



**SPP** *Southwest  
Power Pool*

***System Impact Study  
SPP-2024-032  
For Transmission Service  
Requested By:  
UGPM***

***From NPPD.ELKHNWIND to EWA***

***For a Reserved Amount Of  
3 MW***

***From 05/01/2024  
To 05/08/2024***

## **1. Executive Summary**

UGPM has requested a system impact study for weekly firm transmission service from NPPD.ELKHNWIND to EWA. The period of the transaction is from 05/01/2024 00:00 to 05/08/2024 00:00. The request is for reservation 102574550.

The 3 MW transaction from NPPD.ELKHNWIND has an impact on the following flowgate(s) with no AFC: SCOVICSTESTG. To provide the AFC necessary for this transfer, the impact on this flowgate must be relieved.

After studying many scenarios using generation redispatch, there are several feasible scenarios that will relieve the flowgate(s) in question.

## **2. Introduction**

UGPM has requested a system impact study for transmission service from NPPD.ELKHNWIND to EWA.

There is one constrained flowgate that requires relief for this reservation to be accepted. The flowgate and their explanation is as follows:

- SCOVICSTESTG: Scott Bluff – Victory Hill 115 kV for the loss of Stegall 345/230/13.8 kV XFMR.

### **3. Study Methodology**

#### **A. Description**

Southwest Power Pool used Transmission Adequacy & Reliability Assessment (TARA) to obtain possible unit pairings that would relieve the constraint. TARA calculates impacts on monitored facilities for all units within the Southwest Power Pool Footprint. The SPP ATC Calculator is used to determine response factors for the time period of the reservation.

#### **B. Model Updates**

The 2024 Southwest Power Pool model was used for the study. This model was updated to reflect the most current information available.

#### **C. Transfer Analysis**

Using the short-term calculator, the limiting constraints for the transfer are identified. The response factor of the transfer on each constraint is also determined.

The product of the transfer amount and the response factor is the impact of a transfer on a limiting flowgate that must be relieved. With multiple flowgates affected by a transfer, relief of the largest impact may also provide relief of smaller impacts.

Using Transmission Adequacy & Reliability Assessment (TARA), specific generator pairs are chosen to reflect the units available for redispatch. The quotient of the amount of impact that must be relieved and the generation sensitivity factor calculated by TARA is the amount of redispatch necessary to relieve the impact on the affected flowgate.

## 4. Study Results

After studying the impacts of the request, one flowgate requires relief. The flowgate and associated amount of relief is as follows:

**Table 1**

Flowgate	Duration	Sensitivity (%)	Required Relief (MW)
5700:SCOVICSTESTG	5/1/2024 00:00 - 5/8/2024 00:00	3.47%	0.10

Table 2 displays a list of generator pairs that are possible relief options for each flowgate in question and the amount of redispatch capacity needed.

**Table 2**

5700:SCOVICSTESTG			
Increment	Decrement	Sensitivity	MW
CULBRTSN-BEG	SWS3-1	4.13%	2.42
CULBRTSN-BEG	ANADRK5	4.12%	2.42
CULBRTSN-BEG	SEMINL1G	4.06%	2.46
GROTON_2-BEG	SWS3-1	2.68%	3.73
GROTON_2-BEG	ANADRK5	2.68%	3.73
GROTON_2-BEG	SEMINL1G	2.61%	3.83
BIGSTON JOU	SWS3-1	2.32%	4.31
BIGSTON JOU	ANADRK5	2.32%	4.31
BIGSTON JOU	SEMINL1G	2.26%	4.43

## **5. Conclusion**

Generation redispatch options were studied to relieve the necessary constraints. The results of this study show that the constraints on the flowgate(s) in question could be relieved by executing one or more of the options described in the Study Results section of this document.