



**SPP**

*Southwest  
Power Pool*

***System Impact Study  
SPP-2013-003  
For Transmission Service  
Requested By:  
WRGS***

***From MPS to WAUE***

***For a Reserved Amount Of  
106 MW  
From 2/8/2013  
To 2/16/2013***

## **1. Executive Summary**

WRGS has requested a system impact study for weekly firm transmission service from MPS to WAUE. The period of the transaction is from 2/8/2013 00:00 to 2/16/2013 00:00. The request is for reservation 77805536.

The 106 MW transaction from MPS has an impact on the following flowgate with no AFC: SUBTEKFTCRAU. To provide the AFC necessary for this transfer, the impact on this flowgate 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 MPS to WAUE.

There is 1 constrained flowgate that requires relief in order for this reservation to be accepted. The flowgate and the explanations are as follows:

- SUBTEKFTCRAU: Sub 1226 to Tekamho 161 kV line for the loss of the Fort Calhoun to Raun 345 kV line.

### **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 2013 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**

<b>Flowgate</b>	<b>Duration</b>	<b>Sensitivity (%)</b>	<b>Required Relief (MW)</b>
6126: SUBTEKFTCRAU	2/12/2013 - 2/16/2013	5.7%	5

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**

<b>6126 SUBTEKFTCRAU</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>MW</b>
Femont OPPD	North Omaha OPPD	21%	24
Femont OPPD	Nebraska City OPPD	18%	27
Neosho	North Omaha OPPD	6%	79
City of Erie	North Omaha OPPD	6%	79
Murray Gill Energy Center	North Omaha OPPD	6%	81
Gordon Evans Energy Center	North Omaha OPPD	6%	81
Hutchinson Energy Center	North Omaha OPPD	6%	83
Neosho	Nebraska City OPPD	4%	140
City of Erie	Nebraska City OPPD	4%	141
Murray Gill Energy Center	Nebraska City OPPD	3%	146
Gordon Evans Energy Center	Nebraska City OPPD	3%	147
Hutchinson Energy Center	Nebraska City OPPD	3%	152

## **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, 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.