



**SPP**

*Southwest  
Power Pool*

***System Impact Study***

***2023-073***

***For Transmission Service***

***Requested By:***

***TEA***

***From WFEC to ERCOTN***

***For a Reserved Amount Of***

***50 MW***

***From 11/12/2023***

***To 12/01/2023***

## **1. Executive Summary**

TEA has requested a system impact study for weekly firm transmission service from WFEC to ERCOTN. The period of the transaction is from WFEC to ERCOTN. The request is for reservation 101238431.

The 50 MW transaction from WFEC has an impact on the following flowgates with no AFC: CORNAPTERSUN, REDMINAXTPOS. To provide the AFC necessary for this transfer, the impact on these flowgates 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**

TEA has requested a system impact study for transmission service from WFECC to ERCOTN.

There are two constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- CORNAPTERSUN: Cornville Tap - Naples 138 kV for the loss of Terry Road - Sunnyside 345 kV.
- REDMINAXTPOS: Red Willow - Mingo 345kV for the loss of Axtell - Post Rock 345kV.

### **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 2023 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, two flowgates require relief. The flowgates and associated amount of relief are as follows:

**Table 1**

Flowgate	Duration	Sensitivity (%)	Required Relief (MW)
5107:CORNAPTERSUN	11/16/2023 00:00 - 11/17/2023 00:00	3.71%	1.86
5526:REDMINAXTPOS	11/12/2023 00:00 - 11/26/2023 00:00	3.45%	1.73

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**

5107:CORNAPTERSUN			
Increment	Decrement	Sensitivity	MW
FULTONU1 1	LELAND_2-BEG	10.41%	17.87
WILKE3-1	LELAND_2-BEG	10.39%	17.91

5526:REDMINAXTPOS			
Increment	Decrement	Sensitivity	MW
HOLCGEN1	LELAND_2-BEG	31.12%	5.56
FULTONU1 1	LELAND_2-BEG	10.95%	15.80
WILKE3-1	LELAND_2-BEG	10.86%	15.93

## **5. Conclusion**

Generation redispatch were studied in order to relieve the necessary constraint. The result of this study shows that the constraints on the flowgates in question could not be relieved by executing one of the options described in the Study Results section of this document. The reservation will be refused due to no ATC on the impacted flowgates.