



**SPP**

*Southwest  
Power Pool*

***System Impact Study***

***2023-055***

***For Transmission Service***

***Requested By:***

***MAG***

***From CSWS.GATEWAY to ERCOTE***

***For a Reserved Amount Of***

***100 MW***

***From CSWS***

***To ERCOTE***

## **1. Executive Summary**

MAG has requested a system impact study for monthly firm transmission service from CSWS.GATEWAY to ERCOTE. The period of the transaction is from 10/01/2023 to 11/01/2023. The request is for reservation 100524804.

The 100 MW transaction from CSWS.GATEWAY has an impact on the following flowgates with no AFC: SABSEMPIRDIA, PITVALSUNHUG. 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**

MAG has requested a system impact study for transmission service from CSWS.GATEWAY to ERCOTE.

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

- SABSEMPIRDIA: Sabin Mining - S.E. Marshall 138kV ftlo Pirkey - Diana 345kV
- PITVALSUNHUG: Pittsburg - Valiant 345kv for the loss of Sunnyside - Hugo 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)
5212 : SABSEMPIRDIA	10/01/2023 0:00 – 11/01/2023 0:00	16.34%	16.34
5661 : PITVALSUNHUG	10/01/2023 0:00 – 11/01/2023 0:00	4.89%	4.89

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**

5212 FLOWGATE#1			
Increment	Decrement	Sensitivity	MW
LIEBR3-1	LEBROCG1	24.29%	67.28
LIEBR3-1	KNOXLEE4	18.49%	88.38

5661 FLOWGATE#2			
Increment	Decrement	Sensitivity	MW
FULTONU1 1	SEMINL2G	40.70%	12.02
LIEBR3-1	SEMINL2G	37.64%	12.99
FITZ_CT1 1	SEMINL2G	12.31%	39.71

## **5. Conclusion**

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