



**SPP** *Southwest  
Power Pool*

***System Impact Study  
SPP-2017-039  
For Transmission Service  
Requested By:  
MCPI***

***From WFEK to ERCOTN***

***For a Reserved Amount Of  
200 MW  
From 10/30/2017  
To 10/31/2017***

## **1. Executive Summary**

MCPI has requested a system impact study for Daily firm transmission service from WFEC to ERCOTN. The period of the transaction is from 10/30/2017 00:00 to 10/31/2017 00:00. The request is for reservation 85766844.

The 200 MW transaction from WFEC has an impact on the following flowgates with no AFC: FPLWODNINBEA, SPSNORTH\_STH, MOOTALWDWXFR, TEMPORARY225. 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**

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

There are 4 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- FPLWODNINBEA: FPL Switch – Woodward 138kV for the loss of the Nine Mile – Bearcat 138 kV.
- SPSNORTH\_STH: SPS North – South Tie.
- MOOTALWDWXFR: Mooreland – Taloga 138kV for the loss of the Woodward XFMR 138 kV.
- TEMPORARY225: FPL Switch – Woodward 138kV.

### **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 are as follows:

**Table 1**

Flowgate	Duration	Sensitivity (%)	Required Relief (MW)
5018:FPLWODNINBEA	10/30/2017 00:00 - 10/31/2017 00:00	4.39%	9
5196:SPSNORTH_STH	10/30/2017 00:00 - 10/31/2017 00:00	11.53%	22
5652:MOOTALWDWXFR	10/30/2017 00:00 - 10/31/2017 00:00	4.82%	10
22877:TEMPORARY225	10/30/2017 00:00 - 10/31/2017 00:00	5.92%	12

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

**Table 2**

5018:FPLWODNINBEA			
Increment	Decrement	Sensitivity	MW
Blackhawk	Mooreland	47.97%	19
Plant X	Mooreland	47.59%	19
Tolk	Mooreland	47.58%	19
Plant X	Sooner	5.78%	156
Tolk	Sooner	5.76%	156

5196:SPSNORTH_STH			
Increment	Decrement	Sensitivity	MW
Plant X	Harrington	81.58%	27
Plant X	Nichols	81.55%	27
Tolk	Harrington	80.51%	27
Tolk	Nichols	80.48%	27
Cunningham	Harrington	78.95%	28
Cunningham	Nichols	78.92%	28
Plant X	Blackhawk	78.56%	28
Tolk	Blackhawk	77.50%	28
Cunningham	Blackhawk	75.93%	29

<b>5652:MOOTALWDWXFR</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>MW</b>
Mustang	Mooreland	13.42%	75
Andarko	Mooreland	13.36%	75
Southwestern	Mooreland	13.31%	75

<b>22877:TEMPORARY225</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>MW</b>
Holcomb	Mooreland	43.81%	27
Garden City	Mooreland	43.78%	27
Judson Large	Mooreland	43.54%	28
Holcomb	Sooner	5.35%	224

## **5. Conclusion**

Generation redispatch (and reservation curtailment) 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, proof of the necessary relief options must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.