



**SPP**

*Southwest  
Power Pool*

***System Impact Study  
SPP-2014-004  
For Transmission Service  
Requested By:  
TNSK***

***From CSWS to ERCOTE***

***For a Reserved Amount Of  
50 MW***

***For 6/1/2014 – 9/1/2014***

## **1. Executive Summary**

TNSK has requested a system impact study for monthly firm transmission service from CSWS to ERCOTE. The period of the transaction is from 6/1/2014 00:00 to 9/1/2014 00:00. The request is for reservation 79388854.

The 50 MW transaction from CSWS has an impact on the following flowgates with no AFC: VALIANTLYDIA and VALLYDELDSAR. 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**

TNSK has requested a system impact study for transmission service from CSWS to ERCOTE.

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

- VALIANTLYDIA: Valliant – Lydia 345 kV line
- VALLYDELDSAR: Valliant – Lydia 345 kV line for the loss of El Dorado – Sarepta 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 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 (%)	Required Relief (MW)
5215 : VALLYDELDSAR	6/1/2014 - 9/1/2014	4.2%	2
5220 : VALIANTLYDIA	6/1/2014 - 9/1/2014	4.5%	2

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**

Increment	Decrement	5215		5220	
		Sensitivity	MW	Sensitivity	MW
Welsh AEP	Hugo WFEC	66.4%	3	64.2%	3
Lonestar AEP	Hugo WFEC	63.2%	3	60.7%	3
Wilkes AEP	Hugo WFEC	63.4%	3	60.4%	3
Turk AEP	Hugo WFEC	62.2%	3	60.8%	3
Lebrock AEP	Hugo WFEC	62.4%	3	60.0%	3
Eastman	Hugo WFEC	62.5%	3	59.9%	3
Pirkey AEP	Hugo WFEC	62.4%	3	59.9%	3
Welsh AEP	Comanche AEP	55.1%	4	51.4%	4
Welsh AEP	Seminole OKGE	54.6%	4	50.9%	4
Welsh AEP	SW Station AEP	54.3%	4	50.6%	4
Welsh AEP	Anadarko/Genco/Orme WFEC	54.3%	4	50.5%	4
Lonestar AEP	Comanche AEP	51.8%	4	47.9%	4
Wilkes AEP	Comanche AEP	52.0%	4	47.6%	4
Turk AEP	Comanche AEP	50.8%	4	48.1%	4
Lonestar AEP	Seminole OKGE	51.3%	4	47.4%	4
Wilkes AEP	Seminole OKGE	51.5%	4	47.1%	4
Lebrock AEP	Comanche AEP	51.0%	4	47.3%	4
Eastman	Comanche AEP	51.1%	4	47.2%	4
Pirkey AEP	Comanche AEP	51.0%	4	47.1%	4
Lonestar AEP	SW Station AEP	51.1%	4	47.1%	4
Lonestar AEP	Anadarko/Genco/Orme WFEC	51.0%	4	47.0%	4
Wilkes AEP	SW Station AEP	51.2%	4	46.8%	4
Turk AEP	Seminole OKGE	50.3%	4	47.6%	4
Wilkes AEP	Anadarko/Genco/Orme WFEC	51.2%	4	46.8%	4
Turk AEP	SW Station AEP	50.0%	4	47.3%	4
Turk AEP	Anadarko/Genco/Orme WFEC	50.0%	4	47.2%	4
Lebrock AEP	Seminole OKGE	50.5%	4	46.7%	4
Eastman	Seminole OKGE	50.6%	4	46.6%	4
Pirkey AEP	Seminole OKGE	50.5%	4	46.6%	4
Lebrock AEP	SW Station AEP	50.2%	4	46.4%	4
Eastman	SW Station AEP	50.3%	4	46.3%	4
Lebrock AEP	Anadarko/Genco/Orme WFEC	50.2%	4	46.4%	4
Eastman	Anadarko/Genco/Orme WFEC	50.3%	4	46.3%	4
Pirkey AEP	SW Station AEP	50.2%	4	46.3%	4
Pirkey AEP	Anadarko/Genco/Orme WFEC	50.2%	4	46.2%	4

## **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.