



**SPP**

*Southwest  
Power Pool*

***System Impact Study  
SPP-2017-004  
For Transmission Service  
Requested By:  
CRGL***

***From WFEK to ERCOTN***

***For a Reserved Amount Of  
200 MW***

***For 6/1/2017 – 9/1/2017***

## **1. Executive Summary**

CRGL has requested a system impact study for monthly firm transmission service from WFEC to ERCOTN. The period of the transaction is from 6/1/2017 00:00 CDT to 9/1/2017 00:00 CDT. The request is for reservation 84187224.

The 200 MW transaction from NPPD has an impact on the following flowgates with no AFC: FPLWODNINBEA and SPSNORTH\_STH. 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**

CRGL has requested a system impact study for transmission service from WFEC to ERCOTN.

There are 2 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanation follows:

- FPLWODNINBEA: FPL Switching Station – Woodward 138 kV for the loss of Ninemile – Bearcat 138 kV
- SPSNORTH\_STH: SPS North to South stability interface

### **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 2017 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 follows:

**Table 1**

<b>Flowgate</b>	<b>Duration</b>	<b>Sensitivity</b>	<b>Impact</b>
5018:FPLWODNINBEA	6/1/2017 - 9/1/2017	7.29%	15
5196:SPSNORTH_STH	6/1/2017 - 9/1/2017	13.13%	25

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**

<b>5018:FPLWODNINBEA</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>Redispatch MW</b>
Plant X	Mooreland	45.1%	33
Tolk	Mooreland	45.1%	33
Cunningham	Mooreland	45.1%	33

<b>5196:SPSNORTH_STH</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>Redispatch MW</b>
Plant X	Harrington	81.6%	31
Plant X	Nichols	81.6%	31
Tolk	Harrington	80.6%	31
Tolk	Nichols	80.5%	31
Cunningham	Harrington	78.9%	32
Cunningham	Nichols	78.9%	32

## **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. Before the Transmission Provider accepts the reservations, agreement to the redispatch costs must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.