



# **SPP** *Southwest Power Pool*

***System Impact Study  
SPP-2014-011  
For Transmission Service  
Requested By:  
KMEA***

***From OPPD to SECI***

***For a Reserved Amount Of  
6 MW  
For 5/1/2014 – 4/1/2015***

## **1. Executive Summary**

KMEA has requested a system impact study for monthly firm transmission service from OPPD to SECI. The period of the transaction is from 5/1/2014 00:00 to 4/1/2015 00:00. The request is for reservation 79500289.

The 6 MW transaction from OPPD has an impact on the following flowgates with no AFC: SPEJUDHOLPLY and GENTLMREDWIL. 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**

KMEA has requested a system impact study for transmission service from OPPD to SECI.

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

- SPEJUDHOLPLY: Spearville – Judson Large 115 kV line for the loss of the Holcomb – Plymell 115 kV line
- GENTLMREDWIL: Gentleman – Red Willow 345 kV 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 2014 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 (%)	Impact (MW)
5436:SPEJUDHOLPLY	5/1/2014 - 5/10/2014	12.5%	1
6007:GENTLMREDWIL	5/1/2014 - 2/1/2015	12.7%	1

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**

5436:SPEJUDHOLPLY			
Increment	Decrement	Sensitivity (%)	Redispatch (MW)
Fort Dodge SECI	Goodman EC MIDW	67.5%	1
Fort Dodge SECI	NW Great Bend	67.4%	1
Fort Dodge SECI	Russell	67.2%	1
Cimarron River Plant SECI	Goodman EC MIDW	33.9%	3
Cimarron River Plant SECI	NW Great Bend	33.7%	3
Cimarron River Plant SECI	Russell	33.6%	3

6007:GENTLMREDWIL			
Increment	Decrement	Sensitivity (%)	Redispatch (MW)
McCook NPPD	Gentleman NPPD	54.7%	2
Colby MIDW	Gentleman NPPD	47.4%	2
Morris	Gentleman NPPD	39.3%	3

## **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 options must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.