

To: Federal Energy Regulatory Commission (FERC)
From: Arizona Public Service Company (APS)
Date: September 15, 2021
Re: FERC Questions and APS Responses regarding the Delisting of WECC Paths 22, 23, 50, and 51

Background

As of January 1, 2020, the APS delisting from the WECC Path Rating Catalog of WECC Paths 22, 23, 50, and 51 became effective. On April 14, 2021, APS received an email request from FERC,

"I just looked at the AZPS presentation to the Southwest Area Transmission (SWAT) Oversight group highlighting the delisting of the paths. On slide 7 it is stated that "Studies have shown that for APS paths 22, 23, 50 and 51 thermal and voltage have shown that for APS paths 22, 23, 50 and 51 thermal and voltage violations would occur well before any stability concerns, and thus the path flow violations would occur well before any stability concerns, and thus the path flow would be maintained below any stability limit would be maintained below any stability limit." I am just wondering are those studies available?"

On April 15, 2021, APS provided a file sharing link to the requested study work; with FERC confirming receipt of the requested document(s) on April 16, 2021. On September 14, 2021, FERC provided the following five follow-up questions (in black) on the provided study work and on September 15, 2021, APS the following responses (in blue) to the FERC questions on the study work.

FERC Questions and APS Responses

FERC Question #1: Please explain APS's choice of study conditions, including why APS did not also study multiple system conditions (light, intermediate, and peak load conditions), including studies for system conditions 3 and 5 years into the future.

APS Response #1: Pre-dating 2020, the Western Electric Coordinating Council (WECC) Path Rating process provided no guidelines, process, nor criteria for the path delisting; so, APS developed the process with input from WECC. As the WECC Path Ratings are almost exclusively voluntary and contractual in nature, APS determined that using the FAC-013 process would be the most appropriate technical study and used its existing FAC-013 process to determine any delisting impacts and the associated delisted Total Transfer Capability (TTC) ratings of the elements.

The FAC-013 requirement calls for a near-term planning case which for FAC-013; historically, APS uses a 2nd year peak power flow model. Further, the study provided to FERC was the 2nd time the study was performed on a 2nd year case. 12-18 months earlier, to inform E&O members, preliminary results were performed, but the results were just never formalized, but with the similar results.

APS was further comfortable with near-term planning power flow model because FAC-013 has an annual re-assessment requirement which would be triggered for the delisted WECC path elements if system changes are expected to impact the TTC. Thus, further out cases would make sense if known system changes were on the horizon, which none were planned at the time of the study work (or today) for the northern Arizona system. Further, longer-term 5th and 10th year peak cases and other off-peak assessments to ensure reliability were evaluated in subsequent TPL analyses by removing the path ratings for the power flow cases. While not stressed, the TPL studies resulted provided similar no-impact results to the FAC-013 studies for the path delistings. However, these TPL studies were not done in specific support of the delisting, but rather confirmed the FAC-013 findings of no reliability impacts of path delistings.

Lastly, APS had publicly announced its plans to transition to MOD-030 flowgate methodology in 2022. MOD-029 TTC approaches including WECC path ratings, and FAC-013 studies and their corresponding results become irrelevant in the MOD-030 construct.

FERC Question #2: Did an independent 3rd party also perform an assessment? If yes, please share the third party's assessment.

APS Response #2: No formal third-party review of the FAC-013 assessment was performed nor required by the WECC delisting process. However, the delisting process did include comprehensive discussions with joint owners, peer-utilities, and industry stakeholders/experts, as detailed below:

Coordination and Communication History

The coordination process began in 2018 when APS hosted two meetings with WECC to understand the process and procedure for delisting WECC rated paths and continued through 2018 and into 2019 at various other stakeholder processes including with joint owners and various industry stakeholders.

Joint Ownership Coordination

Through coordinated efforts on joint ownership WECC paths (Path 23, 51) the delisting of these WECC Paths were approved by the Engineering and Operating committees (E&Os). Specifically, the Navajo E&O approved delisting of WECC Path 51 on April 22, 2019, and the Four Corners E&O approved delisting of Path 23 on June 14, 2019. Further, the Mead-Phoenix Project (MPP) E&O was provided an update on the delisting of WECC Path 51 at the May 1, 2019 MPP E&O meeting and no comments or concerns were raised at that time or subsequently.

Industry/Utility/Stakeholder Coordination and Communication

APS had direct communications with Salt River Project (SRP) on Path 50 delisting on August 9, 2019. APS also posted notification of investigating the WECC Path delisting to its OATI OASIS website on August 15, 2019.

In public stakeholder forums, APS provided a presentation to the Southwest Area Transmission (SWAT) Oversight group on August 21, 2019 and didn't receive specific concerns. APS also provided a notification of plans to delist the four WECC paths to the WECC Studies Subcommittee (StS) on September 3, 2019 including notification of a related presentation APS gave on September 17, 2019. Finally, APS provided a presentation to the WECC RAC on October 18, 2019 to summarize the comments received and the effective date. APS then provided formal notification to WECC membership including RAS, OC, and StS on October 21, 2019 in advance of the January 1, 2020 effective date.

Post-Delisting Opportunities

Each of the above steps were augmented through WECC's reliability standards development procedure. Through the procedures, the industry at-large was notified of the delisting from the WECC Path Rating Catalog. The APS delisted WECC paths were included in each of the six, public postings. None of the postings resulted in any minority position suggesting the APS delisted paths should not be delisted nor removed from WECC-FAC-501 Attachment B.

FERC Question #3: On page 7 of the report under results it states that, “The results of the analysis show that all transmission elements in the study were below 100% of their continuous rating under normal conditions. Under contingency scenarios, there were no transient, dynamic, or voltage instability and no transmission element flowed above its emergency rating.” However, results in Appendix E (steady state results) show thermal and voltage violations. Would you please explain this apparent discrepancy with the statement on page 7?

APS Response #3: APS’s FAC-013 methodology only monitors and limits the individual stressed segment for overloads or for the outage of the individual stressed segment for overloads/voltage issues/transient stability issues it causes on other non-stressed elements. Other non-stressed mon/con pairs are disregarded as stressed element limitations but included in the report for full documentation purposes. APS expects this explains the apparent discrepancy. APS’s understanding is this study approach is consistent with industry accepted practice including in the WECC Path Rating process. APS consistently applies this approach to FAC-013 stressing studies.

The SWAT presentation, slide 7, highlights these same findings that thermal, voltages issues will occur on other elements in the system before the individual delisted WECC path elements.

FERC Question #4: What is APS's understanding as to the technical criteria or other rationale that resulted in the establishment of the list of paths (Attachment B) or why these particular paths were selected and others were not? We could find no records supporting the WECC path list.

APS Response #4: One outcome from the delisting stakeholder outreach process that APS developed was for APS to submit Standard Authorization Request (SAR) with WECC regarding FAC-501-WECC. In 2020 APS submitted the SAR, WECC approved the SAR , and a drafting team assembled for reviewing FAC-501-WECC.

The question posed by FERC was an early key question for the WECC-0141 FAC-501 drafting team. However, the drafting team and its WECC-wide outreach has failed to determine the exact criteria used to establish the elements listed in the FAC-501-WECC Attachment B. The drafting team did identify that most are WECC paths, but a few are not formal WEC- approved paths and yet not all WECC paths are included. The WECC-0141 FAC-501 drafting team did document the outreach findings related to the history of Attachment B as detailed in the following posting on page 6-8 :

<https://www.wecc.org/Reliability/WECC-0141%20FAC-501-WECC%20Posting%201%20White%20Paper%20-%20Retire%20or%20Modify%20-%20Post%20Tech.pdf>

FERC Question #5: Paths 22 and 51 have joint ownership; do all parties agree with the delisting and did each perform an independent assessment?

APS Response #5: Path 22 is 100% APS-owned, but Paths 23 and Path 51 are jointly owned. Jointly owned transmission assets including WECC Path 23 and 51 each have an E&O and a technical sub-group to inform and make decisions. The WECC Path 23 and 51 E&Os peer-reviewed the APS delisting results. Each E&O received consensus approval for delisting of WECC Path 23 and 51. APS is unable to answer if other utilities independently performed analyses but can state that no additional path 23 or 51 delisting study work was shared with APS. A more detailed history is included in APS Response #2 above which include specific E&O approvals and dates.