



**SPP**

*Southwest  
Power Pool*

***System Impact Study  
SPP-2012-003  
For Transmission Service  
Requested By:  
OGE***

***From OKGE to EES***

***For a Reserved Amount Of  
10 MW  
From 6/1/2012  
To 10/1/2012***

## **1. Executive Summary**

OGE has requested a system impact study for monthly firm transmission service from OKGE to EES. The period of the transaction is from 5/31/2012 23:00 CST to 9/30/2012 23:00 CST. The request is for reservations 76946334 and 76946346.

The 10 MW transaction from OKGE has an impact on the following flowgates with no AFC: VALLYDELDLON and VALIANTLYDIA. 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**

OGE has requested a system impact study for transmission service from OKGE to EES.

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

- VALLYDELDLON: Valliant - Lydia 345 kV line for the loss of El Dorado - Longwood 345 kV.
- VALIANTLYDIA: Valliant - Lydia 345 kV line.

### **3. Study Methodology**

#### **A. Description**

Southwest Power Pool used Managing and Utilizing System Transmission (MUST) to obtain possible unit pairings that would relieve the constraint. MUST 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 2012 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 Managing and Utilizing System Transmission (MUST), 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 MUST 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)
5215 VALLYDELDLON	6/1/2012 - 6/3/2012	21.2%	2.12
	7/1/2012 – 9/1/2012		
5220 VALIANTLYDIA	6/1/2012 – 6/4/2012	23.8%	2.38
	7/1/2012 - 10/1/2012		

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**

5215 VALLYDELDLON			
Increment	Decrement	Sensitivity	MW
AES Cogen	Seminole	11.9%	17.8
AES Cogen	Mustang	10.3%	20.6
AES Cogen	Horseshoe Lake	10.1%	21.0
Muskogee	Seminole	6.2%	34.3
Muskogee	Mustang	4.5%	46.6
Muskogee	Horseshoe Lake	4.4%	48.5
Sooner	Seminole	4.0%	52.7
Sooner	Mustang	2.4%	88.9
Sooner	Horseshoe Lake	2.2%	96.0
5220 VALIANTLYDIA			
Increment	Decrement	Sensitivity	MW
AES Cogen	Seminole	14.4%	16.5
AES Cogen	Mustang	12.4%	19.1
AES Cogen	Horseshoe Lake	12.2%	19.4
Muskogee	Seminole	7.4%	32.0
Muskogee	Mustang	5.5%	43.3
Muskogee	Horseshoe Lake	5.3%	44.9
Sooner	Seminole	4.8%	49.6
Sooner	Mustang	2.9%	83.4
Sooner	Horseshoe Lake	2.7%	89.8

## **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.