



# **SPP** *Southwest Power Pool*

## ***System Impact Study SPP-2024-018***

***For Transmission Service  
Requested By:  
WRGS***

***From WFEC to ERCOTN***

***For a Reserved Amount Of  
50 MW***

***From 03/02/2024  
To 04/01/2024***

## **1. Executive Summary**

WRGS has requested a system impact study for monthly firm transmission service from WFEC to ERCOTN. The period of the transaction is from 03/02/2024 00:00 to 04/01/2024 00:00. The request is for reservation 102115270.

The 50 MW transaction from WFEC has an impact on the following flowgate(s) with no AFC: CORNAPTERSUN, REDWILLMINGO, 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**

WRGS has requested a system impact study for transmission service from WFEK to ERCOTN.

Three constrained flowgates require relief 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.
- REDWILLMINGO: Red Willow 345 kV for the loss of Mingo 345 kV.
- REDMINAXTPOS: Red Willow – Mingo 345 kV for the loss of Axtell – Post Rock 345 kV.

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

**Table 1**

Flowgate	Duration	Sensitivity (%)	Required Relief (MW)
5107:CORNAPTERSUN	3/14/2024 00:00 - 3/17/2024 00:00	4.48%	2.24
5221:REDWILLMINGO	3/14/2024 00:00 - 3/17/2024 00:00	3.10%	1.55
5526:REDMINAXTPOS	3/2/2024 00:00 - 4/1/2024 00:00	3.66%	1.83

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
WILKE3-1	GENTLM1G	1.34%	167.04
WILKE3-1	LRS_1_MBG	1.31%	170.86

5221:REDWILLMINGO			
Increment	Decrement	Sensitivity	MW
HUGO1	GENTLM1G	25.28%	6.13
FULTONU1 1	GENTLM1G	24.35%	6.37
WILKE3-1	GENTLM1G	24.29%	6.38
HUGO1	LRS_1_MBG	23.59%	6.57
FULTONU1 1	LRS_1_MBG	22.66%	6.84
WILKE3-1	LRS_1_MBG	22.59%	6.86

5526:REDMINAXTPOS			
Increment	Decrement	Sensitivity	MW
HUGO1	GENTLM1G	29.62%	6.18
FULTONU1 1	GENTLM1G	28.37%	6.45
WILKE3-1	GENTLM1G	28.29%	6.47
HUGO1	LRS_1_MBG	27.70%	6.61
FULTONU1 1	LRS_1_MBG	26.45%	6.92
WILKE3-1	LRS_1_MBG	26.37%	6.94

## **5. Conclusion**

Generation redispatch options were studied in order to relieve the necessary constraint(s). The results of this study shows 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.