UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)**	**Docket No. _____**

JOINT PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION AND WESTERN ELECTRICITY COORDINATING COUNCIL FOR APPROVAL OF PROPOSED REGIONAL RELIABILITY STANDARD FAC-501-WECC-4

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Pursuant to Section 215(d)(1) of the Federal Power Act ("FPA")[1] and Section 39.5 of the Federal Energy Regulatory Commission's ("FERC" or the "Commission") regulations,[2] the North American Electric Reliability Corporation ("NERC")[3] and the Western Electricity Coordinating Council ("WECC") hereby submit proposed Regional Reliability Standard FAC-501-WECC-4 – Transmission Maintenance and the associated freestanding Table Revision Process for Commission approval. Proposed Regional Reliability Standard FAC-501-WECC-4 would continue to ensure that the Transmission Owner of a path identified in Attachment A of the Table Revision Process (Major WECC Transfer Paths in the Bulk Electric System, (Table)), has a Transmission Maintenance and Inspection Plan ("TMIP"). The instant filing would improve upon the currently effective standard by: (1) creating a standalone Table Revision Process, which would improve the procedures for identifying paths subject to the standard and other NERC requirements, and included in the Table; (2) clarifying the applicable Facilities; (3) removing four paths from the

[1] 16 U.S.C. § 824o.

[2] 18 C.F.R. § 39.5 (2023).

[3] The Commission certified NERC as the electric reliability organization ("ERO") in accordance with Section 215 of the FPA on July 20, 2006. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006), *order on reh'g & compliance*, 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

Table;[4] (4) removing the Table from the standard; (5) relocating the Table to the newly proposed Table Revision Process as Attachment A; and (6) providing clarifications and updates to the style and format for readability and proper referencing.

NERC and WECC request that the Commission approve proposed Regional Reliability Standard FAC-501-WECC-4 (**Exhibit A**) and the Table Revision Process (**Exhibit B**) as just and reasonable, not unduly discriminatory or preferential, and in the public interest.[5] NERC and WECC also request approval of the associated Implementation Plan (**Exhibit C**); the associated Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") (which are unchanged from the currently effective standard) (**Exhibit A**); and the retirement of currently-effective Reliability Standard FAC-501-WECC-2.[6]

As required by Section 39.5(a) of the Commission's regulations,[7] this petition presents the technical basis and purpose of the proposed Regional Reliability Standard (**Exhibit E**), a summary of the development proceedings (**Exhibit F**), and a demonstration that the proposed Reliability Standard meets the criteria identified by the Commission in Order No. 672[8] (**Exhibit D**). Proposed Regional Reliability Standard FAC-501-WECC-4 was approved by the WECC Board of Directors ("WECC Board") on June 14, 2023 and by the NERC Board of Trustees ("NERC Board")on May 9, 2024.

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4 Paths 22, 50, 51, and 73. *See* Exhibit C, Implementation Plan at 2 & n.4.

5 Unless otherwise designated, all capitalized terms shall have the meaning set forth in the *Glossary of Terms Used in NERC Reliability Standards*, available at https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf.

6 *See infra*, Section III (c) for a detailed discussion of the version history.

7 18 C.F.R. § 39.5(a).

8 *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 114 FERC ¶ 61,104, at PP 262, 321-37 (2006), *order on reh'g*, Order No. 672-A, 114 FERC ¶ 61,328 (2006).

I. SUMMARY

The purpose of FAC-501-WECC-4 would continue to ensure that the Transmission Owner of a path identified in the Table Revision Process has a TMIP for those paths, annually updates its TMIP and adheres to the TMIP. Like the currently effective version, FAC-501-WECC-2, proposed FAC-501-WECC-4 addresses transmission maintenance, applies a more stringent maintenance protocol to the paths identified in the Table, and specifies a broader range of elements for maintenance than those addressed in any continent-wide standards. The proposed standard remains more stringent than the continent-wide Reliability Standards which do not specifically address transmission maintenance.

The proposed standard was developed following a periodic review of the currently effective Regional Reliability Standard FAC-501-WECC-2, which became effective in 2018.[9] As a result of the periodic review, the instant filing would: (1) remove Attachment B – Major WECC Transfer Paths in the Bulk Electric System from the standard; (2) create a standalone Table Revision Process that establishes the procedure for revising the content of the Table outside of the WECC Reliability Standards Development Procedures ("RSDP")[10]; (3) permanently remove four paths that are included in currently effective Regional Reliability Standard FAC-501-WECC-2 (Path 22-Southwest Four Corners, Path 50–Cholla Pinnacle Peak, Path 51-Southern Navajo, and Path 73–North of John Day Cutplane);[11] (4) relocate the Table to the newly proposed Table Revision Process as Attachment A; (5) clarify the applicable Facilities; and (6) provide

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9 *See N. Am. Elec. Reliability Corp.,* Docket No. RD18-5-000 (May 30, 2018) (Delegated Letter Order).

10 The currently effective WECC RSDP was approved by the Commission on September 13, 2021 (*see N. Am. Elec. Reliability Corp.*, Docket No. RR21-4-000 (Sept. 13, 2021) (approving revised WECC Reliability Standards Development Procedures) [hereinafter WECC RSDP]. The WECC Reliability Standards Development Procedures are available at: https://www.wecc.org/Reliability/WECC%20Reliability%20Standards%20Development%20Procedures%20-%20FERC%20Approved%2009-13-2021.pdf.

11 *See* Exhibit C, Implementation Plan at 2 & n.4.

clarifications and updates to the style and format for readability and proper referencing. Proposed Regional Reliability Standard FAC-501-WECC-4 would remain more stringent than any continent-wide standard by requiring, for specified transmission paths, a highly detailed maintenance and inspection plan for all transmission and substation equipment components. For these reasons, discussed more fully herein, NERC and WECC respectfully request that the Commission approve proposed Regional Reliability Standard FAC-501-WECC-4, and the Table Revision Process. The following petition presents the justification for approval and supporting documentation.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:[12]

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III. BACKGROUND

The following background information is provided below: (a) an explanation of the regulatory framework for NERC and Regional Reliability Standards; (b) a description of the WECC Regional Reliability Standards development process; (c) the history of Project WECC-0149 Regional Reliability Standard FAC-501-WECC-4 Transmission Maintenance; and (d) a description of the development of the proposed Regional Reliability Standard FAC-501-WECC-4.

a. Regulatory Framework

By enacting the Energy Policy Act of 2005,[13] Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the Bulk-Power System, and

[12] NERC respectfully requests a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203, to allow the inclusion of more than two persons on the service list in this proceeding.

[13] 16 U.S.C. § 824o.

with the duty of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1) of the FPA states that all users, owners, and operators of the Bulk-Power System in the United States will be subject to Commission-approved Reliability Standards.[14] Section 215(d)(5) of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard.[15] Section 39.5(a) of the Commission's regulations requires the ERO to file for Commission approval each Reliability Standard that the ERO proposes should become mandatory and enforceable in the United States, and each modification to a Reliability Standard that the ERO proposes to make effective.[16]

The Commission has the regulatory responsibility to approve Reliability Standards that protect the reliability of the Bulk-Power System and to ensure that such Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Pursuant to Section 215(d)(2) of the FPA and Section 39.5(c) of the Commission's regulations, the Commission will give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard.[17]

Similarly, the Commission approves regional differences proposed by Regional Entities, such as Regional Reliability Standards and Variances, if the regional difference is just, reasonable, not unduly discriminatory or preferential, and in the public interest.[18] In addition, Order No. 672 requires further criteria for regional differences. A regional difference from a continent-wide Reliability Standard must either be: (1) more stringent than the continent-wide Reliability

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14 *Id.* § 824(b)(1).

15 *Id.* § 824o(d)(5).

16 18 C.F.R. § 39.5(a).

17 16 U.S.C. § 824o(d)(2); 18 C.F.R. § 39.5(c)(1).

18 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a).

Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; or (2) necessitated by a physical difference in the Bulk-Power System.[19] The Commission must give due weight to the technical expertise of a Regional Entity, like WECC, that is organized on an Interconnection-wide basis, with respect to a regional difference to be applicable within that Interconnection.[20]

b. WECC Regional Reliability Standards Development Process

The proposed Regional Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved WECC RSDP. WECC's RSDP provides for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards and, thus, addresses certain of the criteria for approving Reliability Standards. The development process is open to any person or entity that is an interested stakeholder. WECC considers the comments of all stakeholders, and a vote of stakeholders and the WECC Board is required to approve a Regional Reliability Standard. Once the standard is approved by the WECC Board, NERC posts the approved Regional Reliability Standard for an additional comment period. Then the NERC Board must adopt the Regional Reliability Standard before the Regional Reliability Standard is submitted to the Commission for approval.

c. History of FAC-501-WECC

In 2007, FERC approved Regional Reliability Standard WECC-PRC-STD-005-1, Transmission Maintenance, which required each transmission owner and transmission operator of specified transmission paths to perform maintenance and inspection on those paths as described

[19] Order No. 672 at P 291.

[20] *Id*. at P 344.

by its TMIP. Regional Reliability Standard WECC-PRC-STD-005-1 identified specific contents that each applicable transmission owner and transmission operator must include in its TMIP. When FERC approved the Regional Reliability Standard, the Commission noted that:

> [T]he regional Reliability Standard satisfies the statutory standard for approval because it is more stringent than the corresponding NERC Reliability Standard by requiring, for specified transmission paths, a highly detailed maintenance and inspection plan for all transmission and substation equipment components. WECC-PRC-STD-005-1 imposes requirements well beyond the NERC Reliability Standards and improves reliability because disciplined maintenance on equipment such as transmission lines, circuit breakers, power transformers and regulators will help prevent failures during operation.[21]

The Commission further agreed with concerns raised by NERC, in its adoption of Regional Reliability Standard WECC-PRC-STD-005-1, regarding the format and content of the Regional Reliability Standard. The Commission noted its expectation that WECC, in developing a permanent, replacement standard, address these concerns, including but not limited to inclusion of all relevant documents.[22]

In 2011, the Commission approved Regional Reliability Standard FAC-501-WECC-1 to replace Regional Reliability Standard PRC-STD-005-1.[23] Regional Reliability Standard FAC-501-WECC-1 differed from its predecessor by no longer including the Table within the standard, instead maintaining the Table on WECC's website.[24] In Order No. 751, the Commission restated its concern from the Notice of Proposed Rulemaking that, due to WECC removing the Table from the standard and replacing it with a link on the WECC website, the applicability of the standard

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21 *Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications*, 119 FERC ¶ 61,260 at P 95 (2007).

22 *Id.* at P 98.

23 *Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive*, Order No. 751, 135 FERC ¶ 61,061 at P 33 (2011) [hereinafter Order No. 751].

24 *See id.* at P 14.

"could change without review and approval by NERC and the Commission."[25] The Commission directed WECC to file its criterion for identifying and modifying major transmission paths listed in the Table. The Commission also accepted 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."[26] The Commission "believe[d] 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."[27]

Currently effective Regional Reliability Standard FAC-501-WECC-2 was developed to clarify the Transmission Owner's obligations relating to the development, implementation, and review of TMIPs. This version modified the previous version by directly incorporating the list of applicable transmission paths into the Regional Reliability Standard.[28] WECC proposed this revision based on its subsequent experience that required it to update the standard to correct links when the location of the Table moved on the WECC website, even when the Table had not changed.[29] WECC noted that "[b]y removing the extrinsic reference and incorporating the full content of the Table in the standard, the Commission's incorporation by reference concern from Order No. 751 is alleviated because any future changes to the Table would require the full due

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25 *Id.* at P 20.

26 *Id.* at P 24.

27 *Id.*

28 *Joint Petition of the North American Electric Reliability Corporation and Western Electricity Coordinating Council for Approval of Proposed Regional Reliability Standard FAC-501-WECC-2*, Docket No. RD18-5-000 at 3 (Mar. 16, 2018).

29 *See Joint Informational Filing of the North American Electric Reliability Corporation and Western Coordinating Council Regarding Correction of Links in WECC Regional Reliability Standards* FAC-501-WECC-1 and PRC-004-WECC-2, Docket No. RM15-13-000 (June 9, 2017).

process afforded by the WECC RSDP."[30] The Commission approved Regional Reliability Standard FAC-501-WECC-2 in 2018.[31]

d. Development of the Proposed Regional Reliability Standard

As further described in **Exhibit F**, proposed Regional Reliability Standard FAC-501-WECC-4 was developed in accordance with the WECC RSDP, as part of a five-year review of FAC-501-WECC-2, Transmission Maintenance. The original Standard Authorization Request ("SAR") was designated as WECC project WECC-0141, and focused on the removal of four paths (Path 22-Southwest Four Corners, Path 50-Cholla Pinnacle Peak, Path 51-Southern Navajo, and Path 73-North of John Day Cutplane[32]) from the Table. Specifically, Arizona Public Service ("APS") requested deletion of three of its paths from the Table. Bonneville Power Administration ("BPA") added a request to delete one of its paths.[33] The drafting team concluded that adding BPA's request was within the scope of the SAR. WECC developed Regional Reliability Standard FAC-501-WECC-3 to make the changes identified in the SAR.[34] Regional Reliability Standard FAC-501-WECC-3 was posted for comment by WECC six times[35] and was approved by a 100% affirmative vote of the WECC Ballot Pool on October 21, 2021, followed by WECC Board approval on December 8, 2021.[36]

Following approval by the WECC Board, but before submitting Regional Reliability Standard FAC-501-WECC-3 to the NERC Board, WECC determined that if the implementation

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30 *Joint Petition of the North American Reliability Corporation and Western Electricity Coordinating Council for Approval of Proposed Regional Reliability Standard FAC-501-WECC-2*, Docket No. RD18-5-000, at 9 (Mar 16, 2018).

31 *See N. Am. Elec. Reliability Corp.,* Docket No. RD18-5-000 (May 30, 2018) (Delegated Letter Order).

32 *See* Exhibit C, Implementation Plan at 2 & n.4.

33 WECC-0149 FAC-501-WECC NERC Filings Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 2.

34 *Id.*

35 *See* Exhibit C, Implementation Plan, at 2.

36 *See id.* at 5.

plan was modified, changes to the FAC-501 Regional Reliability Standard could be implemented more quickly. As a result, WECC submitted a new SAR to create WECC project WECC-0149, to change the implementation approach. Specifically, the SAR for WECC-0149 proposed to accept the substantive changes of FAC-501-WECC-3, remove the Table from the Regional Reliability Standard, create a free-standing Table Revision Process to file for FERC approval, and include the Table as Attachment A to the Table Revision Process. WECC developed proposed Regional Reliability Standard FAC-501-WECC-4 to combine the changes from Regional Reliability Standard FAC-501-WECC-3, which had not been submitted for NERC or Commission approval, with the additional changes specified in the WECC-0149 SAR.

Proposed Regional Reliability Standard FAC-501-WECC-4 was approved by a 100% affirmative vote of the WECC Ballot Pool on February 2, 2023, followed by WECC Board approval on June 14, 2023. Following approval by WECC's Board, NERC posted the standard for a 45-day comment period concluding on September 29, 2023. No concerns were raised by commenters. The NERC Board subsequently adopted the Regional Reliability Standard on May 9, 2024.

IV. JUSTIFICATION FOR APPROVAL

The purpose of proposed Regional Reliability Standard FAC-501-WECC-4 would be to continue ensuring that the Transmission Owner of a path identified in the Table has a TMIP for those paths, annually updates its TMIP, and adheres to the TMIP. As revised, the proposed Regional Reliability Standard would continue to advance reliability in the Western Interconnection through requirements for transmission maintenance that are more stringent than the continent-wide NERC Reliability Standards, which do not specifically address transmission maintenance.[37] Like

[37] Exhibit D, Order No. 672 Criteria at 9.

its predecessor versions, proposed Regional Reliability Standard FAC-501-WECC-4 addresses transmission maintenance, applies a more stringent maintenance protocol to the paths identified in the Table, and specifies a broader range of elements for maintenance than those addressed by any continent-wide standards.

The instant filing would improve upon the currently effective standard by: (1) removing Attachment B – Major WECC Transfer Paths in the Bulk Electric System from the standard; (2) creating a standalone Table Revision Process that establishes the procedure whereby the content of the Table may be revised outside of the WECC RSDP; (3) permanently removing four paths that are included in currently effective Regional Reliability Standard FAC-501-WECC-2; (4) relocating the Table to the newly proposed Table Revision Process as Attachment A; (5) clarifying the applicable Facilities; and (6) providing clarifications and updates to the style and format for readability and proper referencing. The proposed Table Revision Process would create the process whereby the content of the Table may be revised outside of the WECC RSDP.[38] The proposed Table Revision Process would streamline the process for adding, removing, or modifying paths included in the Table, which determines which paths are subject to FAC-501-WECC-4 and other NERC requirements.[39] The proposed changes are discussed in more detail below.

a. Table Revision Process

Proposed Regional Reliability Standard FAC-501-WECC-4 would remove the Table from Attachment B of Regional Reliability Standard FAC-501-WECC-2 and include it as an attachment to a separate, standalone, Table Revision Process (**Exhibit B**). The Table Revision Process would create a process whereby the content of the Table may be revised outside of the WECC RSDP;

[38] *See* Exhibit B, Table Revision Process, Introduction Section A(3).

[39] WECC-designated Paths are subject to NERC requirements. *See e.g.,* PRC-023, FAC-003, and Bulk Electric System Definition in the *Glossary of Terms Used in NERC Reliability Standards.*

however, all other changes to the Table Revision Process would be dictated by the RSDP. These changes reflect the reality that "[p]aths once deemed essential to stability may no longer be essential as changes are made to the operation, planning, and configuration of the Bulk Electric System. As such, those paths and the equipment comprising those paths may be considered for deletion from the Table."[40] The proposed revisions further acknowledge that "[w]here system changes warrant a more stringent level of maintenance on specific equipment, the associated path(s) may be considered for addition to the Table."[41]

Removing the Table from the standard reflects WECC's experience with administering this process both with it included within the standard and as a standalone document (when accessed via a link). This experience has demonstrated that modifying the Table within the standard requires significant time, resources, and process for stakeholders, WECC, and NERC. Moving the Table into a standalone Commission-approved process with notice of any changes to the Table filed with the Commission as an informational filing,[42] would enhance due process by providing Requesting Entities[43] a more efficient means for adding and removing paths from the Table, when needed, due to changes to the operation, planning, and configuration of the Bulk Electric System. Where system changes warrant a more stringent level of maintenance on specific equipment, the proposed Table Revision Process would allow the associated path(s) to be included in the Table more expeditiously.

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40 *See* Exhibit B, Table Revision Process, Background and Guidance, Section D at 7.

41 *See id*.

42 *See* Exhibit B, Table Revision Process, Required Approvals, Section C at 6.

43 As defined in the Table Revision Process at A(4) Applicability, Part 4.1.

The Table Revision Process was developed using the WECC RSDP as if it were a standard.[44] As proposed, the Table Revision Process would establish a more robust stakeholder process in that the Table Revision Process mandates completion and vetting of specific studies and steps not currently required in the WECC RSDP.

Under Requirement R1 of the Table Revision Process, each Requesting Entity seeking to modify the content of the Table would complete a technical study that includes: a description of the path to be added, removed, or modified from the Table; a description of the circumstances triggering the requested change; a description of the study method used in support of the requested change; a description of the conclusions and impacts disclosed by the technical study; a description of maintenance practices applicable to the path at the time of the request, and a description of the maintenance practices that would apply if the path were removed from the Table. Requirement R1 Part 1.7.1 would require the Requesting Entity to provide a report on enforceable NERC Reliability Standards that may be impacted by the requested change. Requirement R1 Part 1.7.2 states that if a review of enforceable NERC Standards shows that accepting a change to the Table would impact other standards, proposed remediation shall be included in the Requesting Entity's implementation plan. Under Requirement R1 Part 1.8, the actual effective date for changes to the Table would be the latter of the proposed effective date or the first day of the second quarter following FERC's acceptance of the required informational filing.

Under the Table Revision Process Requirement R2, each Requesting Entity would provide specific notice of the proposed change to each Transmission Owner that owns and/or maintains

[44] "Unlike NERC, the WECC [RSDP] (Procedures) do not have a separate procedure for approving supporting technical documents. Instead, the proposed [Table Revision] Process has undergone full vetting using the [WECC RSDP] at the same level of due process and scrutiny required to draft a Standard." *See* Exhibit D, Order No. 672 Criteria at 2. However, the Table Revision Process is not a standard and not intended for enforcement by any compliance entity. *See* Exhibit D, Order No. 672 Criteria at 2.

the identified path; each Transmission Operator that operates the identified path; and each Reliability Coordinator having oversight of the identified path.

Requirement R3 would require each Requesting Entity to provide notice of the proposed change to entities subscribed to WECC's Standard Email List, or its successor.

Requirement R4 would require each Requesting Entity to provide the technical study to the following entities within 30 days of a request: Transmission Owner(s), Transmission Operator(s), and Reliability Coordinator(s), operating in the Western Interconnection and having a reliability-related need; and the chair or chair's designee of the WECC Reliability Risk Committee, or its successor.

Requirement R5 would establish the requirements for notice, including: the proposed change to the Table; a request for comments; the location of the technical study or information regarding how to obtain the study; how to submit comments; and contact information for the Requesting Entity's subject matter expert covering the requested change to the Table.

The Table Revision Process Requirements R6 and R7 would require that each Requesting Entity consider and respond to all comments received during each 30-day posting. Requirement R8 would require that each Requesting Entity, at the close of the final comment/response cycle(s), present to the WECC Reliability Risk Committee, or its successor, its findings and recommendations regarding proposed changes to the Table. Requirement R9 would require the WECC Reliability Risk Committee to conduct a ballot to determine whether the Requesting Entity's proposed change(s) should be adopted. Requirements R10 and R11 set forth how procedural and substantive concerns may be addressed.

When FERC approved FAC-501-WECC-1 in Order No. 751, the Commission reiterated its concern from the Notice of Proposed Rulemaking that the applicability of the standard "could

change without review and approval by NERC and the Commission."[45] WECC agreed that no changes would be made to the Table without using an open and transparent process and notifying the Commission accordingly.[46] Although the instant filing would remove the Table from the standard, it provides the necessary safeguards to ensure that all changes to the Table would be made in accordance with an open and transparent process and be filed with the Commission. The notice features of the Table Revision Process would essentially mirror those used in the WECC RSDP, while affording additional specific notice to impacted entities.

The proposed Table Revision Process would require that "[c]hanges made to the *Table* require approval of the [WECC] Board, followed by an informational filing with NERC and FERC."[47] It further provides that "[c]hanges to this *Revision Process* require approval of the [WECC] Board, the NERC Board of Trustees, and FERC."[48] The proposed Table Revision Process expressly includes notice, via informational filing, to the Commission and NERC of any changes to the Table and requires approval by both NERC and FERC of any changes to the Table Revision Process, thus, providing notice and transparency to address the concerns that FERC articulated in Order No. 751.

Changes to the Table would be expedited by allowing the WECC Board to approve content changes to the Table, followed by an informational filing to NERC and FERC; this would reduce implementation time. In addition, changes to the Table would be effective "the latter of the

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45 Order No. 751 at P 20.

46 *See Joint Petition of the North American Electric Reliability Corporation and Western Electricity Coordinating Council for Approval of Proposed Regional Reliability Standard FAC-501-WECC-2*, Docket No. RD18-05-000 at 8-9 (Mar. 16, 2018).

47 Exhibit B, Table Revision Process, section C at 6.

48 *Id.*

proposed effective date or the first day of the second quarter following FERC's acceptance of the required informational filing."[49]

Approval of the Table Revision Process enhances due process by focusing on the Table's content as opposed to the standard in which the Table is contained. Because the Table is referenced in various unrelated documents, when the Table's content changes those changes self-execute throughout those documents. For example, Regional Reliability Standard FAC-501-WECC-4 focuses on transmission maintenance. This approach would reduce incorporation by reference concerns and enhance notice and due process by creating a single, freestanding forum for interested stakeholders to monitor for changes to the Table.[50]

b. Proposed Removal of 4 Paths from the Table

In the instant proceeding, the following paths would be permanently removed from the Table: Path 22-Southwest Four Corners, Path 50-Cholla Pinnacle Peak, Path 51-Southern Navajo, and Path 73-North of John Day Cutplane.[51] At the onset of the WECC-0141 project, APS requested deletion of three paths from the Table. In Posting 6 of the WECC-0141 project, BPA added a request to delete one of its paths.[52] The Table is a holdover predating the implementation of mandatory standards, with the rationale for inclusion lost to time. As a result, it is not possible to fully describe why these paths were first included in the Table. That said, the mere fact that they were once included, does not mean that they should necessarily continue to be included, and

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49 *See* Exhibit B, Table Revision Process, Section B, Requirement R1 Part 1.81.

50 NERC notes that multiple NERC Reliability Standards reference the paths as applicable facilities. NERC has not identified a need to revise those standards at this time.

51 *See* Exhibit C, Implementation Plan at 2 & n.4.

52 WECC-0149 FAC-501-WECC NERC Filings Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 2 n.5 (APS paths for deletion: 1) Southwest Four Corners (Path 22), 2) Cholla Pinnacle Peak (Path 50), and 3) Southern Navajo Transmission System (Path 51).); *see id.* at 4-5 for discussion of delisting Path 73, North of John Day; *see e.g.,* https://www.wecc.org/Standards/pages/wecc-0149.aspx "BPA agrees with including Path 73 (North of John Day) as part of this project." BPA comments received, WECC-0141, Posting 6, https://www.wecc.org/Standards/Lists/WECC0141Posting6/DispForm.aspx?ID=1.

subject to enhanced transmission maintenance requirements, where circumstances have changed. Here, WECC has overseen a robust and transparent stakeholder process, per its Project Coordination, Path Rating, and Progress Report Processes ("Combined Processes")[53] and later RSDP, to fully vet the proposed removal of the four paths and ensure that reliability is not harmed by the removal.

The removal of these paths was supported by APS and BPA in the form of repeated public presentations to multiple technical committees at WECC (prior to engaging in the WECC Combined Processes and later RSDP), supported by comment/response iterations at the committee level, plus those required per the WECC RSDP.[54]

On August 21, 2019, APS made a presentation to the Southwest Area Transmission Oversite Group regarding its proposed delisting.[55] The content of the presentation was largely reiterated in a September 3, 2019 letter from APS to the WECC Studies Subcommittee Chair, WECC Operating Committee Members, and the WECC Reliability Assessment Committee, which notified those parties of APS' intent to delist certain paths effective January 1, 2020.[56] In the same letter, APS stated its primary driver for delisting as "the inability to maintain existing WECC Path ratings with planned coal retirements and the difficulty in the WECC Path rating process for timely rating changes."[57] The letter stated that APS had conducted the necessary studies "confirming

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53 WECC-0149 FAC-501-WECC NERC Filings Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 1 n.4.

54 *See* Exhibit D, Order No. 672 Criteria at 5.

55 WECC-0149 FAC-501-WECC NERC Filings, Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 3 n.7., https://www.wecc.org/Standards/pages/wecc-0149.aspx.

56 *Id.* at 3 n.8.

57 WECC-0149 FAC-501-WECC NERC Filings, Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 3, https://www.wecc.org/Standards/pages/wecc-0149.aspx (quoting WECC-0141 FAC-501-WECC-3 Trans Maint - Attachment T3 - Additional Supporting Documents - APS Letter 1 Notification to WECC 09-03-0219, https://www.wecc.org/Reliability/WECC-0149%20FAC-501-WECC%20-%20Attachment%20T03%20-%20Add%20Doc%20APS%20Letter%201%20to%20WECC%2009-03-2019.pdf).

reliable system operations after the coal units are retired."[58] APS informed the members that delisting had been coordinated with and approved by the joint path owners, and provided a listing of dates and parties with which communications had been made, including notification provided via the Open Access Transmission, Inc. ("OATI") website on August 15, 2019.[59] APS agreed to provide the required 30-day notice and associated comment/response closing October 17, 2019. APS corporate contact information was also provided.[60]

On October 18, 2019, APS presented its request to the WECC Reliability Assessment Committee.[61] The presentation included: (1) discussion of the primary reasons for seeking the delisting, (2) impacts on current planning and procedures, (3) communication with impacted parties, and (4) proposed steps forward to include SAR WECC-0141. As required in the Combined Processes, the issue was opened for public discussion and debate.[62]

A WECC Whitepaper in WECC-0141 explains that the Path 22, facilities include the Four Corners – Moenkopi 500kV line and the 2 Four Corners to Cholla 345kV lines which were built to support the import of generation from the Four Corners Plant into Arizona and Southern California. Additionally, Four Corners interconnects with the Shiprock and San Juan generation plants and the Rio Puerco, Pinto, and Ambrosia transmission lines, each of which is generally regarded as an import point to adjacent utilities. In 2010, Four Corners units 1, 2, and 3 (500 MW) were retired. In 2014 APS acquired Southern California Edison's rights to Four Corners units 4

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58 *Id.*

59 WECC-0149 FAC-501-WECC NERC Filings, Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 3, https://www.wecc.org/Standards/pages/wecc-0149.aspx .

60 *Id.*

61 *Id.* at 3 n.9.

62 *Id.* at 3.

and 5 (1,540 MW) which are planned to retire in 2030/2031. In 2017 San Juan units 2 and 3 (836 MW) were retired and units 1 and 4 (847 MW) are planned to retire in 2023/2025.[63]

The APS Path 50 facilities include the Cholla–Preacher Canyon and Cholla to Mazatzal 345kV lines, which were primarily used for importing Four Corners and Cholla generation into the Phoenix area. Additionally, Cholla 500kV lines tie into the Coronado Generator (via Sugarloaf) and the Cholla 345kV line ties back into the Four Corners Plant 345kV switchyard. In 2016, Cholla unit 2 was retired and in 2020 Cholla unit 4 was retired.[64]

Path 51 facilities include the Navajo–Moenkopi and Navajo–Dugas 500kV lines, which were primarily used to bring Navajo generation into the Phoenix area via their interconnections to the Westwing 500kV switchyard and to areas west of the Navajo Plant via the Navajo–Crystal 500kv line to the west. In 2019, Navajo units 1, 2, and 3 were retired (2,409 MW).[65]

On December 15, 2020, BPA notified WECC members, as required in the Combined Processes (later RSDP), of its intent to delist Path 73, North of John Day. Notice was accompanied by a technical proposal (North of John Day Retirement Report), initiation of a comment/response cycle, with a projected delisting date of January 15, 2021.[66] On May 12, 2021, BPA dispatched notice that North of John Day had been retired. Notice included a list of documents that had been updated resulting from that retirement.[67] On June 15, 2021, BPA dispatched notice via OATI of

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[63] *See* WECC-0141 Guidance Document-White Paper at 9, https://www.wecc.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Reliability/WECC-0149%20FAC-501-WECC%20-%20Attachment%20O%20Guidance%20White%20Paper.docx&action=default&DefaultItemOpen=1, and Attachments T through T-11, NERC Filings, https://www.wecc.org/Standards/pages/wecc-0149.aspx.

[64] *See id.*

[65] *See id.*

[66] WECC-0149 FAC-501-WECC NERC Filings Attachment T Additional Supporting Documents Cover Sheet WECC-0141/WECC-0149 at 4 https://www.wecc.org/Standards/pages/wecc-0149.aspx .(citing WECC-0141 FAC-501-WECC-3 Trans Maint - Attachment T8 - Additional Supporting Documents - BPA Notice of Intent to Delist 01-15-2021).

[67] *Id.* (citing WECC-0141 FAC-501-WECC-3 Trans Maint - Attachment T10 - Additional Supporting Documents - BPA Notice of Completion 05-12-2021).

BPA's intent to delist North of John Day, noting that North of John Day had been retired as of May 12, 2021.[68]

During Projects WECC-0141 and WECC-0149, no concerns were raised regarding the technical support offered for removing the four paths from the Table.[69] Regional Reliability Standard FAC-501-WECC-3 was approved by a 100% affirmative vote of the WECC Ballot Pool on October 21, 2021, followed by WECC Board approval on December 8, 2021.[70] When WECC-0149 superseded WECC-0141, resulting in Regional Reliability Standard FAC-501-WECC-4, the project was again approved by a 100% affirmative vote of the WECC Ballot Pool on February 2, 2023, followed by WECC Board approval on June 14 , 2023.[71]

c. Revisions to Regional Reliability Standard FAC-501-WECC-4

Proposed Regional Reliability Standard FAC-501-WECC-4 includes several clarifications that improve upon the existing standard. Specifically, FAC-501-WECC-4 proposes updates to the style and format to match NERC's most current document template. The Purpose statement is updated for readability and proper referencing. The Applicability section is updated for readability. Section 5, Facilities, is added to accurately identify the applicable facilities.

A Background section was also added to the standard to provide clarifying context. Non-Substantive[72] changes were made to the Requirements and Measures, and Compliance sections for

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68 *Id.* (citing WECC-0141 FAC-501-WECC-3 Trans Maint - Attachment T9 - Additional Supporting Documents - BPA Notice of Delisting OASIS 05-2021).

69 *See* Exhibit D, Order No. 672 Criteria at 5. *See also* WECC-0141 Home Page, Submit and review Comments, Response to Comments for Posting 1, https://www.wecc.org/Reliability/A%20WECC-0141%20FAC-501-WECC-3%20Trans%20Maint%20%20-%20Attachment%20R1%20-%20Response%20to%20Comments%20-%20Posting%201.docx

70 *See* Exhibit C, Implementation Plan, at 5.

71 *Id.* at 9.

72 Non-Substantive changes are defined in the WECC RSDP, https://www.wecc.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Reliability/WECC%20Reliability%20Standards%20Development%20Procedures%20-%20FERC%20Approved%2009-13-2021.pdf&action=default&DefaultItemOpen=1.

readability. The Associated Documents section adds a reference to the Table Revision Process, highlighting that the Table Revision Process is a freestanding document.

In Attachment A to FAC-501-WECC-4 – Transmission Maintenance and Inspection Plan, Section 2 – Maintenance, existing descriptions were elaborated, and risk-based and Original Equipment Manufacturer maintenance methods were added. The remaining sections of Attachment A were updated for readability.

d. Enforceability of Proposed Regional Reliability Standard FAC-501-WECC-4

The proposed Regional Reliability Standard includes measures that support each requirement by clearly identifying what is required and how the ERO will enforce the requirement. These measures help ensure that the requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.[73] Additionally, the proposed Reliability Standard includes VRFs and VSLs. The VRFs and VSLs remain unchanged from the currently effective FERC-approved version, Regional Reliability Standard FAC-501-WECC-2,[74] and provide guidance on the way the requirements of the proposed Reliability Standard will be enforced. The VRFs and VSLs for the proposed Reliability Standard comport with NERC and Commission guidelines related to their assignment.

V. EFFECTIVE DATE

NERC respectfully requests that the Commission approve the proposed Implementation Plan, provided in **Exhibit C** hereto. Under the proposed Implementation Plan, proposed Regional Reliability Standard FAC-501-WECC-4 and Table Revision Process would become effective on

[73] Order No. 672 at P 327.

[74] *See* Exhibit A, Redlined proposed Regional Reliability Standard FAC-501-WECC-4, section D.

the first day of the second calendar quarter after the effective date of the Commission's order approving the proposed Regional Reliability Standard and the Table Revision Process.[75]

VI. CONCLUSION

For the reasons set forth above, NERC respectfully requests that the Commission approve:

- Proposed Regional Reliability Standard FAC-501-WECC-4, including the VRFs and VSLs included in Exhibit A, effective as proposed herein;
- the Table Revision Process included in Exhibit B;
- the proposed Implementation Plan included in Exhibit C; and
- the retirement of currently effective Regional Reliability Standard FAC-501-WECC-2.

Respectfully submitted,

/s/ Sarah P. Crawford

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Date: May 17, 2024

[75] *See* Exhibit B, Table Revision Process, Section A (6), at. 2, *see e.g.,* Implementation Plan at 1.

Exhibit A

Proposed Regional Reliability Standard
FAC-501-WECC-4 – Transmission Maintenance

Exhibit A-1

Proposed Regional Reliability Standard FAC-501-WECC-4 – Transmission Maintenance (Redline)

A. Introduction

1. **Title:** Transmission Maintenance

2. **Number:** FAC-501-WECC-~~2~~4

3. **Purpose:** To ensure the Transmission Owner of a ~~transmission~~ path identified in the Table Revision Process, Attachment ~~B~~A, Major WECC Transfer Paths in the Bulk Electric System~~, including associated facilities~~ (Table), has a Transmission Maintenance and Inspection Plan (TMIP~~);~~) for those paths, annually updates its TMIP, and ~~performs and documents maintenance and inspection activities in accordance with~~adheres to the TMIP.

4. **Applicability**

   4.1 Transmission Owners ~~that maintain the transmission~~maintaining paths ~~in~~ listed on the Table.

5. **Facilities**

   5.1 Bulk Electric System Facilities, Elements, Transmission Lines, and other equipment as listed on Attachment ~~B.~~A Transmission Maintenance and Inspection Plan (TMIP) Content, comprising the named paths on the Table.

6. **Effective Date:** ~~The first day~~See Posting 1, Implementation Plan

B. Background

(This section may be removed from the standard to align with NERC's current trends. If so, the content will be provided to NERC as part of ~~the first quarter following applicable regulatory~~WECC's filing with a request for approval~~.~~.)

~~B~~In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from inadequate vegetation management. In March 1997, the Western Systems Coordinating Council (WSCC) trustees created the WSCC Reliability Management System (RMS) Policy Group establishing a remedial contract-based operational agreement known as the RMS. Although the RMS was established in response to the 1996 vegetation-related outages, unlike the FAC-003-X Transmission Vegetation Management standard, neither the RMS nor those standards evolving from it had vegetation management as their primary purpose. Rather, the initial version of WECC's Regional Reliability Standards were designed to address the outages collectively by continuing operational practices addressed in the RMS.[1]

By February 2000, the WSCC translated the RMS into what would become the first version

[1] The initial version of WECC's regional Reliability Standards were colloquially referred to as Version Zero standards. Version Zero is not a term used in the NERC Glossary of Terms Used in Reliability Standards. (See Docket No. RR07-11-000, July 2007).

of NERC's mandatory Reliability Standards. In that process, the list of paths contained in the 2000 RMS, Table 4 migrated from the RMS into PRC-STD-005-1 (PRC), Transmission Maintenance, Attachment A, Table 2, Existing WECC Transfer Paths (BPTP), (Revised February 2006), and was permanently replaced with FAC-501-WECC-1 and 2, Transmission Maintenance (Version 2, 2018).

The paths listed in the Table did not change between 2000 and 2020. Neither the RMS nor the filings of PRC-STD-005-1, FAC-501-WECC-1 or 2 explain *why* the specific paths were added to the Table, except that the RMS defines those paths as being monitored by the "Security Coordinator."

The addition of the Table Revision Process (Process) is intended to provide a streamlined development procedure for adding, removing or modifying paths listed on the Table. Specific equipment comprising a path can be identified on FAC-501-WECC-4, Attachment A, Transmission Maintenance and Inspection Plan.

C. Requirements and Measures

R1. Each Transmission Owner shall have a TMIP that includes, at a minimum, each of the items listed in Attachment A, Transmission Maintenance and Inspection Plan (TMIP) Content.~~-~~ *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M1. Each Transmission Owner will have evidence that it has a TMIP detailing each of the items listed in Attachment A, as required in Requirement R1.

R2. Each Transmission Owner shall annually update its TMIP to reflect all changes to its TMIP. ~~-~~*[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Transmission Owner will have evidence that it annually updated its TMIP, as required in Requirement R2. ~~-~~When an annual update shows ~~that~~ no changes are required to the TMIP, evidence may include but is not limited to, attestation that the update was performed but showed ~~that~~ no changes were required.

R3. Each Transmission Owner shall adhere to its TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M3. Each Transmission Owner will have evidence that it adhered to its TMIP, as required in Requirement R3. ~~-~~Evidence may include, but is not limited to:

1.1 The date(s) the patrol, inspection or maintenance was performed;

1.2 ~~The transmission Facility or Element~~The equipment on which the maintenance was performed;

1.3 A description of the inspection results or maintenance performed.

~~C~~D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The Transmission Owners listed in section 4.1 shall keep data or evidence of Requirements ~~1-3~~R1-R3 for three calendar years, or since the last audit, whichever is longer.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Owner's TMIP did not include one of the items listed in Attachment A, as required in Requirement R1.	The Transmission Owner's TMIP did not include two of the items listed in Attachment A, as required in Requirement R1.	The Transmission Owner's TMIP did not include three of the items listed in Attachment A, as required in Requirement R1.	The Transmission Owner's TMIP did not include four or more of the items listed in Attachment A, as required in Requirement R1.
R2.	The Transmission Owner did not annually update its TMIP (within the 365 days following the last review), as required by R2.	The Transmission Owner did not update its TMIP within the last one year and 1 day (within the 366 days following the last review), as required by R2.	The Transmission Owner did not update its TMIP within the last two years and 1 day (within the 731 days following the last review), as required by R2.	The Transmission Owner did not update its TMIP within the last three years and 1 day (within the 1095 days following the last review), as required by R2.
R3.	The Transmission Owner failed to adhere to: 1) one transmission line maintenance item, or 2) one station maintenance item, as contained in its TMIP, as required in R3.	The Transmission Owner failed to adhere to: 1) two transmission line maintenance items; or, 2) two station maintenance items; or 3) any combination of two items taken from the above list, for items contained in its TMIP, as required in R3.	The Transmission Owner failed to adhere to: 1) three transmission line maintenance items; or, 2) three station maintenance items; or 3) any combination of three items taken from the above list, for items contained in its TMIP, as required in R3.	The Transmission Owner failed to adhere to: 1) four or more transmission line maintenance items; or, 2) four or more station maintenance items; or, 3) any combination of four or more items taken from the above list, for items contained in its TMIP, as required in R3.

~~D~~

E. Regional Variances

None.

~~E~~F. Associated Documents

~~None~~Table Revision Process (Process)

The Process is *not* part of this Standard.

The Process: 1) describes the procedure whereby paths are added to or removed from the Table Revision Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System, and 2) contains the sole-source, FERC-approved listing of paths known as Major WECC Transfer Paths in the Bulk Electric System.

Version History – Shows Approval History and Summary of Changes in the Action Field

Version	Date	Action	Change Tracking
1	April 16, 2008	Permanent Replacement Standard for PRC-STD-005-1	
1	October 29, 2008	NERC BOT conditional approval	
1	April 21, 2011	FERC Approved in Order 751	
2	July 1, 2017	Approved by the WECC Board of Directors.	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure M3.
2	February 8, 2018	Adopted by the NERC Board of Trustees.	
2	May 30, 2018	FERC Order issued approving FAC-501-WECC-2. Docket No. RD18-5-000. Effective July 1, 2018.	
3		TBD	TBD

Attachment A
Transmission Maintenance and Inspection Plan (TMIP) Content

The TMIP shall include, at a minimum, each of the following details items:

1. Facilities

A list of Facilities (e.g., transmission lines, transformers, etc.) and , Elements (e.g. circuit breaker, bus section, etc.) that comprise each transmission path(s) identified in, Transmission Lines, and other equipment comprising the named paths on the Table Revision Process (Process), Attachment BA, Major WECC Transfer Paths in the Bulk Electric System. (Table).

2. Maintenance Methodology Method

A description of the maintenance methodology method(s) used for the Facility, transmission line, or station equipment included in the TMIP.

The TMIP maintenance methodology method may be any one of the following or any combination thereof, but must include at least one of the following:

- Performance-based
  - This approach conducts maintenance by first defining the outcome then designing a maintenance program to meet the end performance.
- Time-based
  - This approach conducts maintenance based on defined timelines or specific events.
- Condition -based
  - This approach conducts maintenance based on the current condition of equipment.
- Risk-based
  - This approach conducts maintenance proactively based on predictive modeling. This approach is a benefit/burden analysis weighing the cost of maintenance against the likelihood of component failure. Equipment posing a greater risk to reliability in the event of failure may be maintained more frequently than components posing a lower reliability risk in the event of failure.
- Original Equipment Manufacturer
  - This approach is based on the recommendations of the equipment manufacturer.

3. Periodicity

A

Based on the maintenance method(s) selected in Item 2 above, the TMIP shall include a specification of the periodicity thatat which the described maintenance will occur, or under what circumstancescircumstance it occurs.

4. Transmission Line Maintenance and Inspection

A description of each of the following for the transmission line(s) included in the TMIP:

a. Inspection requirements

b. Patrol requirements

c. Tower and wood pole structure management

5. Station Maintenance and Inspection

A description of each of the following for each station included in the TMIP:

a. Inspection requirements

b. Equipment maintenance for each of the following:

1. Circuit breakers

2. Power transformers (, specifically including, but not limited to, phase-shifting transformers), where present.

3. Reactive devices (, specifically including, but not limited to, shunt capacitors, series capacitors, synchronous condensers, shunt reactors, and tertiary reactor, where present.)

Attachment B

Major WECC Transfer Paths in the Bulk Electric System

,	PATH NAME*	Path Number
1.	Alberta – British Columbia	1
2.	Northwest – British Columbia	3
3.	West of Cascades – North	4
4.	West of Cascades – South	5
5.	West of Hatwai	6
6.	Montana to Northwest	8
7.	Idaho to Northwest	14
8.	South of Los Banos or Midway- Los Banos	15
9.	Idaho – Sierra	16
10.	Borah West	17
11.	Idaho – Montana	18
12.	Bridger West	19
13.	Path C	20
14.	Southwest of Four Corners	22
15.	PG&E – SPP	24
16.	Northern – Southern California	26
17.	Intmntn. Power Project DC Line	27
18.	TOT 1A	30
19.	TOT 2A	31
20.	Pavant – Gonder 230 kV Intermountain – Gonder 230 kV	32
21.	TOT 2B	34
22.	TOT 2C	35
23.	TOT 3	36
24.	TOT 5	39
25.	SDGE – CFE	45
26.	West of Colorado River (WOR)	46
27.	Southern New Mexico (NM1)	47
28.	Northern New Mexico (NM2)	48
29.	East of the Colorado River (EOR)	49
30.	Cholla – Pinnacle Peak	50
31.	Southern Navajo	51
32.	Brownlee East	55
33.	Lugo – Victorville 500 kV	61
34.	Pacific DC Intertie	65
35.	COI	66
36.	North of John Day cutplane	73
37.	Alturas	76
38.	Montana Southeast	80
39.	SCIT**	
40.	COI/PDCI – North of John Day cutplane**	

* For an explanation of terms, path numbers, and definition for the paths refer to WECC's Path Rating Catalog.

** The SCIT and COI/PDCI-North of John Day Cutplane are paths that are operated in accordance with nomograms identified in WECC's Path Rating Catalog

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Exhibit A-2

Proposed Regional Reliability Standard FAC-501-WECC-4 – Transmission Maintenance (Clean)

A. Introduction

1. **Title:** Transmission Maintenance

2. **Number:** FAC-501-WECC-4

3. **Purpose:** To ensure the Transmission Owner of a path identified in the Table Revision Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System (Table), has a Transmission Maintenance and Inspection Plan (TMIP) for those paths, annually updates its TMIP, and adheres to the TMIP.

4. **Applicability**

   4.1 Transmission Owners maintaining paths listed on the Table.

5. **Facilities**

   5.1 Bulk Electric System Facilities, Elements, Transmission Lines, and other equipment as listed on Attachment A Transmission Maintenance and Inspection Plan (TMIP) Content, comprising the named paths on the Table.

6. **Effective Date:** See Posting 1, Implementation Plan

B. Background

(This section may be removed from the Standard to align with NERC's current trends. If so, the content will be provided to NERC as part of WECC's filing with a request for approval.)

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from inadequate vegetation management. In March 1997, the Western Systems Coordinating Council (WSCC) trustees created the WSCC Reliability Management System (RMS) Policy Group establishing a remedial contract-based operational agreement known as the RMS. Although the RMS was established in response to the 1996 vegetation-related outages, unlike the FAC-003-X Transmission Vegetation Management standard, neither the RMS nor those standards evolving from it had vegetation management as their primary purpose. Rather, the initial version of WECC's Regional Reliability Standards were designed to address the outages collectively by continuing operational practices addressed in the RMS.[1]

By February 2000, the WSCC translated the RMS into what would become the first version of NERC's mandatory Reliability Standards. In that process, the list of paths contained in the 2000 RMS, Table 4 migrated from the RMS into PRC-STD-005-1 (PRC), Transmission Maintenance, Attachment A, Table 2, Existing WECC Transfer Paths (BPTP), (Revised February 2006), and was permanently replaced with FAC-501-WECC-1 and 2, Transmission Maintenance (Version 2, 2018).

[1] The initial version of WECC's Regional Reliability Standards were colloquially referred to as Version Zero standards. Version Zero is not a term used in the NERC Glossary of Terms Used in Reliability Standards. (See Docket No. RR07-11-000, July 2007).

The paths listed in the Table did not change between 2000 and 2020. Neither the RMS nor the filings of PRC-STD-005-1, FAC-501-WECC-1 or 2 explain *why* the specific paths were added to the Table, except that the RMS defines those paths as being monitored by the "Security Coordinator."

The addition of the Table Revision Process (Process) is intended to provide a streamlined development procedure for adding, removing or modifying paths listed on the Table. Specific equipment comprising a path can be identified on FAC-501-WECC-4, Attachment A, Transmission Maintenance and Inspection Plan.

C. Requirements and Measures

R1. Each Transmission Owner shall have a TMIP that includes, at a minimum, each of the items listed in Attachment A, Transmission Maintenance and Inspection Plan (TMIP) Content. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M1. Each Transmission Owner will have evidence that it has a TMIP detailing each of the items listed in Attachment A, as required in Requirement R1.

R2. Each Transmission Owner shall annually update its TMIP to reflect all changes to its TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Transmission Owner will have evidence that it annually updated its TMIP, as required in Requirement R2. When an annual update shows no changes are required to the TMIP, evidence may include but is not limited to, attestation that the update was performed but showed no changes were required.

R3. Each Transmission Owner shall adhere to its TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M3. Each Transmission Owner will have evidence that it adhered to its TMIP, as required in Requirement R3. Evidence may include, but is not limited to:

1.1 The date(s) the patrol, inspection or maintenance was performed;

1.2 The equipment on which the maintenance was performed;

1.3 A description of the inspection results or maintenance performed.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The Transmission Owners listed in section 4.1 shall keep data or evidence of Requirements R1-R3 for three calendar years, or since the last audit, whichever is longer.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Transmission Owner's TMIP did not include one of the items listed in Attachment A, as required in Requirement R1.	The Transmission Owner's TMIP did not include two of the items listed in Attachment A, as required in Requirement R1.	The Transmission Owner's TMIP did not include three of the items listed in Attachment A, as required in Requirement R1.	The Transmission Owner's TMIP did not include four or more of the items listed in Attachment A, as required in Requirement R1.
R2.	The Transmission Owner did not annually update its TMIP (within the 365 days following the last review), as required by R2.	The Transmission Owner did not update its TMIP within the last one year and 1 day (within the 366 days following the last review), as required by R2.	The Transmission Owner did not update its TMIP within the last two years and 1 day (within the 731 days following the last review), as required by R2.	The Transmission Owner did not update its TMIP within the last three years and 1 day (within the 1095 days following the last review), as required by R2.
R3.	The Transmission Owner failed to adhere to: 1) one transmission line maintenance item, or 2) one station maintenance item, as contained in its TMIP, as required in R3.	The Transmission Owner failed to adhere to: 1) two transmission line maintenance items; or, 2) two station maintenance items; or 3) any combination of two items taken from the above list, for items contained in its TMIP, as required in R3.	The Transmission Owner failed to adhere to: 1) three transmission line maintenance items; or, 2) three station maintenance items; or 3) any combination of three items taken from the above list, for items contained in its TMIP, as required in R3.	The Transmission Owner failed to adhere to: 1) four or more transmission line maintenance items; or, 2) four or more station maintenance items; or, 3) any combination of four or more items taken from the above list, for items contained in its TMIP, as required in R3.

E. Regional Variances

None.

F. Associated Documents

Table Revision Process (Process)

The Process is *not* part of this Standard.

The Process: 1) describes the procedure whereby paths are added to or removed from the Table Revision Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System, and 2) contains the sole-source, FERC-approved listing of paths known as Major WECC Transfer Paths in the Bulk Electric System.

Version History – Shows Approval History and Summary of Changes in the Action Field

Version	Date	Action	Change Tracking
1	April 16, 2008	Permanent Replacement Standard for PRC-STD-005-1	
1	October 29, 2008	NERC BOT conditional approval	
1	April 21, 2011	FERC Approved in Order 751	
2	July 1, 2017	Approved by the WECC Board of Directors.	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure M3.
2	February 8, 2018	Adopted by the NERC Board of Trustees.	
2	May 30, 2018	FERC Order issued approving FAC-501-WECC-2. Docket No. RD18-5-000. Effective July 1, 2018.	
3		TBD	TBD

Attachment A
Transmission Maintenance and Inspection Plan (TMIP) Content

The TMIP shall include, at a minimum, each of the following items:

1. Facilities

A list of Facilities, Elements, Transmission Lines, and other equipment comprising the named paths on the Table Revision Process (Process), Attachment A, Major WECC Transfer Paths in the Bulk Electric System (Table).

2. Maintenance Method

A description of the maintenance method(s) used for the equipment included in the TMIP.

The TMIP maintenance method may be any one of the following or any combination thereof, but must include at least one of the following:

- Performance-based
    - This approach conducts maintenance by first defining the outcome then designing a maintenance program to meet the end performance.
- Time-based
    - This approach conducts maintenance based on defined timelines or specific events.
- Condition-based
    - This approach conducts maintenance based on the current condition of equipment.
- Risk-based
    - This approach conducts maintenance proactively based on predictive modeling. This approach is a benefit/burden analysis weighing the cost of maintenance against the likelihood of component failure. Equipment posing a greater risk to reliability in the event of failure may be maintained more frequently than components posing a lower reliability risk in the event of failure.
- Original Equipment Manufacturer
    - This approach is based on the recommendations of the equipment manufacturer.

3. Periodicity

Based on the maintenance method(s) selected in Item 2 above, the TMIP shall include a specification of the periodicity at which the described maintenance will occur or under what circumstance it occurs.

4. Transmission Line Maintenance and Inspection

A description of each of the following for the transmission line(s) included in the TMIP:

a. Inspection requirements

b. Patrol requirements

c. Tower and wood pole structure management

5. Station Maintenance and Inspection

A description of each of the following for each station included in the TMIP:

a. Inspection requirements

b. Equipment maintenance for each of the following:

1. Circuit breakers

2. Power transformers, specifically including phase-shifting transformers, where present.

3. Reactive devices, specifically including shunt capacitors, series capacitors, synchronous condensers, shunt reactors, and tertiary reactors, where present.

Exhibit B

Major WECC Transfer Paths in the Bulk Electric System (Table) – Revision Process (Process)

Electric Reliability and Security for the West

Attachment C-2
Clean as Proposed

WECC-0149
Table Revision Process
WECC Major Transfer Paths
In the Bulk Electric System

Table Revision Process

A. Introduction

1. **Title:** **Major[1] WECC Transfer Paths in the Bulk Electric System (Table)—Path List Revision Process (Revision Process)**

2. **Number:** **NOT APPLICABLE. THIS IS NOT A WECC/NERC STANDARD.**

3. **Purpose:** The purpose of this document is to: a) create the process whereby the content of the Table can be revised outside of the WECC Reliability Standards Development Procedures (Procedures), and b) create the sole source listing of the Table's content for all documents in which the Table is referenced.

4. **Applicability**

   4.1. Transmission Owner(s), Transmission Operator(s), and Reliability Coordinator(s), operating in the Western Interconnection (AKA: Requesting Entity[2])

5. **Documents**

[1] For purposes of this document and those documents specified herein, the word "major" is used only as a title and not as an adjective. Its legacy use as a title does not indicate the importance of the path or its impact on reliability. As used, the word is a carryover from WECC's Reliability Management System (RMS), circa 1997, wherein its use designated those paths monitored by the "Security Coordinator"—predecessor of the Reliability Coordinator. Beyond this feature found in the RMS there are no known technical studies explaining why the specified paths are listed in the Table.

[2] The Reliability Coordinator may serve as the Requesting Entity on behalf of any entity not listed in Section 4. Applicability. For example, if a Generator Owner seeks to add a path to the Table, the Generator Owner is required to make that request through the Reliability Coordinator that oversees the path. The Reliability Coordinator may accept or reject the request, subject to appeal to WECC Director of Standards (DOS).

5.1 This Table Revision Process applies to any NERC/WECC document specifically referencing the Table as the "Major WECC Transfer Paths in the Bulk Electric System."

5.2 This Table Revision Process also applies to those documents listed below in which a derivation of the Table title is used, as approved by FERC. Applicability to those documents shall continue so long as the Table continues to be referenced therein.

Because the Table and its content originated circa 1997, the Table has been referenced in various documents under various derivations of the current Table's title. To ensure inclusion of specifically referenced documents as well as documents in which a derivation of the Table's title is used, this Table Revision Process is specifically applicable to the following:

1) FAC-003-4, Transmission Vegetation Management referencing the "Major WECC Transfer Path in the Bulk Electric System by WECC";

2) FAC-501-WECC-4, Transmission Maintenance referencing the "Major WECC Transfer Paths in the Bulk Electric System (Table)."

3) PRC-023-4, Transmission Relay Loadability referencing a "major transfer path within the Western Interconnection as defined by the Regional Entity"; and,

4) The NERC Glossary of Terms Used in Reliability Standards referencing a "major transfer path within the Western Interconnection."

After the effective date of this document, new derivations of the Table's title will not be recognized.

If a document not specified above contains a derivation of the Table's title and the document owner wishes to incorporate the Table by reference, the document owner shall change its document to include the specific title of the Table used herein.

6. Effective Date: The first day of the second quarter following regulatory approval of FAC-501-WECC-4, Transmission Maintenance plus approval of the Table Revision Process.

B. Process Requirements

R1. Each Requesting Entity seeking to modify the content of the Table shall complete a technical study that includes, at a minimum, each of the following:

1.1. A description of the path to be added, removed, or modified from the Table.

1.2. A description of the circumstances triggering the requested change.

1.3. A description of the study method used in support of the requested change.

1.4. A description of the conclusions and impacts disclosed by the technical study.

1.5. A description of maintenance practices applicable to the path at the time of the request, and a description of the maintenance practices that would apply if the path were removed from the Table.

1.6. An implementation plan.

1.7. A report on enforceable NERC Standards that may be impacted by the requested change.

1.7.1. If a review of enforceable NERC Standards shows that accepting a change to the Table will have no impact on other Standards, a statement to that effect meets this requirement.

1.7.2. If a review of enforceable NERC Standards shows that accepting a change to the Table will impact other Standards, proposed remediation shall be included in the Requesting Entity's implementation plan. The implementation plan shall also state the specific Standards or other documents impacted by the proposed change.

1.8. The proposed effective date for the requested change, subject to required approval.

1.8.1. The actual effective date shall be the latter of the proposed effective date or the first day of the second quarter following FERC's acceptance of the required informational filing. (See Section C. Required Approvals.)

1.9. Contact information identifying the Requesting Entity's subject-matter expert having oversight for proposed changes to the Table.

R2. Each Requesting Entity shall, at a minimum, provide *specific* notice of the proposed change to the following entities, operating within the Western Interconnection:

2.1. Each Transmission Owner that owns and/or maintains the identified path;

2.2. Each Transmission Operator that operates the identified path;

2.3. Each Reliability Coordinator having oversight of the identified path.

R3. Each Requesting Entity shall provide *generic* notice of the proposed change to the following entities:

3.1. Those entities subscribed to WECC's Standard Email List, or its successor (as created per Procedures, or its successor).

R4. Each Requesting Entity shall, at a minimum, provide the Requirement R1 technical study to the following entities within 30 days of a request for the study:

4.1. Transmission Owner(s), Transmission Operator(s), and Reliability Coordinator(s), operating in the Western Interconnection, having a reliability-related need.

4.2. The chair or chair's designee of the WECC Reliability Risk Committee (RRC), or its successor.

R5. Each Requesting Entity shall, at a minimum, include the following information in the notice required in R2 and R3 above:

5.1. Notice specifying the proposed change to the Table.

5.2. A request for comments addressing the proposed change.

5.2.1. The request for comments window shall allow for a minimum of one 30-day comment period during which comments regarding the requested change shall be received, considered, and addressed by the Requesting Entity. Additional comment/response cycles are allowed, as needed.

5.3. The location of the Requirement R1 technical study or information regarding how to obtain the study.

5.4. How to submit comments to the Requesting Entity regarding the proposed change.

5.5. The opening and closing dates during which the solicited action shall take place. Unless otherwise posted, all posting periods close at 6:00 p.m. (Mountain).

5.6 Contact information for the Requesting Entity's subject matter expert covering the requested change to the Table.

R6. Each Requesting Entity shall consider all comments received during each 30-day posting.

6.1. If the same comment is received more than once, the Requesting Entity may provide a single response to all comments that raise the same or a similar concern.

6.2. If the same comment is received in iterative postings, the Requesting Entity is not obligated to respond to comments previously addressed.

R7. Each Requesting Entity shall prepare a response to comments received for each posting. Responses shall include, but not be limited to:

7.1. Reporting any changes made in response to comments received.

7.2. A narrative explaining why the Requesting Entity did not accept recommendations proposed by commenters during the comment/response cycle(s).

R8. At the close of the final comment/response cycle(s), each Requesting Entity shall present to the RRC, the entity's findings and recommendations regarding proposed changes to the Table.

R9. At the close of the Requesting Entity's presentation required in Requirement R8, the RRC shall conduct a ballot to determine whether the Requesting Entity's proposed change(s) should be adopted. Balloting rules shall be those established by the RRC.

Primary Ballot

9.1. If the Requirement R9 ballot succeeds:

9.1.1. The RRC chair shall present its findings to the WECC Board of Directors (Board) with a request for disposition. The RRC chair shall make its presentation at the next regularly scheduled Board meeting, subject to the needs and requirements of the Board.

9.1.2. If the Board approves the requested changes, an information-only filing will be made with NERC and FERC reflecting the action taken. No further procedural disposition is required.

Remedial Ballot

9.2. If the Requirement R9 ballot fails, the Requesting Entity may either:

9.2.1. Instruct the RRC chair to withdraw the request with no further action; or,

9.2.2. Request an opportunity to address outstanding objections followed by a remedial ballot.

9.3. At the discretion of the RRC chair, the remedial ballot shall either be immediately following the Requesting Entity's remedial presentation at the RRC, or at a later date set by the RRC chair. The later date shall not exceed six months from the date of the original ballot.

9.4. The Requesting Entity is allowed no more than two ballots to obtain approval for the requested change. If the remedial ballot fails, the original request will be deemed to have failed and the Requesting Entity shall start this process anew.

9.5. The Requesting Entity may submit a new request, based on the production of new evidence.

9.5.1. The RRC shall determine whether the new evidence warrants proceeding with a new request.

R10. Procedural concerns, if any, shall be directed to WECC's Director of Standards (DOS). The DOS shall have 14 days to address the concerns. The decision of the DOS may be appealed to the Board. The Board's decision is final.

R11. Substantive concerns, if any, may be raised at any step in this process, including but not limited to a) the comment/response period(s), b) directly to the RRC, and c) directly to the Board, subject to the needs and requirements of the Board.

11.1. Substantive concerns may be raised to the Board even though the request has been approved at the RRC.

11.2. Failure to obtain approval from the Board does not preclude requesting the same changes in a subsequent proceeding, subject to production of new evidence.

C. Required Approvals

Changes made to the *Table* require approval of the Board, followed by an informational filing with NERC and FERC. No further disposition is required.

Changes to this *Revision Process* require approval of the Board, the NERC Board of Trustees, and FERC.

D. Background and Guidance Section

Overview

Paths once deemed essential to stability may no longer be essential as changes are made to the operation, planning, and configuration of the Bulk Electric System. As such, those paths and the equipment comprising those paths may be considered for deletion from the Table.

Conversely, where system changes warrant a more stringent level of maintenance on specific equipment, the associated path(s) may be considered for addition to the Table.

Background

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from inadequate vegetation management. In March 1997, the Western Systems Coordinating Council (WSCC) trustees created the WSCC Reliability Management System (RMS) Policy Group establishing a remedial contract-based operational agreement known as the RMS. Although the RMS was established in response to the 1996 vegetation-related outages, unlike the FAC-003-X Transmission Vegetation Management standard, neither the RMS nor those standards evolving from it had vegetation management as their primary purpose. Rather, the initial version of WECC's regional Reliability Standards were designed to address the outages collectively by continuing operational practices addressed in the RMS.[3]

By February 2000, the WSCC translated the RMS into what would become the first version of NERC's mandatory Reliability Standards. In that process, the list of paths contained in the 2000 RMS, Table 4 migrated from the RMS into PRC-STD-005-1 (PRC), Transmission Maintenance, Attachment A, Table 2, Existing WECC Transfer Paths (BPTP), (Revised February 2006), and was permanently replaced with FAC-501-WECC-1 and 2, Transmission Maintenance (Version 2, 2018).

The addition of this Process is intended to provide a streamlined development procedure for adding, removing, or modifying paths listed on the Table. Specific equipment comprising a path can be identified in the required technical study and request.

Special Note: Although the content of the Table and the WECC Path Rating Catalog (Catalog) are similar, changes made to either document are governed by two separate processes. Changes to the Table are governed by this Process. Changes made to the Catalog are governed by processes outside of

[3] The initial version of WECC's regional Reliability Standards were colloquially referred to as Version Zero standards. Version Zero is not a term used in the NERC Glossary of Terms Used in Reliability Standards. (See Docket No. RR07-11-000, July 2007).

this document.[4] A change made to the Table does not make a change to the Catalog. A change made to the Catalog does not make a change to the Table.

[4] Since 1998 or earlier, changes to the WECC Path Rating Catalog have been governed by the WECC Project Coordination and Path Rating Processes (PRP).

Attachment A
Major WECC Transfer Paths in the Bulk Electric System (Table)

PATH NAME	Path Number
Alberta–British Columbia	1
Northwest–British Columbia	3
West of Cascades–North	4
West of Cascades–South	5
West of Hatwai	6
Montana to Northwest	8
Idaho to Northwest	14
South of Los Banos or Midway–Los Banos	15
Idaho–Sierra	16
Borah West	17
Idaho–Montana	18
Bridger West	19
Path C	20
Reserved	
PG&E–SPP	24
Northern–Southern California	26
Intmntn. Power Project DC Line	27
TOT 1A	30
TOT 2A	31
Pavant–Gonder 230 kV; Intermountain–Gonder 230 kV	32
TOT 2B	34
TOT 2C	35
TOT 3	36
TOT 5	39
SDGE–CFE	45
West of Colorado River (WOR)	46
Southern New Mexico (NM1)	47
Northern New Mexico (NM2)	48
East of the Colorado River (EOR)	49
Reserved	
Reserved	
Brownlee East	55
Lugo–Victorville 500 kV	61
Pacific DC Intertie	65
COI	66
Reserved	
Alturas	76
Montana Southeast	80

SCIT[5]	
COI/PDCI	

[5] SCIT, COI/PDCI are paths operated in accordance with nomograms identified in WECC's Path Rating Catalog.

Attachment C-2
WECC-0149
Table Revision Process
WECC Major Transfer Paths
In the Bulk Electric System

Version History

Version	Date	Action	Change Tracking
1			Initial

Exhibit C

Implementation Plan for Proposed Regional Reliability Standard FAC-501-WECC-4

WECC
Electric Reliability and Security for the West

Attachment F
Implementation Plan
WECC-0141 FAC-501-WECC-2
WECC-0149 FAC-501-WECC-4
Transmission Maintenance

Implementation Plan[1]

Overview

The proposed effective date for this project is the first day of the second quarter following regulatory approval.

This project is the culmination of two projects: WECC-0141, FAC-501-WECC-2, Transmission Maintenance and WECC-0149, FAC-501-WECC-4, Transmission Maintenance and Table Revision Process. FAC-501-WECC-3, Transmission Maintenance is not submitted as that version was immediately superseded by Version 4 and was not submitted to NERC for disposition.

Pre-SAR Development

Prior to filing Standard Authorization Request (SAR) WECC-0141 and triggering the WECC Reliability Standards Development Procedures (Procedures), the Transmission Owners vetted the expected reliability impacts with various technical committees[2], and provided notice of their intent to have the paths delisted. The pre-SAR process conformed to the WECC 2021 Path Rating Catalog (March 2021), and the WECC Project Coordination, Path Rating and Progress Report Processes (2015). Although these pre-Procedure processes have many of the same study/comment/response attributes of the Procedures, they are advisory and not enforceable.

Upon completing the Pre-SAR processes to delist specific paths from the WECC Path Rating Catalogue, SAR WECC-0141 was filed to delist the same paths from FAC-501-WECC-2, Transmission Maintenance.

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[1] Original WECC-0141 documents are located here: https://www.wecc.org/Standards/Pages/WECC-0141.aspx). Origin WECC-0149 documents are located here: https://www.wecc.org/Standards/pages/wecc-0149.aspx.
[2] See Attachment T through T-11 provided with this filing.

WECC-0141—Path Removal

The original WECC-0141 Implementation Plan is located here.[3] (See also Appendix 1.)

Among other things, WECC-0141 and its associated development process requested: 1) removal of specific paths[4] from the FAC-501-WECC-2, Transmission Maintenance, Attachment B, Major WECC Transfer Paths in the Bulk Electric System (Table), 2) changing the Table's title, thereby breaking any incorporation by reference present in peripheral documents, and 3) creation of an expedited process whereby the list of paths on the Table could be expeditiously modified.

In WECC-0141, both the Table and the proposed process remained a part of the proposed Regional Reliability Standard (RRS). That would change in the iterative SAR WECC-0149.

Once WECC-0141 was filed, the project was posted for comment six times, receiving a 100% affirmative approval from a WECC Ballot Pool.

Because the proposed RRS created no new burden on applicable entities, the drafting team proposed an effective date of the first day of the second quarter following regulatory approval.

Peripheral Impacted NERC Documents

The WECC-0141 Plan also identified specific NERC-approved documents[5] in which the Table is incorporated by reference. Thus, changes made to the Table per WECC-0141 and later WECC-0149 would self-execute into those peripheral documents.

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[3] https://www.wecc.org/Reliability/WECC-0141%20FAC-501-WECC%20Posting%203%20-%20%20Attachment%20F%20-%20Implementation%20Plan%20-%20To%20Tech%2002-19-2021.docx

[4] This project proposes removal of Path 22 - Southwest Four Corners, Path 50–Cholla Pinnacle Peak, Path 51–Southern Navajo, and Path 73–North of John Day Cutplane.

[5] Other NERC documents potentially impacted by changes to FAC-501-WECC-2 include the following:

1) FAC-003-4, Transmission Vegetation Management referencing the "Major WECC Transfer Path in the Bulk Electric System by WECC";
2) FAC-501-WECC-4, Transmission Maintenance referencing the "Major WECC Transfer Paths in the Bulk Electric System (Table)."
3) PRC-023-4, Transmission Relay Loadability referencing a "major transfer path within the Western Interconnection as defined by the Regional Entity"; and,
4) The NERC Glossary of Terms Used in Reliability Standards referencing a "major transfer path within the Western Interconnection."

The WECC-0141 plan suggested that NERC could replace the references to the Table with the actual Table, thereby making only non-substantive changes within the purview of the NERC Standards Committee. The proposed approach, if accurate, would exponentially expedite implementation of FAC-501-WECC-4.

The plan was premised on the conclusion that although the NERC Standards Committee is not allowed to make substantive changes to a Standard,[6] the committee is empowered to determine whether a change to a Standard is substantive or non-substantive.[7] The drafting team concluded that replacing the reference to the Table with the actual Table was equivalent to a non-substantive change within the purview of the NERC Standards Committee. Much like an errata, if references to the Table were replaced with the actual Table, that approach would "not change the scope or intent of the associated Reliability Standard, and [would have] no material impact on the end users of the Reliability Standard." As such, that proposed approach would allow for "approval with Applicable Governmental Authorities as appropriate."[8]

When reviewing the plan with NERC, NERC did not concur with the drafting team as to the powers of the NERC Standards Committee. As such, changes to the peripherally referenced documents would need to be included in NERC's work plan. Alternatively, if the structure of the project was altered, implementation of FAC-501-WECC-4 might be expedited. Thus, WECC-0149 was initiated.

WECC-0149—Table Revision Process

The original WECC-0149 Implementation Plan is located here.[9] (See also Appendix 2.)

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[6] "The Standards Committee shall not under any circumstance change the substance of a draft or approved Reliability Standard." NERC Rules of Procedure, Section 300—Reliability Standards Development, 306. Standards Committee.

[7] "A nonsubstantive [sic] revision is a revision that does not change the scope, applicability, or intent of any Requirement and includes but is not limited to things such as correcting the numbering of a Requirement, correcting the spelling of a word, adding an obviously missing word, or rephrasing a Requirement for improved clarity. Where there is a question as to whether a proposed modification is "substantive," the Standards Committee shall make the final determination." NERC Standard Processes Manual, Version 5, Effective November 28, 2023, Section 4.13: Conduct Final Ballot or Conclude the Standards Action

[8] NERC Standard Processes Manual, Version 5, Effective November 28, 2023Section 12.0: Process for Correcting Errata

[9] https://www.wecc.org/Reliability/WECC-0149%20FAC-501-WECC-4%20Trans%20Maint%20%20-%20Attachment%20F%20-%20Implementation%20Plan.docx

In WECC-0149, the Table and the proposed Process were extracted from the RRS and relocated into the proposed freestanding Table Revision Process.

Although WECC-0149 does not eliminate the incorporation by reference issues, by creating the proposed freestanding WECC/NERC/FERC-approved Process, the undue surprise created by self-execution is reduced. Further, NERC would not be required to make changes to the various identified documents—thereby expediting implementation of the original request. The WECC-0149 Plan retained the same proposed effective date for the same reasons.

Appendix 1
WECC-0141 Implementation Plan

Implementation Plan

Standards Authorization Request (SAR)

The original SAR is located here.

Documentation templates will be updated for final filing.

Approvals Required

- WECC Ballot Body — October 21, 2021
- WECC Board of Directors — December 8, 2021
- NERC Board of Trustees — Targeted for May 2024
- FERC — Pending

Effective Date

The proposed effective is the "First day of the second quarter following regulatory approval." Because changes to FAC-501-WECC-2 Transmission Maintenance may impact other NERC Standards, the drafting team recommends NERC review the following documents, consider whether remediation is required, and if so, coordinate an effective date with all impacted documents.

Other NERC documents potentially impacted by changes to FAC-501-WECC-2 include the following:

1) FAC-003-4, Transmission Vegetation Management
2) PRC-023-4, Transmission Relay Loadability, Attachment B
3) NERC Glossary of Terms Used in Reliability Standards (Glossary)

For more information, please see Other Standards Impacted and Attachment 1A WECC-0141 Posting 1 presented as part of this filing.

Justification of Effective Date

Attachment B

This project proposes removal of four paths from FAC-501-WECC-2, Transmission Maintenance, Attachment B, WECC Major Transfer Paths (Attachment B). The project also proposes creation of Attachment C, Revision Process, whereby paths could be added to and removed from Attachment B. If

approved, Attachment C would be used for adding and/or removing Path Names from Attachment B in lieu of using the WECC Reliability Standards Development Procedures (Procedures).

This project proposes removal of Paths 22, 50, 51, and 73 from Attachment B. Removal of the four paths was fully vetted and approved using the Procedures, augmented by Arizona Public Service's (APS) and the Bonneville Power Administration's (BPS) direct coordination of this effort with WECC staff, impacted Transmission Owners/Operators, and the engineering and operating committees representing the impacted Transmission Owners.[10] The reliability impacts of removing the four paths have been fully vetted and approved at the aforementioned stages and will also be presented to a WECC Ballot Pool and the WECC Board of Directors with a request for approval.

Implementation of the requested effective date will have no negative impact on reliability within the Western Interconnection; however, a coordinated effective date with other NERC documents should be considered by NERC. See Impacts on Other Standards.

Attachment C

This project proposes inclusion of Attachment C, Revision Process as a supporting document to address changes to Attachment B in lieu of the Procedures. This approach was approved/suggested by FERC when Version 1 of the project was approved.

Creation of Attachment C is an essential step in this standard's evolution as the content of Attachment B was created *circa 1997,* has been virtually unchanged since its inception, and there exists no record describing *why* the listed Path Names were originally included nor by what criteria future paths should be added or existing Path Names removed.[11] Proposed Attachment C addresses each of these concerns

[10] To further ensure due process, APS/BPA posted their intentions on the APS/BPA Open Access Same-time Information System (OATI) announcing the proposed removal of the paths from the WECC Path Rating Catalog. The catalog owner approved APS's request to remove Paths 22, 50, and 51 with an effective date of January 1, 2020. BPA's request to remove Path 73 was approved for May 12, 2021.

[11] "As used herein, Path Name is used as a proper noun referring to the as-approved FAC-501-WECC-2, Attachment B, column heading "Path Name." Path Name is not included in the NERC Glossary of Terms Used in Reliability Standards. Although the reliability reasons for inclusion in Attachment B could not be found, WECC's Reliability Management System Criteria Agreement, Annex A provides some evidence as to why the paths were included. At Annex A, the Definitions section indicates that the paths included in Table 2 (later known as Attachment B) are "those transfer paths monitored by the WECC regional Reliability Coordinators." The earliest versions use the term "Security Coordinator" as opposed to Reliability Coordinator.

by acknowledging the unknown background of each path's inclusion while providing a forward-looking means for due process review to add or remove paths from Attachment B.

Because proposed Attachment C mandates both due process plus reliability review, approval of the effective date creates neither undue surprise nor negative impact to reliability within the Western Interconnection. However, a coordinated review of the other identified NERC documents should be undertaken by NERC before an effective date is established.

Impact on Other Standards

The title of FAC-501-WECC-2, Attachment B is "Major WECC Transfer Path in the Bulk Electric System by WECC." The title is a holdover from Version Zero documents.[12] This precise capitalized term is used in the Applicability section of FAC-003-4, Vegetation Management without further reference or definition. A lowercase similar phrase "major transfer path within the Western Interconnection" is used in Section B. Criteria of PRC-023-4, Transmission Relay Loadability and also in the definition of the Bulk Electric System (BES) contained in the NERC Glossary.

If FAC-003-4 is referencing the content (Path Names) of FAC-501-WECC-2, Attachment B, any changes made to Attachment B will self-execute in FAC-003-4 creating due process and implementation concerns for FAC-003-4. Because changes to FAC-003-4 are outside of the scope of this project, the drafting team encourages NERC to review that standard and make changes if deemed necessary. To the extent a change to either FAC-501-WECC-2 or FAC-003-4 impacts the opposite standard, NERC should consider remediation and a coordinated effective date of all impacted documents.

If PRC-023-4 is referencing or relying on FAC-501-WECC-2, Attachment B to determine applicability, NERC should review PRC-023-4 and consider remedial changes. If changes are made, NERC should consider coordinating the effective date of all impacted documents.

If the NERC Glossary definition of the BES relies on FAC-501-WECC-2, Attachment B for detail, the glossary should be revisited with a coordinated effective date in mind.

The drafting team does not definitely conclude that these documents are intertwined. Rather, the drafting team provides the concern to NERC for consideration and treatment—if deemed necessary—per the NERC Rules of Procedure and associated standards development processes.

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[12] Version Zero documents refer to those standards first accepted as NERC Reliability Standards (Docket No. RR07-11-000, July 2007; see also Docket No. RM09-9-000, December 2010). For purposes of this project, standard's nomenclature from 2007 to date is sequentially PRC-STD-005-1, FAC-501-WECC-1, and FAC-501-WECC-2, all of which have the same name: Transmission Maintenance.

Potential Remedy

If a NERC review determines that FAC-003-4 relies on FAC-501-WECC-2, Attachment B to determine how FAC-003-4 is implemented, the remedy may be as simple as importation of Attachment B content from FAC-501-WECC-2, Attachment B into FAC-003-4 as an attachment. Because FAC-501-WECC-3 proposes to change the title of Attachment B, FAC-003-4 could retain the existing reference without upsetting the Applicability verbiage. Because the referenced content is being imported (relocated) and not changed, the importation may be seen by NERC as an errata per its Rules of Procedure.[13]

As to the PRC-023-4 and the NERC Glossary there is a much more tenuous connection due to the lowercase case and the similar but not precise verbiage. Because of this tenuous connection, the drafting team suggests that there is no immediate need to make changes to those two documents. As such, NERC could consider delaying review of the matter for PRC-023-4 and the NERC Glossary until the normally scheduled review.

Consideration of Early Compliance

As to FAC-501-WECC-3, the drafting team sees no concerns with early compliance within the Western Interconnection. However, if NERC concludes that documents outside of the scope of this project require remediation, the drafting team encourages NERC to coordinate the effective dates of those impacted documents.

[13] Because the proposed remedy would "not change the scope or intent of" FAC-003-4, and would have "no material impact on the end users of the Reliability Standard" implementation of a title change and/or importation of content may be covered by the errata authority offered to the NERC Standards Committee per NERC Rules of Procedure, Section 12.0: Process for Correcting Errata.

Appendix 1
WECC-0149 Implementation Plan

Implementation Plan

Standards Authorization Request (SAR)

This project augments WECC-0141, FAC-501-WECC-3, Transmission Maintenance, Update to Attachment B, Major WECC Transfer Paths in the Bulk Electric System (Table).

SARs for WECC-0141 and WECC-0149 are located here and here, respectively.

Note: Documentation templates and version references will be updated for final filing.

This project:

1) Updates WECC-0141 FAC-501-WECC-3 (creating FAC-501-WECC-4) to include:
    a. Conforming the language throughout to incorporate the WECC-0149 Process.
    b. Updating the Compliance section to accept NERC's newest boilerplate.
    c. Deleting FAC-501-WECC-3, Attachment B, Path Names Identified for Transmission Maintenance and Inspection, and migrating that list into the WECC-0149, Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System.
    d. Deleting FAC-501-WECC-3, Attachment C, Revision Process, and replacement of that process with the WECC-0149 Table Revision Process.
2) Creates a process for modifying the content of the Table Revision Process, Attachment A, major WECC Transfer Paths in the Bulk Electric System.

The WECC-0149 Table Revision Process creates a means of modifying the content the Table outside of the WECC Reliability Standards Development Procedures (Procedures).

Approvals Required

- WECC Ballot Body — February 2, 2023
- WECC Board of Directors — June 14, 2023
- NERC Board of Trustees — Targeted for May 2024
- FERC — Pending

Effective Date

The first day of the second quarter following regulatory approval of FAC-501-WECC-4, Transmission Maintenance plus approval of the Table Revision Process.

Justification of Effective Date

On December 8, 2021, the WECC Board of Directors (Board) approved WECC-0141 FAC-501-WECC-3, Transmission Maintenance, with a request for approval and subsequent regulatory disposition, as needed.[14]

On April 11, 2022, NERC informed WECC Standards staff that although NERC raised no specific concerns with WECC-0141, implementation at NERC could take an elongated period due to pre-existing NERC projects.[15]

To remedy the concern, NERC and WECC agreed that WECC should file a subsequent Standard Authorization Request (SAR)(WECC-0149) shifting the implementation burden away from NERC to WECC.

Impact on Reliability

Proposed changes have been fully vetted using the Procedures as well as peripheral ad hoc engagement of subject matter experts performed as part of WECC-0141. No reliability concerns were raised during either process.

Impact on Other Standards

If approved, the following documents will be impacted in that they incorporate the Table by reference:

1) FAC-003-4, Transmission Vegetation Management referencing the "Major WECC Transfer Path in the Bulk Electric System by WECC";
2) FAC-501-WECC-4, Transmission Maintenance referencing the "Major Paths Revision Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System."
3) PRC-023-4, Transmission Relay Loadability referencing a "major transfer path within the Western Interconnection as defined by the Regional Entity"; and,
4) The NERC Glossary of Terms Used in Reliability Standards referencing a "major transfer path within the Western Interconnection."

Although impacted by virtue of incorporation by reference, the DT concluded that the proposed Table Revision Process and proposed FAC-501-WECC-4 should have no impact on implementation of the aforementioned documents, except that the location of the Table has changed.

[14] Step 11, Obtain Board Approval, WECC Reliability Standards Development Procedures.
[15] For example, due to pre-existing NERC projects, NERC/FERC approval to retire the WECC Regional Variance from WECC-0113 FAC-010/011 did not occur until six years after Board approval.

Consideration of Early Compliance

As to FAC-501-WECC-4, the drafting team sees no concerns with early compliance within the Western Interconnection. As mentioned above, changes to the Table were vetted in multiple postings (WECC-0141/WECC-149) as well as peripheral ad hoc briefings with subject matter experts occurring outside of this project.

Exhibit D

Order No. 672 Criteria for Proposed Regional Reliability Standard FAC-501-WECC-4

WECC
Electric Reliability and Security for the West

Attachment K
Order 672 Criteria
WECC-0149 FAC-501-WECC-4
Transmission Maintenance

Introduction

The North American Electric Reliability Corporation (NERC) is responsible for ensuring that the Reliability Standards, Violation Risk Factors (VRF), Violation Severity Levels (VSL), definitions, Variances, and Interpretations developed by drafting teams are developed in accordance with NERC processes. These standards must also meet NERC's benchmarks for Reliability Standards, as well as criteria for governmental approval.

In Federal Energy Regulatory Commission (FERC) Order No. 672,[1] FERC identified criteria that it will use to analyze proposed Reliability Standards for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The discussion below identifies these factors, and explains how the proposed Reliability Standard meets or exceeds the criteria.

For purposes of this filing, the use of the terms Reliability Standard and Standard are synonymous with Regional Reliability Standard, unless otherwise specified.

Designed for a Specific Goal

Proposed Reliability Standards must be designed to achieve a specified reliability goal.

The proposed Reliability Standard must address a reliability concern that falls within the requirements of Section 215 of the Federal Power Act. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to cybersecurity protection. Order No. 672 at P 321.

Further, NERC Reliability Standards are based on certain reliability principles that define the foundation of reliability for North American bulk power systems. Each Reliability Standard shall enable or support one or more of the reliability principles, thereby ensuring that each standard serves a purpose in support of reliability of the North American bulk power systems. Each Reliability Standard

[1] FERC Order 672

shall also be consistent with all of the reliability principles, thereby ensuring that no standard undermines reliability through an unintended consequence.

This project updates FAC-501-WECC-2, Transmission Maintenance (creating Version 4), and creates the Table Revision Process (Process). These two documents apply to facilities on the Bulk Electric System. The two documents work in tandem.

Purpose and Reliability Principles: FAC-501-WECC-4 and the Table Revision Process

FAC-501-WECC-4, Transmission Maintenance

Because the two documents work in tandem, both documents support the same NERC Reliability Principle. Of the eight NERC Reliability Principles, this Standard and the supporting Process address Reliability Principle 1, which states:

"Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards."

The Purpose of FAC-501-WECC-4, Transmission Maintenance is:

"To ensure the Transmission Owner of a path identified in the Table Revision Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System (Table), has a Transmission Maintenance and Inspection Plan (TMIP) for those paths, annually updates its TMIP, and adheres to the TMIP."

The Purpose of the Process is:

"…to: a) create the process whereby the content of the Table can be revised outside of the WECC Reliability Standards Development Procedures (Procedures), and b) create the sole source listing of the Table's content for all documents in which the Table is referenced."

Table Revision Process (Process)

Unlike NERC, the WECC Reliability Standards Development Procedures (Procedures) do not have a separate procedure for approving supporting technical documents.[2] Instead, the proposed Process has undergone full vetting using the Procedures at the same level of due process and scrutiny required to draft a Standard.

The Table Revision Process is not a Standard.

The same format used for Reliability Standards was chosen for the Process because of its familiarity to the industry. Using the same format facilitated the comment/response process.

The Process is **NOT A STANDARD** and is **NOT INTENDED FOR ENFORCEMENT** by any compliance entity. Rather, in its supporting role, the Process streamlines modification of the list of

[2] Manual, Section 11.0: Process for Posting Supporting Technical Documents Alongside an Approved Reliability Standard

paths contained in the Process, Attachment A, Major WECC Transfer Paths in the Bulk Electric System (Table).

The Table Revision Process is not for Enforcement.

Because the Process is not intended for enforcement by a compliance entity, its content does not suggest or represent an approach to compliance with a Standard. Rather, the Process is – a process.

Though the tasks in the Process are stated as a "shall," implementation of the proposed Process falls to the WECC Board of Directors (Board), as opposed to a compliance entity.

Failure to perform a task stated in the Process would not result in monetary sanctions. Rather, failure to perform simply places the petitioner in the position of having its request denied by the Board, and potentially having to start the request process anew.

For clarity, although the Process is not for enforcement, this does not impact the enforceability of any document in which the Table's paths are listed. For example, FAC-501-WECC-4 would remain enforceable as a Standard; the Process would not be enforceable because the Process is not a Standard. The Process is a process.

The Process "received adequate stakeholder review to assess its technical adequacy."[3]

Because the Procedures do not include a bespoke means for approving associated documents, the Procedures were used to develop the Process, just as if it were a Standard.

Within the Procedures, both documents were balloted twice—once in response to Standard Authorization Request (SAR) WECC-0141, and again in response to SAR WECC-0149. Ballots conducted in both forums received a 100% affirmative vote. All documents were approved by the Board.

Technically Sound

Proposed Reliability Standards must contain a technically sound method to achieve the goal.

The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the Electric Reliability Organization (ERO), in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons. Order No. 672 at P 324.

[3] Manual, 11.1, Item 3, page 40.

Standard Development

The initial WECC-0141 SAR was filed by Arizona Public Service (APS) in its role as Subject Matter Expert (SME) and path owner of multiple paths listed in FAC-501-WECC-2, Transmission Maintenance. WECC-0141 resulted in creation of Version 3, augmented by WECC-0149 that created Version 4. The two projects were balloted separately; both receiving a 100% affirmative ballot and separate approval from the Board.

FAC-501-WECC-2 represents the as-approved Standard.

FAC-501-WECC-3 modified the Standard but was superseded by Version 4; thus, the nomenclature jump from Version 2 to Version 4.

FAC-501-WECC-4 is the proposed nomenclature for the final Standard.

FAC-501-WECC-4 and the associated Process were developed using the Procedures as last approved by FERC in September 2021.[4]

Per the Procedures, SMEs (biographies included with this filing) developed the proposed Standard and proposed Process, during publicly noticed drafting team meetings open to the public.

The development process included repeated public iterative comment/response cycles during which comments were received. Responses to those comments were provided by the drafting team and posted for public review.

Per the Procedures, a WECC Standards Briefing was conducted prior to opening a separate ballot for each of the projects (WECC-0141 and WECC-0149). No substantive concerns were raised during those briefings. Both projects received a 100% affirmative ballot.

After being affirmatively balloted, both projects were approved by the WECC Standards Committee and the Board for NERC/FERC disposition.

NERC posted the projects for a 45-day comment period. There were no requests for Substantive change received during either posting.

Technically Sound

There is no additional technical justification offered in support of the Requirements and/or Measures because those components are offered essentially unchanged, and already have FERC approval. By contrast, this project does offer insights into the historic and contemporaneous inclusion of the paths listed in and offered for removal from the Table.

[4] https://www.wecc.org/Reliability/WECC%20Reliability%20Standards%20Development%20Procedures%20-%20FERC%20Approved%2009-13-2021.pdf

Historically

As pointed out in the proposed Standard's Background section:

> "The paths listed in the Table did not change between 2000 and 2020. Neither the (Reliability Management System, circa 1990s) RMS nor the filings of PRC-STD-005-1, FAC-501-WECC-1 or 2 explain *why* the specific paths were added to the Table, except that the RMS defines those paths as being monitored by the "Security Coordinator."

To the extent that the list of impacted paths must be "Technically Sound," that list has never been technically supported. As a result, the applicable entities are providing maintenance required by FAC-501-WECC-X on paths for which there is no technical support dictating the need.

The list is a holdover predating the implementation of mandatory Standards (circa 1995). It is believed that the list is a simple representation of paths that were previously monitored by the "Security Coordinator"—a predecessor of today's Reliability Coordinator.

By approving the Process, the industry is provided a means to modify the list, based on contemporary technical support, in a streamlined environment.

Contemporaneously

If approved, four paths would be removed from the Table.

The removal of these paths was supported by APS and the Bonneville Power Administration (BPA) in the form of repeated public presentations to multiple technical committees at WECC, supported by comment / response iterations at the committee level plus those required per the Procedures. These presentations were augmented by public discussions occurring during multiple drafting team meetings, supported by technical studies posted to various WECC websites. The bulk of these studies and presentations are posted to the WECC-0149 Home Page, on the NERC Filings accordion.[5] These presentations and studies were shared directly with WECC and FERC during the development process.

During the development of WECC-0141 and WECC-0149, there were no concerns raised regarding the technical support offered for removing the four paths from the Table.

As to the technical support in favor of adding two new allowable maintenance methods (see the TMIP), the newly proposed Risk-based method is based on proactive maintenance triggered by predictive

[5] On the NERC Filings accordion, these documents are annotated with a designation of "Attachment T-X."

modeling.[6] Requirements needed to apply the Original Equipment Manufacturer method can be provided by the original manufacturer.[7]

Applicability

Proposed Reliability Standards must be applicable to users, owners, and operators of the bulk power system, and not others.

The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others. Order No. 672 at P 322.

As proposed, the Purpose, Applicability, and Facilities sections of FAC-501-WECC-4 read as follows:

> **3. Purpose:** To ensure the Transmission Owner of a path identified in the *Table Revision Process*, Attachment A, Major WECC Transfer Paths in the Bulk Electric System (Table), has a Transmission Maintenance and Inspection Plan (TMIP) for those paths, annually updates its TMIP, and adheres to the TMIP. (Emphasis added.)
>
> **4. Applicability**
>
> 4.1 Transmission Owners maintaining paths listed on the Table.
>
> **5. Facilities**
>
> 5.1 Bulk Electric System Facilities, Elements, Transmission Lines, and other equipment as listed on *Attachment A Transmission Maintenance and Inspection Plan (TMIP) Content*, comprising the named paths on the Table. (Emphasis added.)

For clarity, it should be noted that the Purpose refers to Attachment A of the proposed *Process*, whereas the Facilities sections refers to Attachment A of the *Standard*. As noted, these are two separate documents.

The proposed applicability section for the Process is as follows:

> **4. Applicability**
>
> **4.1.** Transmission Owner(s), Transmission Operator(s), and Reliability Coordinator(s), operating in the Western Interconnection (AKA: Requesting Entity[8])

[6] This approach conducts maintenance proactively based on predictive modeling. This approach is a benefit/burden analysis weighing the cost of maintenance against the likelihood of component failure. Equipment posing a greater risk to reliability in the event of failure may be maintained more frequently than components posing a lower reliability risk in the event of failure.

[7] This approach is based on the recommendations of the equipment manufacturer.

Clear and Unambiguous

Proposed Reliability Standards must be clear and unambiguous as to what is required and who is required to comply.

The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability. Order No. 672 at P 325.

(See Technically Sound and Applicability sections above.)

Understandable Consequence

Proposed Reliability Standards must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.

The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply. Order No. 672 at P 326.

This filing does not require changes to either the Violation Risk Factors (VRF) or the Violation Severity Levels (VSL).

Measurability for Compliance

Proposed Reliability Standards must identify a clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner.

There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner. Order No. 672 at P 327.

As to the proposed Standard, the filing does not substantively change the Measures.

As to the proposed Process, it should be reiterated that the document is not intended to be enforced by a Compliance Enforcement Entity nor are monetary fines proposed for those not in adherence to the prescribed process.

The Process is just that—a process.

[8] The Reliability Coordinator may serve as the Requesting Entity on behalf of any entity not listed in Section 4. Applicability. For example, if a Generator Owner seeks to add a path to the Table, the Generator Owner is required to make that request through the Reliability Coordinator that oversees the path. The Reliability Coordinator may accept or reject the request, subject to appeal to WECC Director of Standards (DOS).

Whereas the Board would administer the Process to include changes to the Table, FERC would administer any changes to the Process itself.

Effective and Efficient

Proposed Reliability Standards should achieve a reliability goal effectively and efficiently - but does not necessarily have to reflect "best practices" without regard to implementation cost.

The proposed Reliability Standard does not necessarily have to reflect the optimal method, or "best practice," for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently. Order No. 672 at P 328.

During the six postings of WECC-0141, the two postings for WECC-0149, and the two 45-day postings at NERC, no concerns were raised regarding implementation costs. That said, applying the specified maintenance programs of FAC-501-WECC-4 to those paths listed in the Table means that the path's owner is incurring a cost to maintain the paths: 1) for which there is no known technical support or residual record explaining "why" the maintenance is required, or 2) "why" the paths were originally identified. The path list is an unsupported legacy predating mandatory Standards.

Please see the Background section of the proposed Standard.

Lowest Common Denominator

Proposed Reliability Standards cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability.

The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice — the so-called "lowest common denominator" — if such practice does not adequately protect Bulk-Power System reliability. Although the Commission will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability. Order No. 672 at P 329.

This filing does not change the previously approved reliability tasks.

Costs

Proposed Reliability Standards may consider costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability.

A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a "lowest common denominator" Reliability Standard that

would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it. Order No. 672 at P 330.

During the six postings of WECC-0141, the two postings for WECC-0149, and the two 45-day postings at NERC, no concerns were raised regarding implementation costs.

Continent-wide and Regional Variations

Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single reliability standard while not favoring one area or approach.

A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard. Order No. 672 at P 331.

In the Order 740 Remand at P4, the Commission states that:

"Reliability Standards that the ERO proposes to the Commission may include Reliability Standards that are proposed to the ERO by a Regional Entity… 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. 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."

Further, regional entities may propose Regional Reliability Standards that set more stringent reliability requirements than the NERC Reliability Standard or cover matters not covered by an existing NERC Reliability Standard. NERC Rules of Procedure, Section 312, Regional Reliability Standards.

The proposed Standard addresses transmission maintenance in the Western Interconnection. There are no continent-wide Standards specific to transmission maintenance.

As for the Requirements/Measures, the Commission has already approved the reliability tasks in previous versions of the Standard.

No Undue Negative Effect

Proposed reliability standards should cause no undue negative effect on competition or restriction of the grid.

As directed by section 215 of the FPA, the Commission itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another. Order No. 672 at P 332.

The assigned drafting team does not foresee any negative impacts on competition resulting from either the proposed Standard or the associated Process.

During the development phase of this project, the industry raised no concerns regarding competition or restrictive use of the grid.

Outside of the Procedures, one entity raised concerns with WECC staff that the time burden imposed by the Standard and/or the Table Revision Process may take time away from other reliability-related tasks. The reporting entity provided no evidence in support of its claim.

Whereas the proposed Requirements are not Substantially different from those already approved, and whereas the procedural tasks described in the Process are a memorialization of existing processes, the drafting team suggests that any change in burden would be de minimis.

Implementation of New Requirements (Effective Date)

The implementation time for the proposed Reliability Standards must be reasonable.

In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability. Order No. 672 at P 333.

Proposed Effective Date and Justification

The proposed effective date is "[t]he first day of the second quarter following regulatory approval of FAC-501-WECC-4, Transmission Maintenance *plus* approval of the Table Revision Process." (Emphasis added.)

The proposed Standard creates no new Requirements; thus, no new burden.

To the extent the proposed Process memorializes existing processes, no new burden is created. To the extent the proposed Process creates any new burden, that burden is outweighed by the standardization of the process, the prescribed inclusion of specific reliability-related information, and the added benefit of an expedited process for changes to the Table.

Fair and Open Process

The Reliability Standard development process must be open and fair.

Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission. Order No. 672 at P 334.

WECC followed the WECC Reliability Standards Development Procedures (Procedures) approved by FERC in effect at the time of each step in the process.

In accordance with the Procedures, all drafting team meetings are open to the public.

All drafting team meetings were announced via the WECC Standards Email List for the period prescribed in the Procedures. Notice of the meetings was provided to NERC and posted on the WECC Calendar.

All meetings were supported by a telephone conference bridge associated with an online internet visual capability allowing all participants to see the document(s) as they were being developed. Further, this team held an open-mic Standards Briefing before balloting, which afforded the industry an additional opportunity to have its questions addressed.

WECC-0141 was posted six times for public comment. WECC-0149 was posted twice for public comment. At NERC, the two projects were each posted for a 45-day review of procedure.

Comments and the associated responses are currently posted on the WECC website, on the WECC-0141 and WECC-0149 project pages, under the Submit and Review Comments accordion. Responses to Comments received were provided with this filing.

Balanced with Other Vital Interests

Proposed Reliability Standards must balance with other vital public interests.

Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental,

social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard. Order No. 672 at P 335.

WECC is not aware of any other vital public interests. No such balancing concerns were raised or noted.

Consideration of Other Facts

Proposed Reliability Standards must consider any other relevant factors.

In considering whether a proposed Reliability Standard is just and reasonable, [FERC] will consider [several] general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed. Order No. 672 at P 323.

As mentioned above, research could not unearth any technical support for including any of the paths in the Standard. As such, the transmission maintenance specified in the as-approved Standard results in maintenance costs for which there is no known technical support. At minimum, when arguing for path delisting, this presents the applicable entity with the dilemma of arguing against a position for which there is no certain premise, other than that the paths were monitored by the Security Coordinator. Further, without any original technical support to explain why the list is included, the utility is faced with complying with the Standard, incurring costs, then passing those costs on to consumers—without technical support for the costs in incurred.

Exhibit E

Technical Rationale

WECC-0141 FAC-501-WECC-3

Transmission Maintenance

Posting 1

Final Draft

Support for Retirement[1]

Attachment G—Technical Justification

WECC-0141 Drafting Team

[1] The original posting is located here: https://www.wecc.org/Reliability/WECC-0141%20FAC-501-WECC%20Posting%201%20White%20Paper%20-%20Retire%20or%20Modify%20-%20Post%20Tech.pdf

Version 3 was immediately superseded by Version 4 and was not submitted to NERC for disposition.

Executive Summary

Posting 1 explores full retirement of WECC Regional Reliability Standard FAC-501-WECC-2, Transmission Maintenance.[2] The drafting team is recommending full retirement of the standard for the following reasons:

1. The standard is premised on maintenance of 40 specific paths. Contrary to Order 672, P324, there is neither technical support nor supporting record indicating why these 40 paths were chosen in 2000 or why they continue to be used without support 20 years later.
2. The standard is no longer more stringent than its NERC counterpart.
3. Contrary to Order 672, P325, the standard is ambiguous and allows for adoption of the lowest common denominator, P329.
4. The NERC Standards Efficiency Review (SER) did not evaluate regional standards. In keeping with the NERC SER evaluation, the drafting team identified all three requirements as non-essential for reliability and therefore candidates for retirement.

[2] If retirement is approved, references to FAC-501-WECC-2, Attachment B in other NERC Standards will need to be addressed outside of this project. Attachment B is incorporated by reference in FAC-003-4, Transmission Vegetation Management, Section 4.2.3. The attachment is colloquially referred to in PRC-023-4, Transmission Relay Loadability, Attachment B, Criteria B1. Finally, PRC-004-WECC-2—Protection System and Remedial Action Scheme Misoperation incorporates the table by reference; however, that standard is approved for retirement in January 1, 2021.

Table of Contents

Introduction

Posting 1 explores full retirement of WECC Regional Reliability Standard FAC-501-WECC-2, Transmission Maintenance.[3] The scope of the Standard Authorization Request (SAR) allows for consideration of retirement. The SAR is located here.[4] The drafting team will use the industry's answers to the questions following this narrative to determine its next steps.

The standard is applicable to the 40 "Major Paths" specified in its Attachment B. The list was created around 2000; however, the technical justification for its creation is no longer known, nor are records available to illuminate that decision. Presumably in 2000, the paths and their components were identified for enhanced maintenance and oversight because they were critical to operations. However, as the following sections illustrate, this may not be true in 2020 and beyond. Rather than using the static list as the sole identifier for enhanced maintenance, the team suggests that by using more contemporaneous tools a more accurate listing of enhanced maintenance facilities could be identified.[5]

For example, Paths 22, 50, 51, and the SCIT nomogram are listed among the 40 paths in Attachment B, but have been reviewed in-depth for criticality and dropped from the WECC Path Rating Catalog.[6] Inversely, paths such as Path 81 have been added to the WECC Path Rating Catalog and may need to be considered for inclusion in a list such as Attachment B, if a static list concept is retained.[7] Finally, there are at least three WECC Path Rating Phase 3 projects that created new Paths with Accepted Ratings of over 1,000 MW, which will create new WECC Rated Paths once complete. Although these projects will create new Accepted Rating paths per the catalog, there has been no consideration as to

[3] If retirement is approved, references to FAC-501-WECC-2, Attachment B in other NERC Standards will need to be addressed outside of this project. Attachment B is incorporated by reference in FAC-003-4, Transmission Vegetation Management, Section 4.2.3. The attachment is colloquially referred to in PRC-023-4, Transmission Relay Loadability, Attachment B, Criteria B1. Finally, PRC-004-WECC-2—Protection System and Remedial Action Scheme Misoperation incorporates the table by reference; however, that standard is approved for retirement in January 1, 2021.

[4] https://www.wecc.org/Reliability/WECC-0141%20FAC-501-WECC-3%20Transmission%20Maintenance%20-%20Attachment%20B%20-%20Standard%20Authorization%20Request%20-%20Final.pdf.

[5] Possible tools could include the Real-Time Contingency Analysis used by Transmission Operators or the Interconnection-wide models used by Reliability Coordinators.

[6] Retirement of the table or any portion of FAC-501-WECC-2 has no self-executing impact on the WECC Path Rating Catalog or the studies performed therein. The standard and the catalog are connected only in that the 20-year-old list of 40 paths can also be found in the catalog.

[7] Path 81, the Southern Nevada Transmission Interface (SNTI) as revised February 2017, has an Accepted Rating with facilities ranging from 69 kV to 500 kV.

their potential to fall under the auspice of Attachment B or its successor criteria.[8] These projects suggest that a more relevant means of identifying critical assets for higher maintenance scrutiny would be a more relevant approach than relying on a 20-year-old static list.[9]

[8] SunZia Southwest Transmission Project, Southline (Afton-Apache), TransWest Express Project (TWE)-Phase 1
[9] Operating with advanced online network analysis tools such as RTCA is a more conservative way to ensure system reliability is maintained.

Background and Procedural Development

Before 1996, members of the Western Systems Coordinating Council (WSCC) [10] voluntarily operated the Western Interconnection per the WSCC Reliability Criteria, Minimum Operating Reliability Criteria (MORC). [11] Although the MORC contained provisions for coordinated transmission maintenance, the MORC did not specify maintenance for particular paths, nor did it specify the types of maintenance required.

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from improper vegetation management. The associated blackout reports made several recommendations, among them was a requirement to address vegetation management.

In March 1997, noting that federal remedial legislation could take years to implement, the WSCC trustees created the WSCC RMS Policy Group,[12] establishing a contract-based operational system known as the Reliability Management System (RMS). [13] [14]

[10] WSCC is one of the three predecessor entities to WECC. The WECC was formed on April 18, 2002, by the merger of WSCC, Southwest Regional Transmission Association (SWRTA), and Western Regional Transmission Association (WRTA).

[11] MORC, Maintenance Coordination: 1. Sharing information. The security and reliability of the interconnected power system depends upon periodic inspection and adequate maintenance of generators, transmission lines and associated equipment, control equipment, communication equipment, relaying equipment, and other system facilities. Entities and coordinated groups of entities shall establish procedures and responsibility for disseminating information on scheduled outages and for coordinating scheduled outages of major facilities that affect the security and reliability of the interconnected power system.

[12] Following the enactment of EPAct 2005 and the establishment of mandatory Reliability Standards applicable to all owners, operators, and users of the BPS, WECC sought to translate certain of its existing practices under its RMS reliability criteria into regional Reliability Standards to supplement the continent-wide Reliability Standards the Commission approved in Order No. 693. To that end, WECC established a task force to identify criteria in the RMS that should be binding on all BPS users, owners, and operators in the Western Interconnection, not just the Transmission Operators subject to the RMS. The task force chose eight of the identified criteria, which had the highest priority and could be implemented in the near term for translation into regional Reliability Standards. United States of America Before the Federal Energy Regulatory Commission, North American Electric Reliability Corporation (NERC), Docket No. RM16-10-000, Supplemental Information for Petition of the NERC and WECC for Approval of retirement of Regional reliability Standard TOP-007-WECC-1a, page 5.

[13] Hearing.

[14] Electric Reliability Corporation, Helping Owners, Operators, and Users of the Bulk Power System Assure Reliability and Security for More Than 50 Years, By David Nevius, Senior Vice President 1979–2012, Page 40-41.

In establishing the RMS, the WSCC RMS Policy Group reviewed all NERC and WECC reliability criteria, identified specific criteria deemed critical for reliability management, then migrated that peripheral criteria into the RMS through a three-phase implementation plan.[15]

On April 14, 1999, the Federal Energy Regulatory Commission (FERC) asserted jurisdiction over the RMS.

Between September 1998 and February 2000 (phase two of the three-phase RMS implementation), the WSCC translated the content of the RMS into the first mandatory reliability standards (Version Zero, 2007). As a result, all paths represented in the RMS (Table 4 as executed in 2000) are operationally present in FAC-501-WECC-2, Attachment B—20 years later.

The list of 40 paths in Attachment B has not substantively changed in 20 years.[16] [17] [18] However, "[d]ue to timing concerns, WECC submitted the first set of Regional Reliability Standards to NERC with very little modification from the RMS Agreements' format. NERC filed the WECC Regional Reliability Standards with FERC on March 26, 2007."[19] As a result, FERC approved the Version Zero standards but ordered remedial drafting.

[15] Hearing.
[16] The drafting team speculates that since there are many lines to take the power from the Path 40 PDCI, the function of Path 41 may be largely administrative metering how much of the power flowing on Path 40 would flow to or come from SCE.
[17] Within the RMS, the FAC Attachment B is referred to as Table 1, Existing WSCC Transfer Paths (BPTP) (Revised Table 1—June 7, 2000), later updated as Table 4 in the 2000 RMS. Whereas the 2000 RMS Table 4 has 41 paths, the current FAC Attachment lists 40 paths. Path 53, "Billings-Yellowtail" (which consisted of the lines between Billings and Yellowtail) was replaced in 2006 or 2007 by Path 80, "Montana Southeast" (which consists of the lines between Billings-Yellowtail and between Huntly Tap-Hardin). Thus, there has been no substantive change to the Attachment B since June 7, 2000.
[18] Final changes to the Attachment B/Table list were made as part of the RMS Phase Two review. "Additions to Table 1 are Path 41—Sylmar LDWP to Sylmar SCE, Path 55—Brownlee East, Path 61 Lugo—Victorville 500 kV, and Path 76—Alturas. Reference to TOT 2 was removed from Table 1 since TOT 2A, TOT 2B, and TOT 2C are included and cover the entire path. CPTF reviewed Table 3 to ensure that all RAS were included that could potentially affect one of the major transmission paths or the RAS failure has the potential to result in cascading. Additions to Table 3 are Path 30—TOTIA, Path 31—TOT2A, Path 34 TOT2B, Path 39—TOTS, Path 16—Idaho—Sierra, Path 45—SDGE—CFE, Meridian 500/230 kV transformers, and SDGE RAS. A revised list of transmission paths and RAS are included in Tables 4 and 5 (see pages 35 and 36)." WSCC Analysis of RMS Phase 2 Evaluation Period, September 1998 through February 2000, page 6.
[19] WECC Statement of Activities and Accomplishments in Carrying Out Its Delegated Responsibilities for the Period January 1, 2007 through October 31, 2008. Page 4.

In March of 2007, FERC approved PRC-STD-005-1 with instructions to address specified shortfalls.[20] In 2011, WECC submitted FAC-501-WECC-1 to serve as a permanent replacement for PRC-STD-005-1. In July 2017, WECC: 1) conformed FAC-501-WECC-1 to the newest NERC template and drafting conventions, 2) eliminated URLs, and 3) clarified Attachment A, and Measure M3, resulting in FAC-501-WECC-2.

On April 21, 2011, FERC issued Order 751 approving FAC-501-WECC-2; however, the Commission raised concerns that, without published due process, any changes to the content of the table (Attachment B) could create undue surprise for applicable entities. Further, if the content of the attachment changes, the Commission required that WECC provide the criteria upon which addition or subtraction was based. As the substantive content of the attachment has not changed in 20 years, the Commission's first concern has not been an issue. As to FERC's other concern, if any portion of Attachment B is changed (added or subtracted), due process will be essential as will an accompanying explanation for those changes.

Highlight

Although the list of 40 paths has been used virtually unchanged for the last 20 years (2000-2020), nowhere does the record state *why* the 40 paths were selected nor does it state any *criteria* by which the 40 paths were selected. The only certain criteria for selecting the 40 paths in 2000 comes from the Definition section of the RMS in which the paths were defined as those paths "monitored by the Security Coordinator."[21]

The drafting team does not contend that the list of 40 paths has no basis in reliability. Rather, the drafting team contends even though the list may have met a reliability need in 1999-2000, in the absence of a record or technical evidence, there is no documented support for retaining the list in 2020.[22] By contrast, as illustrated in the catalog proceedings, there may be new paths that should be added or older paths that should be deleted from Attachment B.

[20] Docket No. RR07-11-000.

[21] Later versions update the phrase to "Reliability Coordinator."

[22] During the course of developing the RMS criteria, the identified transfer paths and RAS were organized into the Tables by the WSCC task force. The Tables were posted for, and revised through, public comment. The Tables were also evaluated and revised through field tests during the RMS reliability criteria development process. The resulting tables were later named the "Major WECC Transfer Paths in the Bulk Electric System Table" and the "Major WECC Remedial Action Schemes (RAS) Table."

Intent and Purpose

The stated *intent* of the standard was to serve as a vegetation management standard, now supplanted by FAC-003-4 Transmission Vegetation Management.

The historical record indicates FAC-501-WECC-2 was drafted as a vegetation management standard in response to the July and August 1996 Western Interconnection blackouts. The United States Senate record states WECC's "vegetation management program [is] in its Transmission Maintenance and Inspection Plan (TMIP) [FAC-501, Attachment A, wherein the applicable entity] performs vegetation management in accordance with its TMIP; and [keeps] records of its vegetation maintenance activities."[23] This position is buttressed by FAC-501-WECC-2's predecessor, PRC-STD-005-1, Transmission Maintenance, WR1, which states the TMIP is specifically to consider "diverse environmental and climatic conditions, terrain, equipment, maintenance philosophies, and design practices."

The stated *purpose* of the standard is to "ensure the Transmission Owner of a transmission path identified in Attachment B, Major WECC Transfer Paths in the Bulk Electric System, including associated facilities has a Transmission Maintenance and Inspection Plan (TMIP); and performs and documents maintenance and inspection activities in accordance with the TMIP."

Standard Overview

FAC-501-WECC-2 Transmission Maintenance applies to Transmission Owners (TO) that maintain one or more of 40 specified transmission paths listed in Attachment B of the standard. Those owner(s) must: 1) *have* a TMIP containing minimum specified information from Attachment A, 2) *update* the TMIP annually, if needed, and 3) *adhere* to the TMIP.

Applicability

FAC-501-WECC-2 applies to the "Transmission Owners that maintain the transmission paths in Attachment B." Attachment B, Major WECC Transfer Paths in the Bulk Electric System, contains a list of 40 specified paths requiring enhanced maintenance. The list of 40 paths comes virtually unchanged from the RMS executed in 2000.

[23] Statement of Louise McCarren, CEO, WECC, Hearing on the Committee of Energy and Natural Resources, United States Senate, One Hundred Eighth Congress, Second Session on the Reliability of the Nation's Electricity Grid, February 24, 2004, page 17-20. (Hearing)Hearing. Q and A, Domenic and McCarren, page 57, question 4. See also FAC-003-4, Transmission Vegetation Management, Section 4, Applicability, 4.2. Transmission Facilities, 4.2.3 referring to the Major WECC Transfer Path in the Bulk Electric System.

Although the list has been virtually unchanged for 20 years, an in-depth review of the available records shows that at no time has the industry provided any empirical support for why the 40 paths were originally included on the list, what the criteria was for selecting them, or how to get them removed from the list.[24] Restated, the applicable Transmission Owners are providing enhanced maintenance on 40 specified paths for which there is no record specifying a need for that maintenance.

Because the Applicability section has no technical support nor historical evidence explaining why the 40 paths were selected, the drafting team is recommending the list be retired. Because the entire standard is predicated on the list, if the list is retired, the entire standard must either be retired or the standard must be redrafted entirely. The structure for the redraft would exclude a static list of paths, facilities, and elements to which the standard would apply. In its place would be a descriptive narrative identifying the criteria by which the applicable facilities would be identified.

Requirement R1—Have a Plan

Requirement R1 states:

> R1. Each Transmission Owner shall have a [Transmission Maintenance Inspect Plan] that includes, at a minimum, each of the items listed in Attachment A, Transmission Maintenance and Inspection Plan Content.

At its core, R1 simply requires that a plan exist with a minimum quality threshold. Although Attachment A specifies minimal content, nowhere in the standard is there a requirement for quality or quantity of information; not even a predetermined structure is required. The associated measure requires that the TO have evidence "that it has a TMIP."[25] Restated, R1 requires that a plan exist and be presented if someone asks for it. Even if the quality of the plan produced were superlative, it would neither add nor subtract from the reliability of the grid. Being solely administrative, the requirement can be retired immediately with no impact on reliability.

[24] Per FERC Order 672, P324, reliability standards should be based on actual data, lessons learned, and should be technically supported.

[25] As stated by the WSCC's former CEO in testimony to the United States Senate, the primary purpose of the TMIP is vegetation management. Statement of Louise McCarren, CEO, WECC, Hearing on the Committee of Energy and Natural Resources, United States Senate, One Hundred Eighth Congress, Second Session on the Reliability of the Nation's Electricity Grid, February 24, 2004, page 17-20. (Hearing) Hearing. Q and A, Domenic and McCarren, page 57, question 4.

Arguably, R1 is more than administrative because it requires a baseline of attributes stemming from Attachment A. Although R1 rests on the foundation of Attachment A, Attachment A fails to meet FERC's minimum requirements of Order 672, as will be shown below.

Requirement R2—Update the Plan

Requirement R2 states:

> R2. Each Transmission Owner shall annually update its TMIP to reflect all changes to its TMIP.

The drafting team concurs that having a sound plan is preferential to having no plan at all. Further, the drafting team agrees that keeping that plan updated is preferential to administering a plan based on outdated information. However, the requirement simply states the plan should be updated annually to reflect all changes. R2 does not require any changes; it only requires an update "if" changes are made. Since the measure for the requirement allows simple attestation that "nothing happened," any requirement to update has negligible impact on reliability, if any at all.

What R2 actually requires is a review of the plan with no mandate to make changes. The lack of criticality ascribed to Requirement R2 may be evidenced in its Violation Severity Level (VSL). An entity can fail to update its plan for *a full three years* before the severity of that violation is deemed "severe."

At the extremes of the argument, if the plan were reviewed and its template, font, and color palette were "updated" but no substantive changes were added, arguably the TO would meet the letter of the requirement. The associated measure further illustrates the null set created by the requirement in that, where no change is made at all, an attestation to that effect serves as compliance. Simply stating "we looked at the plan and made no changes" neither adds nor detracts from the reliability of the grid. The requirement is solely administrative in nature and can therefore be retired immediately without impact to the grid.

Requirement R3—Stick to the Plan

Requirement R3 states:

> R3. Each Transmission Owner shall adhere to its TMIP.

Like Requirement R1 and R2, Requirement R3 can be retired immediately without impact to reliability. If the applicable entity makes a plan (R1—TMIP) setting the lowest common denominator in the industry, then reviews the plan annually making no change or even lowering its entity-specific requirements (R2), the applicable entity arguably met the requirements without adding any reliability to the grid.

To recap, R1 says "have a plan" without specifying a quality threshold, R2 says "review the plan" (but does not add a corrective mandate), then adhere to the plan (R3)—no matter how good or bad the plan is. Because R1 and R2 are administrative, and because R3 requires compliance with ANY TMIP meeting the minimums listed in Attachment A, no matter how high or low the performance threshold, the end result is a standard that is administrative, ambiguous, and allows for adoption of the lowest common denominator in conflict with FERC's Order 672. As such, the standard can be retired without negative impact to the grid.

Attachment A—TMIP Criteria

FAC-501-WECC-2, Transmission Maintenance, Attachment A, Transmission Maintenance and Inspection Plan Content lists the contents required for the TMIP mandated in Requirement R1.

There are five attributes required for inclusion:

1. A Facilities list
2. Maintenance methodology
3. Periodicity
4. Transmission Line Maintenance
5. Station Maintenance

Vegetation Management

To the extent that any portion of Attachment A addresses vegetation management, FAC-003-4, Vegetation Management more precisely addresses that need rending those portions less stringent than the NERC counterpart.[26]

[26] FAC-003-4 – designated to address vegetation management - Requirement R7 does not just say "stick to the plan," rather, the vegetation management standard requires the applicable entities to "complete 100% of its annual vegetation work plan…" Further, FAC-003-4, Requirement R3's call for documentation is not merely measured by presentation of a document. Rather, the Measure for FAC-003-4, Requirement R3 requires that the documented strategies, procedures, or processes actually "demonstrate" that the strategies work. As such, the documentation called for in FAC-501-WECC-2 is covered in FAC-003-4; the language of FAC-003-4 sets a higher standard. Thus, FAC-501-WECC-2 Requirement R3 could be retired without impact to reliability.

Senate Testimony—The TMIP is for Vegetation Management

In testimony to the United States Senate, Ms. Louise McCarren, then the CEO for WECC's predecessor, specifically states that the TMIP (now resident in FAC-501-WECC-2) *was designed to address vegetation management.* [27]

The intent of the TMIP is clarified by Ms. Louise McCarren, then WECC's CEO, in the following exchange:

> [Senator] Domenici: "Please describe your vegetation management program and do you believe it can serve as a nationwide model?"
>
> McCarren: "WECC has three different processes in place to monitor an organization's vegetation management program. [One of those processes is]:
>
> 4.1.1. Annual certification through the RMS that owners of transmission facilities are performing vegetation management for the 40 major transmission paths (transmission paths which are identified [in FAC-501-WECC-2, Attachment B]. Each path owner(s) certifies that:
>
> - It has a vegetation management program in its Transmission Maintenance and Inspection Plan (TMIP);
> - It performs vegetation management in accordance with its TMIP; and
> - It has records of its vegetation maintenance activities."

Because the RMS and FAC-501-WECC-2 predates FAC-003-3 and 4 by many years, it is not surprising that vegetation management was subsumed into FAC-003-4 in much greater detail than the WECC regional standards.

Transmission Maintenance

One concern with retirement of Attachment A is that it represents the only standard, regional or otherwise, that addresses transmission maintenance. Though transmission maintenance is, indeed, discussed in Attachment A, the language of R1 combined with Attachment A is so amorphous as to allow creation of a TMIP where nothing is actually mandated. By default, that is the definition of the lowest common denominator prohibited by FERC in Order 672.

For example, R1 says have a TMIP that includes everything in Attachment A.

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[27] Statement of Louise McCarren, CEO, WECC, Hearing on the Committee of Energy and Natural Resources, United States Senate, One Hundred Eighth Congress, Second Session on the Reliability of the Nation's Electricity Grid, February 24, 2004, page 17-20. (Hearing)Hearing. Q and A, Domenic and McCarren, page 57, question 4. See also FAC-003-4, Transmission Vegetation Management, Section 4, Applicability, 4.2. Transmission Facilities, 4.2.3 referring to the Major WECC Transfer Path in the Bulk Electric System.

To illustrate the potential for lowest common denominator, the TMIP would identify those facilities already identified in the WECC Path Rating Catalog, Description section of the path. As such, no new information is created under that section of Attachment A. At the lowest common denominator, the TMIP could be read as follows:

> *TMIP at the Lowest Common Denominator*
>
> Once a year (Periodicity), we drive by (Transmission Line Maintenance—Patrol Requirement) the conductor (Facility) and visually check it (Inspection Requirement), making sure the wooden poles that support it are still upright (Tower and wood pole structure management) and the conductor is still carrying electricity (Performance-based). We do the same for station maintenance plus (Station Maintenance) we write a description of what we *should* do (Station/Equipment Maintenance). It *should* be noted that we draft what *should* be done—not what we will do.

The drafting team does not contend that any responsible entity would create such a TMIP. The drafting team contends that Attachment A is sufficiently wanting, overly broad, and ambiguous, such that a creative entity could easily adopt a substandard TMIP adding nothing to reliability. As such, it violates FERC mandate to avoid such an approach and should therefore be retired.

Section 1 is purely administrative

FAC-501-WECC-2, Attachment A, Section 1 calls for the creation of a "list of Facilities" comprising the paths listed in Attachment B. Regardless of the detail contained in the list, it is nonetheless a requirement to create a list. Because it is a call to create a list, and because the list is purely administrative in nature, creating the list neither adds nor detracts from the reliability of the grid and can be retired immediately from FAC-501-WECC-2 without impact on reliability.

Sections 2, 4, and 5 are purely administrative

Sections 2, 4, and 5 call for the creation of a "description" of maintenance practices. The practice must be either: performance-based, time-based, or condition-based.

These requirements are purely administrative. Regardless of the quality or precision of the description, Sections 2, 4, and 5 are nonetheless a requirement to create a writing, none of which contains a measure of quality. All of which are open to setting the performance bar at the lowest common denominator. Because Sections 2, 4, and 5 are a call to administration and not to operation, creating these descriptions neither adds nor detracts from the reliability of the grid and can be retired immediately without impact on reliability.

Section 3 is purely administrative

Attachment A, Section 3 simply requires a statement as to how often maintenance will be done "or" under what circumstances maintenance will be done. It does not require both. As to periodicity, at the extreme of the argument, Section 3 allows an entity to establish a maintenance schedule of every 10 years for equipment recommended for replacement each five years. Section 3 only calls for a description of the periodicity. As to circumstances, Section 3 allows an entity to describe its maintenance practice as occurring only after an element fails, or only after stake/stockholders approve, or only when the sun rises in the west. By doing so, the entity has "described" the periodicity and/or the circumstance triggering the maintenance—even if that decision is blatantly outside the industry standards. As such, Section 3 adds no direct reliability to the grid; inversely, its loose language could be used to degrade reliability while remaining within the strict letter of the law. As such, Attachment A, Section 3 only calls for a description, adds no reliability to the grid, and should therefore be retired.

Attachment B—The 40 Paths

At the threshold, if Attachment B is retained "as is" it will continue a 20-year-long practice of requiring enhanced maintenance of 40 paths without offering any record or reason as to why that maintenance is required. Restated, requiring additional maintenance on these 40 paths is an arbitrary application of a standard, perpetuated by a 20-year-old practice for which there is no longer any supporting record. As a result, the industry is subject to a more stringent standard, the justification for which can no longer be discerned.

As part of its due diligence and in the dearth of a 20-year-old record, the drafting team reviewed the 40 paths seeking out a thread of commonality. None was found.

The only certainty discovered is that in 2000 when the list was created, the listed paths were not all:

- Supported by Remedial Actions Schemes;
- Listed as having an impact on the 1996 blackouts;
- Of a specified defined type of path ("Existing/Accepted or Other" derived from the WECC Path Rating Catalog);
- Similarly constructed;
- Listed in WECC's Path Rating Catalog;
- Operated at the same voltage; nor did all
- Cross over a Control Area (2000) boundary / Balancing Authority boundary.

What the drafting team does know for certain is that the list of 40 paths has been static for 20 years and was a defined term in the RMS (executed in 2000), Definition for Table 2 (that would later change to

Table 4). The only commonality in that definition was that each path was monitored by the "Security Coordinator" (2000) / AKA: Reliability Coordinator (2020). Beyond the fact that the 40 paths were monitored in 2000, the drafting team found no other commonality and no other documented reason for performing additional maintenance on the stated 40 paths. As such, requiring additional maintenance on the 40 paths is arbitrary in 2020.

The 40 paths have not changed in 20 years

Of the 40 paths included in the final RMS Table 4 (2000) and the 40 paths included in the FAC-501-WECC-2, Attachment B, there are ostensibly three paths that are different: Path 53 and Path 80, and Path 41.

As to Path 53 and Path 80, although Path 53 was delisted from the RMS Table 4, the path's operations are still addressed in FAC-501-WECC-2, Attachment B. Path 53's operations were subsumed into those of Path 80, circa 2007-2008. Therefore, with Path 80 resident in FAC Attachment B, operationally there has been no change in the Major Paths table since the 2000 RMS.

As to Path 41, even though it was delisted from the RMS in 2000, operationally it is still represented in the Major Path table. Like Path 53, Path 41's operational impact was subsumed elsewhere. As seen in the 2020 WECC Path Rating Catalog, Path 41 is a subset of the lines connecting Path 40, COI/PDCI to the LADWP and SCE systems. As such, even though Path 41 did not explicitly migrate from RMS 2000 to FAC-501-WECC-2, it is still operationally represented in FAC-501-WECC-2.

As a result, all paths represented in the RMS Table 4 as executed in 2000 are operationally present in FAC-501-WECC-2, Attachment B. There has been no substantive change to the Major Paths table in 20 years.[28]

[28] The drafting team speculates that, since there are many lines to take the power from the Path 40 PDCI, the function of Path 41 may be largely administrative metering how much of the power flowing on Path 40 would flow to or come from SCE.

Thus, the Attachment B now embedded in FAC-501-WECC-2 was operationally resident in the RMS on June 7, 2000—seven years before it migrated into a NERC Reliability Standard.[29] [30]

Finally, any standard relying on the 40 paths is predicated on a 20-year-old static list for which the establishing criteria has been lost to the ages. If retirement is not approved, the result is a more stringent Regional Reliability Standard that lacks a documented foundation.

Recommendations

Because each aspect of FAC-501-WECC-2, Transmission Maintenance is either administrative, ambiguous, allows for the lowest common denominator, or arbitrary in its application, FAC-501-WECC-2 neither adds nor detracts from the reliability of the grid. [31]

FAC-501-WECC-2, Requirements R1 and R2 are purely administrative: (R1) have a plan and (R2) update the plan. Having a plan, regardless of its characteristics, neither adds to nor subtracts from the reliability of the grid. Even if the value of R1 relies on the "detail" of Attachment A, the language there is so amorphous as to allow creation of a TMIP that brings little to no value to reliability, and, if manipulated, could degrade reliability. As such, these administrative requirements can be retired.

FAC-501-WECC-2, Requirement R3 is dependent on the underpinning of R1 and R2, which in turn, are dependent on Attachments A and B. If R1 and R2 are retired as administrative, Attachment A is retired

[29] Within the RMS, the FAC Attachment B is referred to as Table 1, Existing WSCC Transfer Paths (BPTP) (Revised Table 1 - June 7, 2000), later updated as Table 4 in the 2000 RMS. Whereas the 2000 RMS Table 4 has 41 paths, the current FAC Attachment lists 40 paths. Path 53, "Billings-Yellowtail" (which consisted of the lines between Billings and Yellowtail) was replaced in 2006 or 2007 by Path 80, "Montana Southeast" (which consists of the lines between Billings-Yellowtail and between Huntly Tap-Hardin). Thus, there has been no substantive change to the Attachment B since June 7, 2000.

[30] Final changes to the Attachment B/Table list were made as part of the RMS Phase Two review. "Additions to Table 1 are Path 41—Sylmar LDWP to Sylmar SCE, Path 55—Brownlee East, Path 61 Lugo—Victorville 500 kV, and Path 76 - Alturas. Reference to TOT 2 was removed from Table 1 since TOT 2A, TOT 2B, and TOT 2C are included and cover the entire path. CPTF reviewed Table 3 to ensure that all RAS were included that could potentially affect one of the major transmission paths or the RAS failure has the potential to result in cascading. Additions to Table 3 are Path 30—TOTIA, Path 31—TOT2A, Path 34 TOT2B, Path 39—TOTS, Path 16—Idaho—Sierra, Path 45—SDGE—CFE, Meridian 500/230 kV transformers, and SDGE RAS. A revised list of transmission paths and RAS are included in Tables 4 and 5 (see pages 35 and 36)." WSCC Analysis of RMS Phase 2 Evaluation Period, September 1998 through February 2000, page 6.

[31] Contrary to Order 672, P325, the standard is ambiguous and allows for adoption of the lowest common denominator, P329. Further, the NERC Standards Efficiency Review (SER) did not evaluate regional standards. In keeping with the NERC SER evaluation, the drafting team identified all three requirements as non-essential for reliability and therefore candidates for retirement.

by default as it is no longer attached to a requirement. Similarly, if Attachment B is retired, the entire standard fails because it predicated on enhanced maintenance on 40 paths in a 20-year-old list. R3 becomes null and should be retired.

Further, because that which constitutes performance of R3 is not clear, the requirement lacks the clarity required by the Commission in Order 672.[32] Finally, because the applicable entity can set the bar as low as desired (adopting the lowest common denominator set out in Attachment A), the requirement fails to meet FERC's Order 672 requirement to avoid inclusion of the lowest common denominator.[33]

[32] Proposed Reliability Standards must be clear and unambiguous as to what is required and who is required to comply. The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability. Order No. 672 at P 325.

[33] Proposed Reliability Standards cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability.
The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice—the so-called "lowest common denominator"—if such practice does not adequately protect Bulk-Power System reliability. Although the Commission will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability. Order No. 672 at P 329.

Posting 1 Review

The drafting team is suggesting retirement of all or portions of FAC-501-WECC-2. The drafting team acknowledges that there are alternatives to full retirement. Of specific concern, if FAC-501-WECC-2, Attachment B is retired and the industry concurs that there are specific transmission assets in need of enhanced transmission maintenance, the static list would have to be replaced with an established criteria identifying those specific assets. This option is supported in FERC Order 751.

In light of the first-blush analysis, the drafting team is seeking further guidance from the industry to determine the team's next steps. Your detailed responses to the following questions would be greatly appreciated as the team determines its next steps:

1) The drafting team suggests that Requirement R1 (the entity must have a TMIP) is administrative in nature and can therefore be retired. Do you agree? If you disagree, please explain your answer.
2) The drafting team suggests that Requirement R2 (the entity must annually review the plan) is administrative in nature and can therefore be retired. Do you agree? If you disagree, please explain your answer.
3) The drafting team suggests that Requirement R3 (the entity must adhere to the TMIP) is administrative in nature and can therefore be retired. Do you agree? If you disagree, please explain your answer.
4) If the entire standard is retired, do you believe that retirement will create a reliability gap? If your answer is "yes", please: 1) identify and explain the specific reliability gap, and 2) provide a suggested remedy.
5) The drafting team suggests that some of the requirements of FAC-501-WECC-2 may be covered in other standards.
    a. If you believe that the reliability related substance of FAC-501-WECC-2 is addressed in another NERC Standard, please identify the standard number and associated requirement.
    b. If you believe there are portions of FAC-501-WECC-2 that are only addressed in that standard and therefore must be retained, please identify those specific aspects and their location in the standard.
6) FAC-501-WECC-2, Attachment B is a static list of paths created in 2000. There is no known documentation explaining how the list was created or why the listed paths were included. Is Attachment B still relevant for identifying those assets in need of enhanced maintenance? If your answer is "no," please describe the appropriate criteria for making that identification.

7) Do you believe the 40 paths listed in Attachment B are all *critical* to the reliability of the Western Interconnection? Please explain your answer.
8) The list of 40 paths in FAC-501-WECC-2, Attachment B was created between 1998 and 2000, predating mandatory standards by several years. The records identifying the specific *criteria* used to identify the 40 paths could not be located.
    a. Does your firm have any documentation specifying the *criteria* used to select the 40 paths? If yes, please provide the drafting team with that documentation.
9) FAC-501-WECC-2, Attachment B is also incorporated by reference in: 1) FAC-003-4 Transmission Vegetation Management, Section 4.2.3., 2) PRC-004-WECC-2 Protection System and Remedial Action Scheme Misoperation (to be retired January 1, 2021), and 3) PRC-023-4 Transmission Relay Loadability, Attachment B, Criteria B1, where that standard colloquially refers to the "major transfer path within the Western Interconnection" without directly referencing the WECC Major Transfer Paths in the Bulk Electric System and without further description. If Attachment B is retired, please identify any actions required in the aforementioned standards.
10) The drafting team invites comment on other areas of the project not specifically addressed above.

Exhibit F

Summary of Development History and Complete Record of Development

WECC
Electric Reliability and Security for the West

Attachment E
Project Roadmap
WECC-0149 FAC-501-WECC-4
Transmission Maintenance

Project Roadmap for WECC-0141 and WECC-0149

Pre-SAR Development

Before filing Standard Authorization Request (SAR) WECC-0141 and triggering the WECC Reliability Standards Development Procedures (Procedures), the Transmission Owners vetted the expected reliability impacts with various technical committees[1], and provided notice of their intent to have the paths delisted. The pre-SAR process conformed to the WECC 2021 Path Rating Catalog (March 2021), and the WECC Project Coordination, Path Rating and Progress Report Processes (2015). Although these pre-Procedure processes have many of the same study/comment/response attributes of the Procedures, they are advisory and not enforceable.

Upon completing the pre-SAR processes to delist specific paths from the WECC Path Rating Catalogue, SAR WECC-0141 was filed to delist the same paths from FAC-501-WECC-2, Transmission Maintenance. To expedite implementation, SAR WECC-0149 was filed.

Actions under WECC-0141		Date
Standard Authorization Request WECC-0141 milestones		
1.	Standard Authorization Request (SAR) Filed—WECC-0141	December 19, 2019
2.	WECC Standards Committee (WSC) approved the SAR	March 10, 2020
3.	Drafting Team (DT) Solicitation (plus two augmenting solicitations)	March 17, 2020
4.	DT Initial Roster Approved	May 20, 2020
5.	DT Meeting	June 9, 2020
6.	DT Meeting	June 16, 2020
7.	DT Meeting	July 13, 2020
8.	Posting 1—Open	August 4, 2020

[1] See Attachment T through T-11 provided with this filing.

9.	Posting 1—Closed	September 4, 2020
10.	Posting 1—Closing Extended	September 11, 2020
11.	DT Meeting	September 15, 2020
12.	DT Meeting	September 29, 2020
13.	DT Meeting	October 13, 2020
14.	DT Meeting—Cancelled	October 27, 2020
15.	DT Meeting	November 24,2020
16.	DT Meeting	December 8, 2020
17.	Posting 2—Open	December 14, 2020
18.	Posting 2—Closed	January 13, 2021
19.	Posting 2—Extension of Time	January 26, 2021
20.	DT Meeting	February 16, 2021
21.	DT Meeting	February 22, 2021
22.	Posting 3—Open	February 25, 2021
23.	Posting 3—Closed	March 25, 2021
24.	DT Meeting	March 30, 2021
25.	DT Meeting	April 5, 2021
26.	Posting 4—Open	April 7, 2021
27.	Posting 4—Closed	May 7, 2021
28.	DT Meeting	April 5, 2021
29.	Posting 5—Open	June 2, 2021
30.	Posting 5—Closed	July 2, 2021
31.	DT Meeting	July 13, 2021
32.	Posting 6—Open	July 20, 2021
33.	Posting 6—Closed	August 20, 2021
34.	DT Meeting	August 31, 2021
35.	WSC Approved for Ballot	September 9, 2021

36.	Ballot Pool—Open	September 21, 2021
37.	Ballot Pool—Closed	October 5, 2021
38.	Standards Briefing	October 6, 2021
39.	Ballot—Open	October 7, 2021
40.	Ballot - Closed (Extended)	October 21, 2021
41.	WSC approves forwarding to the WECC Board of Directors (BOD) with a request for approval[2]	November 1, 2021
42.	BOD approves for NERC/FERC disposition[3]	December 8, 2021
43.	NERC 45-Day Posting—Open	January 26, 2022
44.	NERC 45-Day Posting—Closed	March 11, 2022
45.	DT Meeting[4]	March 18, 2022
46.	Discussions with NERC. Agreement to change the implementation to expedite the project.[5]	April 11, 2022

Actions under WECC-0149	**Date**
SAR WECC-0149 was filed to augment SAR WECC-0141 to expedite implementation of the original project.	

Standard Authorization Request WECC-0149 milestones	
1. Standard Authorization Request (SAR) Filed—WECC-0149	May 18, 2022
2. WECC Standards Committee (WSC) approved the SAR.	June 14, 2022

[2] On November 1, 2021, a WSC Action Without a Meeting (AWM) was convened to approve WEC-0141, FAC-501-WECC-3, Transmission Maintenance, for presentation to the WECC Board of Directors (BOD) in December 2021. Notice was provided to the Standards Email List, quorum was met, and the action unanimously approved.
[3] Item 5. Approve FAC-501-WECC-3 Revisions: Resolved, that the WECC Board of Directors (Board), acting on the recommendation of the WECC Standards Committee (WSC) at the meeting of the Board on December 8, 2021, approves FAC-501-WECC-3, Transmission Maintenance Regional Reliability Standard as presented and attached. WECC Board of Directors, Minutes Excerpt, December 8, 2021.
[4] No meeting was convened; based on comments received, responses were perfunctory, drafted by staff, circulated to and approved by the DT.
[5] On April 11, 2022, NERC informed WECC Standards staff that although NERC raised no specific concerns with WECC-0141, implementation at NERC could take a long time due to pre-existing NERC projects.

3. DT Meeting	July 12, 2022
4. Posting 1—Open	July 20, 2022
5. Posting 1—Closed	August 19, 2022
6. DT Meeting	August 23, 2022
7. DT Meeting—Agreed to Post	August 29, 2022
8. DT Meeting—Cancelled	August 30, 2022
9. Posting 2—Open	September 8, 2022
10. Posting 2—Closed	October 10, 2022
11. DT Meeting	October 18, 2022
12. DT Meeting—To WSC—Request for Ballot	October 25, 2022
13. WSC Approved for Ballot	December 6, 2022
14. Ballot Pool Open	December 20, 2022
15. Ballot Pool Closed	January 12, 2023
16. Standards Briefing	January 18, 2023
17. Ballot—Open	January 19, 2023
18. Ballot—Closed	February 2, 2023
19. WSC approves forwarding to the WECC Board of Directors (BOD) with a request for approval	March 7, 2023
20. BOD approves for NERC/FERC disposition[6]	June 14, 2023
21. NERC 45-Day Posting—Open	August 16, 2023
22. NERC 45-Day Posting—Closed	September 29, 2023
23. DT Meeting to Answer NERC Comments (If needed.)	No Changes Proposed
24. NERC Board of Trustee (BOT)	Target: May 2024

[6] Item 5. Approve FAC-501-WECC-4, Transmission Maintenance Regional Reliability Standard and Associated Table Revision Process: Resolved, that the WECC Board of Directors (Board), acting on the recommendation of the WECC Standards Committee (WSC) at the meeting of the Board on June 14, 2023, approves FAC-501-WECC-4, Transmission Maintenance Regional Reliability Standard and the associated Table Revision Process as presented and attached. WECC Board of Directors, Minutes Excerpt, June 14, 2023.

Electric Reliability and Security for the West

Attachment A-1

Standard Authorization Request WECC-0141, FAC-501-WECC-3, Transmission Maintenance

Todd Komaromy

Arizona Public Service

This Standard Authorization Request (SAR) was received on December 19, 2019, and deemed complete the same day. The SAR was approved by the WECC Standards Committee (WSC) on March 10, 2020.

This project is designated as WECC-0141, FAC-501-WECC-3, Transmission Maintenance. This project was augmented by WECC-0149, Major WECC Transfer Paths in the Bulk Electric System—Path List Revision Process.[1]

Introduction

This project is a request to update FAC-501-WECC-2, Transmission Maintenance, Attachment B, Major WECC Transfer Paths in the Bulk Electric System.

Requester Information

Provide your contact information and your alternate's contact information:

Primary contact

- First name: Todd
- Last name: Komaromy
- Email: Todd.Komaromy@aps.com
- Phone: (602) 250-5171
- Organization: Arizona Public Service (APS)

Alternate

- First name: Linda
- Last name: Henrickson
- Email: Linda.Henrickson@aps.com

[1] Original documents are located on the WECC-0141 (https://www.wecc.org/Standards/Pages/WECC-0141.aspx) and WECC-0149 (https://www.wecc.org/Standards/pages/wecc-0149.aspx) project pages. Where appropriate, language in this filing is standardized to ensure a clear connection between WECC-0141 and WECC-0149. Final documents for filing are located on the WECC-0149 project page at the NERC Filings accordion.

- Phone: (602) 371-7873
- Organization: Arizona Public Service (APS)

Type of Request

Specify the type of request: (select one)

- Request to update FAC-501-WECC-2, Attachment B

Create, Modify, or Retire a Document Questions

Provide information for your request to create, modify, or retire the document.

Requested Action (select one)

- Request to update FAC-501-WECC-2, Attachment B

Document Type (select one)

- WECC Regional Standard

Issue

Specify what industry problem this request is trying to resolve.

The Purpose of FAC-501-WECC-2 Transmission Maintenance (FAC-501), is:

> To ensure the Transmission Owner of a transmission path identified in Attachment B, Major WECC Transfer Paths in the Bulk Electric System, including associated facilities, has a Transmission Maintenance and Inspection Plan (TMIP); and performs and documents maintenance and inspection activities in accordance with the TMIP.

In FAC-501-WECC-1, the *document* titled "Major WECC Transfer Paths in the Bulk Electric System" was incorporated by reference as part of Attachment A. Concerned that incorporation of an extrinsic document could dilute due process, the actual *content* of the document was incorporated in FAC-501-WECC-2, Attachment B.[2] As a result, the static content of Attachment B must be updated each time the list of Major WECC Transfer Paths changes.

As of January 1, 2020, Paths 22, 50, and 51 listed in Attachment B will be deleted from the Major WECC Transfer Path listing, rendering FAC-501-WECC-2 out of date.[3]

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[2] On May 30, 2018, the Federal Energy Regulatory Commission (FERC) issued a delegated letter order approving FAC-501-WECC-2. See FERC Letter Order, Docket No. RD18-5-00, with an effective date of July 1, 2018. See also United States of America Before the FERC, Joint Petition of North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) for Approval of Proposed Regional Reliability Standard FAC-501-WECC-2, Page 3, March 16, 2018.

[3] Listed in Attachment B: 1) Southwest Four Corners (Path 22), 2) Cholla Pinnacle Peak (Path 50), and 3) Southern

Proposed Remedy

Specify how this request will address the issue.

This SAR requests that a drafting team be assigned to review and update the content of FAC-501-WECC-2, Attachment B. Additionally, the document: 1) should be reviewed to ensure proper coordination with existing NERC Standards, 2) should be reviewed for potential retirement, and 3) should be updated to NERC's newest styles, formats, and drafting conventions.

Applicable Entities

Each function will be reviewed if affected.

- "4.1 Transmission Owners that maintain the transmission paths in Attachment B."

Detailed Description

(Additional background)

On August 21, 2019, Arizona Public Service (AZPS) provided a public presentation to the Southwest Area Transmission (SWAT) Oversight group highlighting the delisting of the paths. No concerns were raised by stakeholders.

On September 3, 2019, AZPS notified the WECC Studies Subcommittee (StS) of its intent to delist the paths from Attachment B with an effective date of January 1, 2020.[4]

On October 18, 2019, AZPS provided a presentation to the WECC Reliability Assessment Committee (RAC) summarizing the procedural background of delisting, comments received during the process, and the technical reasons why the delisting took place.

To ensure due process and stakeholder inclusion, AZPS also posted notification on the AZPS Open Access Same-time Information System (OATI) announcing the pending path delisting prior to the effective date.

Affected Reliability Principles

Which of the following reliability principles is MOST affected by this request? (select one)

- **Reliability Principle 1**—*Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.*

Navajo Transmission System (Path 51). Also delisted but not included in Attachment B is Four Corners 345/500 (Path 23).

[4] Paths 22, 23, 50 and 51. Path 23 is not currently listed in Attachment B. An additional public presentation was made on September 17, 2019.

Document Information

Specify the document title, document number, and affected section regarding the request.

See above.

Reference Uploads

Please reference or upload any affected standards, regional business practices, criteria, policies, white papers, technical reports, or other relevant documents. If this request is based on a conflict of law, please include a copy of—or accessible reference to—the specific law or regulatory mandate in conflict.

Referenced presentations and applicable methodology used for the delisting are available upon request. *(Subsequent Entry: These presentations were later loaded to the WECC-0141 Home Page at the SAR accordion, and are made available as Attachment(s) T with the WECC-0149 filing.)*

Provide additional comments (if needed).

NA

WECC
Electric Reliability and Security for the West

Attachment A-2

Standard Authorization Request
WECC-0149 FAC-501-WECC-4
Transmission Maintenance

This Standard Authorization Request (SAR) was received on May 18, 2022, and deemed complete the same day. The SAR was approved by the WECC Standards Committee (WSC) on June 14, 2022.

This project is designated as WECC-0149, FAC-501-WECC-4, Major WECC Transfer Paths in the Bulk Electric System – Path List Revision Process. This project augments WECC-0141, FAC-501-WECC-3, Transmission Maintenance.[1]

Introduction

This project is a request to augment WECC-0141, FAC-501-WECC-3, Transmission Maintenance, Attachment B, Major WECC Transfer Paths in the Bulk Electric System and its Attachment C, Revision Process.

Requester Information

Provide your contact information and your alternate's contact information:

Primary contact

- First name: W. Shannon
- Last name: Black
- Email: sblack@wecc.org
- Phone: (503) 307-5782
- Organization: WECC

Alternate

- First name: Donovan
- Last name: Crane
- Email: dcrane@wecc.org
- Phone: (602) 371-7873

1 Original documents are located on the WECC-0141 (https://www.wecc.org/Standards/Pages/WECC-0141.aspx) and WECC-0149 (https://www.wecc.org/Standards/pages/wecc-0149.aspx) project pages. Where appropriate, language in this filing is standardized to ensure a clear connection between WECC-0141 and WECC-0149. Final documents for filing are located on the WECC-0149 project page at the NERC Filings accordion.

- Organization: WECC

Type of Request

Specify the type of request: (select one)

- Request to augment WECC-0141 FAC-501-WECC-3, Transmission Maintenance

Create, Change, or Retire a Document Questions

Provide information for your request to create, modify, or retire the document.

Requested Action (select one)

- Request to augment WECC-0141 FAC-501-WECC-3, Transmission Maintenance

Document Type (select one)

- WECC Regional Standard

Issue

Specify what industry problem this request is trying to resolve.

On December 8, 2021, the WECC Board of Directors (Board) approved WECC-0141 FAC-501-WECC-3, Transmission Maintenance, with a request for approval and subsequent regulatory disposition, as needed.[2]

On April 11, 2022, NERC informed WECC Standards staff that although NERC raised no specific concerns with WECC-0141, implementation at NERC could take an elongated period due to pre-existing NERC projects.[3]

To remedy the concern, NERC/WECC agreed that WECC should file a subsequent SAR shifting the implementation burden away from NERC and to WECC. Specifically, this project should alter WECC-0141 as follows:

1) Cut the contents of FAC-501-WECC-3 (Version 3), Attachment B (Table) out of WECC-0141 leaving only a reference to the title of the document wherein the paths are listed. As proposed, the Table would migrate to a free-standing Revision Process, using WECC-0141 Attachment C as the starting point. The Revision Process would be the only document across WECC/NERC in which the approved Table would reside.

2) Paste the contents of the Table into the free-standing Revision Process.

---

[2] Step 11, Obtain Board Approval, WECC Reliability Standards Development Procedures.

[3] For example, due to pre-existing NERC projects, NERC/FERC approval to retire the WECC Regional Variance from WECC-0113 FAC-010/011 did not occur until six years after Board approval.

3) Cut WECC-0141, FAC-501-WECC-3, Attachment C out of WECC-0141.

4) Paste WECC-0141, FAC-501-WECC-3, Attachment C into WECC-0149 as a free-standing Revision Process. The free-standing Revision Process will serve as the only approved source listing the major paths within WECC.

5) The name for the Table would be changed:

   a) From:

      i) Version 3: FAC-501-WECC-3, Attachment B, *Path Names Identified for Transmission Maintenance and Inspection* (Emphasis added.)

   b) To:

      i) Version 4: Revision Process, Attachment A, *Major WECC Transfer Paths in the Bulk Electric System (Table)* (Emphasis added.)

Drafting Team

Assign the WECC-0141 Drafting Team to this task and augment the team as needed.

Although this drafting approach no longer addresses the incorporation by reference concerns corrected by WECC-0141, this approach: 1) supports the ERO Enterprise, 2) creates a single-source list of paths (Table), 3) serves multiple documents using a single revision process, and 4) speeds up removal from FAC-501-WECC-3, Attachment B those paths approved for removal in WECC-0141.

Proposed Remedy

Specify how this request will address the issue.

Supporting the ERO Enterprise

This approach should result in an expedited removal of paths from FAC-501-WECC-3, Attachment B.

The WECC-0141 project was built on the understanding that a NERC SAR would be required to effect changes to NERC documents wherein the List was referenced. Though correct, the approach did not factor in NERC's ongoing workload.

After discussions with NERC, WECC/NERC agreed that WECC could address the procedure for changing the Table without filing a NERC SAR. Because the contents of the Table would self-execute into WECC/NERC documents referencing the Table, the WECC-0149 approach would implement the removal of paths from the Table more quickly than asking NERC to address each NERC document directly.

Create a Single Source List—Single Source Process

This project would create a single source Table and a single process for changing the content of the Table.

The WECC-0149 Revision Process would be broadened to include all NERC/WECC documents wherein the Table is referenced. Where possible, the WECC-0149 Revision Process should specifically identify known NERC documents wherein the Table referenced.

WECC would not file WECC-0141 at NERC. Rather, changes approved in that project would be accepted and migrate to WECC-0149 for further augmentation.

Reaching Multiple Documents—Expedited Implementation

This SAR is based on the premise that WECC controls the *content* of the Table but not the NERC *documents* wherein the Table is referenced.

Applicable Entities for FAC-501-WECC-3

- 4.1 Transmission Owners that maintain the transmission paths in Attachment B.

  Version 4 would update this section to refer to the proposed Revision Process' Table. Version 3, Attachment B would be cut out of FAC-501-WECC-3 and pasted into the Version 4 Revision Process. Version 4 would not have an Attachment B as that content would only reside in the Revision Process' Table.

Applicable Facilities for FAC-501-WECC-3

- 5.1 Bulk Electric System Facilities, Elements, Transmission Lines, and other equipment as listed on Attachment A Transmission Maintenance and Inspection Plan (TMIP) Content, comprising the named paths on Attachment B, Path Names Identified for Transmission Maintenance and Inspection.

Version 4 would update this section to refer to the proposed WECC-0149 Revision Process.

Applicable Entities for the WECC-0149 Revision Process

- Transmission Owners, Transmission Operators, and Reliability Coordinators.

Detailed Description

(Additional background from WECC-0141)

On August 21, 2019, APS (Arizona Public Service) provided a public presentation to the Southwest Area Transmission (SWAT) Oversight group highlighting the delisting of the paths from the List. No concerns were raised by stakeholders.

On September 3, 2019, APS notified the WECC Studies Subcommittee (StS) of its intent to delist the paths from the List with an effective date of January 1, 2020.[4]

On October 18, 2019, APS provided a presentation to the WECC Reliability Assessment Committee (RAC) summarizing the procedural background of delisting, comments received during the process, and the technical reasons why the delisting took place. To ensure due process and stakeholder inclusion, APS also posted notification on the APS Open Access Same-time Information System (OATI) announcing the pending path delisting prior to the effective date.

On December 8, 2021, the WECC Board of Directors approved WECC-0141 for NERC/FERC disposition.

On April 11, 2022, NERC/WECC agreed WECC could control the content of and process impacting the List without re-opening each impacted NERC document.

Affected Reliability Principles

Which of the following reliability principles is MOST affected by this request? (Select one)

- **Reliability Principle 1**—*Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.*

Document Information

Specify the document title, document number, and affected section regarding the request.

See above.

Reference Uploads

Please reference or upload any affected standards, regional business practices, criteria, policies, white papers, technical reports, or other relevant documents. If this request is based on a conflict of law, please include a copy of—or accessible reference to—the specific law or regulatory mandate in conflict.

Referenced presentations and applicable method used for the delisting are available upon request.

Provide additional comments (if needed).

NA

[4] Paths 22, 23, 50 and 51. Path 23 is not currently listed in Version 3, Attachment B.

Exhibit G

Standard Drafting Team Roster for Project WECC-0141/WECC-0149 Transmission Maintenance

WECC
Electric Reliability and Security for the West

Attachment L
Drafting Team Roster
WECC-0149 FAC-501-WECC-4
Transmission Maintenance

Drafting Team Roster

Below please find a biographical snapshot for the members of the WECC-0141/WECC-0149 FAC-501-WECC-4 Transmission Maintenance Drafting Team.

Linda Henrickson, Arizona Public Service (APS)	Ms. Henrickson holds her Master of Business Administration degree from Keller Graduate School of Management with a Graduate Certificate in Project Management. She has over 30 years of experience in the utility industry including the following: • Seven years in leadership, • Seven years as a distribution and transmission operator, • Ten years managing generator and transmission interconnections, participant-owned transmission and generation projects, and transmission service agreements, • Two years managing maintenance crews, • Three years as a NERC Compliance Advisor managing standards including TPLs, MODs, and FACs, and • Five years as an APS Transmission Provider Representative on the WECC Market Interface Committee (MIC).
Christopher Fecke-Stoudt, APS	Mr. Fecke-Stoudt is a Senior Engineer in the Transmission Planning and Engineering department at the Arizona Public Service (APS). In his role at APS, Mr. Fecke-Stoudt addresses the most complex transmission planning needs including recently completed projects such as the WECC Path De-listing and the Navajo Generation Station Retirement. Mr. Fecke-Stoudt's qualifications include: • Thirteen years of experience as a Transmission Planning Engineer within WECC, five as a senior engineer for Arizona Public Service (2015–2020) and eight years of experience as Transmission Planning Engineer as a consultant at K.R. Saline and Associates (2007–2015); • Chair of Southwest Area Transmission Planning (SWAT) Group (2018–2019), Vice Chair of SWAT (2014–2017), and Chair of SWAT Biennial Transmission Assessment Task Force (2019–2020); • Vice Chair of WestConnect Planning Subcommittee (2020-Present); Mr. Fecke-Stoudt is a licensed Professional Engineer with the states of Arizona and California.

Alan Wahlstrom, Southwest Power Pool	Mr. Wahlstrom holds his Bachelor of Science degree in electrical engineering from Western Kentucky University, Bowling Green, KY, an Associate of Science degree in industrial technology from IVY Tech State College of Evansville, IN, and a technical certificate in electronic communications from Kentucky State College, Owensboro, Kentucky. Mr. Wahlstrom has extensive knowledge of the electric power industry, primarily focused on transmission and generation engineering, operations, training, and compliance with federally approved reliability standards. His experience spans real-time electric system operations, generation project management, and working knowledgeable of hydraulics, pneumatics, pumps, and programmable logic controllers. Mr. Wahlstrom has expertise and experience with the following: • Trained Accident Investigator, determining the cause and remediation for industrial accidents including investigation of transmission system events. • Ten years of experience at the Southwest Power Pool where he serves as Lead Engineer for Event Analysis, reporting directly to executive leadership. His expertise includes: 1) analysis of Bulk Power System events; 2) provision of valuable input for training, education, reliability trend analysis efforts, and reliability standards development; and 3) assistance in development of intra/inter regional reliability assessments. • In his role as the Lead Engineer, Reliability Assessment and Performance Analysis (RAPA), Mr. Wahlstrom: 1) managed seasonal, long-term, and special assessments examining current and future adequacy and operational reliability of the Southwest Power Pool Region Bulk Power System, and 2) coordinated Generator Availability Data System, Transmission Availability Data System, and Demand Response Availability Data Systems. • NERC Reliability Authority Certification. • Certified Hydraulic Technician, Fluid Power Society. • Programmable Logic Controllers and Design Data. • Hydraulic and pneumatic training. • ASEA Brown Boveri Generator Excitation training. • Voltage stability. Additionally, Mr. Wahlstrom has multiple years of experience in compliance auditing, operations training, transmission system operations, transmission tariff administration, major generator project management, relay review, oversite of equipment maintenance, and performance.

Diana Torres, Imperial Irrigation District	Ms. Torres is a Reliability Compliance Program Specialist and has worked in the public utility industry for 32 years, with the last 13 years in the reliability compliance office. Her expertise and experience include the following: • Performing compliance assessments of Operations and Planning standards. • Developing and conducting internal compliance program trainings (which include background of NERC/WECC compliance, the WECC Compliance Monitoring and Enforcement Program, WECC audit training and internal controls). • Coordinating and helping to lead five WECC audits, working directly with audit leads. • Conducting compliance assessments for several NERC Operations & Planning standards, including FAC-501-WECC, Transmission Maintenance and Inspection Program evidence and procedures. • Member of a previous FAC-501-WECC drafting team. Ms. Torres regularly attends WECC outreach events, such as open webinars, Reliability and Security workshops, and human performance conferences.
Jason V. Saline, Tucson Electric Power Company	Mr. Saline has a Bachelor of Science in plant sciences from the University of Arizona, Tucson, Arizona, and his Associate of Applied Science in environmental technology from Pima Community College, Tucson, Arizona. Mr. Saline also holds multiple professional certificates. Over the past two years, Mr. Saline has been involved with multiple process improvements and policy changes involving transmission inspection, data collection, and resulting maintenance strategies. Mr. Saline's experience includes: • Seven years in transmission maintenance planning with responsibility for planning, executing, and scheduling maintenance for high-voltage transmission systems including 500 kV, 345 kV and 138 kV spanning thousands of miles, to include analysis of transmission inspection data, coordinated scheduling, permitting, and project management. • Nine years in land use and environmental management including: 1) planning and scheduling of consultants performing research and inspection services for distribution and transmission maintenance project, 2) securing environmental permits and land use authorizations required for the construction and maintenance of distribution, transmission, and generation assets, 3) development and implementation of environmental monitoring, protection, and enforcement programs, and 4) large construction project management

	• Eleven years in environmental engineering, irrigation, water treatment and associated data analysis. Expertise includes: 1) permitting, 2) enforcement, 3) inspection, 4) monitoring, 5) training, 6) data analysis, 7) testing, and 8) sampling.
Sean Erickson, Western Area Power Administration	Mr. Erickson holds his Master of Science degree in electrical engineering and is a NERC certified Reliability Coordinator. He serves the Western Area Power Authority as a Senior Power Operations Specialist. His qualifications include: • Two years of experience as a WECC Reliability Coordinator (2009–2011); • Two years of experience as a WECC Reliability Coordination Operations Engineer (2007–2009); • Four years of experience as an Operations Engineer (2011–2015); • Serving as the Transmission Alternate on the WECC Operating Committee, as well as the WECC Ballot Body representative for both WECC and NERC; • Previous member of the WECC Performance Work Group during the BAL-001 field trial evaluations; • Previous member of the Path Operator Task Force (POTF) (post-September 8, 2011, NERC/FERC findings and mitigation regarding path operations) and the POT—Implementation Team for the Operational adoption of the POTF findings; and • Contributor to retiring TOP-007-WECC-1a, System Operating Limits.