UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Transmission System Planning Performance	)	
Requirements for Extreme Weather	)	Docket No. RM22-10-000

COMMENTS OF ARIZONA PUBLIC SERVICE COMPANY

Arizona Public Service Company (APS) submits comments regarding the Federal Energy Regulatory Commission's (Commission) Notice of Proposed Rulemaking (NOPR)[1] issued on June 16, 2022, in the above captioned docket.

1. INTRODUCTION

APS, a wholly-owned subsidiary of Pinnacle West Capital Corporation (PWCC), is a vertically-integrated public utility doing business under the laws of the State of Arizona. APS is engaged in the business of generating, transmitting, and distributing electricity in eleven of Arizona's fifteen counties. APS serves more than one million retail electric customers in Arizona and participates in wholesale markets throughout the West. APS is registered with the North American Electric Reliability Corporation (NERC) for purposes of compliance with the Electric Reliability Standards and performs 10 of the registered NERC functions.[2]

[1] Transmission System Planning Performance Requirements for Extreme Weather, 179 FERC ¶ 61,195 (2022) (NOPR).

[2] APS is currently registered with NERC as a Balancing Authority, Transmission Operator, Transmission Owner, Transmission Planner, Transmission System Provider, Planning Authority, Generation Operator, Generation Owner, Resource Planner, and Distribution Provider.

2. BACKGROUND

In this NOPR, the Commission seeks comment on its proposal to direct NERC to submit modifications to Reliability Standard TPL-001-5.1 (Transmission System Planning Performance Requirements) to address reliability concerns pertaining to transmission system planning for extreme heat and cold weather events that impact the reliable operations of the Bulk Power System. As described below, APS supports the Commission's objective to better address and respond to extreme weather events via improved transmission system planning. However, APS recommends that the Commission account for regional differences and consider using a regional planning entity to coordinate across regions and jurisdictions as a means of addressing identified extreme weather events.

For the reasons stated in the NOPR,[3] FERC proposes to direct NERC to develop modifications to Reliability Standard TPL-001-5.1 to require: (1) development of benchmark planning cases based on information such as major prior extreme heat and cold weather events or future meteorological projections; (2) planning for extreme heat and cold events using steady state and transient stability analyses expanded to cover a range of extreme weather scenarios including the expected resource mix's availability during extreme heat and cold weather conditions, including the broad area impacts of extreme heat and cold weather; and (3) corrective action plans that include mitigation for any instances where performance requirements for extreme heat and cold events are not met.

[3] *See* NOPR at p. 5-7, ¶¶ 4, 5.

3. APS COMMENTS

A. Development of benchmark planning cases based on information such as major prior extreme heat and cold weather events or future meteorological projections.

APS generally supports the development of benchmark planning cases. However, because the types of studies being proposed for extreme weather events typically cover an area larger than a single Transmission Planner or Planning Coordinator area, APS recommends that a regional planning entity would be the appropriate entity to determine the benchmark planning cases and develop the scenarios that constitute an extreme event in their region. These regional planning entities would be best positioned to periodically update key aspects of the benchmark events based on input from its members.

B. Transmission System Planning for extreme heat and cold weather events.

i. Steady state and transient stability analysis

APS agrees that the use of both steady state and transient stability analyses can be beneficial to understanding the potential impacts of extreme heat and cold weather events. However, because these types of extreme weather events are normally wide-spread and may encompass multiple jurisdictions, APS posits that having individual Transmission Planners or Planning Coordinators perform these studies would not produce meaningful results. APS recommends that a regional planning entity would be appropriate to perform these types of studies for their area.

APS supports the inclusion of analyses to ensure system stability, frequency excursion, and angular deviations that may be the result of near simultaneous outages or common mode failures of Variable Energy Resources (VERs). This approach is consistent

with TPL-001-4 and its successor TPL-001-5.1, which requires studying certain extreme events such as the loss of a single gas pipeline or water source for thermal generation. APS agrees that it would be beneficial to include additional extreme event criteria to simulate the loss or reduction of solar and/or wind resources. However, the regional planning entity, working with their Transmission Planners and Planning Coordinators, must have the discretion to identify the method of determining which resources to include in particular events. Finally, demand response should be used as a tool to resolve issues and studied only when relied upon as mitigation.

MOD-032-1 currently provides the Transmission Planner flexibility to define what data is needed to model different scenarios. For this reason, MOD-032-1 is adequate to ensure access to the necessary data to complete these types of studies.

ii. Transmission planning studies of wide-area issues

As previously stated, APS does not believe a single Transmission Planner or Planning Coordinator would be positioned to perform a wide-area assessment. Generally, in the determination of the regional planning areas, both geographic and electrical considerations are accounted for, and the footprints of the regional planning areas would be sufficient for performing wide-area assessments. For these reasons, APS suggests that a regional planning entity, such as those created under FERC Order 1000, would be appropriate to oversee and coordinate wide-area planning models and studies. APS also recommends that the regional planning entity address the results of the studies and be afforded the flexibility to determine their own processes for addressing and communicating

study results. This includes the ability to incorporate any required studies into their regional planning efforts.

iii. Study concurrent generator and transmission outages

The NOPR states that "[r]equiring transmission planners and planning coordinators to study concurrent generator and transmission failures under extreme heat and cold events is one way to address the reliability gap."[4] Rather than a Transmission Planner or Planning Coordinator performing the study, APS recommends that a regional planning entity would be better suited to perform wide-area assessments as that approach would account for all outages within a region.

To identify the scope of these planning studies, FERC seeks comments on whether a certain threshold of penetration of wind, solar generation, and natural gas generators should trigger additional analyses. APS agrees that the penetration of wind, solar, and natural gas should be factors considered, but does not agree that a fixed threshold would be appropriate to trigger additional analyses. Rather, APS suggests that the determination of any threshold best resides with the entity performing the study because the threshold likely would differ depending on the characteristics of the particular system. Furthermore, because extreme events vary by region, the entity performing the study must have the flexibility to determine assumptions based on specific events that could be problematic in that area.

[4] NOPR at p. 48, ¶ 72.

In relation to identifying the scope of the planning studies, FERC also seeks comments on how the impact of loss of generators sensitive to extreme heat and cold should be factored into long-term planning. APS asserts that the assessment of the loss of a generator unit is studied to ensure transmission reliability as required by TPL-001-4 and its successor TPL-001-5.1. However, the ability to import resources to maintain resource adequacy is outside the scope of TPL-001-4 and its successor TPL-001-5.1. APS respectfully suggests that it is important to maintain the line between performing transmission reliability assessments and resource adequacy assessments. The purpose of TPL-001-4 and its successor TPL-001-5.1 is to determine the reliability of the transmission system.[5] The TPL-001-4 and its successor TPL-001-5.1 assessment should account for sudden losses or faults in generators.

iv. Sensitivity analysis

The NOPR requests comments about requiring Transmission Planners and Planning Coordinators to assess reliability in the planning horizon for sensitivity cases in which multiple inputs change simultaneously during extreme heat and cold events. The TPL-001-4 and its successor TPL-001-5.1 assessment requires that a minimum number of sensitivity cases be performed but does not limit the number of sensitivities an entity can evaluate. As such, Transmission Planners can conduct sensitivity cases if a risk has been identified. TPL-001-4 and its successor TPL-001-5.1 allow for the entity performing the study to determine the inputs being adjusted to allow for regional differences.

[5] TPL-001-4 Transmission System Planning Performance Requirements. Purpose: Establish Transmission system planning performance requirements within the planning horizon to develop a Bulk Electric System (BES) that will operate reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies.

APS respectfully asserts the importance of balancing the value of performing study work against the time and effort required to perform the study. APS suggests that the entities performing the study work are best positioned to determine whether additional sensitivities are warranted based on the regional needs and the time and resources available to perform the study.

v. Consideration of modifications to the traditional planning approach

FERC proposes to expand the required deterministic studies to include probabilistically developed scenarios. APS urges FERC to hold a robust industry-wide discussion if probabilistic approaches are desired. Industry-wide discussion and input are essential for effective implementation of such a modification. Until more information is known about how probabilistic methods would be used to create the hybrid approach, the specific impacts and challenges to implementation will be unknown. For instance, additional software or modifications to existing software may be required, which could take multiple years to implement. In addition to understanding how a hybrid approach would be created, additional guidance on how to handle the results of those studies should be discussed. For these reasons, APS does not agree with implementing probabilistic methods into transmission reliability assessments at this time.

C. Implement corrective action plans that include mitigation for any instances where performance requirements for extreme heat and cold events are not met.

APS does not support the development and implementation of Corrective Action Plans for all instances where performance requirements for extreme heat and cold events are not met. TPL-001-4 and its successor TPL-001-5.1 do not currently require Corrective

Action Plans for sensitivity cases or for extreme events. Corrective Action Plans should be focused on the most likely and impactful events, which may not include extreme weather scenarios. For this reason, APS does not agree that Corrective Action Plans should be required for results that come out of sensitivity analysis, which includes extreme weather scenarios. If FERC does implement Corrective Action Plans as a requirement of extreme weather events, the timeframe for developing a Corrective Action Plan should be flexible as the solutions for mitigating conditions may vary widely and involve or include various neighboring entities.

D. Other extreme weather-related events and issues.

The Commission notes concerns that drought or other extreme weather-related events may cause or contribute to conditions that affect reliable operation of transmission systems such as transmission outages, reduced plant efficiency, and reduced generation capacity.[6] FERC seeks comments on whether drought or other extreme weather-related events should be included along with extreme heat and cold weather events within the scope of TPL-001-5.1 system planning requirements. APS asserts that drought or other extreme events, such as tornados or hurricanes, could be more impactful to one regional area than another. Therefore, APS recommends a regional planning entity determine the studies applicable to their region and to study extreme weather events at a regional level.

[6] NOPR p. 58-59, ¶ 90.

4. CONCLUSION

As noted above, and summarized below, APS appreciates the Commission's objective to address concerns pertaining to transmission system planning for extreme weather events but has some concerns with certain aspects of the Commission's proposal.

- Regional planning entities should play an important role in addressing extreme weather events.
- Regional flexibility is important.
- Corrective Action Plans should not be required for all sensitivity cases or extreme events. Corrective Action Plans should be focused on the most likely and impactful events and coordinated with the regional planning process.
- Probabilistic approaches should not be implemented prior to holding a robust industry-wide discussion and until such time as tools and software are available.

For the foregoing reasons, APS respectfully requests that any subsequent action taken by the Commission in this proceeding be consistent with the comments and recommendations set forth herein.

Respectfully submitted,

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August 26, 2022

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.
Dated at Phoenix, Arizona, this 26th day of August 2022.

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