# Posting 1

The drafting team (DT) for WECC-0141, Transmission Maintenance thanks everyone who submitted comments on the proposed project.

## Posting

The project was posted for comment from August 4 through September 11, 2020.

WECC distributed notice for the posting on August 3, 2020. The original notice set the closing date as September 4, 2020. On August 27, 2020, notice was dispatched to the WECC Standards Email List extending the comment period to September 11, 2020.

The DT asked stakeholders to provide feedback on the proposed project through a standardized electronic template.

Six comments were received.

## Location of Comments

All comments received on the projects can be viewed in their original format on the WECC-0141 project page under the “Submit and Review Comments” accordion.[[1]](#footnote-1)

**Overview**

The draft team (DT) concluded that, when considered individually, each Requirement appeared to be administrative in nature and could therefore be retired. However, when considered as a whole, if the entire Standard were retired, a reliability gap could be created in the absence of portions of Attachment A. Further, if the entirety of Attachment B was deleted, the wholesale deletion may go beyond a more surgical removal of only a few paths known to be at issue.

As such, the DT concluded that only those paths specified in the Standard Authorization Request should be proposed for deletion from Attachment B during this project development. However, the DT also noted that other entities plan to request deletion of paths from Attachment B.

To further that process, the DT is proposing inclusion of the Attachment C, Revision Process creating a process whereby assets may be added or subtracted from Attachment B. If approved, an entity requesting addition or deletion of an asset from Attachment B would follow the procedure described in proposed Attachment C, followed by an informational filing at NERC/FERC drafted by WECC. The goal is to streamline and standardize that process.

The proposed Attachment C process is a near mirror image of that used within WECC to remove paths from the WECC Path Rating Catalogue. For clarity, Attachment C and actions taken per the WECC Path Rating processes are completely separate. For example, if a path is removed from the Catalog and is also included in Attachment B, removing the path from the Catalog will not remove it from Attachment B. The additional Attachment C process would be required to remove the asset from the Standard.

**General Summary of Comments**

**(Q1-Q3)**

When each Requirement was **individually** reviewed for retirement, all respondents agreed that Requirements R1-R3 could be retired, albeit, not for the same reason. Five entities concluded the Requirements were administrative in nature. One entity concluded that retirement was appropriate because the Standard’s original intent (circa 1996) to address vegetation management was now addressed in FAC-003-4, Vegetation Management.

**(Q4-Q6)**

By contrast, when the Requirements were reviewed **together**, the DT concluded that reliability-related features of Attachment A and Attachment B, triggered by Requirements R1-R3, would be lost in the event of full retirement.

As such, the DT chose minimal redrafting of the existing language thereby avoiding any reliability gap potentially caused if the entire Standard were to be retired. This approach is coupled by the addition of proposed Attachment C creating a streamlined and standardized process to add or delete an asset from Attachment B.

Because the Standard’s origins stem from vegetation management, and, whereas vegetation management is now covered elsewhere, an annotation to that effect will be included in the redraft.

**(Q7-Q9)**

Five of the six respondents agreed the content of Attachment B (the 40 listed paths) is no longer relevant as the benchmark to identify specific assets requiring specified maintenance because: 1) due to the passage of time (1997–2020), the reasons and records for including paths in Attachment B are no longer known (Q8, Q9), 2) the configuration of the Western Interconnection has changed substantially over the last 23 years, outdating the attachment’s content as the best identifier of equipment for which enhanced maintenance is warranted, and 3) peripheral maintenance programs outside of the Standard are more stringent and timely focused than the static list of the attachment.

As a result, in some cases, FAC-501 represents a lower maintenance threshold (AKA: the lowest common denominator) than peripheral programs currently used by utilities.

One entity asserted that common knowledge would lead to the conclusion that Attachment B is, indeed, still relevant; however, the technical support for that conclusion was lacking.

**(Q10)**

At the threshold, there was no consensus on how to address peripheral standards wherein Attachment B is referenced. A Q&A provided by WECC Standards explained potential treatment.

See Attachment A to WECC-0141 Posting 1.

**(Q11) (All Other)**

## The drafting team and the industry concur that the original reasons for including paths in Attachment B are no longer known, nor is there a discernable common denominator.

## Minority View

The DT concurs with the minority view that complete retirement of the standard could result in a reliability gap. To address that concern, the DT proposes to keep the standard and add Attachment C outlining the baseline technical support required for inclusion on Attachment B as well as outlining a process whereby assets may be added or deleted from Attachment B.

As to the content of Attachment A and B, concerns were raised that the effectiveness of having such a Standard remains unproven. Specifically, if the DT creates a list of equipment that must be maintained on a cyclical basis, some equipment is more reliable if left alone and replaced only when it fails. Some of this equipment falls outside of the BES definition but is associated with critical paths. As such, any Attachment A/B designation will need to be detailed and may need to reach beyond the scope of the BES definition.

As to Questions 7 and 8, BPA asserts that, although Attachment B is out of date, it is presumably still relevant because historically the paths were included because of stability issues, albeit, the precise reliability reason has been lost to time.

Finally, WECC Entity Risk Assessment and Registration (ERAR) suggests that portions of Attachment A are the only citations within the NERC body of Standards wherein the specifics of prescribed maintenance are listed. If the Standard is retired in its entirety, those specific requirements will be lost.

## Changes in Response to Comment

The purpose of Posting 1 was to discern industry viewpoints as to how the WECC-0141 project should proceed. Specifically, the team asked whether any or all of the Standard should be retired. All but one respondent stated the Standard could be retired without creating a reliability gap. Rather than risk creation of the noted gap, the drafting team opted to retain the Standard as approved but file a request at NERC/FERC to delist Paths 22, 50, and 51 from Attachment B.[[2]](#footnote-2)

The following specific changes were made after consideration of all comments received.

***B. Background***

A background section was added highlighting that there are no known criteria for the current inclusion of the 40 paths listed on Attachment B.

A footnote was added in the Background section highlighting that “Although the [Reliability Management System] was established in response to 1996 vegetation-related outages, this Standard does not address vegetation management.”

***B. Requirement and Measures***

At Measure M2, clarifying syntax was used deleting the superfluous “that.”

At Requirement R3/Measure M3, the word “adhere” was replaced with “conform” to differentiate between the mandate to comply with a Standard versus the advisory language used in WECC Criteria wherein “adherence” is advised.

***C. Compliance***

This section is generally left for NERC to update; however, the filing will request that C.1.1., Compliance Enforcement Authority be updated to match NERC’s most current boilerplate language.

At C.1.2, Evidence retention, “Requirements 1-3” was replaced with “Requirements R1-R3.”

***Violation Severity Levels***

No changes were made.

***Attachment A, Transmission Maintenance and Inspection Plan Content***

1. Facilities was replaced in its entirety with the following:

A list of Facilities and Elements as listed in Attachment A that comprise each of the transmission paths listed in Attachment B.

2. Maintenance Methodology

“Methodology” was replaced with “method.”

A “risk-based” method and an “As based on recommendations from the equipment manufacturer” were added as allowable maintenance methods.

5. Station Maintenance

5.b.2. was updated to read, “Power Transformers, specifically including phase-shifting transformers, where present.”

5.b.3. was updated to read, “Reactive devices, specifically including shunt capacitors, series capacitors, synchronous condensers, shunt reactors, and tertiary reactors, where present.”

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

Paths 22, 50, and 51 were deleted.

***Attachment C, Revision Process***

This posting introduces the entirety of Attachment C, proposed to create a streamlined process whereby assets could be added or subtracted from Attachment B without having to use the full rigors of the WECC Reliability Standards Development Procedures.

## Proposed Effective Date

This project is proposed to become effective immediately upon receipt of regulatory approval.

## Action Plan

On December 8, 2020, the WECC-0141 FAC-501-WECC-2, Transmission Maintenance Drafting Team agreed by a majority vote to post Posting 2 for a 30-day comment period. Posting 2 will open on December 14, 2020, and close on January 13, 2021. The drafting team will meet on January 19, 2021, 10:00 a.m. to 12:00 p.m. to consider comments. The DT will meet each two weeks thereafter, at the same time, unless otherwise noted.

Comments can be submitted by selecting the Submit and Review Comments accordion on the WECC-0141 Home Page. Then, click on Submit Responses to Posting 2.

Posting 2 proposes to remove Paths 22, 50, and 51 from Attachment B of the Standard. The posting also introduces Attachment C, Revision Process as a streamlined procedural alternative for adding and removing assets from Attachment B.

Proposed Attachment C would *not* be part of the standard and would *not* be subject to compliance. To see how this concept is already in use, refer to BAL-001-TRE-1—Primary Frequency Response in the ERCOT Region, E. Associated Documents.

If you have questions regarding the posting, please contact [W. Shannon Black](mailto:sblack@wecc.biz) at (503) 307-5782.

## Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact [W. Shannon Black](mailto:sblack@wecc.biz), WECC Consultant, at (503) 307-5782. In addition, there is a WECC Reliability Standards appeals process.

| Commenter | | Organization |
| --- | --- | --- |
| **1** | Amber Barss | Tucson Electric Power (TEP) |
| **2** | Richard Jackson | United States Bureau of Reclamation (USBR) |
| **3** | Daniela Atanasovski | Arizona Public Service (APS) |
| **4** | Cain Braveheart | Bonneville Power Administration (BPA) |
| **5** | Pamalet Mackey | Pacific Gas and Electric (PGE) |
| **6** | Kevin Paletskih | Western Electric Coordinating Council (WECC)  Entity Risk Assessment and Registration |

# Index to Questions, Comments, and Responses

### Question

1. The drafting team suggests that Requirement R1 (the entity must have a TMIP) is administrative in nature and can therefore be retired. Do you agree?
   1. If you disagree, please explain your answer.
2. The drafting team suggests that Requirement R2 (the entity must annually review the plan) is administrative in nature and can therefore be retired. Do you agree?
   1. If you disagree, please explain your answer.
3. The drafting team suggests that Requirement R3 (the entity must adhere to the TMIP) is administrative in nature and can therefore be retired. Do you agree?
   1. If you disagree, please explain your answer.
4. If the entire standard is retired, do you believe that retirement will create a reliability gap?
5. If your answer (to the above question) is “yes,” please:
   1. Identify and explain the specific reliability gap, and
   2. Provide a suggested remedy.
6. The drafting team suggests that some of the requirements of FAC-501-WECC-2 may be covered in other standards.
   1. If you believe that the reliability related substance of FAC-501-WECC-2 is addressed in another NERC Standard, please identify the standard number and associated requirement.
   2. If you believe there are portions of FAC-501-WECC-2 that are only addressed in that standard and therefore must be retained, please identify those specific aspects and their location in the standard.
7. FAC-501-WECC-2, Attachment B is a static list of paths created in 2000. There is no known documentation explaining how the list was created or why the listed paths were included. Is Attachment B still relevant for identifying those assets in need of enhanced maintenance?
   1. If your answer is “no,” please describe the appropriate criteria for making that identification.
8. Do you believe the 40 paths listed in Attachment B are all critical to the reliability of the Western Interconnection?
   1. Please explain your answer.
9. The list of 40 paths in FAC-501-WECC-2, Attachment B was created between 1998 and 2000, predating mandatory standards by several years. The records identifying the specific criteria used to identify the 40 paths could not be located. Does your firm have any documentation specifying the criteria used to select the 40 paths?
   1. If yes, please provide the drafting team with that documentation.
10. FAC-501-WECC-2, Attachment B is also incorporated by reference in: a) FAC-003-4 Transmission Vegetation Management, Section 4.2.3., b) PRC-004-WECC-2 Protection System and Remedial Action Scheme Misoperation (to be retired January 1, 2021), and c) PRC-023-4 Transmission Relay Loadability, Attachment B, Criteria B1, where that standard colloquially refers to the “major transfer path within the Western Interconnection” without directly referencing the WECC Major Transfer Paths in the Bulk Electric System and without further description.
    1. If Attachment B is retired, please identify any actions required in the aforementioned standards.
11. The drafting team invites comment on other areas of the project not specifically addressed above.
12. The drafting team suggests that Requirement R1 (the entity must have a TMIP) is administrative in nature and can therefore be retired. Do you agree?
    1. If you disagree, please explain your answer.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 1 – Retire R1*  Five of the six respondents agreed that Requirement R1 should be retired; however, the premise for retirement varied.  WECC ERAR asserts that, although the requirement may be administrative in nature, the intent to create and implement a maintenance plan should be retained. ERAR further asserts that if the Standard is not retired, the overall standard should be modeled after PRC-005-6, Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (USBR) | Yes. Reclamation does not disagree that the requirement should be retired; however, Reclamation disagrees that Requirement R1 is administrative in nature. Reclamation supports retiring FAC-501-WECC because the standard failed to meet its original intent of being a vegetation standard and the desired vegetation component is now addressed by other standards. Reclamation observes that the efforts regarding FAC-501-WECC are similar to the early days of PRC-005. If it is desired to perform maintenance on transmission assets identified in FAC-501-WECC Attachment A, Reclamation recommends that a nationwide standard be developed to address the specific maintenance and frequency, rather than a regional standard. |
| **Response** | |
| The DT appreciates USBR’s observation and would like to know whether USBR would be inclined to author a continent-wide Standard Authorization Request (SAR). To do so is outside of the scope of this project; however, should such a SAR be filed at NERC it may cause reconsideration of this project’s trajectory. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | Yes. PG&E agrees that R1 can be retired without detrimental effect to system reliability. The drafting team states that FAC-501-WECC-2 calls for ‘enhanced’ or ‘higher maintenance scrutiny” for assets associated with the identified paths more than facilities not included in the listed paths. PG&E applies the same maintenance criteria and practices for like facilities independent of whether they are covered under FAC-501-WECC-2 or not. PG&E would continue with its established TMIP, whether FAC-501-WECC-2 is retired or just modified. Therefore, retirement of the reliability standard, and R1 in particular, would not materially impact PG&E’s maintenance practices. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | No. R1 might be administrative in nature but intent is not administrative. This standard requires [the applicable entity] to have a TMIP according to the minimum criteria in the Attachment A. WECC does not agree that this Standard should be retired; rather, the Standard should be redrafted.  Attachment A should be revised. Attachment A of the FAC-501-WECC should follow the lead of PRC-005-6 and require entities to do certain maintenance activities at certain timeframes. WECC believes that there should be more Subject Matter Experts (SME’s) involved in the discussion. We encourage the Drafting Team to make this a performance-based standard. |
| **Response** | |
| The DT thanks WECC’s Entity Risk Assessment and Registration (ERAR) department for its involvement in the Standards Development process. The DT concurs that additional SME’s would bring enhanced value to the project and encourages all entities to engage in the open and transparent development process.  The DT concurs that if Requirements R1-R3 are deleted, a reliability gap may develop by the associated retirement of Attachment A and B.  Although modeling a revamped Standard after PRC-005-6, Protection System, Automatic Reclosing and Sudden Pressure Relaying Maintenance is a viable option, at this stage of the project the DT will only be pursuing deletion of the SAR-specific paths. | |

1. The drafting team suggests that Requirement R2 (the entity must annually review the plan) is administrative in nature and can therefore be retired. Do you agree?
   1. If you disagree, please explain your answer.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 2 – Retire R2*  Five of the six respondents agreed that Requirement R2 should be retired because it is administrative in nature. WECC’s ERAR concurred that the language may be administrative; however, it asserts the intent should be retained and captured through a redraft of the Standard modeled after PRC-005-6. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (USBR) | Yes. Reclamation agrees that Requirement R2 is administrative in nature, and Reclamation agrees that Requirement R2 should be retired along with the retirement of Requirement R1. Reclamation agrees with the need to require entities to periodically review their process/procedure documents.  Reclamation supports retiring FAC-501-WECC because the standard failed to meet its original intent of being a vegetation standard and the desired vegetation component is now addressed by other standards. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | Yes. Q2. PG&E agrees that R2 can be retired. As stated by the drafting team “What the requirement actually requires is a review of the plan with no mandate to make changes.” This review requirement is very open. Therefore, the annual review does not provide any assurance that changes that would be beneficial to grid reliability would be made. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | No. This is administrative but should not be retired as long as R1 is present. This requires entities periodically review their TMIP for updates. Also see answer to the question #1. |
| **Response** | |
| Thank you. Please see the DT’s response to WECC ERAR in Question 1. | |

1. The drafting team suggests that Requirement R3 (the entity must adhere to the TMIP) is administrative in nature and can therefore be retired. Do you agree?
   1. If you disagree, please explain your answer.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 3 – Retire R3*  Five of the six respondents agreed that Requirement R3 should be retired; however, the premise for retirement varied. All respondents except the United States Bureau of Reclamation (USBR) support retirement on administrative grounds. USBR recommends retirement because the standard falls short of its original intent (vegetation management circa 1997). WECC’s ERAR concurred that the language may be administrative; however, it asserts the intent should be retained and captured through a redraft of the Standard modeled after PRC-005-6. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (USBR) | Yes. Reclamation does not agree that Requirement R3 is administrative in nature, but Reclamation agrees that Requirement R3 should be retired along with the retirement of Requirement R1. “Adhere to the TMIP” means perform maintenance on equipment. Maintenance is not administrative in nature.  The question of whether retirement is appropriate is not founded on the question of “administrative in nature,” but on another issue discussed in the responses below. This should not be the justification for the retirement of the standard.  Reclamation observes that the efforts regarding FAC-501-WECC are similar to the early days of PRC-005. If reliability dictates that maintenance should be performed on transmission assets identified in FAC-501-WECC Attachment A, Reclamation recommends that a nationwide standard be developed to address the specific maintenance and frequency, rather than a regional standard. |
| **Response** | |
| See above query regarding a NERC SAR. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | Yes |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | Yes. Q3. PG&E agrees that R3 can be retired. The basis of documenting a TMIP is that it guides operational behaviors. PG&E issues guidance documents to define standard operating practices with the intention that they are followed. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | No. This is administrative but should not be retired as long as R1 is present. This requires entities to follow their TMIP. Also see answer to the question #1. |
| Thank you. Please see the DT’s response to WECC ERAR in Question 1. | |

1. If the entire standard is retired, do you believe that retirement will create a reliability gap?

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 4-5 – Reliability Gap*  Five of the six respondents agreed that if the Standard is retired, there would be no resultant reliability gap. By contrast, WECC’s ERAR asserts that full retirement would result in a reliability gap because FAC-501 includes required maintenance of equipment not covered in any other Standard. If FAC-501 is retired, inspection of equipment specified in Attachment A will no longer be required; albeit, they may be performed as needed outside of the body of Standards. Further, because Attachment B lists a number of high value paths, no longer requiring maintenance on those paths results in a substantial reliability gap. [[3]](#footnote-3) | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | No |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (USBR) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | No. Q4. No, PG&E does not believe that the retirement of FAC-501-WECC-2 will create a reliability gap for PG&E. As stated in the response to Question 1, PG&E has one uniform TMIP for all transmission (BES) assets that do not specifically call out the Major WECC Transfer Paths that are listed in Attachment B of FAC-501-WECC-2. Additionally, PG&E must meet state compliance with GO 95 (overhead lines), GO 165 (underground) & GO 174 (substation / distribution), concerning maintenance and inspections. Therefore, no gaps would be created for PG&E. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | Yes. |
| **Response** | |
| Thank you. | |

1. If your answer (to the above question) is “yes,” please:
   1. Identify and explain the specific reliability gap, and
   2. Provide a suggested remedy.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 4-5 – Reliability Gap*  Five of the six respondents agreed that if the Standard is retired, there would be no resultant reliability gap. By contrast, WECC’s ERAR asserts that full retirement would result in a reliability gap because FAC-501 includes required maintenance of equipment not covered in any other Standard. If FAC-501 is retired, inspection of equipment specified in Attachment A will no longer be required, even though the maintenance may continue to be performed with the Standard mandate. Further, because Attachment B lists a number of high value paths, no longer requiring maintenance on those paths results in a substantial reliability gap. [[4]](#footnote-4) | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | NA |
| **Response** | |
| NA | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (USBR) | In practice, FAC-501-WECC is about maintenance of equipment that is not maintained under any other standard. This standard is the only standard Reclamation is aware of that requires maintenance of transformers and breakers. Reclamation asserts that many entities outside of WECC likely have maintenance programs that address the equipment identified in FAC-501-WECC, although not required by a standard. Reclamation observes that the lack of nationwide prescribed maintenance for FAC-501-WECC equipment has not caused any reliability issues elsewhere in the country. Whether the lack of such maintenance poses a reliability gap depends on the reason for the existence of the path list in Attachment B. |
| **Response** | |
| The DT agrees. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | The original Intent of the Standard was to address vegetation management issues and was later modified to include transmission maintenance. The NERC FAC-003 standard now covers vegetation management and although there are no other NERC standards that address transmission maintenance, a gap is not created by retirement of the existing standard as the standard is administrative in nature and does not prescribe a minimum standard for performing maintenance. |
| **Response** | |
| The DT appreciates APS’s observation and concurs that FAC-003 covers the vegetation management issues for the BES. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | NA |
| **Response** | |
| NA | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | See above. |
| **Response** | |
| NA | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | While PRC-005-6 (protection systems) and FAC-003-4 (vegetation control) address certain maintenance plans for certain equipment, there is no other standard that enforces entities to review the following:  Transmission Line Maintenance:  • Inspection requirements  • Patrol requirements  • Tower and wood structure maintenance  Station Maintenance:  • Inspection requirements  • Equipment maintenance for each of the following:   * + - Circuit breakers     - Power transformers     - Reactive Devices   For example, PRC-005-6 does not focus on the mechanical and manual testing of the protection equipment, but FAC-501-WECC covers it. Also, FAC-501-WECC focuses on the structural and equipment maintenance program rather than a vegetation control. Some entities may have such TMIPs already in place, but some may not. A failure to inspect an aging structure or a transformer can lead to a serious cascading outage. If we use current methodology of applicable Major WECC Transfer Path, Path 66 – California-Oregon Intertie (COI) would qualify for TMIP under FAC-501-WECC. It is a very important path that connects Oregon generation with the load in the Northern California. It is also a part of the WECC’s “donut.” The loss of the Path 66 will result in the limitations available for power transfer and will terminate one of the two interconnections points between North and South WECC regions.  Another point can be made on the reported violations of the FAC-501-WECC. There is a total of 22 violations that were reported for FAC-501-WECC between 2012 and 2020 for 13 different entities. Out of 22, 19 have been assessed for a potential impact on the BES: 79% minimal impact and 21% moderate impact.  Since there are reported violations, it shows that not all entities have, update, and/or follow their TMIPs.  Remedy:   * WECC ERAR believes that this standard should be redrafted, and Attachment A should be revised. Attachment A of the FAC-501-WECC should follow the lead of PRC-005-6 and enforce entities to do certain maintenance activities at certain timeframes. * WECC ERAR also believes that we should redefine a list of applicable equipment as a current list of Major WECC Transfer Paths is outdated. WECC ERAR proposes to create a “live” or updated list of the critical transmission that should be a part of the TMIPs. This would potentially require a coordination between WECC, registered entities and RCs.   As another suggestion, FAC-501-WECC should become a NERC-wide standard rather than just a regional standard. |
| **Response** | |
| Thank you. After considering all comments, the DT proposes only limited changes to Attachment A. The DT will pursue removing only Paths 22, 50, and 51 from Attachment B. Further, the DT has proposed inclusion of Attachment C, Revision Process to create a living process whereby an entity can either add or delete an asset from Attachment B without applying the full rigors of the WECC Reliability Standards Development Procedures (Procedures).  The Attachment C, Revision Process is a near-mirror image to that currently used to remove a path from the WECC Path Rating Catalogue. The DT concluded the Attachment C approach enhances document viability without locking down a static list of assets.  WECC ERAR suggests that the DT could adopt a redraft of the document in the style and format of PRC-005-6. The DT concurs that PRC-005-6 may serve as a model for redraft; however, at this stage of the project the DT concluded that the existing language was sufficient to ensure adequate reliability. | |

1. The drafting team suggests that some of the requirements of FAC-501-WECC-2 may be covered in other standards.
   1. If you believe that the reliability related substance of FAC-501-WECC-2 is addressed in another NERC Standard, please identify the standard number and associated requirement.
   2. If you believe there are portions of FAC-501-WECC-2 that are only addressed in that standard and therefore must be retained, please identify those specific aspects and their location in the standard.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 6 – Tasks not Covered Elsewhere*  Only four of the six respondents provided comments. Of the four providing comments, four agreed that not all aspects of FAC-501 are covered in other NERC Standards. Specifically, some equipment specified in Attachment A is covered nowhere else.  For example, USBR and WECC ERAR assert that maintenance of circuits breakers, power transformers, reactive devices, transmission line and transmission tower and wood poles are not addresses in any other Standard.[[5]](#footnote-5) They are specifically addressed in Attachment A. Pacific Gas and Electric concurs noting that the granularity of Attachments A and B is not found in any other Standard (specifically transmission line and substation elements); however, the same reliability goal may constructively be met in PRC-017-1 Remedial Action Scheme Maintenance and Testing, PRC-005-6 Protection System maintenance, and FAC-003-4 Transmission Vegetation Management rendering the added granularity moot.  Because the Standard’s origins stem from vegetation management, and whereas vegetation management is now covered elsewhere, a footnote indicating that the Standard does not address vegetation management will be included. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | As identified previously in this document this standard proceeds the FAC-003-04 standard that is now in force for the BES. Tucson Electric Power believe that FAC-003-04 standard is sufficient to assure reliability in the BES.  Not all portions of this standard are covered in other NERC Standards. |
| **Response** | |
| The DT concurs that not all portions of the Standard are covered in other NERC Standards. The DT also concurs that vegetation management is addressed elsewhere and is proposing inclusion of a footnote to clarify that. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (USBR) | See below. /// FAC-501-WECC Posting 1 page 8 included a statement that the intent of this standard was for vegetation management, but no source was cited for this information. The document highlights historical vegetation-related concepts tied to the development of PRC-STD-005-1 and the FAC-501-WECC series of standards. In reality, none of these standards ever required vegetation management, and all of them required maintenance of specifically identified pieces of equipment, some of which could not reasonably be impacted by vegetation at all (e.g., circuit breakers and relays).  The list of specific equipment required to be maintained under FAC-501-WECC-2 and no other reliability standard (circuit breakers, power transformers, reactive devices, transmission lines, and transmission towers and wood poles) appears only in Attachment A. The nationwide standard FAC-003-4 adequately addresses vegetation management, but not required maintenance of specifically identified equipment. PRC-005 identifies the protection associated with transformers and breakers, but not the transformers and breakers themselves.  The requirement to maintain circuit breakers, power transformers, reactive devices, transmission lines, transmission towers, and wood poles only appears in FAC-501-WECC-2 and no other reliability standard that Reclamation is aware of. The requirement is imposed by R3 and spelled out in Attachment A.  The issue of whether R3 should be retained depends on the reason for the existence of the path list in Attachment B.  Although FAC-003 does not contain specific, detailed requirements to be contained within a Transmission Management Inspection Program, Reclamation observes that no other regional entities prescribe specific maintenance requirements in regional standards. As stated in the white paper, TMIPs may not enhance the reliability of the BES because a TMIP is only as valuable as an entity writes it to be. If FAC-501-WECC is retired and reliability dictates that maintenance should be performed on transmission assets identified in FAC-501-WECC Attachment A, Reclamation recommends that a nationwide standard be developed to address the specific maintenance and frequency, rather than a regional standard |
| **Response** | |
| The DT appreciates USBR’s observations and draws the conclusion that USBR is suggesting a continent-wide standard might better meet the reliability needs of the grid.  As to the *intent* of the Standard and its predecessors, its original *intent* (circa 1997) was to address outages caused by vegetation-to-equipment contact. That *intent* does not carry forward into the existing Standard; rather, vegetation management is addressed in FAC-003-4, Transmission Vegetation Management. A clarifying annotation is proposed in the event the Standard is not retired.  As to the detail of the TMIP and Attachment A, the DT concurs that the plan is only as good as the detail it includes, and the detail of Attachment A is not covered elsewhere. In Posting 1, the DT proposes only minimal changes as the primary trajectory has shifted to inclusion of proposed Attachment C creating a process for addition/subtraction of assets from Attachment B rather than a “laundry list” of assets that could easily include/exclude essential elements. The proposed Attachment C process should allow for a more detailed review of specific assets while adding long-term viability to the document.  For a more in-depth explanation of the original intent, please review the senate record referenced in on page 9 at footnote 22. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | NA |
| **Response** | |
| NA | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | NA |
| **Response** | |
| NA | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | Q5. both a and b are accurate. Q5 a. The purpose of FAC-501-WECC-2 is to ensure that the inspection and maintenance of those current carrying facilities applicable to Major WECC Transfer Paths. This is not directly covered by any other standard. However, aspects of FAC-501-WECC-2 are plausibly covered in other requirements. PRC-017-1 covers the maintenance of RAS schemes that have an impact on aspects of WECC paths that those RAS schemes protect. Additionally, PRC-005-6 requires maintenance of the protection systems that protect the specific lines that make up each Major WECC Transfer Path. Lastly, FAC-003-4 governs the inspection and mitigation of vegetation encroachment and abatement, but it fails to identify or require evidence regarding an observable inspection report of the transmission line, Substation Facility, and/or asset.  Q5 b. FAC-501-WECC-2 is the only standard that specifically requires a regimented transmission maintenance and inspection plan for specific current carrying facilities (Transmission Line and Substation Elements). If the purpose of FAC-501-WECC-2 is to ensure each Major WECC Transfer Path is maintained per the criteria set in Attachment A, then this criterion should be incorporated in another governing NERC standard. |
| **Response** | |
| Thank you. Please see previous response to USBR regarding a continent-wide SAR. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | See answer for question #4.  While PRC-005-6 (protection systems) and FAC-003-4 (vegetation control) address certain maintenance plans for certain equipment, there is no other standard that enforces entities to review the list of equipment specified in the FAC-501-WECC. |
| **Response** | |
| Thank you. Please see the above response to USBR. | |

1. FAC-501-WECC-2, Attachment B is a static list of paths created in 2000. There is no known documentation explaining how the list was created or why the listed paths were included. Is Attachment B still relevant for identifying those assets in need of enhanced maintenance?
   1. If your answer is “no,” please describe the appropriate criteria for making that identification.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 7 – Relevance of Attachment B*  Five of the six respondents agreed the content of Attachment B is no longer relevant as the benchmark to identify specific assets requiring specified maintenance. The Five respondents held this position because: 1) due to the passage of time (1997-2020), the reason for including paths in Attachment B is no longer known, 2) the configuration of the Western Interconnection has changed substantially over the last 23 years outdating the attachment’s content as the best identifier of equipment in need of enhanced maintenance, and 3) peripheral maintenance programs outside of the Standard are more stringent and timely focused than the static list of the attachment. One respondent asserted that even though Attachment B is no longer relevant, a Standard should not single out specific equipment for enhanced maintenance. WECC ERAR suggested a criteria should be developed to identify critical paths as fact patterns change as opposed to reliance on a static list. One respondent asserted Attachment B remains relevant because of the high profile of the paths listed on Attachment B.  None of the respondents offered criteria for identifying high profile paths such as those included in Attachment B. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | No. Tucson Electric Power does not operate any of the lines in FAC-501-WECC-2 Attachment B. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (BUR) | No. Reclamation agrees that the basis for inclusion on the list and the imposition of extra maintenance tasks (an extra regulatory burden) have been largely lost to history.  Reclamation does not believe it is appropriate to single out some equipment for “enhanced maintenance.” A single, national standard should cover all maintenance that is considered essential to the reliability of the Bulk Electric System and should be applied universally to all such equipment. If maintenance on the equipment identified in FAC-501-WECC Attachment A is essential for reliability, this equipment should be covered by a nationwide standard. |
| **Response** | |
| The DT appreciates USBR’s observation and concluded that USBR would be in support of a continent-wide standard in lieu of a regional standard lacking technical support. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | No. There is currently no agreed upon methodology for determining which transmission paths are critical to the reliability of the Western Interconnection. The current Attachment B was developed 20 years ago and the technical justification for its creation is unknown. Since the creation of Attachment B, the Western Interconnection has changed substantially and the list has remained static. For example, new paths have been added to the system and have not been vetted in regard to their applicability to Attachment B. Paths 22, 50, and 51 are included on the list and have been reviewed in-depth for criticality to the BES and removed from the WECC Path Rating Catalog. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | Yes. It is BPA’s understanding that the paths on this list are, historically, the major interties and areas with known reliability issues (especially stability issues) within the Western Interconnection. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | No. Q6. No for PG&E. PG&E performs a risk-based approach for its enhanced maintenance practices and risk-ranks its facilities that are Major WECC Transfer Paths. Moreover, PG&E codifies enhanced inspection and maintenance procedures in its internal procedures. For instance, TD-1001P-13, which is entitled "Enhanced Inspection and Maintenance Requirements for Diablo Canyon and Morro Bay Power Plants Overhead Transmission Facilities”, states that “Circuits supporting Diablo Canyon Power Plant (DCPP) and Morro Bay Power Plant, and the tie lines for the Western Electric Coordinating Council (WECC) will be inspected more frequently and follow more rigorous maintenance practices.” PG&E does not suggest that WECC should adopt PG&E’s criteria, however, considering PG&E’s inspection and maintenance practices, it serves PG&E well. Additionally, PG&E believes that Attachment B may still be relevant for the Western Interconnect for some entities. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | No. WECC believes that we should redefine a list of applicable equipment as a current list of Major WECC Transfer Paths is outdated. WECC proposes to create a “live” or updated list of the critical transmission that should be a part of the TMIPs. This would require a wider range of SMEs and coordination between different entities. |
| **Response** | |
| Thank you. The DT’s current approach is to define a “process” to address the equipment as opposed to creating a static “list” of equipment. Please see proposed Attachment C. | |

1. Do you believe the 40 paths listed in Attachment B are all critical to the reliability of the Western Interconnection?
   1. Please explain your answer.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 8 – Are the 40 Paths Critical to Reliability*  Five of the six respondents assert that the 40 specified paths are not critical to reliability of the Western Interconnection. Restated, the mere listing of the 40 paths in the Attachment B does not make them critical to reliability. One respondent asserted that at least some of paths listed are critical to reliability and, if lost, could destabilize the Western Interconnection.  All respondents agreed that due to the passage of time (1997-2020), none of the respondents were aware of why the specific contents of either Attachment A or B were included in the Standard.  None of the respondents were aware of any supporting records or documentation that would explain why the granularity of Attachment A or B exists. Some of the respondents viewed peripheral documents such as the WECC Path Rating Catalogue as more relevant to operations and planning. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | No. The list of 40 critical paths may contain circuits with a larger potential impact to the overall BES, however, the presumed certainty is these lines are routinely monitored and maintained as needed based on their criticality to the BES. The additional FAC-501-WECC-2 requirements seems to be an unnecessary requirement and paperwork burden. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (BUR) | No. Recently, Reclamation devoted many resources to determining why one of its smaller facilities was listed on a path, and found minimal information to support it. Reclamation was challenged by the lack of historical records and the lack of a process to seek removal of a small facility from both the Path Rating Catalog and Attachment B.  Reclamation recommends the term “critical” should be defined in a nationwide standard instead of a list of all critical paths. This should be developed with the latest model from the Balancing Authorities. |
| **Response** | |
| See above response to USBR. The DT, like USBR, has been taken aback by the lack of historic record or current technical support for inclusion of the Paths.  To avoid confusion, the DT would highlight that removal of a path, facility, or equipment from the WECC Path Rating Catalog is an entirely separate procedure from removing the same equipment from a standard. One could have equipment removed from the catalogue while doing so would have no impact on the standard – and visa-versa. Two separate processes are required.  That said, the DT would welcome observations gleaned from the path rating process that might form the foundation for a technically supported “Attachment B.” Further, the DT would welcome USBR’s suggestions as to how “critical” might be defined.  In subsequent postings of this project the DT would welcome greater detail on USBR’s intent. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | No. There is currently no agreed upon methodology for determining which transmission paths are critical to the reliability of the Western Interconnection. The current Attachment B was developed 20 years ago and the technical justification for its creation is unknown. Since the creation of Attachment B, the Western Interconnection has changed substantially and the list has remained static. For example, new paths have been added to the system and have not been vetted in regard to their applicability to Attachment B. Paths 22, 50, and 51 are included on the list and have been reviewed in-depth for criticality to the BES and removed from the WECC Path Rating Catalog. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | No. BPA agrees that the selected paths are not completely arbitrary but the list is out of date. BPA does not know of any specific detailed criteria that was used to identify these 40 paths. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | No. Q7. PG&E believes that there still exist some critical paths in the Western Interconnection that are listed on Attachment B. However, for operating and planning purposes, PG&E relies on the WECC Rating Catalog and not FAC-501-WECC for information concerning PG&E’s four Major WECC Transfer Paths. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | Yes, there are critical transmission elements on Attachment B that can destabilize the system if they are lost.  This list of 40 paths is very outdated and requires a revision. |
| **Response** | |
| Thank you.  As an overview of the above comments and responses, the DT concurs that there is no existing approved method, procedure, or authoritative document that defines the attributes of a “critical” path. The DT does not believe that simply because a path is critical to one entity within the Western Interconnection that it is also critical to all entities within the Western Interconnection; thus, addition and subtraction of paths from Attachment B should be led by those utilities and/or applicable entities most directly impacted by the asset. The entity most impacted by performance or changes in a path is most likely to possess the best tools, information, and vested interest to add or subtract a path from Attachment B.  As such, the DT is suggesting creation of Attachment C.  As proposed, Attachment C would be first approved by FERC. Thereafter, the process would govern how assets were added/subtracted from Attachment B. When the proposed FERC-approved process is used, adding/subtracting from Attachment B would only require approval by the Board followed by an informational filing at NERC/FERC.  If the Attachment C process is changed, those changes would need to be vetted using the full rigors of the WECC Reliability Standards Development Procedures.  Finally, by adopting Attachment C, where Attachment B has been incorporated by reference into other NERC Standards, no changes would be required in those peripheral documents solely based on changes to Attachment B. (See Question 10 responses to the following question.) Because the technically supported evidence for addition / subtraction from Attachment B would be generated afresh under the Attachment C proposal, the dearth of historic evidence would no longer be a factor (See Question 9.) | |

1. The list of 40 paths in FAC-501-WECC-2, Attachment B was created between 1998 and 2000, predating mandatory standards by several years. The records identifying the specific criteria used to identify the 40 paths could not be located. Does your firm have any documentation specifying the criteria used to select the 40 paths?
   1. If yes, please provide the drafting team with that documentation.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 9 – No Supporting Records*  Due to the passage of time (1997-2020), none of the respondents were aware of why the specific contents of either Attachment A or B were included in the Standard. None of the respondents could provide any supporting records or documentation that would explain why the granularity of Attachment A or B exists. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (BUR) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | No. |
| **Response** | |
| Thank you. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | No. A much deeper investigation would require finding the criteria used, however, that was over 20 years ago and finding documentation would be difficult. The Drafting Team has already performed an extensive analysis on this, and they couldn’t find the exact criteria used for the identification. |
| **Response** | |
| Thank you. | |

1. FAC-501-WECC-2, Attachment B is also incorporated by reference in: a) FAC-003-4 Transmission Vegetation Management, Section 4.2.3., b) PRC-004-WECC-2 Protection System and Remedial Action Scheme Misoperation (to be retired January 1, 2021), and c) PRC-023-4 Transmission Relay Loadability, Attachment B, Criteria B1, where that standard colloquially refers to the “major transfer path within the Western Interconnection” without directly referencing the WECC Major Transfer Paths in the Bulk Electric System and without further description.
   1. If Attachment B is retired, please identify any actions required in the aforementioned standards.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  *Question 10 – Identify impacted to Other Standards*  There was no consensus on how to treat references to the “Major WECC Transfer Paths” (AKA: Attachment B) appearing in other Standards.    Suggestions included: 1) redaction from all other Standards either under this Standard Authorization Request (SAR) or by a separate SAR, 2) no action required, 3) add the entire Attachment B into all other impacted Standards, or 4) simply include a hyperlink in all other Standards, linking to a separate document from Attachment B that would be titled “Major WECC Transfer Paths”.  WECC Standards offered an FAQ regarding FERC’s historic treatment of this Standard. The FAQ concluded that simply including a hyperlink is contrary to FERC’s direction. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | All reference to Attachment B within FAC-003-4 would require to be redacted from the standard and revised as needed. |
| **Response** | |
| Thank you. Please see Attachment A of WECC-0141 Posting 1, Response to Comments - Incorporation by Reference - Question 10 and also the proposed creation of Attachment C. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (BUR) | Reclamation has minimal, informal email records of why a transmission line terminating at one of its substations was entered on the Path Rating Catalog by the Transmission Owner, thus rendering a small substation part of a critical path, which was then copied onto Attachment B. Reclamation regrets there is neither a better record of this decision nor a means of revisiting it periodically for the purposes of validation and updating.  If Attachment B is retired, there would be no impact to FAC-003-4 and PRC-023-4. These standards do not specifically reference FAC-501-WECC-2 Attachment B; rather, they reference the Major WECC Transfer Paths. If the Major WECC Transfer Path list is updated, there would be no impact to the other standards because they only reference the list itself, not its specific content.  If the drafting team’s intent is to retire the Major WECC Transfer Path list, Reclamation recommends that action would be separate from the action to retire FAC-501-WECC-2. Reclamation has no visibility into how to move toward a re-examination of the criteria used to select the Major WECC Transfer Paths. |
| **Response** | |
| Thank you. Please see Attachment A WECC-0141 Posting 1, Response to Comments - Incorporation by Reference - Question 10 (appended) as well as the DT’s proposed Attachment C.  The DT appreciates USBR’s frustration on forward movement. As a peripheral observation, it was APS’s successful removal of paths from the WECC Path Rating Catalogue that precipitated this project. As the machinations of the catalogue are outside of the scope of this project, and whereas the processes for Standards development and the catalog are independent of one another, the DT would encourage USBR to contact APS directly to discern how APS successfully had its paths removed from the catalogue. To reiterate, even though the paths have been removed from the catalogue – they remain in the standard. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | If FAC-501-WECC-2 is retired, a SAR should be drafted to remove references to “Attachment B” and “Major Transfer Paths within the Western Interconnection” from FAC-003-4 and PRC-023-4. If FAC-501-WECC-2 is not retired, a methodology for determining which transmission paths are critical to the reliability of the Western Interconnection needs to be developed. APS suggests that the existing Attachment B, which is a static list, be replaced with the methodology for determining which paths FAC-501-WECC-2 is applicable to. |
| **Response** | |
| Thank you. Please see Attachment A of WECC-0141 Posting 1, Response to Comments - Incorporation by Reference - Question 10 (appended) and the proposed Attachment C of the standard. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | If other NERC Reliability Standards reference Attachment B, BPA believes an Attachment B equivalent should be incorporated into those Reliability Standards. Alternatively, BPA suggests that Attachment B be turned into a stand-alone document that can then be referenced by each standard, as needed. |
| **Response** | |
| Thank you. Please see Attachment A of WECC-0141 Posting 1, Response to Comments - Incorporation by Reference - Question 10 (appended) and proposed Attachment C of the standard. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | Q8. PG&E is not aware of any documentation on the creation of the criteria for determining the Major WECC Transfer Paths. However, PG&E is of the opinion that the criteria likely included at least two factors: 1) transfer of ownership between different entities on transmission lines with major Megawatt flow; and 2) susceptibility of cascading outages if there is a major interruption of Megawatt flow.  Q9. For FAC-003-4, no further action will be required because Section 4.2 of the Standard would remain intact and would include transmission lines that are identified as an element of a Major WECC Transfer Path in the BES. Moreover, PG&E does not rely on Attachment B, but uses the WECC Ratings Catalogue. For PRC-004-WECC-2, no further action will be required because PG&E will continue to report out Misoperations on transmission paths and RAS irrespective of FAC-501-WECC-2. For PRC-023-4, no further action will be required because PG&E will continue to report out on the transmission loadability on the circuits and equipment as indicated in Section 4.2 of the Standard, which does not make a distinction between WECC and non-WECC transfer paths. |
| **Response** | |
| Thank you. Please see Attachment A of WECC-0141 Posting 1, Response to Comments - Incorporation by Reference - Question 10 (appended) and the proposed Attachment C for the standard. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | The list of Major WECC Transfer Paths is mentioned in some standards. For example, a PRC-004-WECC-2 (retiring on December 31st, 2020) has a link to the WECC website and FAC-003-4 mentions the list but does not have the list attached. We believe that we should move towards identifying a list of the critical transmission elements and use that as a reference. This might involve changing the reference for FAC-003-4 and PRC-023-4 as well as FAC-501-WECC. |
| **Response** | |
| Thank you. Please see Attachment A WECC-0141 Posting 1, Response to Comments - Incorporation by Reference - Question 10 (appended). | |

1. The drafting team invites comment on other areas of the project not specifically addressed above.

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| Comment Summary. For proposed changes and avenues forward, please see the preamble.  The drafting team and the industry concur that support for including paths in Attachment B can no longer be located. Although BPA, PGE and WECC had excellent suggestions for proposed redrafting, at the conclusion of the team’s review the drafting team opted only to address the three specified paths called out in the Standard Authorization Request. The team agreed to hold BPA’s comments in abeyance should the project take on a different trajectory.  The team will only be pursuing deletion of the SAR-specific paths from Attachment B.  The team will request that the Compliance section be updated with the most recent NERC-provided boilerplate language. | |
| **Commenter** | **Comment** |
| Tucson Electric Power (TEP) | NA |
| **Response** | |
| The DT appreciates TEP’s continued involvement in the standards development process. | |
| **Commenter** | **Comment** |
| United States Bureau of Reclamation (BUR) | Reclamation observes that Posting 1 contains several assertions of facts that are not substantiated and that disregard the actual content of PRC-STD-005-1 through FAC-501-WECC-2. Reclamation supports the retirement of FAC-501-WECC-2, but not for the reasons cited by WECC. Reclamation asserts the standard is neither administrative nor about vegetation; rather, there is no justification for singling out equipment types at only a few locations in the WECC region for “enhanced maintenance.” If this maintenance is essential to reliability, it should be captured in a nationally applicable standard. |
| **Response** | |
| See previous response to USBR regarding supporting documentation. The DT concurs there is no justification for the attachment’s content (40 paths). Further, any resemblance to a vegetation management Standard has long since disappeared from the Standard as approved.  As a result, the Standard imposes a higher burden (is more stringent than the continent-wide standard) without having provided any supporting evidence for the need. The hurdle the team seeks to overcome is how to rachet back a more stringent standard when – arguably – less maintenance for whatever reason may be perceived as less reliability than more maintenance without a reason. The DT thanks USBR for its observations and encourages USBR to stay engaged in the project and continue to offer positive suggestions as the opportunity arises. | |
| **Commenter** | **Comment** |
| Arizona Public Service (APS) | If the FAC-501-WECC is not retired, a methodology for determining which transmission paths are critical to the reliability of the Western Interconnection needs to be developed. APS suggests that the existing Attachment B, which is a static list, be replaced with the methodology for determining which paths FAC-501-WECC-2 is applicable to. |
| **Response** | |
| Thank you. Please see the above summary. | |
| **Commenter** | **Comment** |
| Bonneville Power Administration (BPA) | BPA appreciates the opportunity to provide comments to the WECC-0141 Project Drafting Team. With that, BPA has the following comments and questions:  1. BPA would like to understand what reliability issues are being addressed and/or solved by FAC-501-WECC.  o BPA’s Preventative Maintenance Guide and Transmission Line Work Standards, which includes TMIP related activities, ensures all equipment is being maintained appropriately. All Substation Maintenance activities are documented in BPA’s chosen maintenance database, Cascade.  2. BPA would like more information regarding the need for FAC-501-WECC in the Western Interconnection if there is no national standard requiring a major/critical paths list, or, a Regional Reliability Standard (RRS) requiring other regions to identify, perform maintenance, and report on critical facilities.  3. If FAC-501-WECC cannot be retired, BPA recommends the following solutions to add clarity to the current FAC-501-WECC, thus ensuring the Standard is adequate to serve as a functional RRS.  Section B.M1 – The wording implies a specific set of items are to be reported on, “… TMIP detailing each of the items listed in Attachment A…” However, Section 1 and 5.b of the attachment are not so precise when terms such as “… etc.” and “… but not limited to…” are used.  Section C.1.1.1 – This seems to imply that NERC either references or has a standard covering these maintenance activities “… NERC or the Regional Entity...”  Attachment A:  Section 1 – Be explicit as to which facilities are to be included: BPA’s assumption is that Appendix B included Path Lines, and specific connected equipment that includes transformers, series capacitors, shunt capacitors, shunt reactors and circuit breakers. BPA has understood this to be a sampling of maintenance activities on critical path equipment. Another preferred option would be to only identify the list of facilities in Section 5.b.  Section 2 – BPA believes a fourth methodology could include the maintenance recommendations of the OEM. This methodology could overlap any of the other three.  Section 5.b – BPA recommends elimination of the term “but not limited to” and be explicit as to the equipment where reporting is required. BPA’s assumption was transformers, series capacitors, shunt capacitors, shunt reactors, and circuit breakers were to be included. BPA does not have any phase-shifters, synchronous condensers, or tertiary reactors as a reactive device. |
| **Response** | |
| *1. What is the reliability issue addressed?*  The DT appreciates BPA’s question. In light of the DT’s research and the responses provided in Posting 1, the DT cannot pinpoint a specific reliability goal originally addressed by the Standard. That said, there is a quasi-clear intent to ensure the identification and maintenance of specific facilities; albeit, there is no stated reason why any of the Attachment A or B assets have been identified.  *2. Regional need in light of no continent-wide Standard*  The DT appreciates BPA’s request for the DT to explain why this Standard is only needed in the Western Interconnection. In light of the dearth of historic record, corporate memory, or specific current operating or/or planning criteria explaining the content of Attachments A and B, the DT cannot currently explain why the Western Interconnection needs this Standard. That said, the Standard does contain requirements to address maintenance not included in any other Standard.  If the threshold for keeping the Standard is simply “the FAC-501 contains more detail”, its retention could be argued under FERC’s “more stringent” doctrine. However, because the continued inclusion of the greater granularity has no support the DT is in accord with BPA’s position that the Standard need not be retained, but for the granularity provided in Attachment A.  The hurdle the DT and Ballot Pool faces is how to support retirement of the unsupported features in light of the “more stringent” doctrine.  *3. Suggested added clarity: Attachment A. 1. Facilities and 5. Station Maintenance*  The DT concurs that BPA’s suggested language has merit. Please see the “Changes Made” summary at the beginning of this document to identify changes made to Attachment A.  *4. Suggested added clarity: Section C.1.1.1.*  The Compliance section of the Standard generally falls under the purview of NERC. The current Compliance language appears to be out of date when compared to NERC’s current language. The DT will propose to NERC that the Compliance section be updated to read as follows (NERC’s newest language):   1. Compliance 2. **Compliance Monitoring Process**    1. **Compliance Enforcement Authority**   As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.    *5. Suggested added clarity: Attachment A, Section 2. Maintenance Methodology and Section 5.b.*  The DT concurs that BPA’s suggested language has merit. Please see the “Changes Made” summary at the beginning of this document to identify changes made to Attachment A. | |
| **Commenter** | **Comment** |
| Pacific Gas and Electric (PGE) | PG&E supports the retirement of FAC-501-WECC-2. In the event that WECC decides to re-draft the standard rather than retire it, PG&E suggests that the redrafted standard should explicitly exclude Vegetation Management and reference FAC-003-4 (or its replacement) as the definitive standard for Vegetation compliance. If the original intent of FAC-501-WECC was to center on vegetation management, the current, effective, version of the standard does little to bring vegetation management to the forefront. In fact, vegetation is not even mentioned. Furthermore, Attachment A has no influence on PG&E’s Transmission Vegetation Management inspection program, and PG&E’s vegetation inspection program is informed and influenced by FAC-003-4, not FAC-501-WECC-2. Attachment B is critical information, but it should be updated, and it is not relied upon by PG&E. |
| **Response** | |
| *1) Explicit exclusion of vegetation management.*  The DT concurs with PG&E’s and will include an appropriate annotation.  As of October 13, 2020, the DT has opted not to fully redraft the Standard. Rather, the DT will pursue a more surgical approach to delete/delist only the SAR-specific paths, coupled with the creation of proposed Attachment C to add/subtract assets from Attachment B. | |
| **Commenter** | **Comment** |
| Western Electric Coordinating Council (WECC) | In summary, the difference between FAC-501-WECC and FAC-003 is that each standard has it is own purpose. FAC-501-WECC focuses on the inspection of transmission equipment, substation equipment and transmission structures, while FAC-003 focuses on the vegetation management under and around transmission facilities. Both standards are important to the reliability of the BES and are applicable to the important facilities, such as Major WECC Transfer Paths.  The paths listed on Attachment B are very important to the reliability, and a loss of a path(s) can have severe consequences to the reliability of the BES.  FAC-003 focuses on the vegetation management to prevent vegetation-related outages, and even potential fires. Vegetation has a high risk to the reliability as vegetation growth can be unpredictable. Similarly, FAC-501-WECC focuses on the equipment and structure inspection and maintenance. A failure to inspect an aging, damaged or defective equipment can result in equipment failure, which in return, can lead to a major outage or series of cascading outages and compromise reliability of the BES.  There is no other alternative standard to FAC-501-WECC that covers requirements for equipment inspection.  There is a PRC-005 that focuses on the maintenance of the protection systems, but its scope is limited. FAC-501-WECC standard covers requirements for the entities to develop, annually review, and follow their inspection plan that focuses on inspection and maintenance of many pieces of transmission and substation equipment which is a part of the Major WECC Transfer Path.  There is a strong case to keep FAC-501-WECC requirement, but it needs to be re-drafted. There are violations that were reported for FAC-501-WECC, which tells us that there are potential problems with the entities develop and follow their TMIPs, and how they perform inspections of their equipment in general. Another concern is the entities who do not qualify under FAC-501-WECC applicability rules. These entities are not required to inspect and maintain their BES assets, which can be a troublesome. Just like FAC-003 and PRC-005, FAC-501-WECC requires entities to develop and follow a plan to ensure the appropriate operation of their qualified BES assets, which in return, provides better reliability of the BES. |
| **Response** | |
| The DT thanks WECC ERAR for the summary of its previous comments. | |

1. When viewed in their original format, Tucson’s response appears as “View Response #3” with all other responses following. There is no response one or two when viewed online. Prior to the close of the comment window, Kevin Paletskih, WECC Entity Risk Assessment & Registration, provided comments for the posting via an internal memo. Although the comments were received outside of the provided portal, the drafting team agreed to consider the comments due to their merit. [↑](#footnote-ref-1)
2. Listed in Attachment B: 1) Path 22, Southwest Four Corners, 2) Path 50, Cholla – Pinnacle Peak, and 3) Path 51, Southern Navajo Transmission System. [↑](#footnote-ref-2)
3. There is no other Standard addressing the full list of features contained in Attachment A. For example, Transmission Line Maintenance, patrolling, inspection of towers and wood structures, and the Station Maintenance elements addressed Attachment A (equipment maintenance for circuit breakers, power transformers, and reactive devices. [↑](#footnote-ref-3)
4. There is no other Standard addressing the full list of features contained in Attachment A. For example, Transmission Line Maintenance, patrolling, inspection of towers and wood structures, and the Station Maintenance elements addressed Attachment A (equipment maintenance for circuit breakers, power transformers, and reactive devices. [↑](#footnote-ref-4)
5. See comment provided in response to Question 6. [↑](#footnote-ref-5)