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-2

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March 16, 2018

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Pursuant to Section 215(d)(1) of the Federal Power Act ("FPA")[1] and Section 39.5[2] of the Federal Energy Regulatory Commission's ("FERC" or the "Commission") regulations, the North American Electric Reliability Corporation ("NERC")[3] and the Western Electricity Coordinating Council ("WECC") hereby submit proposed Regional Reliability Standard FAC-501-WECC-2 – Transmission Maintenance for Commission approval. Regional Reliability Standard FAC-501-WECC-2 addresses transmission maintenance for specified transmission paths in the Western Interconnection.

NERC and WECC request that the Commission approve proposed Regional Reliability Standard FAC-501-WECC-2 (**Exhibit A**) as just, reasonable, not unduly discriminatory or preferential, and in the public interest.[4] NERC and WECC also request approval of the associated

[1] 16 U.S.C. § 824o (2012).

[2] 18 C.F.R. § 39.5 (2017).

[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) ("ERO Certification Order").

[4] Unless otherwise designated, all capitalized terms shall have the meaning set forth in the *Glossary of Terms Used in NERC Reliability Standards*, *available at* http://www.nerc.com/files/Glossary_of_Terms.pdf.

implementation plan (**Exhibit B**), and the associated Violation Severity Levels ("VSLs") (**Exhibit D**), as detailed in this petition.

As required by Section 39.5(a)[5] of the Commission's regulations, this petition presents the technical basis and purpose of the proposed Regional Reliability Standard, a summary of the development proceedings (**Exhibit E**), and a demonstration that the proposed Reliability Standard meets the criteria identified by the Commission in Order No. 672[6] (**Exhibit C**). Proposed Regional Reliability Standard FAC-501-WECC-2 was approved by the WECC Board of Directors on December 6, 2017 and by the NERC Board of Trustees on February 8, 2018.

I. EXECUTIVE SUMMARY

The purpose of FAC-501-WECC-2 is to ensure the Transmission Owner of a transmission path identified in the table titled "Major WECC Transfer Paths in the Bulk Electric System" ("WECC Transfer Path Table" or "Table"), including associated facilities, has a Transmission Maintenance and Inspection Plan ("TMIP") and performs and documents maintenance and inspection activities in accordance with the TMIP. The proposed standard was developed following a periodic review of the currently-effective version of the standard, FAC-501-WECC-1, which became effective in 2011.

As a result of WECC's periodic review, WECC revised the standard to clarify the Transmission Owner's obligations with respect to the development, implementation, and review of TMIPs, and to directly incorporate the list of applicable transmission paths, thereby eliminating incorporation by reference to any extrinsic document. Proposed Regional Reliability Standard

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5 18 C.F.R. § 39.5(a) (2017).

6 The Commission specified in Order No. 672 certain general factors it would consider when assessing whether a particular Reliability Standard is just and reasonable. *See Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, at P 262, 321-37, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

FAC-501-WECC-2 continues to remain more stringent than continent-wide standards and necessary for reliability in the Western Interconnection. For these reasons, and as discussed more fully herein, NERC and WECC respectfully request the Commission approve proposed Regional Reliability Standard FAC-501-WECC-2 and the associated elements. 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:[7]

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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) an explanation of the WECC Regional Reliability Standards development process; and (c) the history of Project WECC-0120 FAC-501-WECC-1 Transmission Maintenance, Five-Year Review**.**

[7] Persons to be included on the Commission's service list are identified by an asterisk. NERC respectfully requests a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203 (2017), to allow the inclusion of more than two persons on the service list in this proceeding.

A. Regulatory Framework

By enacting the Energy Policy Act of 2005,[8] Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the Nation's Bulk-Power System, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1)[9] 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. Section 215(d)(5)[10] of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard. Section 39.5(a)[11] of the Commission's regulations requires the ERO to file with the Commission for its 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 should be made effective.

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[12] and Section 39.5(c)[13] 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.

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8 16 U.S.C. § 824o (2012).

9 *Id.* § 824o(b)(1).

10 *Id.* § 824o(d)(5).

11 18 C.F.R. § 39.5(a) (2017).

12 16 U.S.C. § 824o(d)(2).

13 18 C.F.R. § 39.5(c)(1).

Similarly, the Commission approves Regional Reliability Standards proposed by Regional Entities if the Regional Reliability Standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest.[14] In addition, Order No. 672 requires further criteria for Regional Reliability Standards. A Regional difference from a continent-wide Reliability Standard must either be: (1) more stringent than the continent-wide Reliability Standard, or (2) necessitated by a physical difference in the Bulk-Power System.[15] 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 Reliability Standard to be applicable within that Interconnection.[16]

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 Reliability Standards Development Procedures ("RSDP").[17] 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 of Directors is required to approve a Regional Reliability Standard. Once the standard is approved by the WECC

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[14] Section 215(d)(2) of the FPA and 18 C.F.R. §39.5(a).

[15] *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, at P 291, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

[16] Order No. 672 at P 344.

[17] The currently-effective WECC RSDP was approved by the Commission on October 27, 2017 (*see N. Am. Elec. Reliability Corp.*, RR17-5-000 (Oct. 27, 2017) (unpublished letter order)) and is available at http://www.nerc.com/FilingsOrders/us/Regional%20Delegation%20Agreements%20DL/WECC%20RSDP_20171027.pdf.

Board of Directors, NERC posts the approved Regional Reliability Standard for an additional comment period. Then the NERC Board of Trustees must adopt the Regional Reliability Standard before the Regional Reliability Standard is submitted to the Commission for approval.

C. Approval of FAC-501-WECC-1

The Commission approved currently-effective Regional standard FAC-501-WECC-1 in Order No. 751, issued in 2011. FAC-501-WECC-1 was developed to replace Regional Reliability Standard PRC-STD-005-1 to address FERC directives.[18] In approving the standard, the Commission stated that it was more stringent than the then-effective NERC Reliability Standard PRC-005-1 "by virtue of its requirement for a highly detailed maintenance and inspection plan for all transmission and substation equipment components associated with transmission paths identified in the WECC Transfer Path Table".[19]

D. Development of the Proposed Regional Reliability Standard

As further described in Exhibit E hereto, proposed Regional Reliability Standard FAC-501-WECC-2 was developed in accordance with the WECC RSDP, as part of a five-year review of FAC-501-WECC-1. On October 11, 2017, the fifth draft of proposed Regional Reliability Standard FAC-501-WECC-2 was approved by the WECC ballot body with 100 percent affirmative vote. The WECC Board of Directors approved the standard on December 6, 2017. NERC posted the standard for a 45-day comment period concluding on December 18, 2017. Commenters agreed that WECC's process was open, inclusive, balanced, transparent, and that due process was followed, and there were no additional changes after this comment period. The NERC Board of Trustees subsequently adopted the Regional standard on February 8, 2018.

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[18] *Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications*, 119 FERC ¶ 61,260, at P 98 (2007).

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

IV. JUSTIFICATION FOR APPROVAL

The purpose of proposed Regional Reliability Standard FAC-501-WECC-2 is to ensure the Transmission Owner of a transmission path identified in the WECC Transfer Path table has a TMIP and performs and documents maintenance and inspection activities in accordance with the TMIP. The provisions of the proposed Regional standard provide specific requirements for implementing and maintaining comprehensive maintenance and inspection plans for transmission lines and substation equipment. Proposed FAC-501-WECC-2 builds upon the currently-effective version of the standard and improves it by clarifying the obligations of applicable Transmission Owners with respect to TMIPs and their required content. The proposed regional standard remains more stringent than its continent-wide counterparts in that it includes specific emphasis on the 40 major paths of Attachment B not otherwise included elsewhere, applies a more stringent maintenance protocol to those paths, and specifies a broader range of elements for maintenance than those addressed in the continent-wide PRC Reliability Standards. The proposed changes are discussed in more detail below.

A. WECC Transfer Path Table

In proposed Regional Reliability Standard FAC-501-WECC-2, WECC has directly incorporated the list of applicable transmission paths thereby eliminating incorporation by reference to any extrinsic document. In currently-effective FAC-501-WECC-1, WECC removed the Table from the standard, replacing it with a link to the table on the WECC website.[20] In

[20] In Order No. 751, the Commission restated its concern from the Notice of Proposed Rulemaking that, due to WECC removing the WECC Transfer Path Table from the standard and replacing it with a link to the table on the WECC website, the applicability of the standard "could change without review and approval by NERC and the Commission." Order No. 751 at P 20. In response to WECC's comments, the Commission directed WECC to file its criterion for identifying and modifying major transmission paths listed in the tables on the WECC website before they become effective with concurrent notification to the Commission, NERC and the industry. The Commission stated, "We believe that this process balances the interests of WECC in developing timely revisions to the WECC

response to the Commission's concerns, WECC agreed that no changes would be made to the Table without using an open and transparent process and notifying the Commission accordingly. In the intervening years, WECC has made no revisions to this Table, although WECC has had to update the standard to reflect the new location of the Table on the WECC website.[21] To avoid having to correct link locations in the future, the WECC drafting team and stakeholders agreed that the WECC Transfer Path Table should be included in the standard. By 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 and any future changes to the Table would require the full due process afforded by the WECC RSDP.

Other conforming changes include eliminating all links referencing this table and replacing the term "Table" with the term "Attachment B".

B. Other Clarifications

The proposed Regional Reliability Standard FAC-501-WECC-2 includes several clarifications that improve upon the existing standard. Requirement R1 is revised to add language requiring each TMIP to contain, at a minimum, the items specified in Attachment A, Transmission Maintenance and Inspection Plan Content. The term "System Operating Limit" is removed from Requirement R1 to remain consistent with the revised System Operating Limit methodology instituted by Peak Reliability effective April 1, 2017 which decouples the concepts of System

Transfer Path Table with the need for adequate transparency for transmission owners that are affected by changes to the WECC Transfer Path Table." *Id.* at P 24.

[21] *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*, in Docket No. RM15-13-000 (filed June 9, 2017).

Operating Limits and paths as they have traditionally been understood in the Western Interconnection.[22]

Requirement R1 now consists of two separate Requirements: the requirement to "have a TMIP" (Requirement R1) and to "annually update it to reflect all changes" (Requirement R2). Requirement R3 is revised to provide that each Transmission Owner shall adhere to its TMIP (revised from "implement and follow" its TMIP).

Attachment A was revised clarifying the required contents of TMIPs and removing "and/or" statements. The term "contamination control" was removed due to ambiguity. The specific reference to "regulators" was determined to be an unnecessarily detailed subset of power transformers and was also removed.

C. Enforceability of Proposed Regional Reliability Standard FAC-501-WECC-2

The proposed regional Reliability Standard includes VRFs and VSLs. The VSLs provide guidance on the way that NERC will enforce the requirements of the proposed regional Reliability Standard. The VRFs are one of several elements used to determine an appropriate sanction when the associated requirement is violated. The VRFs assess the impact to reliability of violating a specific requirement. The VRFs and VSLs for the proposed regional Reliability Standard comport with NERC and Commission guidelines related to their assignment. In proposed Reliability Standard FAC-501-WECC-2, the VRFs remain unchanged from the related Requirements in currently-effective FAC-501-WECC-1. The VSL section has been changed to match the current NERC table format and the revised language of underlying Requirements. The VSLs for the

[22] *See* Exhibit E, Posting 1 Response to Comments at 4-6 (responding to comments submitted by Bonneville Power Administration). For additional information on the shift away from the path-centric model to the framework established in the continent-wide TOP and IRO Reliability Standards, *see generally* Docket No. RD16-10-000 (retirement of TOP-007-WECC-1a).

proposed Regional Reliability Standard comport with NERC and Commission guidelines related to their assignment.

The proposed Regional Reliability Standard also includes Measures that support each requirement by clearly identifying what is required and how the requirement will be enforced. These Measures help ensure that the requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.[23]

V. EFFECTIVE DATE

NERC respectfully requests that the Commission approve the proposed implementation plan, provided in Exhibit B hereto. Under the proposed implementation plan, proposed Reliability Standard FAC-501-WECC-2 would become effective on the first day of the first calendar quarter after Commission approval.

[23] Order No. 672 at P 327 ("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.").

VI. CONCLUSION

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

- the proposed Regional Reliability Standard FAC-501-WECC-2 in **Exhibit A**;
- the other associated elements in the Reliability Standard in **Exhibit A**, including the VRFs and VSLs in **Exhibit D**;
- the proposed implementation plan, included in **Exhibit B**; and
- the retirement of currently-effective Regional Reliability Standard FAC-501-WECC-1.

Respectfully submitted,

/s/ Lauren Perotti

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Date: March 16, 2018

Exhibit A
Proposed Regional Reliability Standard FAC-501-WECC-2 – Transmission Maintenance

Exhibit A
Proposed Regional Reliability Standard FAC-501-WECC-2 – Transmission Maintenance
Clean

A. Introduction

1. **Title:** Transmission Maintenance

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

3. **Purpose:** 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.

4. **Applicability**

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

5. **Effective Date:** The first day of the first quarter following applicable regulatory approval.

B. 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 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 on which the maintenance was performed;

1.3 A description of the inspection results or maintenance performed.

C. 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 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. Regional Variances

None.

E. Associated Documents

None

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	Approved by the NERC Board of Trustees.	

Attachment A
Transmission Maintenance and Inspection Plan Content

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

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 Attachment B, Major WECC Transfer Paths in the Bulk Electric System.

2. Maintenance Methodology

A description of the maintenance methodology used for the Facility, transmission line, or station included in the TMIP.

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

- Performance-based
- Time-based
- Condition based

3. Periodicity

A specification of the periodicity that the described maintenance will occur, or under what circumstances it occurs.

4. Transmission Line Maintenance

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

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 (including, but not limited to, phase-shifting transformers)

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

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.

Exhibit A
Proposed Regional Reliability Standard FAC-501-WECC-2 – Transmission Maintenance
Redline

A. Introduction

1. **Title:** Transmission Maintenance

2. **Number:** FAC-501-WECC-~~1~~2

3. **Purpose:** To ensure the Transmission Owner of a transmission path identified in ~~the table titled "~~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.

4. **Applicability**

   4.1 Transmission Owners that maintain the transmission paths in ~~the most current table titled "~~Attachment B.~~**Major WECC Transfer Paths in the Bulk Electric System**" provided at:~~

   ~~https://www.wecc.biz/Reliability/TableMajorPaths4-28-08.pdf.~~

5. **Effective Date:** ~~July 1, 2011~~The first day of the first quarter following applicable regulatory approval.

B. Requirements and Measures

R1. Each Transmission ~~Owners~~Owner shall have a TMIP ~~detailing their inspection and maintenance requirements~~ that ~~apply to all transmission facilities necessary for System Operating Limits associated with~~includes, at a minimum, each of the ~~transmission paths identified in table titled "Major WECC Transfer Paths in the Bulk Electric System."~~items listed in Attachment A, Transmission Maintenance and Inspection Plan Content. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

~~**R1.1.** Transmission Owners~~**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 ~~review their TMIP and~~ update ~~as required.~~ its TMIP to reflect all changes to its TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

~~Transmission Owners shall~~ **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 ~~the maintenance categories in Attachment 1 FAC-501-WECC-1 when developing their TMIP.~~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]*

~~**R.1.**~~ **M3.** Each Transmission ~~Owners shall implement and follow their TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*~~

~~A. Measures~~

~~**M1.** Transmission Owners shall have a documented TMIP per R.1.~~

~~**M1.1** Transmission Owners shall have evidence they have annually reviewed their TMIP and updated as needed.~~

~~**M2.** Transmission Owners shall~~Owner will have evidence that ~~their TMIP addresses the required maintenance details of R.2.~~

~~**M3.** Transmission Owners shall have records that they implemented and followed their TMIP~~it adhered to its TMIP, as required in ~~R.3. The records shall~~Requirement R3. Evidence may include, but is not limited to:

1.1 The ~~person or crew responsible for performing~~date(s) the ~~work~~patrol, inspection or maintenance was performed;

~~**1.**~~ The transmission Facility or ~~inspection,~~

~~**2.** The date(s) the work or inspection was performed,~~

~~**1.1**~~**1.2** ~~The transmission facility~~Element on which the ~~work~~maintenance was performed~~, and~~;

~~**1.2**~~**1.3** A description of the inspection results or maintenance performed.

C. 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 for three calendar years, or since the last audit, whichever is longer.

~~**2.1 Additional Compliance Information**~~

~~No additional compliance information.~~

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

~~**2.1. Lower:** There shall be a Lower Level of non-compliance if any of the following conditions exist:~~

~~The TMIP does not include associated~~

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	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	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.

		required in R3.	required in R3.	

D. Regional Variances

None.

E. Associated Documents

None

2.1.1 **Facilities** for one of the Paths identified in Attachment 1 FAC-501-WECC-1 as required by R.1 but Transmission Owners are performing maintenance and inspection for the missing Facilities.

2.1.2 Transmission Owners did not review their TMIP annually as required by R.1.1.

2.1.3 The TMIP does not include one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.1.4 Transmission Owners do not have maintenance and inspection records as required by R.3 but have evidence that they are implementing and following their TMIP.

2.2. Moderate: There shall be a Moderate Level of non-compliance if any of the following conditions exist:

2.2.1 The TMIP does not include associated Facilities for two of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.2.2 The TMIP does not include two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.2.3 Transmission Owners are not performing maintenance and inspection for one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.3. **High:** There shall be a High Level of non-compliance if any of the following condition exists:

2.3.1 The TMIP does not include associated Facilities for three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.3.2 The TMIP does not include three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.3.3 Transmission Owners are not performing maintenance and inspection for two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.4. **Severe:** There shall be a Severe Level of non-compliance if any of the following condition exists:

2.4.1 The TMIP does not include associated Facilities for more than three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.4.2 The TMIP does not exist or does not include more than three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.4.3 Transmission Owners are not performing maintenance and inspection for more than two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

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	

~~Attachment 1-FAC-501-WECC-1~~ 2	~~TBD~~July 1, 2017	Approved by the WECC Board of Directors.~~TBD~~	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure M3.
2	February 8, 2018	Approved by the NERC Board of Trustees.	

Attachment A

Transmission ~~Line and Station~~ **Maintenance** ~~Details~~**and Inspection Plan Content**

~~The maintenance practices in the TMIP may be performance-based, time-based, conditional based, or a combination of all three.~~ The TMIP shall include~~:~~, at a minimum, each of the following details:

1. Facilities

A list of Facilities ~~and associated~~ (e.g., transmission lines, transformers, etc.) and Elements ~~necessary to maintain the SOL for the transfer paths~~ (e.g. circuit breaker, bus section, etc.) that comprise each transmission path(s) identified in ~~the most current Table titled "~~Attachment B, Major WECC Transfer Paths in the Bulk Electric System~~;"~~.

~~1. The scheduled interval for any time-based maintenance activities and/or a description supporting condition or performance-based maintenance activities including a description of the condition based trigger;~~

2. Maintenance Methodology

A description of the maintenance methodology used for the Facility, transmission line, or station included in the TMIP.

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

- Performance-based
- Time-based
- Condition based

3. Periodicity

A specification of the periodicity that the described maintenance will occur, or under what circumstances it occurs.

4. Transmission Line Maintenance ~~Details:~~

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

a. Inspection requirements

b. Patrol~~/Inspection~~ requirements

~~a. Contamination Control~~

c. Tower and wood pole structure management

5. Station Maintenance ~~Details:~~

~~b. Inspections~~

~~c. Contamination Control~~

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

a. Inspection requirements

~~a.~~b. Equipment ~~Maintenance~~maintenance for each of the following:

1. Circuit ~~Breakers~~breakers

~~•~~ 2. Power ~~Transformers (including phase-shifting~~ transformers~~)~~

~~• Regulators~~

~~Reactive Devices~~ (including, but not limited to, phase-shifting transformers)

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

Attachment B

Major WECC Transfer Paths in the Bulk Electric System~~Shunt Capacitors, Series Capacitors, Synchronous Condensers, Shunt Reactors, and Tertiary Reactors)~~

	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.

Exhibit B
Implementation Plan for Proposed Regional Reliability Standard FAC-501-WECC-2

Implementation Plan
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Standard Authorization Request

WECC-0120 SAR is located here. In this filing, it is provided as Attachment A.

Approvals Required

- WECC Board of Directors December 6, 2017
- NERC Board of Trustees February 8, 2018
- FERC Pending

Applicable Entities

4. Applicability

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

Conforming Changes to Other Standards

There are no conforming changes to other standards required to implement the proposed document.

Proposed Effective Date

The Effective Date is proposed to be the first day of the first quarter following applicable regulatory approval.

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) reviewed NERC Standards, both in effect and those standards that are approved by the NERC Board of Trustees, but pending regulatory disposition. The DT concluded that the proposed substantive changes pose a minimal burden beyond current reasonable and customary operations. As such, the implementation time should impose no undue burden.

Consideration of Early Compliance

The drafting team foresees no concerns with early compliance.

Required Retirements

The currently approved standard (FAC-501-WECC-1) should be retired immediately prior to the Effective Date of this version, FAC-501-WECC-2. No other retirements or modifications are needed.

Exhibit C
Order No. 672 Criteria for Proposed Regional Reliability Standard FAC-501-WECC-2

NERC is responsible for the activities governing "the development, approval, revision, reaffirmation, and withdrawal of Reliability Standards, Interpretations, Violations Risk Factors (VRF), Violation Severity Levels (VSL), definitions, Variances, and reference documents developed to support standards for the Reliable Operation and planning of the North American Bulk Power Systems".[1]

In FERC Order No. 672,[2] the Federal Energy Regulatory Commission (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."[3] The following discussion identifies these factors, and explains how the proposed Regional Reliability Standard (RRS) meets or exceeds these criteria.[4]

1. 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."[5]

[1] NERC Rules of Procedure, Standard Processes Manual, Version 3, Section 1.0, Introduction, Sub-section 1.2 Scope. June 26, 2013. For purposes of this filing, the term Reliability Standard is synonymous with Regional Reliability Standard (RRS).

[2] FERC Order 672, P 320-338.

[3] FERC Order 672, P320.

[4] NERC Rules of Procedure, Definitions Used in Rules of Procedure, Appendix 2 to the Rules of Procedure, page 19, October 31, 2016. See also NERC Rules of Procedure, Section 300 Reliability Standards development, Sub-section 312.1 Regional Reliability Standards, indicating that Regional Reliability Standards "shall in all cases be submitted to NERC for adoption and, if adopted, made part of the NERC Reliability Standards and shall be enforceable in accordance with the delegation agreement between NERC and the Regional Entity or other instrument granting authority over enforcement to the Regional Entity."

[5] 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 Reliability Standard serves a purpose in support of reliability of the North American Bulk Power Systems. Each Reliability Standard shall also be consistent with all of the reliability principles, thereby ensuring that no standard undermines reliability through an unintended consequence."[6]

Of NERC's eight NERC Reliability Principles, FAC-501-WECC-2 meets:

Reliability Principle 3

"Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably."

2. 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 [Electricity 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.

Standard Development

This project was developed in accordance with the WECC Reliability Standards Development Procedures (Procedures), as approved by NERC/FERC, in effect at each point in the process. Among other things, the Procedures require that drafting be conducted by a team of Subject Matter Experts (SME). Biographies of those SMEs are provided with this filing.

These processes also include repeated public iterative comment/response cycles whereby comments are received from the industry and responses to those comments are provided by the drafting team.

Technically Sound

[6] NERC Rules of Procedure, Standard Processes Manual, Version 3, Section 2.0, Elements of a Reliability Standard, Sub-section 2.2: Reliability Principles. NERC Reliability Principles are currently located here.

The Federal Energy Regulatory Commission (FERC) found Version 1 of this standard to be technically sound in FERC Order 751.[7]

Because the proposed changes either fill in a logical void or clarify the existing document, no additional technical justification is offered.

This project: 1) adds a requirement to follow the Transmission Maintenance Inspection Plan (TMIP) as opposed to simply having a TMIP, 2) updates Attachment A TMIP Content, reducing ambiguity in the attachment, 3) eliminates incorporation by reference of the "Major WECC Transfer Paths in the Bulk Electric System" table in favor of full inclusion as Attachment B, and 4) updates the content and format of the compliance sections to incorporate NERC styles, format, and standardized language.

3. 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.

The Applicability section of the proposed Reliability Standard is as follows:

Applicable Entities

4. Applicability

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

4. 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.

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance project is the result of a five-year review required under the Procedures. The Standard Authorization Request identified no specific issues nor did it suggest that any specific changes be made.

[7] Order 751, 135 FERC ¶ 61,061, United States of America, Federal Energy Regulatory Commission, 18 CFR Part 40, Docket No. RM09-9-000; Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive, issued April 21, 2011

The project clearly states the tasks each applicable entity must complete, how performance of the tasks will be measured, and compliance elements indicating how lack of performance will be addressed.

Per the Procedures, the project was posted for comment five times.

In Posting 2, the drafting team opted not to change language of Requirement R1 because the proposed changes added no additional clarity but would have the effect of expanding the Applicability section of the standard without providing justification for the change.

In Posting 3, the drafting team addressed ambiguities by: 1) correcting the plural tense of some phrases, 2) eliminating an and/or statement in Attachment A, and 3) adopting NERC's formatting and boilerplate language for compliance sections.

In Posting 4, the drafting team merged a continuum of language from various requirements to eliminate any single requirement containing multiple required tasks.

In Posting 5, the language of Measure M3 was streamlined to eliminate ambiguity.

For more information on the specifics of these changes please review Attachments R1-R5 of this filing.

5. 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.

Table of Compliance Elements

FAC-501-WECC-2, Transmission Maintenance, Section C – Compliance has been updated to reflect the current language used in new NERC Standards.

Violation Risk Factors (VRF)[8]

No changes were made to the Violation Risk Factors.

Violation Severity Levels (VSL)[9]

The drafting team used NERC's Violation Severity Level Guidelines (VSL) to review and complete an up-to-date VSL table where none previously existed. The drafting team used the Version 1 VSL narrative to populate the Version 2 VSL table, interpolating where necessary to achieve the required compliance

[8] NERC Criteria for Violation Risk Factors
[9] NERC Violation Severity Level Guidelines

tiers, and correcting the narrative to ensure the VSL had an actual relationship to the task impacted (eliminating apples-to-oranges narrative). See Response to Comments, Posting 4 for further detail (Attachment R4).

6. 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.

NERC's most recent Compliance section narrative was included.

Each Requirement has a corresponding Measure.

Each Requirement has been assigned a Violation Risk Factor.

Each Requirement has been assigned a tiered Violation Severity Level.[10]

7. 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 five postings, the cost issue was neither raised nor addressed.

The reliability goal of the project is to ensure that Transmission Owners maintaining specified paths have a TMIP and use that plan. The project calls for a high-level TMIP without precluding additional detail.

8. Proposed Reliability Standards cannot be "lowest common denominator".

"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

[10] Where required performance cannot be broken down into compliance tiers, those requirements require assignment of a "severe" VSL. NERC Violation Severity Level Guidelines, page 2.

reliability. Although the Commission will give due weight to the technical expertise of the ERO, [the Commission] will not hesitate to remand a proposed Reliability Standard if…convinced it is not adequate to protect reliability." Order No. 672 at P 329.

Version 2 largely maintains the tasks and burdens included in Version 1; albeit, with greater clarity and adoption of updated drafting conventions.

9. 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 five postings at WECC the industry raised no cost concerns.

10. 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."[11]

In accordance with FERC Orders 751, paragraph 11, Version One was found to be applicable solely within the Western Interconnection, and more stringent than NERC Standards.[12] Version Two does not change that finding.

11. 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 changes made in Version Two.

In the five postings at WECC, the industry raised no concerns regarding competition or restrictive use of the grid.

12. 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.

Per the Procedures, an implementation plan was posted for comment during at least one of the five postings for comment. See Attachment F – Implementation Plan.

Conforming Changes to Other Standards

There are no conforming changes to other standards required to implement the proposed document.

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[11] NERC Rules of Procedure, Section 312, Regional Reliability Standards.

[12] FERC Order 751, 135 FERC ¶ 61,061, United States of America, Federal Energy Regulatory Commission, 18 CFR Part 40, Docket No. RM09-9-000, Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive, Issued April 21, 2011

Proposed Effective Date

The Effective Date is proposed to be the first day of the first quarter following applicable regulatory approval.

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) reviewed NERC Standards, both in effect and those standards that have been approved by the NERC Board of Trustees but pending final regulatory disposition. The DT concluded that the proposed substantive changes pose a minimal burden beyond current reasonable and customary operations. As such, the implementation time should impose no undue burden.

Consideration of Early Compliance

The drafting team foresees no concerns with early compliance.

Required Retirements

The currently approved standard, FAC-501-WECC-1, should be retired immediately prior to the Effective Date of this version, FAC-501-WECC-2. No other retirements or modifications are needed.

13. 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.

The WECC Procedures, as approved by WECC/NERC/FERC were used during each development step of this project.

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

All drafting team meetings were announced via the WECC Standards Email List for the prescribed period, prior to each meeting. Notice of each meeting was provided to NERC and posted on the WECC Calendar along with meeting minutes.

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 prior to balloting affording the industry an additional opportunity to have any questions addressed.

The project was also posted for comment at NERC in accordance with NERC's Rules of Procedures.

Comments and responses to comments are found in their original format on the WECC-0120 Project Page on the Submit and Review project accordion.

14. Proposed Reliability Standards must balance with other vital public interests.

"Finally, [the Commission understands] 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 concerns were raised or noted.

15. Proposed Reliability Standards must consider any other relevant factors.

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

WECC is not aware of any other general factors in need of consideration.

Exhibit D
Analysis of Violation Risk Factors and Violation Severity Levels

Table of Compliance Elements

FAC-501-WECC-2, Transmission Maintenance, Section C – Compliance has been updated to reflect the current language used in new NERC Standards.

Violation Risk Factors (VRF)[1]

No changes were made to the Violation Risk Factors.

Violation Severity Levels (VSL)[2]

The drafting team used NERC's Violation Severity Level Guidelines (VSL) to review and complete an up-to-date VSL table where none previously existed. The drafting team used the Version 1 VSL narrative to populate the Version 2 VSL table, interpolating where necessary to achieve the required compliance tiers, and correcting the narrative to ensure the VSL had an actual relationship to the task impacted (eliminating apples-to-oranges narrative). See Response to Comments, Posting 4 for further detail.

[1] NERC Criteria for Violation Risk Factors
[2] NERC Violation Severity Level Guidelines

Exhibit E
Summary of Development History and Complete Record of Development

Summary of Development History

Summary of Development History

The development record for proposed Regional Reliability Standard FAC-501-WECC-2 is summarized below.

I. Overview of the Standard Drafting Team

When evaluating a proposed Reliability Standard, the Commission is expected to give "due weight" to the technical expertise of the Electric Reliability Organization ("ERO").[1] The technical expertise of the ERO is derived from the standard drafting team selected by the WECC Standards Committee to lead each project in accordance with Step 3 of the WECC Reliability Standards Development Procedures.[2] For this project, the standard drafting team consisted of industry experts, all with a diverse set of experiences. A roster of the Standard Drafting team members is included in **Exhibit F**.

II. Standard Development History

A. Standard Authorization Request Development

Project WECC-0120 FAC-501-WECC-2 – Transmission Maintenance, Five-Year Review was initiated on June 10, 2016 with receipt of a proposed Standards Authorization Request ("SAR"). The WECC Standards Committee formally approved the SAR on June 15, 2016 and created a standard drafting team on September 6, 2016.

B. First Posting – Comment Period

On October 12, 2016, the standard drafting team agreed by majority vote to post proposed Regional Reliability Standard FAC-501-WECC-2 for a 45-day public comment

[1] Section 215(d)(2) of the Federal Power Act; 16 U.S.C. §824(d)(2) (2012).

[2] The WECC Reliability Standards Development Procedures are available at https://www.wecc.biz/Reliability/Reliability%20Standards%20Development%20Procedures%20-%20FERC%20Approved%20Dec%2023%202014.pdf

period.[3] Proposed Regional Reliability Standard FAC-501-WECC-2 was posted for a 45-day public comment period from October 14, 2016 through November 29, 2016. WECC received comments from two companies representing five of the eight WECC Standards Voting Segments. Based on the comments received, the standard drafting team determined to make substantive changes to the proposed standard. Therefore, the proposed standard was posted for an additional comment period.[4]

C. Second Posting – Comment Period

Proposed Regional Reliability Standard FAC-501-WECC-2 was posted for another public comment period for 30 days from January 30, 2017 to March 2, 2017.[5] WECC received comments from three companies representing five of the eight WECC Standards Voting Segments. Based on the comments received, the standard drafting team determined to make substantive changes to the proposed standard.[6]

D. Third Posting – Comment Period

Proposed Regional Reliability Standard FAC-501-WECC-2 was posted for another public comment period for 30 days from March 17, 2017 to April 17, 2017.[7] WECC received comments from three companies representing five of the eight WECC Standards Voting Sectors. Based on

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[3] Notice of FAC-501-WECC-2 Transmission Maintenance Five-Year Review Posting 1 is available at https://www.wecc.biz/Administrative/WECC-0120%20Notice%20of%20Posting%20for%20Comment%20-%20Posting%201%20-%20FAC-501-WECC-2%2045-Day%20Comment%20Period.pdf.

[4] Project WECC-0120 FAC-501-WECC-1 Transmission Maintenance Five-Year Review Response to Comments for Posting 1 is available at https://www.wecc.biz/Reliability/WECC-0120%20Posting%201%20FAC-501-WECC-1%20Response%20to%20Comments%20-%20Draft%201%20to%20Tech%20Writer%2001-26-2017.docx.

[5] Notice of FAC-501-WECC-2 Transmission Maintenance Five-Year Review Posting 2 is available at https://www.wecc.biz/Reliability/WECC-0120%20Posting%202%20FAC-501-WECC-1%20Response%20to%20Comments%20-%20To%20Tech%20Writer%203-14-2017.docx.

[6] Project WECC-0120 FAC-501-WECC-1 Transmission Maintenance Five-Year Review FAC-501-WECC-2 Response to Comments for Posting 2 is available at https://www.wecc.biz/Reliability/WECC-0120%20Posting%203%20FAC-501-WECC-1%20Response%20to%20Comments.docx.

[7] Notice of FAC-501-WECC-2 Transmission Maintenance Five-Year Review Posting 3 is available at https://www.wecc.biz/Administrative/WECC-0120%20Notice%20of%20Posting%20for%20Comment%20-%20Posting%203%20-%20FAC-501-WECC-2%2030-Day%20Comment%20Period.pdf.

the comments received, the standard drafting team determined to make substantive changes to the proposed standard.[8]

E. Fourth Draft – Comment Period

Proposed Regional Reliability Standard FAC-501-WECC-2 was posted for another public comment period for 30 days from May 2, 2017 to June 2, 2017.[9] WECC received comments from two companies representing five of the eight WECC Standards Voting Segments. Based on the comments received, the standard drafting team determined to make substantive changes to the proposed standard.[10]

F. Fifth Draft – Comment Period

Proposed Regional Reliability Standard FAC-501-WECC-2 was posted for another public comment period for 30 days from June 23, 2017 to July 24, 2017.[11] WECC received comments from three companies representing five of the eight WECC Standards Voting Segments.

G. Final Standard for WECC Standards Committee

Because only non-substantive changes were made between the fifth and sixth postings, the standard drafting team did not solicit public comments on the sixth posting of the standard. On July 27, 2017, the standard drafting team agreed to send the standard to the WECC Standards Committee with a request for ballot.

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[8] Project WECC-0120 FAC-501-WECC-1 Transmission Maintenance Five-Year Review Response to Comments for Posting 3 is available at https://www.wecc.biz/Reliability/WECC-0120%20Posting%203%20FAC-501-WECC-1%20Response%20to%20Comments.docx.

[9] Notice of FAC-501-WECC-2 Transmission Maintenance Five-Year Review Posting 4 is available at https://www.wecc.biz/Administrative/WECC-0120%20Notice%20of%20Posting%20for%20Comment%20-%20Posting%204%20-%20FAC-501-WECC-2%2030-Day%20Comment%20Period.pdf.

[10] Project WECC-0120 FAC-501-WECC-1 Transmission Maintenance Five-Year Review Response to Comments for Posting 4 is available at https://www.wecc.biz/Reliability/WECC-0120%20Posting%204%20FAC-501-WECC-1%20Response%20to%20Comments.docx.

[11] Notice of FAC-501-WECC-2 Transmission Maintenance Five-Year Review Posting 5 (modified June 22, 2017) is available at https://www.wecc.biz/Administrative/WECC-0120%20Notice%20of%20Posting%20for%20Comment%20-%20Posting%205%20-%20FAC-501-WECC-2%2030-Day%20Comment%20Period%20-%20Amended.pdf.

H. Ballot Period and Results

On July 31, 2017, the WECC Standards Committee approved proposed Regional Reliability Standard FAC-501-WECC-2 to be posted for ballot. The ballot pool opened on August 30, 2017 and closed on September 14, 2017. WECC held a Standards Briefing on September 19, 2017. Eighty-seven individuals joined the ballot pool. Seventy-one individuals cast votes, reaching quorum at 81.6 percent. The standard obtained 55 affirmative votes,[12] which was 100 percent of the weighted segment vote. As a result, the standard passed ballot on October 11, 2017.[13]

I. WECC Board of Directors Approval

On December 6, 2017, the WECC Board of Directors approved proposed Regional Reliability Standard FAC-501-WECC-2 and the retirement of currently-effective Regional Reliability Standard FAC-501-WECC-1.

J. NERC Comment Period and Board of Trustees Adoption

NERC received the Regional Reliability Standard Submittal Request for FAC-501-WECC-2 on September 6, 2017. NERC posted proposed Regional Reliability Standard FAC-501-WECC-2 for a 45-day public comment period from November 3, 2017 to December 18, 2017.[14] The NERC Board of Trustees adopted proposed Regional Reliability Standard FAC-501-WECC-2 on February 8, 2018.[15]

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[12] During the ballot period there were 16 abstentions and 16 individuals that did not cast a vote.

[13] The FAC-501-WECC-2 ballot results are available at https://www.wecc.biz/Reliability/20171011%20WECC-0120%20Final%20Voting%20Record.pdf.

[14] The NERC web page for Regional Reliability Standards Under Development is available at http://www.nerc.com/pa/Stand/Pages/RegionalReliabilityStandardsUnderDevelopment.aspx.

[15] NERC, *Board of Trustees Agenda Package*, Agenda Item 6b (FAC-501-WECC-2 – Transmission Maintenance), *available at* http://www.nerc.com/gov/bot/Agenda%20highlights%20and%20Mintues%202013/Board_of_Trustees_Open_Agenda_Package_February_8_2018.pdf.

Complete Record of Development

Steven Rueckert
Director of Standards
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February 21, 2018

Mr. Mat Bunch
North American Electric Reliability Corporation (NERC)
Manager of Standards Development
3353 Peachtree Rd. NE, North Tower – Suite 600
Atlanta, GA 30326

Regarding: Notification of Completion
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Dear Mat,

In accordance with the WECC Reliability Standards Development Procedures, the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Drafting Team has completed its assigned project. The proposed standard has been approved by the WECC Ballot Pool and the WECC Board of Directors.

WECC is seeking approval by the NERC Board of Trustees, with subsequent disposition by the Federal Energy Regulatory Commission, to retire Version 1 of the standard and replace it with the proposed Version 2.

Overview

This project: 1) adds a requirement to *follow* the Transmission Maintenance Inspection Plan (TMIP) as opposed to simply *having* a TMIP, 2) updates Attachment A TMIP Content, reducing ambiguity in the attachment, 3) eliminates incorporation by reference of the "Major WECC Transfer Paths in the Bulk Electric System" table in favor of full inclusion as Attachment B, and 4) updates the content and format of the compliance sections to incorporate NERC styles, format, and standardized language.

Thank you for your assistance.

Steven Rueckert
WECC Director of Standards

For documentation support please contact Mr. W. Shannon Black, sblack@wecc.biz, (503) 307-5782.

WECC-0120 FAC-501-WECC-2 Transmission Maintenance Regional Reliability Standard
SAR – Standard Authorization Request Attachment A (1)
Regional Reliability Standard(s) (Clean Existing) Attachment B (2)
Regional Reliability Standard(s) (redlined) Attachment C (3)
Regional Reliability Standard(s) (redlined) Attachment D (4)
Project Roadmap Attachment E (5)
Implementation Plan Attachment F (6)
Technical Justification Attachment G (7)
VRF & VSL Justification Attachment H (8)
Regional Reliability Standard Submittal Request Attachment I (9)
Order 672 Criteria Attachment J (10)
Drafting Team Roster with Biographies Attachment K (11)
Ballot Pool Members Attachment L (12)
Final Ballot Results Attachment M (13)
Minority Issues Attachment N (14)
WECC Standards Committee Roster Attachment O (15)
Responses to Comments – WECC Attachment P1 (16), P2 (17), P3 (18), P4 (19), P5 (20) and P6 (21)

FAC-501-WECC-2	Transmission Maintenance	Standard Under Development	11/03/17 - 12/18/17	Info (22) FAC-501-WECC-2 Clean (23) | Redline (24) Submit Comments Unofficial Comment Form (Word) (25) Comments Received (26) Consideration of Comments (27)

Attachment A
Standard Authorization Request
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

This Standard Authorization Request (SAR) was received on June 10, 2016 and deemed complete the same day. The SAR was vetted and approved during the June 15, 2016 WECC Standards Committee meeting.

Introduction

In accordance with the Reliability Standards Development Procedures (Procedures), Regional Reliability Standards (RRS) such as WECC's Standard FAC-501-WECC-1, Transmission Maintenance (FAC) are to be reviewed at least once every five years from the effective date of the most recent version of the RRS.

The FAC's effective date was July 1, 2011 making it subject to review July 1, 2016.

Requester Information

1. Provide your contact information and your alternates contact information:
    - Your First Name: W. Shannon
    - Your Last Name: Black
    - Your Email Address: sblack@wecc.biz
    - Your Phone Number: (503) 307-5782
    - Organization Name: WECC
    - Alternate's First Name: Steven
    - Alternate's Last Name: Rueckert
    - Alternate's Email Address: steve@wecc.biz
    - Alternate's Phone Number: NA

Type of Request

2. Specify the type of request: (select one)
    - Request to Review and update as needed.

Create, Modify or Retire a Document Questions

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

3. Requested Action: (select one)
    - Other
        i. Five-year review

4. Document Type: (select one)
    - WECC Regional Reliability Standard (RRS)
5. Issue: Specify what industry problem this request is trying to resolve.

    The FAC was created under the Procedures and requires review at least once every five years. The RRS Effective Date is July 1, 2011 making it subject to review.

    No specific issues have been identified.

    No specific changes are known to be required.

6. Proposed Remedy: Specify how this request proposes to address the issue described.

    The assigned drafting team (DT) is requested to review the documents and to take one of the following courses of action (or an appropriate combination thereof) or each document:

    Option 1: No Change

    Recommend that no changes should be made. If the DT recommends Option 1, the DT will notify the WSC of its finding. The WSC will, in turn, communicate that decision via the Standards Email List (SEL) and no further action will be required, per the Procedures at Maintenance of RRS and Ops Documents.

    Option 2: Non-Substantive Changes

    Recommend that only non-substantive changes should be made for clarity or conformity to current drafting conventions. If the DT recommends Option 2, the DT will draft and provide those changes to the WSC. Upon a WSC finding that the changes are non-substantive in nature, the WSC shall request WECC Board of Director approval of the proposed changes, with subsequent disposition to be handled in accordance with the NERC Standards Development Manual or its successor, per the Procedures at Step 6 – Respond to Comments, Non-Substantive Changes.

    Option 3: Substantive Changes

    Recommend that substantive changes should be made, in which case, the DT will draft and develop those changes in accordance with the Procedures.

7. Functions: Each function will be reviewed if affected.
    - 4. Applicability

        4.1 Transmission Owners that maintain the transmission paths in the most current table titled “Major WECC Transfer Paths in the Bulk Electric System.” (Table; as posted “Revised September 19, 2007.)

8. Detailed Description:

   See above.

   Special Note regarding the Applicability Section and its Reference to the Table

   If the Table is updated, the DT is charged to establish the criteria whereby paths are added or subtracted from the Table.

   In FERC Order 752, Docket No. RM09-14-000, FERC approved (WECC-0111) TOP-007-WECC-1a, System Operating Limits (TOP) to replace TOP-STD-007-0 Operating Transfer Capability. Because the Table is also incorporated by reference into the FAC, FERC expressed concern that "the applicability of [those documents referencing the Table] could change without Commission and industry notice and opportunity to respond" and instructed WECC to submit a compliance filing to address FERC's concern. P37.

   The Commission 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. P43.

   In FERC Order 751 and 752 Compliance Filing, Docket RM09-9-000 and RM-09-14-000, WECC reported that it "is using an open, transparent, stakeholder process…to develop the criteria" for modifying the Table. "After approval by the WECC Board of Directors, WECC will post the criteria on its website and provide notice to FERC, NERC and the industry through a subsequent Compliance Filing, unless otherwise directed by the Commission." WECC has agreed not to modify "the Tables in the interim, unless directed by the Commission." (All references are in Section III. WECC Transfer Path Table and WECC Remedial Action Schemes Table)

9. Affected Reliability Principles: Which of the following reliability principles is MOST affected by this request? (select one)
   - **Reliability Principle** — To ensure the applicable Transmission Owner includes specified facilities in its Transmission Maintenance and Inspection Plans, and performs maintenance and inspection accordingly.

Document Information

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

10. Document Title: FAC-501-WECC-1, Transmission Maintenance
11. Document Title: Table – only if modified

Reference Uploads

Please reference or upload any affected Standards, Regional Business Practices, Criterion, 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.

12. Provide additional comments (if needed)

WECC Standard FAC-501-WECC-1 – Transmission Maintenance

A. Introduction

1. **Title:** Transmission Maintenance

2. **Number:** FAC-501-WECC-1

3. **Purpose:** To ensure the Transmission Owner of a transmission path identified in the table titled "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.

4. **Applicability**

   4.1 Transmission Owners that maintain the transmission paths in the most current table titled "Major WECC Transfer Paths in the Bulk Electric System" provided at:

   https://www.wecc.biz/Reliability/TableMajorPaths4-28-08.pdf.

5. **Effective Date:** July 1, 2011

B. Requirements

R.1. Transmission Owners shall have a TMIP detailing their inspection and maintenance requirements that apply to all transmission facilities necessary for System Operating Limits associated with each of the transmission paths identified in table titled "Major WECC Transfer Paths in the Bulk Electric System." *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

R1.1. Transmission Owners shall annually review their TMIP and update as required. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

R.2. Transmission Owners shall include the maintenance categories in Attachment 1-FAC-501-WECC-1 when developing their TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

R.3. Transmission Owners shall implement and follow their TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

C. Measures

M1. Transmission Owners shall have a documented TMIP per R.1.

M1.1 Transmission Owners shall have evidence they have annually reviewed their TMIP and updated as needed.

M2. Transmission Owners shall have evidence that their TMIP addresses the required maintenance details of R.2.

M3. Transmission Owners shall have records that they implemented and followed their TMIP as required in R.3. The records shall include:

1. The person or crew responsible for performing the work or inspection,
2. The date(s) the work or inspection was performed,
3. The transmission facility on which the work was performed, and
4. A description of the inspection or maintenance performed.

D. Compliance

1. Compliance Monitoring Process

1.1 Compliance Monitoring Responsibility

Compliance Enforcement Authority

1.2 Compliance Monitoring Period

The Compliance Enforcement Authority may use one or more of the following methods to assess compliance:

- Self-certification conducted annually
- Spot check audits conducted anytime with 30 days notice given to prepare
- Periodic audit as scheduled by the Compliance Enforcement Authority
- Investigations
- Other methods as provided for in the Compliance Monitoring Enforcement Program

The Reset Time Frame shall be one year.

1.3 Data Retention

The Transmission Owners shall keep evidence for Measure M1 through M3 for three years plus the current year, or since the last audit, whichever is longer.

1.4 Additional Compliance Information

No additional compliance information.

2. Violation Severity Levels

2.1. Lower: There shall be a Lower Level of non-compliance if any of the following conditions exist:

2.1.1 The TMIP does not include associated Facilities for one of the Paths identified in Attachment 1 FAC-501-WECC-1 as required by R.1 but Transmission Owners are performing maintenance and inspection for the missing Facilities.

2.1.2 Transmission Owners did not review their TMIP annually as required by R.1.1.

2.1.3 The TMIP does not include one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.1.4 Transmission Owners do not have maintenance and inspection records as required by R.3 but have evidence that they are implementing and following their TMIP.

2.2. Moderate: There shall be a Moderate Level of non-compliance if any of the following conditions exist:

2.2.1 The TMIP does not include associated Facilities for two of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.2.2 The TMIP does not include two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.2.3 Transmission Owners are not performing maintenance and inspection for one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.3. High: There shall be a High Level of non-compliance if any of the following condition exists:

2.3.1 The TMIP does not include associated Facilities for three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.3.2 The TMIP does not include three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.3.3 Transmission Owners are not performing maintenance and inspection for two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.4. Severe: There shall be a Severe Level of non-compliance if any of the following condition exists:

2.4.1 The TMIP does not include associated Facilities for more than three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.4.2 The TMIP does not exist or does not include more than three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.4.3 Transmission Owners are not performing maintenance and inspection for more than two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

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	

Attachment 1-FAC-501-WECC-1
Transmission Line and Station Maintenance Details

The maintenance practices in the TMIP may be performance-based, time-based, conditional based, or a combination of all three. The TMIP shall include:

1. A list of Facilities and associated Elements necessary to maintain the SOL for the transfer paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System;"
2. The scheduled interval for any time-based maintenance activities and/or a description supporting condition or performance-based maintenance activities including a description of the condition based trigger;
3. Transmission Line Maintenance Details:
    a. Patrol/Inspection
    b. Contamination Control
    c. Tower and wood pole structure management
4. Station Maintenance Details:
    a. Inspections
    b. Contamination Control
    c. Equipment Maintenance for the following:
        - Circuit Breakers
        - Power Transformers (including phase-shifting transformers)
        - Regulators
        - Reactive Devices (including, but not limited to, Shunt Capacitors, Series Capacitors, Synchronous Condensers, Shunt Reactors, and Tertiary Reactors)

A. Introduction

1. **Title:** Transmission Maintenance

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

3. **Purpose:** 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.

4. **Applicability**

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

5. **Effective Date:** The first day of the first quarter following applicable regulatory approval.

B. 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 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 on which the maintenance was performed;

1.3 A description of the inspection results or maintenance performed.

C. 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 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. Regional Variances

None.

E. Associated Documents

None

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	TBD	TBD	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure 3M.

Attachment A
Transmission Maintenance and Inspection Plan Content

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

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 Attachment B, Major WECC Transfer Paths in the Bulk Electric System.

2. Maintenance Methodology

A description of the maintenance methodology used for the Facility, transmission line, or station included in the TMIP.

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

- Performance-based
- Time-based
- Condition based

3. Periodicity

A specification of the periodicity that the described maintenance will occur, or under what circumstances it occurs.

4. Transmission Line Maintenance

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

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 (including, but not limited to, phase-shifting transformers)

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

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.

THIS SECTION WILL NOT BE PART OF THE STANDARD BUT IS REQUIRED FOR NERC FILING.

Standards Authorization Request (SAR)

WECC-0120 FAC-501-WECC-2 Transmission Maintenance SAR

Approvals Required

- WECC Ballot Pool Pending
- WECC Board of Directors Pending
- NERC Board of Trustees Pending
- FERC Pending

Applicable Entities

Transmission Owners that maintain the transmission paths in the most current WECC Major Paths table (Attachment B of the standard)

Conforming Changes to Other Standards

None are required.

Proposed Effective Date

The first day of the first quarter following regulatory approval

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) has reviewed NERC Standards, both in effect and those standards that are NERC Board of Trustees approved pending regulatory filing. The DT concluded that the proposed substantive changes pose a minimal burden beyond ordinary and current operations. As such, the short implementation time should impose no undue burden.

Consideration of Early Compliance

The DT foresees no negative impacts to reliability in the event of early compliance.

Retirements

None

A. Introduction

1. **Title:** Transmission Maintenance

2. **Number:** FAC-501-WECC-~~1~~2

3. **Purpose:** To ensure the Transmission Owner of a transmission path identified in ~~the table titled "~~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.

4. **Applicability**

4.1~~-~~ Transmission Owners that maintain the transmission paths in ~~the most current table titled "~~Attachment B.~~**Major WECC Transfer Paths in the Bulk Electric System**" provided at:~~

~~https://www.wecc.biz/Reliability/TableMajorPaths4-28-08.pdf.~~

5. **Effective Date:** ~~July 1, 2011~~The first day of the first quarter following applicable regulatory approval.

B. Requirements and Measures

R1. Each Transmission ~~Owners~~Owner shall have a TMIP ~~detailing their inspection and maintenance requirements~~ that ~~apply to all transmission facilities necessary for System Operating Limits associated with~~includes, at a minimum, each of the ~~transmission paths identified in table titled "Major WECC Transfer Paths in the Bulk Electric System."~~items listed in Attachment A, Transmission Maintenance and Inspection Plan Content. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

~~**R1.1.** Transmission Owners~~**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 ~~review their TMIP and~~ update ~~as required.~~ its TMIP to reflect all changes to its TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

~~Transmission Owners shall~~ **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 ~~the maintenance categories in Attachment 1 FAC-501-WECC-1 when developing their TMIP.~~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]*

~~**R.1.**~~ **M3.** Each Transmission ~~Owners shall implement and follow their TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*~~

~~**A. Measures**~~

~~**M1.** Transmission Owners shall have a documented TMIP per R.1.~~

~~**M1.1** Transmission Owners shall have evidence they have annually reviewed their TMIP and updated as needed.~~

~~**M2.** Transmission Owners shall~~Owner will have evidence that ~~their TMIP addresses the required maintenance details of R.2.~~

~~**M3.** Transmission Owners shall have records that they implemented and followed their TMIP~~it adhered to its TMIP, as required in ~~R.3. The records shall~~Requirement R3. Evidence may include, but is not limited to:

1.1 The ~~person or crew responsible for performing~~date(s) the ~~work~~patrol, inspection or maintenance was performed;

~~**1.**~~ The transmission Facility or ~~inspection,~~

~~**2.** The date(s) the work or inspection was performed,~~

~~**1.1**~~**1.2** ~~The transmission facility~~Element on which the ~~work~~maintenance was performed~~, and~~;

~~**1.2**~~**1.3** A description of the inspection results or maintenance performed.

C. Compliance

1. Compliance Monitoring Process

~~2.1~~ **Compliance ~~Monitoring Responsibility~~ Enforcement Authority:** "Compliance Enforcement Authority

~~**Compliance Monitoring Period**~~" means NERC ~~The Compliance Enforcement Authority may use one~~ or ~~more of~~ the ~~following methods to assess~~Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance~~:~~

~~- Self-certification conducted annually~~

1.1. ~~Spot check audits conducted anytime~~ with ~~30 days notice given to prepare~~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 Periodic audit as scheduled by the Compliance Enforcement Authority~~
~~- Investigations~~
~~- Other methods as provided for in the Compliance Monitoring Enforcement Program~~

~~The Reset Time Frame shall be one year.~~

~~2.2 Data Retention~~

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 ~~for Measure M1 through M3~~of Requirements 1-3 for three calendar years ~~plus the current year~~, or since the last audit, whichever is longer.

~~2.3 Additional Compliance Information~~

~~No additional compliance information.~~

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

~~**2.1. Lower:** There shall be a Lower Level of non-compliance if any of the following conditions exist:~~

~~The TMIP does not include associated~~

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	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	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.

		required in R3.	required in R3.	

D. Regional Variances

None.

E. Associated Documents

None

~~**2.1.1 Facilities** for one of the Paths identified in Attachment 1 FAC-501-WECC-1 as required by R.1 but Transmission Owners are performing maintenance and inspection for the missing Facilities.~~

~~**2.1.2** Transmission Owners did not review their TMIP annually as required by R.1.1.~~

~~**2.1.3** The TMIP does not include one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.~~

~~**2.1.4** Transmission Owners do not have maintenance and inspection records as required by R.3 but have evidence that they are implementing and following their TMIP.~~

~~**2.2. Moderate:** There shall be a Moderate Level of non-compliance if any of the following conditions exist:~~

~~**2.2.1** The TMIP does not include associated Facilities for two of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.~~

~~**2.2.2** The TMIP does not include two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.~~

2.2.3 Transmission Owners are not performing maintenance and inspection for one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.3. **High:** There shall be a High Level of non-compliance if any of the following condition exists:

2.3.1 The TMIP does not include associated Facilities for three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.3.2 The TMIP does not include three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.3.3 Transmission Owners are not performing maintenance and inspection for two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.4. **Severe:** There shall be a Severe Level of non-compliance if any of the following condition exists:

2.4.1 The TMIP does not include associated Facilities for more than three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.4.2 The TMIP does not exist or does not include more than three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.4.3 Transmission Owners are not performing maintenance and inspection for more than two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

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	

~~Attachment 1 FAC 501 WECC-1~~ 2	TBD	TBD	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure 3M.

Attachment A

Transmission ~~Line and Station~~ Maintenance ~~Details~~and Inspection Plan Content

~~The maintenance practices in the TMIP may be performance-based, time-based, conditional-based, or a combination of all three.~~ The TMIP shall include~~:~~, at a minimum, each of the following details:

1. Facilities

A list of Facilities ~~and associated~~ (e.g., transmission lines, transformers, etc.) and Elements ~~necessary to maintain the SOL for the transfer paths~~ (e.g., circuit breaker, bus section, etc.) that comprise each transmission path(s) identified in ~~the most current Table titled "~~Attachment B, Major WECC Transfer Paths in the Bulk Electric System~~;"~~.

~~1. The scheduled interval for any time-based maintenance activities and/or a description supporting condition or performance-based maintenance activities including a description of the condition-based trigger;~~

2. Maintenance Methodology

A description of the maintenance methodology used for the Facility, transmission line, or station included in the TMIP.

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

- Performance-based
- Time-based
- Condition based

3. Periodicity

A specification of the periodicity that the described maintenance will occur, or under what circumstances it occurs.

4. Transmission Line Maintenance ~~Details:~~

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

a. Inspection requirements

b. Patrol~~/Inspection~~ requirements

~~a. Contamination Control~~

c. Tower and wood pole structure management

5. Station Maintenance~~Details:~~

~~b. Inspections~~

~~c. Contamination Control~~

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

a. Inspection requirements

a.b. Equipment Maintenancemaintenance for each of the following:

1. Circuit Breakersbreakers

- 2. Power Transformers (including phase-shifting transformers)
- Regulators

Reactive Devices (including, but not limited to, phase-shifting transformers)

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

Attachment B

Major WECC Transfer Paths in the Bulk Electric System~~Shunt Capacitors, Series Capacitors, Synchronous Condensers, Shunt Reactors, and Tertiary Reactors)~~

	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.

WECC Standard FAC-501-WECC-2 — Transmission Maintenance

THIS SECTION WILL NOT BE PART OF THE STANDARD BUT IS REQUIRED FOR NERC FILING.

Standards Authorization Request (SAR)

WECC-0120 FAC-501-WECC-2 Transmission Maintenance SAR

Approvals Required

- WECC Ballot Pool Pending
- WECC Board of Directors Pending
- NERC Board of Trustees Pending
- FERC Pending

Applicable Entities

Transmission Owners that maintain the transmission paths in the most current WECC Major Paths table (Attachment B of the standard)

Conforming Changes to Other Standards

None are required.

Proposed Effective Date

The first day of the first quarter following regulatory approval

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) has reviewed NERC Standards, both in effect and those standards that are NERC Board of Trustees approved pending regulatory filing. The DT concluded that the proposed substantive changes pose a minimal burden beyond ordinary and current operations. As such, the short implementation time should impose no undue burden.

Consideration of Early Compliance

The DT foresees no negative impacts to reliability in the event of early compliance.

Retirements

None

Project Roadmap

Actions	Date
1. SAR Filed	June 10, 2016
2. WSC approved the SAR	June 15, 2016
3. WSC assigned the drafting team	September 6, 2016
4. First DT meeting	October 12, 2016
5. Posting 1 Comments Open	October 14, 2016
6. Posting 1 Comments Closed (45-day)	November 29, 2016
7. DT Meets to answer Comments	December 13, 2016
8. DT Meets to answer Comments	January 26, 2017
9. Posting 2 Comments Open	January 30, 2017
10. Posting 2 Comments Closed	March 2, 2017
11. DT Meets to answer Comments	March 14, 2017
12. Posting 3 Comments Open	March 17, 2017
13. Posting 3 Comments Closed	April 17, 2017
14. DT Meets to answer Comments	April 20, 2017
15. DT Meets to answer Comments	April 27, 2017
16. Posting 4 Comments Open	May 2, 2017
17. Posting 4 Comments Closed	June 2, 2017
18. DT Meets to answer Comments	June 6, 2017
19. Posting 5 Comments Open	June 14, 2017
20. Posting 5 Comments Closed	July 14, 2017
21. DT Meets to answer Comments	July 25, 2017
22. WSC approves for Ballot	July 31, 2017
23. Notice of Ballot Pool Forming	August 23, 2017
24. Ballot Pool Open	August 30, 2017
25. Notice of Standards Briefing	September 1, 2017
26. Ballot Pool Closed	September 14, 2017
27. Standards Briefing	September 19, 2017
28. Ballot Open	September 21, 2017
29. Ballot Closed	October 11, 2017

30. NERC Posting for 45 days Opens	November 3, 2017
31. WSC approves forwarding document to the WECC Board of Directors	November 15, 2017
32. WECC Board of Directors Approved	December 6, 2017
33. NERC Posting for 45 days Closes	December 18, 2017

Anticipated Actions	Proposed Date
34. NERC Board of Trustees approval	Pending
35. FERC approval	Pending

Attachment F
Implementation Plan
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Standard Authorization Request

WECC-0120 SAR is located here. In this filing, it is provided as Attachment A.

Approvals Required

- WECC Board of Directors December 6, 2017
- NERC Board of Trustees February 8, 2018
- FERC Pending

Applicable Entities

4. Applicability

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

Conforming Changes to Other Standards

There are no conforming changes to other standards required to implement the proposed document.

Proposed Effective Date

The Effective Date is proposed to be the first day of the first quarter following applicable regulatory approval.

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) reviewed NERC Standards, both in effect and those standards that are approved by the NERC Board of Trustees, but pending regulatory disposition. The DT concluded that the proposed substantive changes pose a minimal burden beyond current reasonable and customary operations. As such, the implementation time should impose no undue burden.

Consideration of Early Compliance

The drafting team foresees no concerns with early compliance.

Required Retirements

The currently approved standard (FAC-501-WECC-1) should be retired immediately prior to the Effective Date of this version, FAC-501-WECC-2. No other retirements or modifications are needed.

Attachment G
Technical Justification
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

The Federal Energy Regulatory Commission (FERC) found Version 1 of this standard to be technically sound in FERC Order 751.[1]

Because the proposed changes either fill in a logical void or clarify the existing document, no additional technical justification is offered.

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance project is the result of a five-year review required under the WECC Reliability Standards Development Procedures (Procedures), Maintenance of RRSs and CRTs. The Standard Authorization Request identified no specific issues nor recommended any specific changes.

This project:

1. adds a requirement to *follow* the Transmission Maintenance Inspection Plan (TMIP) as opposed to simply *having* a TMIP,
2. updates Attachment A TMIP Content, reducing ambiguity in the attachment,
3. eliminates incorporation by reference of the "Major WECC Transfer Paths in the Bulk Electric System" table in favor of full inclusion as Attachment B, and
4. updates the content and format of the compliance sections to incorporate NERC styles, format, and standardized language.

[1] Order 751, 135 FERC ¶ 61,061, United States of America, Federal Energy Regulatory Commission, 18 CFR Part 40, Docket No. RM09-9-000; Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive: issued April 21, 2011.

Attachment H
VRF and VSL Justification

WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Table of Compliance Elements

FAC-501-WECC-2, Transmission Maintenance, Section C – Compliance has been updated to reflect the current language used in new NERC Standards.

Violation Risk Factors (VRF)[1]

No changes were made to the Violation Risk Factors.

Violation Severity Levels (VSL)[2]

The drafting team used NERC's Violation Severity Level Guidelines (VSL) to review and complete an up-to-date VSL table where none previously existed. The drafting team used the Version 1 VSL narrative to populate the Version 2 VSL table, interpolating where necessary to achieve the required compliance tiers, and correcting the narrative to ensure the VSL had an actual relationship to the task impacted (eliminating apples-to-oranges narrative). See Response to Comments, Posting 4 for further detail.

[1] NERC Criteria for Violation Risk Factors
[2] NERC Violation Severity Level Guidelines

Regional Reliability Standard Submittal Request
Attachment I

Region:	**Western Electricity Coordinating Council**
Regional Standard Number:	**FAC-501-WECC-2**
Regional Standard Title:	**Transmission Maintenance**
Date Submitted:	**February 21, 2018**
Regional Contact Name:	**Steven Rueckert**
Regional Contact Title:	**Director of Standards**
Regional Contact Telephone Number:	**(801) 883-6878**

Request (check all that apply):

- ☐ Retirement of WECC Regional Variance
- ☐ Interpret an Existing Standard
- ☐ Approval of a new standard
- ☒ Revision of an existing standard
- ☐ Withdrawal of an existing standard
- ☐ Urgent Action

Has this action been approved by your Board of Directors:

- ☒ Yes
- ☐ No

(If no please indicate date standard action is expected along with the current status (e.g., third comment period with anticipated board approval on mm/dd/year)):

December 6, 2017, Board of Directors / Board Resolution

Resolved, that the Western Electricity Coordinating Council Board of Directors (Board), acting upon the recommendation of the WECC Standards Committee at the meeting of the Board on December 6, 2017, hereby approves the following Regional Reliability Standards and Regional Criteria as presented to the Board on December 6, 2017.

- *BAL-004-WECC-3, Automatic Time Error Correction*

• *FAC-501-WECC-2, Transmission Maintenance* • *INT-007-WECC-CRT-3, Processing of Emergency Requests for Interchange* • *INT-016-WECC-CRT-3, Data Submittal* • *PRC-001-WECC-CRT-2, Governor Droop Setting*	
[Note: The purpose of the remaining questions is to provide NERC with the information needed to file the regional standard(s) with FERC. The information provided may to a large degree be used verbatim. It is extremely important for the entity submitting this form to provide sufficient detail that clearly delineates the scope and justification of the request.]	
Concise statement of the basis and purpose (scope) of request:	The WECC-0120 FAC-501-WECC-2, Transmission Maintenance project is the result of a five-year review required under the WECC Reliability Standards Development Procedures, addressing the maintenance of Regional Reliability Standards. The Standard Authorization Request identified no specific issues or changes to be made. Once reviewed, the drafting team made the following changes to bring the document up to current NERC drafting standards and formats. This project: 1) adds a requirement to *follow* the Transmission Maintenance Inspection Plan (TMIP) as opposed to simply *having* a TMIP, 2) updates Attachment A TMIP Content, reducing ambiguity in the attachment, 3) eliminates incorporation by reference of the "Major WECC Transfer Paths in the Bulk Electric System" table in favor of full inclusion as Attachment B, and 4) updates the content and format of the compliance sections to incorporate NERC styles, format, and standardized language.
Concise statement of the justification of the request:	See above.

Attachment J
Order 672 Criteria

WECC-0120 FAC-501-WECC-2
Transmission Maintenance

NERC is responsible for the activities governing "the development, approval, revision, reaffirmation, and withdrawal of Reliability Standards, Interpretations, Violations Risk Factors (VRF), Violation Severity Levels (VSL), definitions, Variances, and reference documents developed to support standards for the Reliable Operation and planning of the North American Bulk Power Systems".[1]

In FERC Order No. 672,[2] the Federal Energy Regulatory Commission (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."[3] The following discussion identifies these factors, and explains how the proposed Regional Reliability Standard (RRS) meets or exceeds these criteria.[4]

1. 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."[5]

[1] NERC Rules of Procedure, Standard Processes Manual, Version 3, Section 1.0, Introduction, Sub-section 1.2 Scope. June 26, 2013. For purposes of this filing, the term Reliability Standard is synonymous with Regional Reliability Standard (RRS).

[2] FERC Order 672, P 320-338.

[3] FERC Order 672, P320.

[4] NERC Rules of Procedure, Definitions Used in Rules of Procedure, Appendix 2 to the Rules of Procedure, page 19, October 31, 2016. See also NERC Rules of Procedure, Section 300 Reliability Standards development, Sub-section 312.1 Regional Reliability Standards, indicating that Regional Reliability Standards "shall in all cases be submitted to NERC for adoption and, if adopted, made part of the NERC Reliability Standards and shall be enforceable in accordance with the delegation agreement between NERC and the Regional Entity or other instrument granting authority over enforcement to the Regional Entity."

[5] 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 Reliability Standard serves a purpose in support of reliability of the North American Bulk Power Systems. Each Reliability Standard shall also be consistent with all of the reliability principles, thereby ensuring that no standard undermines reliability through an unintended consequence."[6]

Of NERC's eight NERC Reliability Principles, FAC-501-WECC-2 meets:

Reliability Principle 3

"Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably."

2. 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 [Electricity 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.

Standard Development

This project was developed in accordance with the WECC Reliability Standards Development Procedures (Procedures), as approved by NERC/FERC, in effect at each point in the process. Among other things, the Procedures require that drafting be conducted by a team of Subject Matter Experts (SME). Biographies of those SMEs are provided with this filing.

These processes also include repeated public iterative comment/response cycles whereby comments are received from the industry and responses to those comments are provided by the drafting team.

Technically Sound

[6] NERC Rules of Procedure, Standard Processes Manual, Version 3, Section 2.0, Elements of a Reliability Standard, Sub-section 2.2: Reliability Principles. NERC Reliability Principles are currently located here.

The Federal Energy Regulatory Commission (FERC) found Version 1 of this standard to be technically sound in FERC Order 751.[7]

Because the proposed changes either fill in a logical void or clarify the existing document, no additional technical justification is offered.

This project: 1) adds a requirement to follow the Transmission Maintenance Inspection Plan (TMIP) as opposed to simply having a TMIP, 2) updates Attachment A TMIP Content, reducing ambiguity in the attachment, 3) eliminates incorporation by reference of the "Major WECC Transfer Paths in the Bulk Electric System" table in favor of full inclusion as Attachment B, and 4) updates the content and format of the compliance sections to incorporate NERC styles, format, and standardized language.

3. 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.

The Applicability section of the proposed Reliability Standard is as follows:

Applicable Entities

4. Applicability

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

4. 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.

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance project is the result of a five-year review required under the Procedures. The Standard Authorization Request identified no specific issues nor did it suggest that any specific changes be made.

[7] Order 751, 135 FERC ¶ 61,061, United States of America, Federal Energy Regulatory Commission, 18 CFR Part 40, Docket No. RM09-9-000; Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive, issued April 21, 2011

The project clearly states the tasks each applicable entity must complete, how performance of the tasks will be measured, and compliance elements indicating how lack of performance will be addressed.

Per the Procedures, the project was posted for comment five times.

In Posting 2, the drafting team opted not to change language of Requirement R1 because the proposed changes added no additional clarity but would have the effect of expanding the Applicability section of the standard without providing justification for the change.

In Posting 3, the drafting team addressed ambiguities by: 1) correcting the plural tense of some phrases, 2) eliminating an and/or statement in Attachment A, and 3) adopting NERC's formatting and boilerplate language for compliance sections.

In Posting 4, the drafting team merged a continuum of language from various requirements to eliminate any single requirement containing multiple required tasks.

In Posting 5, the language of Measure M3 was streamlined to eliminate ambiguity.

For more information on the specifics of these changes please review Attachments R1-R5 of this filing.

5. 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.

Table of Compliance Elements

FAC-501-WECC-2, Transmission Maintenance, Section C – Compliance has been updated to reflect the current language used in new NERC Standards.

Violation Risk Factors (VRF)[8]

No changes were made to the Violation Risk Factors.

Violation Severity Levels (VSL)[9]

The drafting team used NERC's Violation Severity Level Guidelines (VSL) to review and complete an up-to-date VSL table where none previously existed. The drafting team used the Version 1 VSL narrative to populate the Version 2 VSL table, interpolating where necessary to achieve the required compliance

[8] NERC Criteria for Violation Risk Factors
[9] NERC Violation Severity Level Guidelines

tiers, and correcting the narrative to ensure the VSL had an actual relationship to the task impacted (eliminating apples-to-oranges narrative). See Response to Comments, Posting 4 for further detail (Attachment R4).

6. 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.

NERC's most recent Compliance section narrative was included.

Each Requirement has a corresponding Measure.

Each Requirement has been assigned a Violation Risk Factor.

Each Requirement has been assigned a tiered Violation Severity Level.[10]

7. 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 five postings, the cost issue was neither raised nor addressed.

The reliability goal of the project is to ensure that Transmission Owners maintaining specified paths have a TMIP and use that plan. The project calls for a high-level TMIP without precluding additional detail.

8. Proposed Reliability Standards cannot be "lowest common denominator".

"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

[10] Where required performance cannot be broken down into compliance tiers, those requirements require assignment of a "severe" VSL. NERC Violation Severity Level Guidelines, page 2.

reliability. Although the Commission will give due weight to the technical expertise of the ERO, [the Commission] will not hesitate to remand a proposed Reliability Standard if…convinced it is not adequate to protect reliability." Order No. 672 at P 329.

Version 2 largely maintains the tasks and burdens included in Version 1; albeit, with greater clarity and adoption of updated drafting conventions.

9. 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 five postings at WECC the industry raised no cost concerns.

10. 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."[11]

In accordance with FERC Orders 751, paragraph 11, Version One was found to be applicable solely within the Western Interconnection, and more stringent than NERC Standards.[12] Version Two does not change that finding.

11. 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 changes made in Version Two.

In the five postings at WECC, the industry raised no concerns regarding competition or restrictive use of the grid.

12. 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.

Per the Procedures, an implementation plan was posted for comment during at least one of the five postings for comment. See Attachment F – Implementation Plan.

Conforming Changes to Other Standards

There are no conforming changes to other standards required to implement the proposed document.

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[11] NERC Rules of Procedure, Section 312, Regional Reliability Standards.

[12] FERC Order 751, 135 FERC ¶ 61,061, United States of America, Federal Energy Regulatory Commission, 18 CFR Part 40, Docket No. RM09-9-000, Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive, Issued April 21, 2011

Proposed Effective Date

The Effective Date is proposed to be the first day of the first quarter following applicable regulatory approval.

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) reviewed NERC Standards, both in effect and those standards that have been approved by the NERC Board of Trustees but pending final regulatory disposition. The DT concluded that the proposed substantive changes pose a minimal burden beyond current reasonable and customary operations. As such, the implementation time should impose no undue burden.

Consideration of Early Compliance

The drafting team foresees no concerns with early compliance.

Required Retirements

The currently approved standard, FAC-501-WECC-1, should be retired immediately prior to the Effective Date of this version, FAC-501-WECC-2. No other retirements or modifications are needed.

13. 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.

The WECC Procedures, as approved by WECC/NERC/FERC were used during each development step of this project.

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

All drafting team meetings were announced via the WECC Standards Email List for the prescribed period, prior to each meeting. Notice of each meeting was provided to NERC and posted on the WECC Calendar along with meeting minutes.

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 prior to balloting affording the industry an additional opportunity to have any questions addressed.

The project was also posted for comment at NERC in accordance with NERC's Rules of Procedures.

Comments and responses to comments are found in their original format on the WECC-0120 Project Page on the Submit and Review project accordion.

14. Proposed Reliability Standards must balance with other vital public interests.

"Finally, [the Commission understands] 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 concerns were raised or noted.

15. Proposed Reliability Standards must consider any other relevant factors.

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

WECC is not aware of any other general factors in need of consideration.

Attachment K
Drafting Team Roster

WECC-0120 FAC-501-WECC-2
Transmission Maintenance
Five-Year Review

Below please find a biographical snapshot for the members of the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Drafting Team.

Jeff Watkins NV Energy Chair	Mr. Watkins has four years working as a Substation Field Engineer assisting with commissioning of new substations, troubleshooting misoperations and assisting the crews with maintenance tasks including analyzing maintenance results including DGA, breaker motion analysis and power factor testing. Additionally, Mr. Watkins has seven years working as a System Protection Engineer creating settings for new installations and trouble-shooting misoperations. He served as a subject-matter expert for PRC-005-X, and developed/implemented a new maintenance program for protection systems to comply with PRC-005-2. Mr. Watkins also has one year of experience working in the Compliance Department as a Compliance Engineer. A majority of his time is spent working with the various departments interpreting standards and supplying technical help when needed. He also performs technical assessments on certain standards (such as PRC-023 and TPL-001-4) to help ensure that the standards are correct from a technical standpoint.
Cristi Sawtell	Ms. Sawtell began her career in the electrical industry at Bonneville Power as a Transmission Lineman performing maintenance and construction activities. In 2010, she joined the Work Planning and Evaluation Group overseeing yearly maintenance and construction work plans for the Transmission Field Organization. For the last two and a half years Ms. Sawtell has been working as the Transmission Field Compliance Specialist, focused on the maintenance organizations compliance program related to PRC-005 and FAC-501 standards.
Diana Torres Imperial Irrigation District	Ms. Torres has worked in the public utility industry for 29 years, with the last 10 years in the reliability compliance office performing compliance assessments of Operations and Planning standards, and developing and training internal compliance programs (which included background of NERC/WECC compliance, WECC CMEP, WECC audit training and internal controls). Ms. Torres coordinated and helped lead four WECC audits working directly with audit leads. For the last four years, Ms. Torres has worked with subject-matter experts to conduct compliance assessments of the FAC-501 Standard, Transmission Maintenance and Inspection Program evidence and procedures. She regularly attends WECC outreach events, such as open webinars, compliance workshops and human performance conferences.

Kathee Downey PacifiCorp	Ms. Downey has been involved in WECC committees for several years, on drafting teams, and leading drafting teams. Specifically, those relating to Interchange Scheduling and Accounting Subcommittee (ISAS) and Federal Energy Regulatory Commission (FERC) Order 764. Currently she is serving as PacifiCorp's representative on the Operating Committee and ISAS.

Attachment L
Ballot Pool Members
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Ballot Pool

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Arizona Public Service Company	Distribution	Yes		Michelle Amarantos
WECC-0120	Arizona Public Service Company	Marketers and Brokers	Yes		Linda Henrickson
WECC-0120	Arizona Public Service Company	Generation	Yes		Nicholas Kirby
WECC-0120	Arizona Public Service Company	System Coordination	Yes		Vivian Vo
WECC-0120	Arizona Public Service Company	Transmission	Yes		Gary Nolan
WECC-0120	Avista Corporation	Generation	Yes		Glen Farmer
WECC-0120	Avista Corporation	Marketers and Brokers	Yes		Scott Kinney
WECC-0120	Balancing Authority of Northern California	System Coordination	Abstain	Position is neutral - The changes to the "-2" Standard would be somewhat insignificant to our TMIP or current inspection and maintenance practices.	Joe Tarantino
WECC-0120	Bonneville Power Administration	Distribution	Yes		Rebecca Berdahl
WECC-0120	Bonneville Power Administration	Marketers and Brokers	Yes		Andrew Meyers

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Bonneville Power Administration	Transmission	Yes		Kammy Rogers-Holliday
WECC-0120	Bonneville Power Administration	System Coordination	Yes		Francis Halpin
WECC-0120	British Columbia Hydro & Power Authority	System Coordination	Yes	BC Hydro requests the drafting team provide clarification on "results" and what the intent is.	Patricia Robertson
WECC-0120	British Columbia Hydro & Power Authority	Transmission	Yes	BC Hydro requests the drafting team provide clarification on "results" and what the intent is.	Patricia Robertson
WECC-0120	British Columbia Hydro & Power Authority	Distribution			Hootan Jarollahi
WECC-0120	British Columbia Hydro & Power Authority	Generation			Helen Hamilton Harding
WECC-0120	California Independent System Operator	System Coordination	Yes		Richard Vine
WECC-0120	California Independent System Operator	Transmission	Yes		Richard Vine
WECC-0120	Gridforce Energy Management, LLC	System Coordination			David Blackshear
WECC-0120	Idaho Power Company	System Coordination	Yes		Laura Nelson
WECC-0120	Idaho Power Company	Generation	Yes		Laura Nelson

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Idaho Power Company	Distribution	Yes		Laura Nelson
WECC-0120	Idaho Power Company	Transmission	Yes		Laura Nelson
WECC-0120	Los Angeles Department of Water and Power	System Coordination	Yes		Pjoy Chua
WECC-0120	Los Angeles Department of Water and Power	Generation	Yes		Pjoy Chua
WECC-0120	Los Angeles Department of Water and Power	Distribution	Yes		Pjoy Chua
WECC-0120	Los Angeles Department of Water and Power	Transmission	Yes		Pjoy Chua
WECC-0120	Los Angeles Department of Water and Power	Marketers and Brokers	Yes		Pjoy Chua
WECC-0120	Northern California Power Agency	Generation	Abstain	None	Marty Hostler
WECC-0120	Northern California Power Agency	Generation	Abstain	None	Marty Hostler
WECC-0120	Northern California Power Agency	Marketers and Brokers	Abstain	Standard applies to TO only and NCPA is registered as a GO/GOP.	Dennis Sismaet
WECC-0120	NV Energy	Transmission	Yes		Kevin Salsbury
WECC-0120	NV Energy	Generation	Yes		Kevin Salsbury
WECC-0120	NV Energy	System Coordination	Yes		Kevin Salsbury

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	NV Energy	Distribution	Yes		Kevin Salsbury
WECC-0120	Platte River Power Authority	Marketers and Brokers	Abstain	PRPA does not operator or maintain equipment on Paths included in Attachment A	Sabrina Martz
WECC-0120	Platte River Power Authority	Generation	Abstain	PRPA does not operate or maintain equipment on Paths included in Attachment A	Tyson Archie
WECC-0120	Platte River Power Authority	Transmission	Abstain	PRPA does not operate or maintain equipment on Paths included in Attachment A	Jeff Landis
WECC-0120	Platte River Power Authority	System Coordination			Matthew Thompson
WECC-0120	Powerex, Inc.	Marketers and Brokers			Gordon Dobson-Mack
WECC-0120	Public Service Company of Colorado (Xcel Energy)	System Coordination	Yes		Robert Staton
WECC-0120	Public Service Company of Colorado (Xcel Energy)	Generation	Yes		Robert Staton
WECC-0120	Public Service Company of Colorado (Xcel Energy)	Transmission	Yes		Robert Staton
WECC-0120	Public Utility District No. 1 of Snohomish County	Generation	Yes		Franklin Lu
WECC-0120	Public Utility District No. 1 of Snohomish County	Distribution	Yes		Franklin Lu

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Public Utility District No. 1 of Snohomish County	Transmission	Yes		Franklin Lu
WECC-0120	Public Utility District No. 1 of Snohomish County	Marketers and Brokers	Yes		Franklin Lu
WECC-0120	Public Utility District No. 2 of Grant County	System Coordination	Yes		LeRoy Patterson
WECC-0120	Public Utility District No. 2 of Grant County	Generation	Yes		LeRoy Patterson
WECC-0120	Public Utility District No. 2 of Grant County	Distribution	Yes		LeRoy Patterson
WECC-0120	Public Utility District No. 2 of Grant County	Transmission	Yes		LeRoy Patterson
WECC-0120	Public Utility District No. 2 of Grant County	Marketers and Brokers	Yes		LeRoy Patterson
WECC-0120	Puget Sound Energy, Inc.	Marketers and Brokers			Lynda Kupfer
WECC-0120	Puget Sound Energy, Inc.	System Coordination			Theresa Rakowsky
WECC-0120	Puget Sound Energy, Inc.	Distribution			Theresa Rakowsky
WECC-0120	Puget Sound Energy, Inc.	Transmission			Theresa Rakowsky
WECC-0120	Puget Sound Energy, Inc.	Generation			Eleanor Ewry

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Sacramento Municipal Utility District	System Coordination	Abstain	Position is neutral - The changes to the "-2" Standard would be somewhat insignificant to our TMIP or current inspection and maintenance practices.	Joe Tarantino
WECC-0120	Sacramento Municipal Utility District	Generation	Abstain	See Above Comment	Joe Tarantino
WECC-0120	Sacramento Municipal Utility District	Distribution	Abstain	See Above Comment	Joe Tarantino
WECC-0120	Sacramento Municipal Utility District	Transmission	Abstain	See Above Comment	Joe Tarantino
WECC-0120	Sacramento Municipal Utility District	Marketers and Brokers	Abstain	See Above Comment.	Joe Tarantino
WECC-0120	Salt River Project	Marketers and Brokers			Bobby Olsen
WECC-0120	Salt River Project	Generation	Yes		Kevin Nielsen
WECC-0120	Salt River Project	Distribution	Yes		Rudy Navarro
WECC-0120	San Diego Gas & Electric	System Coordination	Yes		Bridget Silvia
WECC-0120	San Diego Gas & Electric	Generation	Yes		Jerome Gobby
WECC-0120	San Diego Gas & Electric	Distribution	Yes		ANNIE RUIZ
WECC-0120	San Diego Gas & Electric	Transmission	Yes		Martine Blair
WECC-0120	Seattle City Light	Transmission	Yes		Hao Li

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Seattle City Light	Marketers and Brokers			Charles Freeman
WECC-0120	Southern California Edison Company	System Coordination	Yes		Romel Aquino
WECC-0120	Southern California Edison Company	Distribution	Yes		Steven Mavis
WECC-0120	Southern California Edison Company	Transmission	Yes		Steven Mavis
WECC-0120	Southern California Edison Company	Generation	Yes		Thomas Rafferty
WECC-0120	Tacoma Power	System Coordination	Abstain	Not applicable to our company	Twila Hofer
WECC-0120	Tacoma Power	Generation	Abstain	Standard not applicable to company	Karen Hedlund
WECC-0120	Tacoma Power	Transmission	Abstain	Standard not applicable to company	Joseph Wilson
WECC-0120	Tacoma Power	Distribution	Abstain	Standard not applicable to entity.	Chad Edinger
WECC-0120	Tacoma Power	Marketers and Brokers			Todd Lloyd
WECC-0120	Tri-State Generation & Transmission - Reliability	System Coordination	Yes		Tracy Sliman
WECC-0120	Tri-State Generation & Transmission - Reliability	Transmission	Yes		Tracy Sliman

Title	Company	Sector	Vote	Comments	Created By
WECC-0120	Tri-State Generation & Transmission - Reliability	Distribution			Janelle Gill
WECC-0120	Tri-State Generation & Transmission - Reliability	Generation			Mark Stein
WECC-0120	Western Area Power Administration	System Coordination	Yes		Patrick Harwood
WECC-0120	Western Area Power Administration	Transmission	Yes		Patrick Harwood
WECC-0120	Western Area Power Administration - Rocky Mountain Region	Transmission			James Hirning

Attachment M
Final Ballot Results
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Ballot Name: **FAC-501-WECC-2 Transmission Maintenance**

This project: 1) adds a requirement to *follow* the Transmission Maintenance Inspection Plan (TMIP) as opposed to simply *having* a TMIP, 2) updates Attachment A TMIP Content, reducing ambiguity in the attachment, 3) eliminates incorporation by reference of the "Major WECC Transfer Paths in the Bulk Electric System" table in favor of full inclusion as Attachment B, and 4) updates the content and format of the compliance sections to incorporate NERC styles, format, and standardized language.

Ballot Pool Open: 08/30/2017
Ballot Pool Closed: 09/14/2017
Ballot Opened: 09/21/2017
Ballot Closed: 10/11/2017
Total Ballot Pool: 87
Total Votes: 71
Quorum: 81.6 %
Weighted Votes: 100.0 %
Ballot Results: This project was approved by the WECC-0120 Ballot Pool.

Voting Sectors	Total in Ballot Pool	Votes Non-Abstain	Sector Weight	Yes Votes	Weighted Segment Vote	No Votes	Abstain	Total Votes for Quorum	Didn't Vote
Distribution	15	10	1	10	100.0%	0	2	12	3
End User Representative	0	0	0	0	0.0%	0	0	0	0
Generation	19	11	1	11	100.0%	0	5	16	3
Marketers and Brokers	14	6	0.6	6	60.0%	0	3	9	5
Other Non-Registered	0	0	0	0	0.0%	0	0	0	0
State and Provincial Representatives	0	0	0	0	0.0%	0	0	0	0
System Coordination	19	13	1	13	100.0%	0	3	16	3
Transmission	20	15	1	15	100.0%	0	3	18	2

Following a ballot period from September 21, through October 11, 2017, the WECC Ballot Pool approved WECC-0120 FAC-501-WECC-2, Transmission Maintenance.

Development Phase Comments – Minority View

Comment response forms and comments received during the development phase of this project are included as Attachments R1 through R5.

WECC has posted this project for comment on five separate occasions. The drafting team reviewed and considered all comments received. The following minority opinions were expressed by the industry during the development phase, but were not accepted by the drafting team.

Posting 1

The 200-kV threshold proposed was not adopted noting that the Path Operator Task Force specifically included six identified criteria for its approved methodology; however, there was no mention of a 200-kV threshold.

Out of an abundance of caution, during Posting 2 the drafting team agreed to ask the industry for additional guidance on the proposed threshold.

Posting 2

The drafting team agreed with commenters that a 200-kV applicability threshold created an easily manageable bright line for compliance. However, the suggested change to the applicability threshold was declined because the alternatives examined would arbitrarily include additional facilities to which the more stringent requirements need not apply.

Posting 3

The drafting team declined the invitation to alter the content of the Major WECC Transfer Paths in the Bulk Electric System (Table). To do so required a much broader skillset than available on the drafting team.

The drafting team instructed commenters that if changes to the table were needed, a separate Standard Authorization Request should be filed for that specific purpose. To produce a work product

that would comport with FERC's instructions, it is likely that the WECC Path Rating Catalogue would have to be revamped using the WECC Reliability Standards Development Procedures.[1]

Any changes to the table that might result from such a project would require changing the impacted information in each standard in which the table resides.

Posting 4

The drafting team considered each of the proposed non-substantive changes to Requirements R2, R3, Attachment A – Title, Attachment A – Body, and the insertion of the more granular phrase "Maintenance Categories." Although the drafting team did not adopt these specific changes, other changes were incorporated targeting greater clarity. (See Attachment R4, Response to Comment for Posting 4.)

Posting 5

There were no minority concerns.

[1] Please refer to the WECC-0120 Standard Authorization Request for background on FERC's instructions regarding any changes to the Table.

Attachment O
WECC Standards Committee Roster

WECC-0120 FAC-501-WECC-2
Transmission Maintenance

The following individuals were assigned to the WECC Standards Committee as of September 1, 2017.

Sector	Name	Organization
1. Transmission	Dana Cabbell	Southern California Edison Company
2. Generation	Gary Nolan	Arizona Public Service Company
3. Marketers and Brokers	Tanner Brier	Bonneville Power Administration
4. Distribution	Warren Rust	Colorado Springs Utilities
5. System Coordination	Joseph Tarantino	Sacramento Muni. Utility District
6. End User Representative	Caitlin Liotiris	Utah Assoc. of Energy Users
7. State and Provincial	Vacant	Vacant
8. Other Non-Registered Entities	Crystal Musselman	Proven Compliance Solutions
9. Board of Directors	Joe McArthur	Non-Affiliate Director/WSC Chair

Attachment P1

FAC-501-WECC-2
Transmission Maintenance
Response to Comments / Posting 1
October 14 through November 29, 2016

Posting 1

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 45-day public comment period from October 14, 2016 through November 29, 2016.

On October 13, 2016, WECC distributed notice of the posting via the Standards Email List.

The DT asked stakeholders to provide feedback on the proposed document through a standardized electronic template. WECC received comments from two entities as shown in the following table.

Location of Comments

All comments received on the document can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion.

Changes in Response to Comment

The drafting team considered the suggested language and agreed to post the following change in Posting 2:

"R1. Each Transmission Owner shall have a TMIP detailing its inspection and maintenance requirements that apply to all transmission facilities *comprising each transmission path identified in the Table.*" (emphasis added)

To conform the language to drafting conventions, in the Purpose statement the following phrase would be added to streamline references that followed:

"Major WECC Transfer Paths in the Bulk Electric System" *(Table)."* (emphasis added)

Minority View

The 200-kV threshold proposed was not adopted noting that the Path Operator Task Force specifically included six identified criteria for its approved methodology; however, there was no mention of a 200-kV threshold.

Out of an abundance of caution, for Posting 2 the drafting team agreed to ask the industry for additional guidance on the proposed threshold.

Effective Date and Implementation Plan

The Reliability Standards Development Procedures (Procedures) require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval.

Action Plan

The project will be posted for an iterative 30-day posting period to include the proposed changes and the following additional questions:

1) Commenters have suggested that Requirement R1 should contain a threshold statement of 200 kV and above. Do you agree that Requirement R1 should state that it specifically applies at 200 kV and above? Yes/No
2) Please explain why you made the choice selected in Question 1.
3) Are there sufficient existing NERC Standards to cover the reliability-related substance of FAC-501-WECC-1 in the event the entire document was retired? Yes/no.
4) If you answered yes to the above question, please list the specific NERC Standards and Requirements that render FAC-501-WECC-1 redundant and practical for retirement.
5) The drafting team welcomes comments on all aspects of the document.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Commenter		Organization
1	Kristie Cocco	Arizona Public Service Company
2	Justin Mosiman	Bonneville Power Administration (SalientCRGT)

Comment Report Form for WECC-0120

Index to Questions, Comments, and Responses

Question

The Drafting Team welcomes comments on all aspects of the document.

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			**Response**
Arizona Public Service Company			AZPS approves the changes as proposed.
The drafting team appreciates AZPS's continued involvement in the standards development process.			
Bonneville Power Administration SalientCRGT			NERC, in their "Operating Limit Definition and Exceedance Clarification" document reaffirmed their definition of a System Operating Limit (SOL) to be a facility rating, a voltage limit, or a stability limit. With the exception of a stability limit, this definition of SOL does not involve the concept of a "path" as this term has historically been understood in WECC. The Path Operator Implementation Task Force (POITF) further expanded this separation of "path" and SOL in a set of recommendations that were approved by WECC in March, 2016. These recommendations are the basis of the revised SOL Methodology that PeakRC has recently drafted and which will go into effect on April 1, 2017. Unless there is a stability limit, PeakRC will no longer be associating SOLs with paths. All of these actions on the part of NERC, WECC, and PeakRC have broken the tight coupling between the concept of SOL and the concept of a "path" that has previously existed in WECC. If the existing FAC-501 language is not modified, Transmission Operators (TOPs) would be forced to run a separate set of studies using a methodology that may not be consistent with the new standards and SOL

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			Response
			methodology after April 1, 2017 simply to identify facilities that could impact a path SOL that is not even used in actual operations. In order to maintain consistency and align with the shift away from determining path system operating limits in the operations time horizon beginning April 1, 2017 and the predominance of lines rated above 200kV comprising the WECC Transfer Paths, Bonneville Power Administration (BPA) suggests modifying R1 to read: "Each Transmission Owner shall have a TMIP detailing its inspection and maintenance requirements that apply to all transmission facilities rated 200kV and above which comprise each of the transmission paths identified in the Table "Major WECC Transfer Paths in the Bulk Electric System."

Requirement Change

The drafting team considered the suggested language and agreed to post the following change for an additional 30-day comment period:

"R1. Each Transmission Owner shall have a TMIP detailing its inspection and maintenance requirements that apply to all transmission facilities *comprising each transmission path identified in the Table.*" (emphasis added)

Purpose Statement Change

To conform the language to drafting conventions, in the Purpose statement the following phrase would be added to streamline references that followed:

"Major WECC Transfer Paths in the Bulk Electric System" *(Table)."* (emphasis added)

Comment Report Form for WECC-0120

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			Response

Consideration of the 200-kV Threshold

The DT declined to adopt the suggested 200-kV threshold without further vetting. As such, a specific question regarding the 200-kV threshold will be added to the next posting. That decision is based on the following:

The January 1, 2016 definition of a System Operating Limit (SOL) states that the SOL methodology includes, but is not limited to, those items mentioned by BPA.

The February 2, 2016, Path Operator Implementation Task Force, System Stressing Methodology states:

> For purposes of the Path Operator Implementation Task Force (POITF) and Peak Reliability's (Peak) SOL Methodology, the objective of stressing the system is to determine whether instability risks practically exist for a particular transmission interface or load area. Transfer analyses for purposes of determining TC or TTC are outside the scope of the POITF and the RC's SOL Methodology.
>
> While the system should be stressed far enough to accomplish the intended objective, the expectation of this methodology is to stress the system up to – and slightly beyond – reasonable maximum stressed conditions. It is not the intent of this methodology for TOPs to stress the system unrealistically or to stress the system to levels appreciably beyond those that are practically or realistically achievable.

The paper goes on to provide six criteria that should be examined in the studies. None of the criteria mention a 200-kV threshold.

The DT will ask the industry for further guidance regarding inclusion of the proposed 200-kV threshold because:

- the methodology may have been more deeply vetted during the POITF proceeding, and
- the POITF did not mention the 200-kV threshold.

A question regarding the threshold will be included in Posting 2.

Consideration of Retirement

Finally, after considering comments during the January 26, 2017, DT call, the DT will also ask the industry whether existing NERC Standards sufficiently cover the reliability concerns in the event the FAC were to be retired.

Attachment P2
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Response to Comments / Posting 2
January 30 through March 2, 2017

Posting 2

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 30-day public comment period from January 30 through March 2, 2017.

On January 26, 2017, WECC distributed notice of the posting via the Standards Email List.

The DT asked stakeholders to provide feedback on the proposed document through a standardized electronic template. WECC received comments from three entities as shown in the following table.

Location of Comments

All comments received on the document can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion.

Changes in Response to Comments

All respondents concurred that the standard should not be retired.

The drafting team opted not to change the language of Requirement R1 because the proposed changes added no additional clarity but would expand the applicability of the standard without providing justification for the change.

A change was made to the Attachment so that the language of Item 1 would match the language of Requirement R1.

Minority View

The drafting team agreed with commenters that a 200-kV applicability threshold created an easily manageable bright line for compliance. However, the suggested change to the applicability threshold was declined because the alternatives examined would arbitrarily include additional facilities to which the more stringent requirements need not apply.

Comment Report Form for WECC-0120

Effective Date and Implementation Plan

The Reliability Standards Development Procedures (Procedures) require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval.

Action Plan

On March 14, 2017, the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) agreed by majority vote to post Posting 3 of the project for a 30-day comment period.

The posting period will open March 17, 2017 and close April 17, 2017. The drafting team will meet on April 20, 2017 from 2:00 p.m. to 4:00 p.m. (MT) and on April 27, 2017 from 10:00 a.m. to 12:00 p.m. (MT) to respond to comments received.

Comments can be submitted using the green survey buttons located on the Submit and Review Comments accordion of the WECC-0120 project page.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Comment Report Form for WECC-0120

WECC Standards Comment Table

Commenter		Organization
1	Aaron Cavanaugh	Bonneville Power Administration (BPA)
2	Ralph Tan	Not identified
3	Laura Nelson	Not identified

Index to Questions, Comments, and Responses

Question

The Drafting Team welcomes comments on all aspects of the document.

1) Commenters have suggested that Requirement R1 should contain a threshold statement of 200 kV and above. Do you agree that Requirement R1 should state that it specifically applies at 200 kV and above?
2) Please explain why you made the choice selected in Question 1.
3) Are there sufficient existing NERC Standards to cover the reliability-related substance of FAC-501-WECC-1 in the event the entire document was retired?
4) If you answered yes to the above question, please list the specific NERC Standards and requirement that render DAC-501-WECC-1 redundant and practical for retirement.
5) The drafting team welcomes comments on all aspects of the document.

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	**See summary in the preamble of this document.** **Commenters have suggested that Requirement R1 should contain a threshold statement of 200 kV and above.** **1) Do you agree that Requirement R1 should state that it specifically applies to 200 kV and above?** **2) Please explain why you made the choice selected in Question 1.**

Commenter / Comment	Response
Bonneville Power Administration (BPA)	Yes. BPA agrees with the new language as written.
Thank you. See response to Laura Nelson.	
Ralph Tan	Yes. Having a threshold voltage will provide a clear requirement that is easy to remember and abide by.
Thank you. See response to Laura Nelson.	
Laura Nelson	Yes. In R.1, it is unclear what the phrase "all transmission facilities necessary for System Operating Limits associated with each of the transmission paths" means, especially as we move into the post-TOP-007-WECC-1-retirement paradigm (i.e., the phrase Path SOL will be obsolete). I have always interpreted the goal of R.1 as identifying all facilities necessary for supporting the established WECC Path Catalog Rating for each path in the Table. If this is the spirit of R.1, I suggest replacing the phrase "all transmission facilities necessary for System Operating Limits associated with each

Summary Consideration:	See summary in the preamble of this document. Commenters have suggested that Requirement R1 should contain a threshold statement of 200 kV and above. 1) Do you agree that Requirement R1 should state that it specifically applies to 200 kV and above? 2) Please explain why you made the choice selected in Question 1.

Commenter / Comment			Response
			of the transmission paths..." in R.1 with "all transmission facilities necessary for supporting the published path ratings in the WECC Path Catalog associated with each of the transmission paths...". Basing the applicability of this Standard on the "Major WECC Transfer Paths in the Bulk Electric System" Table results in an arbitrary list of facilities with regard to their importance in terms of maintaining system reliability. This Table hasn't been updated for almost a decade. Using this Table as the basis results in the inclusion of facilities that aren't very important with regard to system reliability and excludes facilities that are important. I suggest using a different set of criteria for establishing applicability, such as all transmission facilities > 200kV.

Change to applicability threshold

After considering its options, the drafting team opted not to change the language of Requirement R1 because the proposed changes added no additional clarity but would expand the applicability of the standard without providing justification for the change.

The drafting team appreciates the need to accurately identify the facilities to which the standard should apply, taking note that the standard's Attachment applies a more stringent scrutiny to the applicable facilities than that contained in existing NERC Standards.

Comment Report Form for WECC-0120

Summary Consideration:	**See summary in the preamble of this document.** **Commenters have suggested that Requirement R1 should contain a threshold statement of 200 kV and above.** **1) Do you agree that Requirement R1 should state that it specifically applies to 200 kV and above?** **2) Please explain why you made the choice selected in Question 1.**

Commenter / Comment			Response

The drafting team first considered changing R1, per Ms. Nelson's request, to include "necessary for supporting the published path ratings." The drafting team concluded that determining what was "necessary for supporting" the ratings was no more clear than the language included in Posting 2. Determining what was necessary to support the ratings would be a technical undertaking unto itself and would be outside of the scope of this project.

The drafting team next considered replacing the Table designation with that of the WECC Path Rating Catalogue (Catalogue). The team noted that because the Catalogue is more frequently updated and is currently more up-to-date than the Table, perhaps it would be the better source to define the applicability. A comparison of the Table with the Catalogue shows that adopting the Catalogue would increase the number of applicable paths from approximately 40 to 80. The more stringent features of the standard's Attachment would apply to nearly twice as many paths when, in fact, the additional scrutiny is not needed on all of the additional facilities included in the Catalogue.

In like fashion, the drafting team considered replacing the Table with the default applicability levels of the Bulk Electric System. In many cases, that would lower the applicability threshold down to 100 kV. Like the Catalogue and the commenter's proposed 200-kV threshold, the drafting team concluded that this approach would sweep in far more Facilities not in need of additional scrutiny.

As such, no change was made to Requirement R1.

Comment Report Form for WECC-0120

Summary Consideration:	**See summary in the preamble of this document.** **3) Are there sufficient existing NERC Standards to cover the reliability-related substance of FAC-501-WECC-1 in the event the entire document was retired?** **4) If you answered yes to the above question, please list the specific NERC Standards and requirement that render FAC-501-WECC-1 redundant and practical for retirement.**

Commenter / Comment	**Response**
Bonneville Power Administration (BPA)	No. BPA believes that after reviewing NERC Standards the results did not produce a standard that appeared toc over equipment and maintenance of equipment in FAC-501. N/A
Thank you.	
Ralph Tan	No. None.
Thank you.	
Laura Nelson	Yes. No further response.
Thank you.	

Comment Report Form for WECC-0120

Summary Consideration:	See summary in the preamble of this document. 5) The drafting team welcomes comments on all aspects of the document.
Commenter / Comment	**Response**
Bonneville Power Administration (BPA)	NA
The drafting team appreciates your continued and thoughtful involvement in the standards development process.	
Ralph Tan	None.
The drafting team appreciates your continued and thoughtful involvement in the standards development process.	
Laura Nelson	No response.
The drafting team appreciates your continued and thoughtful involvement in the standards development process.	

Attachment P3
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Response to Comments / Posting 3
March 17 through April 17, 2017

Posting 3

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 30-day public comment period from March 17 through April 17, 2017.

On March 14, 2017, WECC distributed notice of the posting via the Standards Email List.

The DT asked stakeholders to provide feedback on the proposed document through a standardized electronic template. WECC received comments from three entities as shown in the following table.

Location of Comments

All comments received on the document can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion.

Changes in Response to Comment

The drafting team agreed with Xcel regarding the functionality of the link to the Major WECC Transfer Path (Table). Rather than retain the link, the actual Table has been embedded as Attachment B. This eliminates the problem of dead links.

The drafting team agreed with Arizona Public Service (APS) and corrected the plurality concern in Requirement R3.

The drafting team agreed with Farmington (FE) that the and/or statement in Attachment 1 (renamed Attachment A in Posting 4) could cause confusion. The and/or was replaced with an "or" statement.

Posting 4 also adopts NERC's newest standards template. VSLs have been changed from pure text to a table. Fonts are adjusted. NERC's boilerplate Compliance section has been adopted.

Included as an addendum is an Implementation Plan for comment. *The Implementation Plan will not remain in the standard but will be included as part of the final filing.*

Comment Report Form for WECC-0120

Minority View

The drafting team declined the invitation to alter the content of the Major WECC Transfer Path in the Bulk Electric System (Table). To do so requires a much broader skillset than currently available on the drafting team.

If the commenters hold that changes are needed to the Table, it is suggested that a Standard Authorization Request be filed for that specific purpose. To produce a work product that would comport with FERC's instructions (See WECC-0120 SAR), it is likely that the WECC Path Rating Catalogue would have to be revamped using the WECC Reliability Standards Development Procedures (Procedures).

Any changes to the Table that might result from such a project would require changing the impacted information in each standard in which the Table resides.

Effective Date and Implementation Plan

The Procedures require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval.

Action Plan

On April 27, 2017, the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) agreed by majority vote to post Posting 4 of the project for a 30-day comment period.

The posting period will open May 2, 2017 and close June 2, 2017. The drafting team will meet on June 6, 2017 from 10:00 a.m. to 12:00 p.m. (MT) and June 13, 2017 from 2:00 p.m. to 4:00 p.m. (MT) to respond to comments received.

Comments can be submitted using the green survey buttons located on the Submit and Review Comments accordion of the WECC-0120 project page.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Comment Report Form for WECC-0120

WECC Standards Comment Table

Commenter		Organization
1	William Franklin	Public Service Company of Colorado / Xcel Energy (Xcel)
2	Kristie Cocco	Arizona Public Service Company (APS)
3	Linda Jacobson-Quinn	Farmington Electric Utility System (FE)

Index to Questions, Comments, and Responses

Question

The Drafting Team welcomes comments on all aspects of the document.

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	See summary in the preamble of this document.
Commenter / Comment	**Response**
Xcel	The applicable facilities list seems to become more obscure. The standard states " Transmission Owners that maintain the transmission paths in the most current Table provided by the Western Electricity Coordinating Council." To whom and how will WECC provide this Table? Will it not be available as a general document as well on the WECC site? Also, the table itself does not list the affected elements/facilities. Additionally, further complications occur since the elements that make up the Path can change with each update of the Path Rating Catalog. How will parties be notified of those changes? Suggest having a good distribution and notification process for changes to either of these two documents.
Table Administration The DT concurs with Xcel. Removal of the link could obscure implementation of the document. On the other hand, retention of the link will continue to remain a concern each time the software host changes its webpages or the document is relocated. This concern is compounded when the affected document resides on both the NERC and WECC websites and changing one does not automatically change the other. To remedy the concern, the DT will embed the referenced table directly into the document as an attachment and eliminate the link. This creates a document that is free-standing without incorporation by reference. Thus, if future changes to the table are required those changes would be implemented via a SAR that provides transparency and full due process. This approach should align with FERC Order 752, Docket No. RM-09-14-000 wherein WECC has agreed to use appropriate due process should it choose to change the content of the Table.	

Comment Report Form for WECC-0120

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			**Response**
With the Table embedded there is no chance that the content of the Table could be changed without notice and due process. *Table Content* The DT recognizes that the content of the Table has short-comings. Although the Standard Authorization Request (SAR) would allow the DT to alter the content, that alteration is voluntary under the SAR. The DT concluded that a greater breadth of subject matter expertise would be needed to change the content of the Table and that suggested changes might best be made under a separate SAR targeting that specific task. As a precursor, the task might be undertaken at the Standing Committee level and the resulting work product included in an iterative SAR that would afford full due process beyond the committee level. Per FERC Order 752, Docket No. RM-09-14-000, if any changes are made to the content of the Table WECC is required to detail the criteria by which the changes were made, inform NERC/FERC and post the changes on the WECC website. (See the WECC-0120 SAR for details.) Restated, the DT could not simply update the Table. The methodology behind the update and its applicability to each included Path would have to be detailed to NERC/FERC. That methodology would have to work when considered in each standard in which the Table is referenced: e.g. FAC-501-WECC, PRC-004-WECC (WECC-0126 will ballot the PRC for retirement), TOP-007 (retired April 1, 2017), EOP-00-4-3, and FAC-003-4. The task is within the scope of this team but outside of its expertise.			
APS			AZPS offers the minor edit to remove the 's' from the phrase "Transmission Owners" in R3.
Thank you. That change will be made.			
FE			In addition, FEUS encourages the SDT to review the item 2 of Attachment 1, "The scheduled interval for any time-based maintenance activities and/or a description supporting condition or performance-based maintenance activities including a description of the condition based trigger." The and/or in criteria has caused confusion when implementing the requirement and audit approach. FEUS

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			Response
			recommends if it is intended to be an 'and' the standard be revised to be two separate sentences. If it is an 'or' it should simply reflect an 'or.'

Please refer to the above response provided to Xcel for additional information.

At the threshold, it appears FE is asking the DT to provide guidance on how to implement or interpret the standard as currently approved. To do so would be outside of the scope of the SAR but might be well placed in a Request for Interpretation. When a Request for Interpretation is made the WECC Standards Committee endeavors to assign as many of the original drafting team to the Interpretation team as is practical. The goal is to discern the intent from the original drafters.

That said, the DT reviewed the Applicability section along with the approved Attachment 1 and concluded the two are compatible and sufficiently clear to allow for compliance with the standard. Attachment 1, requires the entity to identify the Facilities and Elements (both NERC defined terms), schedule maintenance, and include specific descriptions of what is done and when it is done. Since the applicable entity is the one identifying the Facilities and Elements, what is included in the TMIP should be determined by the applicable entity.

To the extent the Path Rating Catalogue clouds the waters, the standard takes precedence.

As to the and/or statement, the DT eliminated the and/or statement and replaced it with “or.”

“The scheduled interval for any time-based maintenance activities, *or* a description supporting condition or performance-based maintenance activities including a description of the condition based trigger” (Emphasis added.)

Attachment P4
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Response to Comments / Posting 4
May 2 through June 2, 2017

Posting 4

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 30-day public comment period from May 2 through June 2, 2017.

On April 24, 2017, WECC distributed notice of the posting via the Standards Email List.

The DT asked stakeholders to provide feedback on the proposed document through a standardized electronic template. WECC received comments from two entities as shown in the following table.

Location of Comments

All comments received on the document can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion.

Changes in Response to Comment

In response to comments received in Posting 4 the drafting team made the following non-substantive changes:

Table vs. Attachment B

The term "Table" was removed throughout in favor of "Attachment B."

Changes in Response to Technical Review

To ensure the project meets current drafting conventions, the drafting team further reviewed the project for consistency of content and application of Violation Severity Levels, and examined restructuring the document for brevity and clarity.

The following concerns were identified with proposed remediation in Posting 5.

Requirements, Measures and Tables

- The combination of Posting 4 Requirement R1 and Part R1.1 created a single Requirement containing multiple requirements. The first was to "have a TMIP", the second was to "annually review it." To remedy the concern the requirement of Part R1.1 was drafted as its own freestanding Requirement.

- When Posting 4 Requirement R1 and Requirement R2 were read together, the result was a requirement to have a TMIP "detailing its inspection and maintenance requirements" that includes "the maintenance categories in Attachment A." The drafting team concluded these two Requirements could be merged by creating a Requirement requiring that each TMIP contain the information specified in Attachment A, Transmission Line and Station Maintenance Details.
- Posting 4 Requirement R3, like Posting 4 Requirement R1 is a single Requirement with multiple requirements therein. The first is to "implement" the TMIP and the second is to "follow" the TMIP. This concern was remedied by requiring the Transmission Owner to "adhere" to its TMIP. By default, an entity cannot adhere to a TMIP it has not implemented, thus negating the first of the two requirements: to "implement." Further concerns were raised with the use of "implement" in that some of its common definitions include only partial performance; thus, the term was replaced.
- The substance of Attachment A was more finely parsed for readability.

Violation Severity Levels

- Examination of the Violation Severity Table for Posting 4 Requirement R1 showed an "apples-to-oranges" mixing of failed recordation ameliorated by maintenance performance. Further, the VSL for Posting 4 Part R1.1 did not address any increasing severity in the event review of the TMIP occurred multiple years after the annual review requirement. These concerns were remedied by first adjusting the VSL to match the core of Posting 5 Requirement R1 – that the Transmission Owner have a TMIP that includes the elements of Attachment A with the second concern addressed by creating a freestanding requirement to review the TMIP. In the first instance, the VSL increases based on the number of items omitted from the TMIP. In the latter, the VSL increases based on the time passed since the last review.
- Like Posting 4 Requirement R1, the VSL did not match the core of the underlying Requirement. The Requirement called for implementation of the TMIP but the VSL was based on record retention. This was remedied in Posting 5 Requirement R3 wherein the core of the task is to adhere to the TMIP; the VSL increases as lack of adherence increases.

Minority View

The drafting team considered each of the proposed non-substantive changes to R2, R3, Attachment A – Title, Attachment A – Body, and the insertion of the more granular phrase "Maintenance Categories." Although the DT did not adopt these specific changes other changes were incorporated targeting greater clarity. (See above.)

Comment Report Form for WECC-0120

Effective Date and Implementation Plan

Implementation Plan

The Reliability Standards Development Procedures (Procedures) require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval. The Implementation Plan was posted with Posting 4; no changes were made in Posting 5.

Action Plan

On June 6, 2017, the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) agreed by majority vote to post Posting 5 of the project for a 30-day comment period.

In response to comments received in Posting 4, no substantive changes were made; however, after a review of the Violation Severity Level table some substantive changes are being proposed in Posting 5.

The posting period will open June 14, 2017 and close July 14, 2017. The drafting team will meet on July 25 and July 27, 2017 from 10:00 a.m. to 12:00 p.m. (MT), as needed, to discuss disposition of the project.

Comments can be submitted using the green survey buttons located on the Submit and Review Comments accordion of the WECC-0120 project page.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Comment Report Form for WECC-0120

WECC Standards Comment Table

Commenter		Organization
1	William Franklin	Public Service Company of Colorado / PSCo
2	Michelle Amarantos On behalf of Todd Komaromy	Arizona Public Service Company (APS)

Index to Questions, Comments, and Responses

Question

The Drafting Team welcomes comments on all aspects of the document.

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			**Response**
PSCo			PSCo appreciates the changes made to include Attachment B to identify the Major WECC Transfer Paths in the Bulk Electric System. We noticed a few other areas in the standard that still refer to "Table" and suggest those be changed to "Attachment B": Applicability 4.1; R1, Attachment A item 1 We thank the drafting team for its work on this standard.
The DT sees the proposed change as non-substantive and accepts PSCo's alternative drafting approach. The term "Table" has been replaced with "Attachment B."			
APS			APS suggests the following edits: R1. Each Transmission Owner shall have a TMIP detailing describing its inspection and maintenance requirement practices that apply to all transmission facilities comprising each transmission path identified in the Table. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning] The phrase "update as required" could benefit from clarification. APS suggests a more definitive revision such as "update when there is a modification of or addition to any of the topics required to be addressed in the TMIP as set forth in Attachment 1." (R1.1) or: R1.1. Each Transmission Owner shall annually review its TMIP and update it as required to reflect changes to its maintenance or inspection practices or other applicable content. [Violation

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			Response
			Risk Factor: Medium] [Time Horizon: Long-term Planning] R2. Each Transmission Owner shall include the required elements set forth maintenance category topic in Attachment A of this document when developing its TMIP. [Violation Risk Factor: Medium] [Time Horizon: Operations Assessment] R3. Each Transmission Owner shall implement and follow its TMIP. [Violation Risk Factor: Medium] [Time Horizon: Operations Assessment] APS believes "and follow" does not add clarity. A revision to the title of Attachment A better comports with the requirements. Attachment A Required Elements Of A Transmission Line and Station Maintenance Implementation Plan Detail Additionally, Attachment A should be edited to state and/or include: A list of Facilities that comprise each transmission path identifies in the Table and the Elements associated with the listed Facilities. Inclusion of "maintenance categories" as referred to in R1 and throughout.
The DT appreciates APS's comments and made the following non-substantive/clarifying changes. **R1 and Part R1.1** Requirement R1 and Part R1.1 were parsed into two separate requirements for clarity.			

Comment Report Form for WECC-0120

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			Response

R2.

APS's suggested change to R2 was not accepted. The DT did not concur that the proposed language added any greater clarity; however, the DT did consider APS's concerns in the project redraft. (See Posting 5 Requirement R1.)

R3.

Although the team did not specifically adopt APS' language it did consider the suggestion when redrafting the project. (See Posting 5 Requirement R3.)

Specific to the use of the term "implement" the DT had concerns in the context of the requirement in that some lesser common definitions of the term could be interpreted as only starting a project without a mandate to finish it. Thus, the team tried to avoid using the term in its redraft.

Attachment A - Title

APS's suggested change to the Attachment A title was not accepted. The change as proposed may have been appropriate if coupled with other APS-proposed changes; however, not all of those changes were accepted. As the change adds no additional clarity it was not accepted.

Attachment A - Body

APS's specific suggested change to the Attachment A body was not accepted; however, the body of Attachment A was redrafted in pursuit of clarity.

Attachment P5
WECC-0120 FAC-501-WECC-2
Transmission Maintenance

Response to Comments / Posting 5
June 23 through July 24, 2017

Posting 5

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 30-day public comment period from June 23 through July 24, 2017.

On June 6, 2017, WECC distributed notice of the posting via the Standards Email List.

The DT asked stakeholders to provide feedback on the proposed document through a standardized electronic template. WECC received comments from three entities as shown in the following table.

Location of Comments

All comments received on the document can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion.[1]

Changes in Response to Comment

In response to comments received in Posting 5 the drafting team made the following non-substantive changes:

Measure M3 was changed as follows. The DT concluded this was clarification that did not add substantive change to the document.

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 on which the maintenance was performed;
- **1.3** A description of the inspection results or maintenance performed.

In response to a request for clarification of Attachment A the DT reorganized the entire attachment. The DT concluded this was clarification that did not add substantive change to the document.

[1] Comments received from Farmington Electric Utility System (FEUS) were augmented by emails received from FEUS after it submitted its comments via the electronic portal. Comments as presented herein were approved by FEUS prior to the July 25, 2017 meeting. FEUS joined the July 25, 2017 meeting to discuss the comments.

Comment Report Form for WECC-0120

Minority View

There were no minority concerns.

Effective Date and Implementation Plan

Implementation Plan

The Reliability Standards Development Procedures (Procedures) require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval. The Implementation Plan was posted with Posting 4; no changes to the Implementation Plan were made.

Action Plan

On July 25, 2017, the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) agreed to open a drafting team ballot to determine whether the project should be forwarded to the WECC Standards Committee (WSC) with a request for ballot. The email ballot will close at noon (Mountain) on July 27, 2017. If the ballot is approved the project will move forward to the WSC. If the ballot fails, the team will reconvene at 2:00 p.m. on July 27, 2017.

No further postings are anticipated.

The WSC does not currently have a future meeting scheduled.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Comment Report Form for WECC-0120

WECC Standards Comment Table

Commenter		Organization
1	William Franklin	Public Service Company of Colorado (PSCo)
2	Linda Jacobson-Quinn	Farmington Electric Utility System (FEUS)
3	Todd Komaromy	Arizona Public Service Company (APS)

Index to Questions, Comments, and Responses

Question

The Drafting Team welcomes comments on all aspects of the document.

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	See summary in the preamble of this document.
Commenter / Comment	**Response**
PSCo	PSCo appreciates the work of the drafting team and has no further comments.
The drafting team appreciates PSCo's continued involvement in the standards development process.	
FEUS	**Changes to the Measure M3.** FEUS proposed the following changes to Measure M3, Sub Parts 1.1 through 1.3: **Currently posted:** 1.1 The date(s) the work or inspection was performed; 1.2 The transmission facility on which the work was performed; 1.3 A description of the inspection or maintenance performed. **FEUS Proposed:** 1.1 The date(s) the patrol, inspection or maintenance was performed; 1.2 The transmission Facility or Element on which the maintenance was performed; 1.3 A description of the inspection results or maintenance performed. **Clarification on Attachment A "and/or" Statement** FEUS would like clarification for the Revised Attachment A. The introductory paragraph states "The maintenance practices in the TMIP may be performance-based, time-based, conditional based, or any combination thereof."

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			Response
			This would indicate having a TMIP with only one of the practices would be compliant. However, Section 3d and 4c indicate at performance-based and/or condition-based maintenance must be included for transmission and station maintenance. FEUS recommends either revising the introduction to clarify either the introduction or section 2d and 4c to be consistent.
Changes to the Measure M3 **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: **1.4** The date(s) the patrol, inspection or maintenance was performed; **1.5** The transmission Facility or Element on which the maintenance was performed; **1.6** A description of the inspection results or maintenance performed. **Clarification to Attachment A** In response to FEUS the and/or statement was eliminated and the entire attachment reorganized for clarity.			
APS			For purposes of clarity, AZPS suggests modifying Attachment A, item 1 as follows: **Currently Posted:** A list of Facilities and associated Elements that apply to all transmission facilities comprising each transmission path identified in Attachment B, Major WECC Transfer Paths in the Bulk Electric System.

Comment Report Form for WECC-0120

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			**Response**
			Suggested Change A list of Facilities and the Elements associated with those transmission Facilities that comprise each transmission path(s) identified in Attachment B, Major WECC Transfer Paths in the Bulk Electric System.
The drafting team adopted the suggestion.			

Attachment P6
WECC-0120 FAC-501-WECC-2
Transmission Maintenance Five-year Review

Response to Comments / NERC 45-day Posting
November 3 through December 18, 2017

Posting 1

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 45-day public comment period at the North American Electricity Reliability Corporation (NERC) from November 3, through December 18, 2017.

On November 3, 2017, NERC distributed notice of the posting via the NERC Standards Announcements email exploder.

NERC received comments from six entities as shown in the following table.

Location of Comments

All comments received on the project can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion. Additionally, the raw data provided to WECC by NERC in support of this filing is appended to this response form.

Changes in Response to Comment

No changes were made to the project based on the comments received during this posting.

Minority View

There were no minority concerns.

Effective Date and Implementation Plan

The Reliability Standards Development Procedures (Procedures) require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval. The Implementation Plan was posted with Posting 4; no changes to the Implementation Plan were made.

Comment Report Form for WECC-0120

Action Plan

As of January 10, 2018, this project is awaiting filing at NERC.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Comment Report Form for WECC-0120

WECC Standards Comment Table

Commenter		Organization
1	Aaron Cavanaugh	Bonneville Power Administration (BPA)
2	John Tolo	Tucson Electric Power Company (TEP)
3	Laurie Williams	PNM Resources - Public Service Company of New Mexico (PNM)
4	Sandra Shaffer	Berkshire Hathaway – PacifiCorp (PAC)
5	Glen Farmer	Avista
6	Michelle Amarantos	Arizona Public Service Company (APS)

Index to Questions, Comments, and Responses

Questions

1. Do you agree the development of the Regional Reliability Standard met the “Open” criteria as outlined above? If “No,” please explain in the comment area below:

2. Do you agree the development of the Regional Reliability Standard met the “Inclusive” criteria as outlined above? If “No,” please explain in the comment area below:

3. Do you agree the development of the Regional Reliability Standard met the “Balanced” criteria as outlined above? If “No,” please explain in the comment area below:

4. Do you agree the development of the Regional Reliability Standard met the “Due Process” criteria as outlined above? If “No,” please explain in the comment area below:

5. Do you agree the development of the Regional Reliability Standard met the “Transparent” criteria as outlined above? If “No,” please explain in the comment area below:

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			**Response**
The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team thanks all parties for their continued support and dedication to the standards development process. All respondents answered in the affirmative on all questions. There were no minority opinions nor were there requests for modification. No changes were made to the project.			

Raw data provided by NERC Comment Report

Project Name:	Regional Reliability Standard (WECC) | FAC-501-WECC-2
Comment Period Start Date:	11/3/2017
Comment Period End Date:	12/18/2017
Associated Ballots:	

There were 6 sets of responses, including comments from approximately 6 different people from approximately 6 companies representing 4 of the Industry Segments as shown in the table on the following pages.

Comment Report Form for WECC-0120

Questions

1. Do you agree the development of the Regional Reliability Standard met the "Open" criteria as outlined above? If "No", please explain in the comment area below:

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:

3. Do you agree the development of the Regional Reliability Standard met the "Balanced" criteria as outlined above? If "No", please explain in the comment area below:

4. Do you agree the development of the Regional Reliability Standard met the "Due Process" criteria as outlined above? If "No", please explain in the comment area below:

5. Do you agree the development of the Regional Reliability Standard met the "Transparent" criteria as outlined above? If "No", please explain in the comment area below:

Comment Report Form for WECC-0120

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region

Comment Report Form for WECC-0120

1. Do you agree the development of the Regional Reliability Standard met the "Open" criteria as outlined above? If "No", please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
DisLikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Do you agree the development of the Regional Reliability Standard met the "Balanced" criteria as outlined above? If "No", please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

4. Do you agree the development of the Regional Reliability Standard met the "Due Process" criteria as outlined above? If "No", please explain in the comment area below:	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

5. Do you agree the development of the Regional Reliability Standard met the "Transparent" criteria as outlined above? If "No", please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Regional Reliability Standards Announcement

Western Electricity Coordinating Council
FAC-501-WECC-2, PRC-004-WECC-2, and VAR-002-WECC-2

Comment period open through December 18, 2017

Now Available

The Western Electricity Coordinating Council (WECC) has requested NERC to post the following proposed Regional Reliability Standards for industry review and comment as permitted by the NERC Rules of Procedure:

- **FAC-501-WECC-2 - Transmission Maintenance**
- **PRC-004-WECC-2 - Protection System and Remedial Action Scheme Misoperation (Retirement)**
- **VAR-002-WECC-2 - Automatic Voltage Regulators (Retirement)**

Commenting
Use the Standards Balloting and Commenting System (SBS) to submit comments. If you experience any difficulties using the electronic forms, contact Mat Bunch. The forms must be submitted by **8 p.m. Eastern, Monday, December 18, 2017.** Unofficial Word versions of the comment forms are posted on the Regional Reliability Standards Under Development page.

Regional Reliability Standards Development Process
Section 300 of NERC's Rules of Procedures of the Electric Reliability Organization governs the regional reliability standards development process. Although the technical aspects of this Regional Reliability Standard have been vetted through WECC's Regional Standards development process, the final approval process for a Regional Reliability Standard requires NERC publicly to notice and request comment on the criteria outlined in the unofficial comment forms.

Documents and information about this project are available on the WECC's Standards Under Development page.

For more information or assistance, contact Standards Developer, Mat Bunch (via email) or at (404) 446-9785.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

A. Introduction

1. **Title:** Transmission Maintenance

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

3. **Purpose:** 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.

4. **Applicability**

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

5. **Effective Date:** The first day of the first quarter following applicable regulatory approval.

B. 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 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 on which the maintenance was performed;

1.3 A description of the inspection results or maintenance performed.

C. 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 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. Regional Variances

None.

E. Associated Documents

None

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	TBD	TBD	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure 3M.

Attachment A
Transmission Maintenance and Inspection Plan Content

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

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 Attachment B, Major WECC Transfer Paths in the Bulk Electric System.

2. Maintenance Methodology

A description of the maintenance methodology used for the Facility, transmission line, or station included in the TMIP.

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

- Performance-based
- Time-based
- Condition based

3. Periodicity

A specification of the periodicity that the described maintenance will occur, or under what circumstances it occurs.

4. Transmission Line Maintenance

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

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 (including, but not limited to, phase-shifting transformers)

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

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.

THIS SECTION WILL NOT BE PART OF THE STANDARD BUT IS REQUIRED FOR NERC FILING.

Standards Authorization Request (SAR)

WECC-0120 FAC-501-WECC-2 Transmission Maintenance SAR

Approvals Required

- WECC Ballot Pool Pending
- WECC Board of Directors Pending
- NERC Board of Trustees Pending
- FERC Pending

Applicable Entities

Transmission Owners that maintain the transmission paths in the most current WECC Major Paths table (Attachment B of the standard)

Conforming Changes to Other Standards

None are required.

Proposed Effective Date

The first day of the first quarter following regulatory approval

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) has reviewed NERC Standards, both in effect and those standards that are NERC Board of Trustees approved pending regulatory filing. The DT concluded that the proposed substantive changes pose a minimal burden beyond ordinary and current operations. As such, the short implementation time should impose no undue burden.

Consideration of Early Compliance

The DT foresees no negative impacts to reliability in the event of early compliance.

Retirements

None

A. Introduction

1. **Title:** Transmission Maintenance

2. **Number:** FAC-501-WECC-12

3. **Purpose:** To ensure the Transmission Owner of a transmission path identified in the table titled "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.

4. **Applicability**

   4.1 Transmission Owners that maintain the transmission paths in the most current table titled "Attachment B.**Major WECC Transfer Paths in the Bulk Electric System**" provided at:

   https://www.wecc.biz/Reliability/TableMajorPaths4-28-08.pdf.

5. **Effective Date:** July 1, 2011The first day of the first quarter following applicable regulatory approval.

B. Requirements and Measures

R1. Each Transmission OwnersOwner shall have a TMIP detailing their inspection and maintenance requirements that apply to all transmission facilities necessary for System Operating Limits associated withincludes, at a minimum, each of the transmission paths identified in table titled "Major WECC Transfer Paths in the Bulk Electric System."items listed in Attachment A, Transmission Maintenance and Inspection Plan Content. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

R1.1. Transmission Owners**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 review their TMIP and update as required.

its TMIP to reflect all changes to its TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

Transmission Owners shall **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 the maintenance categories in Attachment 1 FAC-501-WECC-1 when developing their TMIP.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]*

~~**R.1.**~~ **M3.** Each Transmission ~~Owners shall implement and follow their TMIP. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*~~

~~A. Measures~~

~~**M1.** Transmission Owners shall have a documented TMIP per R.1.~~

~~**M1.1** Transmission Owners shall have evidence they have annually reviewed their TMIP and updated as needed.~~

~~**M2.** Transmission Owners shall~~Owner will have evidence that ~~their TMIP addresses the required maintenance details of R.2.~~

~~**M3.** Transmission Owners shall have records that they implemented and followed their TMIP~~it adhered to its TMIP, as required in ~~R.3. The records shall~~Requirement R3. Evidence may include, but is not limited to:

1.1 The ~~person or crew responsible for performing~~date(s) the ~~work~~patrol, inspection or maintenance was performed;

~~**1.**~~ The transmission Facility or ~~inspection,~~

~~**2.** The date(s) the work or inspection was performed,~~

~~**1.1**~~**1.2** ~~The transmission facility~~Element on which the ~~work~~maintenance was performed~~, and~~;

~~**1.2**~~**1.3** A description of the inspection results or maintenance performed.

C. 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 for three calendar years, or since the last audit, whichever is longer.

~~**2.1 Additional Compliance Information**~~

~~No additional compliance information.~~

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

2.1. Lower: There shall be a Lower Level of non-compliance if any of the following conditions exist:

The TMIP does not include associated

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	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	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.

		required in R3.	required in R3.	

D. Regional Variances

None.

E. Associated Documents

None

2.1.1 Facilities for one of the Paths identified in Attachment 1 FAC-501-WECC-1 as required by R.1 but Transmission Owners are performing maintenance and inspection for the missing Facilities.

2.1.2 Transmission Owners did not review their TMIP annually as required by R.1.1.

2.1.3 The TMIP does not include one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.1.4 Transmission Owners do not have maintenance and inspection records as required by R.3 but have evidence that they are implementing and following their TMIP.

2.2. Moderate: There shall be a Moderate Level of non-compliance if any of the following conditions exist:

2.2.1 The TMIP does not include associated Facilities for two of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.2.2 The TMIP does not include two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.2.3 Transmission Owners are not performing maintenance and inspection for one maintenance category identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.3. **High:** There shall be a High Level of non-compliance if any of the following condition exists:

2.3.1 The TMIP does not include associated Facilities for three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.3.2 The TMIP does not include three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.3.3 Transmission Owners are not performing maintenance and inspection for two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

2.4. **Severe:** There shall be a Severe Level of non-compliance if any of the following condition exists:

2.4.1 The TMIP does not include associated Facilities for more than three of the Paths identified in the most current Table titled "Major WECC Transfer Paths in the Bulk Electric System" as required by R.1 and Transmission Owners are not performing maintenance and inspection for the missing Facilities.

2.4.2 The TMIP does not exist or does not include more than three maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required by R.2 but Transmission Owners are performing maintenance and inspection for the missing maintenance categories.

2.4.3 Transmission Owners are not performing maintenance and inspection for more than two maintenance categories identified in Attachment 1 FAC-501-WECC-1 as required in R3.

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	

~~Attachment 1 FAC 501 WECC 1~~ 2	TBD	TBD	1) Conformed to newest NERC template and drafting conventions, 2) eliminated URLs, 3) clarified Attachment A, and Measure 3M.

Attachment A

Transmission ~~Line and Station~~ **Maintenance** ~~Details~~**and Inspection Plan Content**

~~The maintenance practices in the TMIP may be performance-based, time-based, conditional based, or a combination of all three.~~ The TMIP shall include~~:~~, at a minimum, each of the following details:

1. Facilities

A list of Facilities ~~and associated~~ (e.g., transmission lines, transformers, etc.) and Elements ~~necessary to maintain the SOL for the transfer paths~~ (e.g. circuit breaker, bus section, etc.) that comprise each transmission path(s) identified in ~~the most current Table titled "~~Attachment B, Major WECC Transfer Paths in the Bulk Electric System~~;"~~.

~~1. The scheduled interval for any time-based maintenance activities and/or a description supporting condition or performance-based maintenance activities including a description of the condition based trigger;~~

2. Maintenance Methodology

A description of the maintenance methodology used for the Facility, transmission line, or station included in the TMIP.

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

- Performance-based
- Time-based
- Condition based

3. Periodicity

A specification of the periodicity that the described maintenance will occur, or under what circumstances it occurs.

4. Transmission Line Maintenance ~~Details:~~

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

a. Inspection requirements

b. Patrol~~/Inspection~~ requirements

~~a. Contamination Control~~

c. Tower and wood pole structure management

5. Station Maintenance ~~Details:~~

~~b. Inspections~~

~~c. Contamination Control~~

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

a. Inspection requirements

~~a.~~b. Equipment ~~Maintenance~~maintenance for each of the following:

1. Circuit ~~Breakers~~breakers

~~•~~ 2. Power ~~Transformers (including phase-shifting~~ transformers~~)~~

~~• Regulators~~

~~Reactive Devices~~ (including, but not limited to, phase-shifting transformers)

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

Attachment B

Major WECC Transfer Paths in the Bulk Electric System~~Shunt Capacitors, Series Capacitors, Synchronous Condensers, Shunt Reactors, and Tertiary Reactors)~~

	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.

THIS SECTION WILL NOT BE PART OF THE STANDARD BUT IS REQUIRED FOR NERC FILING.

Standards Authorization Request (SAR)

WECC-0120 FAC-501-WECC-2 Transmission Maintenance SAR

Approvals Required

- WECC Ballot Pool Pending
- WECC Board of Directors Pending
- NERC Board of Trustees Pending
- FERC Pending

Applicable Entities

Transmission Owners that maintain the transmission paths in the most current WECC Major Paths table (Attachment B of the standard)

Conforming Changes to Other Standards

None are required.

Proposed Effective Date

The first day of the first quarter following regulatory approval

Justification

The WECC-0120, FAC-501-WECC-2, Transmission Maintenance Drafting Team (DT) has reviewed NERC Standards, both in effect and those standards that are NERC Board of Trustees approved pending regulatory filing. The DT concluded that the proposed substantive changes pose a minimal burden beyond ordinary and current operations. As such, the short implementation time should impose no undue burden.

Consideration of Early Compliance

The DT foresees no negative impacts to reliability in the event of early compliance.

Retirements

None

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Regional Reliability Standard
FAC-501-WECC-2

DO NOT use this form for submitting comments. Use the electronic form to submit comments on Regional Reliability Standard **FAC-501-WECC-2 – Transmission Maintenance**. The electronic form must be submitted by **8 p.m. Eastern, Monday, December 18, 2017.**

Documents and information about this project are available on the WECC's Standards Under Development page. If you have questions, contact Standards Developer, Mat Bunch (via email) or at (404) 446-9785.

Background Information

In its five-year update, the WECC standard drafting team agreed to forward the project to the WECC Standards Committee (WSC) with a request for ballot. The WSC approved making the following modifications to FAC-501-WECC-1:

- Conform the existing document to the newest NERC template and drafting conventions;
- Eliminate URLs; and
- Clarify Attachment A and Measure 3M.

NERC Criteria for Developing or Modifying a Regional Reliability Standard

Regional Reliability Standard shall be: (1) a regional reliability standard that is more stringent than the continent-wide reliability standard, including a regional standard that addresses matters that the continent-wide reliability standard does not; or (2) a regional reliability standard that is necessitated by a physical difference in the bulk power system. Regional reliability standards shall provide for as much uniformity as possible with reliability standards across the interconnected bulk power system of the North American continent. Regional reliability standards, when approved by FERC and applicable authorities in Mexico and Canada, shall be made part of the body of NERC reliability standards and shall be enforced upon all applicable bulk power system owners, operators, and users within the applicable area, regardless of membership in the region.

The approval process for a regional reliability standard requires NERC to publicly notice and request comment on the proposed standard. Comments shall be permitted only on the following criteria (technical aspects of the standard are vetted through the regional standards development process):

> **Open** — Regional reliability standards shall provide that any person or entity that is directly and materially affected by the reliability of the bulk power system within the regional entity shall be able to participate in the development and approval of reliability standards. There shall be no undue financial barriers to participation. Participation shall not be conditional upon membership in the regional entity, a regional entity or any organization, and shall not be unreasonably restricted on the basis of technical qualifications or other such requirements.

Inclusive — Regional reliability standards shall provide that any person with a direct and material interest has a right to participate by expressing an opinion and its basis, having that position considered, and appealing through an established appeals process, if adversely affected.

Balanced — Regional reliability standards shall have a balance of interests and shall not be dominated by any two-interest categories and no single-interest category shall be able to defeat a matter.

Due Process — Regional reliability standards shall provide for reasonable notice and opportunity for public comment. At a minimum, the standard shall include public notice of the intent to develop a standard, a public comment period on the proposed standard, due consideration of those public comments, and a ballot of interested stakeholders.

Transparent — All actions material to the development of regional reliability standards shall be transparent. All standards development meetings shall be open and publicly noticed on the regional entity's Web site.

Review the revised the Regional Reliability Standard regional standard and answer the following questions.

1. Do you agree the development of the Regional Reliability Standard met the "Open" criteria as outlined above? If "No", please explain in the comment area below:

   ☐ Yes
   ☐ No
   Comments:

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:

   ☐ Yes
   ☐ No
   Comments:

3. Do you agree the development of the Regional Reliability Standard met the "Balanced" criteria as outlined above? If "No", please explain in the comment area below:

   ☐ Yes
   ☐ No
   Comments:

4. Do you agree the development of the Regional Reliability Standard met the "Due Process" criteria as outlined above? If "No", please explain in the comment area below:

☐ Yes
☐ No
Comments:

5. Do you agree the development of the Regional Reliability Standard met the "Transparent" criteria as outlined above? If "No", please explain in the comment area below:

☐ Yes
☐ No
Comments:

Comment Report

Project Name:	Regional Reliability Standard (WECC) | FAC-501-WECC-2
Comment Period Start Date:	11/3/2017
Comment Period End Date:	12/18/2017
Associated Ballots:	

There were 6 sets of responses, including comments from approximately 6 different people from approximately 6 companies representing 4 of the Industry Segments as shown in the table on the following pages.

Questions

1. Do you agree the development of the Regional Reliability Standard met the "Open" criteria as outlined above? If "No", please explain in the comment area below:

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:

3. Do you agree the development of the Regional Reliability Standard met the "Balanced" criteria as outlined above? If "No", please explain in the comment area below:

4. Do you agree the development of the Regional Reliability Standard met the "Due Process" criteria as outlined above? If "No", please explain in the comment area below:

5. Do you agree the development of the Regional Reliability Standard met the "Transparent" criteria as outlined above? If "No", please explain in the comment area below:

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region

1. Do you agree the development of the Regional Reliability Standard met the “Open” criteria as outlined above? If “No”, please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Do you agree the development of the Regional Reliability Standard met the “Balanced” criteria as outlined above? If “No”, please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

4. Do you agree the development of the Regional Reliability Standard met the “Due Process” criteria as outlined above? If “No”, please explain in the comment area below:	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

5. Do you agree the development of the Regional Reliability Standard met the “Transparent” criteria as outlined above? If “No”, please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Attachment R6

WECC-0120 FAC-501-WECC-2
Transmission Maintenance Five-year Review
Response to Comments / NERC 45-day Posting
November 3 through December 18, 2017

Posting 1

The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This document was posted for a 45-day public comment period at the North American Electricity Reliability Corporation (NERC) from November 3 through December 18, 2017.

On November 3, 2017, NERC distributed notice of the posting via the NERC Standards Announcements email exploder.

NERC received comments from six entities as shown in the following table.

Location of Comments

All comments received on the project can be viewed in their original format on the WECC-0120 project page under the "Submit and Review Comments" accordion. Additionally, the raw data provided to WECC by NERC in support of this filing is appended to this response form.

Changes in Response to Comment

No changes were made to the project based on the comments received during this posting.

Minority View

There were no minority concerns.

Effective Date and Implementation Plan

The Reliability Standards Development Procedures (Procedures) require that an implementation plan be posted with at least one posting of the project. The Effective Date is proposed as the first day of the first quarter following applicable regulatory approval. The Implementation Plan was posted with Posting 4; no changes to the Implementation Plan were made.

Comment Report Form for WECC-0120

Action Plan

As of January 10, 2018, this project is awaiting filing at NERC.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact W. Shannon Black, WECC Consultant. In addition, the WECC Reliability Standards Appeals Process can be found in the Reliability Standards Development Procedures.

Comment Report Form for WECC-0120

WECC Standards Comment Table

Commenter		Organization
1	Aaron Cavanaugh	Bonneville Power Administration (BPA)
2	John Tolo	Tucson Electric Power Company (TEP)
3	Laurie Williams	PNM Resources - Public Service Company of New Mexico (PNM)
4	Sandra Shaffer	Berkshire Hathaway – PacifiCorp (PAC)
5	Glen Farmer	Avista
6	Michelle Amarantos	Arizona Public Service Company (APS)

Index to Questions, Comments, and Responses

Questions

1. Do you agree the development of the Regional Reliability Standard met the “Open” criteria as outlined above? If “No”, please explain in the comment area below:

2. Do you agree the development of the Regional Reliability Standard met the “Inclusive” criteria as outlined above? If “No”, please explain in the comment area below:

3. Do you agree the development of the Regional Reliability Standard met the “Balanced” criteria as outlined above? If “No”, please explain in the comment area below:

4. Do you agree the development of the Regional Reliability Standard met the “Due Process” criteria as outlined above? If “No”, please explain in the comment area below:

5. Do you agree the development of the Regional Reliability Standard met the “Transparent” criteria as outlined above? If “No”, please explain in the comment area below:

Comment Report Form for WECC-0120

1. Response Summary

Summary Consideration:	See summary in the preamble of this document.		
Commenter / Comment			**Response**
The WECC-0120 FAC-501-WECC-2, Transmission Maintenance Five-year Review Drafting Team thanks each party for their continued support and dedication to the standards development process. All respondents answered in the affirmative on all questions. There were no minority opinions nor were there requests for modification. No changes were made to the project.			

Raw data provided by NERC Comment Report

Project Name:	Regional Reliability Standard (WECC) | FAC-501-WECC-2
Comment Period Start Date:	11/3/2017
Comment Period End Date:	12/18/2017
Associated Ballots:	

There were 6 sets of responses, including comments from approximately 6 different people from approximately 6 companies representing 4 of the Industry Segments as shown in the table on the following pages.

Comment Report Form for WECC-0120

Questions

1. Do you agree the development of the Regional Reliability Standard met the "Open" criteria as outlined above? If "No", please explain in the comment area below:

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:

3. Do you agree the development of the Regional Reliability Standard met the "Balanced" criteria as outlined above? If "No", please explain in the comment area below:

4. Do you agree the development of the Regional Reliability Standard met the "Due Process" criteria as outlined above? If "No", please explain in the comment area below:

5. Do you agree the development of the Regional Reliability Standard met the "Transparent" criteria as outlined above? If "No", please explain in the comment area below:

Comment Report Form for WECC-0120

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region

Comment Report Form for WECC-0120

1. Do you agree the development of the Regional Reliability Standard met the "Open" criteria as outlined above? If "No", please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Do you agree the development of the Regional Reliability Standard met the "Inclusive" criteria as outlined above? If "No", please explain in the comment area below:	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Do you agree the development of the Regional Reliability Standard met the "Balanced" criteria as outlined above? If "No", please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
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Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

4. Do you agree the development of the Regional Reliability Standard met the "Due Process" criteria as outlined above? If "No", please explain in the comment area below:	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

5. Do you agree the development of the Regional Reliability Standard met the "Transparent" criteria as outlined above? If "No", please explain in the comment area below:	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Tolo - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Exhibit F
Standard Drafting Team Roster for Project WECC-0120 Transmission Maintenance Five-Year Review

Drafting Team Roster

WECC-0120 FAC-501-WECC-2 Transmission Maintenance Five-Year Review

Below please find a biographical snapshot for the members of the WECC-0120 FAC-501-WECC-2, Transmission Maintenance Drafting Team.

Jeff Watkins NV Energy Chair	Mr. Watkins has four years working as a Substation Field Engineer assisting with commissioning of new substations, troubleshooting misoperations and assisting the crews with maintenance tasks including analyzing maintenance results including DGA, breaker motion analysis and power factor testing. Additionally, Mr. Watkins has seven years working as a System Protection Engineer creating settings for new installations and trouble-shooting misoperations. He served as a subject-matter expert for PRC-005-X, and developed/implemented a new maintenance program for protection systems to comply with PRC-005-2. Mr. Watkins also has one year of experience working in the Compliance Department as a Compliance Engineer. A majority of his time is spent working with the various departments interpreting standards and supplying technical help when needed. He also performs technical assessments on certain standards (such as PRC-023 and TPL-001-4) to help ensure that the standards are correct from a technical standpoint.
Cristi Sawtell	Ms. Sawtell began her career in the electrical industry at Bonneville Power as a Transmission Lineman performing maintenance and construction activities. In 2010, she joined the Work Planning and Evaluation Group overseeing yearly maintenance and construction work plans for the Transmission Field Organization. For the last two and a half years Ms. Sawtell has been working as the Transmission Field Compliance Specialist, focused on the maintenance organizations compliance program related to PRC-005 and FAC-501 standards.
Diana Torres Imperial Irrigation District	Ms. Torres has worked in the public utility industry for 29 years, with the last 10 years in the reliability compliance office performing compliance assessments of Operations and Planning standards, and developing and training internal compliance programs (which included background of NERC/WECC compliance, WECC CMEP, WECC audit training and internal controls). Ms. Torres coordinated and helped lead four WECC audits working directly with audit leads. For the last four years, Ms. Torres has worked with subject-matter experts to conduct compliance assessments of the FAC-501 Standard, Transmission Maintenance and Inspection Program evidence and procedures. She regularly attends WECC outreach events, such as open webinars, compliance workshops and human performance conferences.

Kathee Downey PacifiCorp	Ms. Downey has been involved in WECC committees for several years, on drafting teams, and leading drafting teams. Specifically, those relating to Interchange Scheduling and Accounting Subcommittee (ISAS) and Federal Energy Regulatory Commission (FERC) Order 764. Currently she is serving as PacifiCorp's representative on the Operating Committee and ISAS.