



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2012-007
For Transmission Service
Requested By:
EXGN***

From OKGE.SC.WR to ERCOTN

***For a Reserved Amount Of
25 MW
From 8/1/2012
To 9/1/2012***

1. Executive Summary

EXGN has requested a system impact study for monthly firm transmission service from OKGE.SC.WR to ERCOTN. The period of the transaction is from 7/31/2012 23:00 CST to 8/31/2012 23:00 CST. The request is for reservation 77069584.

The 25 MW transaction from OKGE.SC.WR has an impact on the following flowgates with no AFC: MIDFRNPHAWET, CEDCANMIDFRA, POTXFRHITXFR, 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

EXGN has requested a system impact study for transmission service from OKGE.SC.WR to ERCOTN.

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

- MIDFRNPHAWET: Midwest – Franklin Switch 138 kV line for the loss of the Pharoah – Wetumka 138 kV line.
- CEDCANMIDFRA: Cedar Lane – Canadian 138 kV line for the loss of the Midwest – Franklin 138 kV line.
- POTXFRHITXFR: Potter 345/230 kV transformer for the loss of the Hitchland 345/230 kV transformer.
- GENTLMREDWIL: Gentleman – Red Willow 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)
5096 : MIDFRNPHAWET	8/1/2012 - 9/1/2012	3.7%	1
5324 : CEDCANMIDFRA	8/1/2012 - 9/1/2012	4.4%	1
5420 : POTXFRHITXFR	8/1/2012 - 9/1/2012	8.2%	2
6007 : GENTLMREDWIL	8/1/2012 - 9/1/2012	3.2%	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

5096 MIDFRNPHAWET			
Increment	Decrement	Sensitivity	MW
OKGE McClain	WFEC Anadarko/Genco/ORME	14%	7.2
OKGE Horseshoe Lake	WFEC Anadarko/Genco/ORME	14%	7.2
OKGE Seminole	WFEC Anadarko/Genco/ORME	14%	7.4
OKGE McClain	CSWS Southwestern Station	10%	9.8
OKGE Horseshoe Lake	CSWS Southwestern Station	10%	9.9
OKGE Seminole	CSWS Southwestern Station	10%	10.2
OKGE McClain	CSWS Comanche	7%	14.5
OKGE Horseshoe Lake	CSWS Comanche	7%	14.8
OKGE Seminole	CSWS Comanche	6%	15.4

5324 CEDCANMIDFRA			
Increment	Decrement	Sensitivity	MW
OKGE McClain	WFEC Anadarko/GENCO/ORME	20%	5.1
OKGE Smith Center	WFEC Anadarko/GENCO/ORME	15%	6.8
OKGE Mustang	WFEC Anadarko/GENCO/ORME	14%	7.1
OKGE McClain	CSWS Southwestern Station	16%	6.1
OKGE Smith Center	CSWS Southwestern Station	11%	8.8
OKGE Mustang	CSWS Southwestern Station	11%	9.3
OKGE McClain	OKGE Weleetka	16%	6.1
OKGE Smith Center	OKGE Weleetka	11%	8.9
OKGE Mustang	OKGE Weleetka	11%	9.4

5420 POTXFRHITXFR			
Increment	Decrement	Sensitivity	MW
SECI Holcomb	SPS Harrington	40%	5.0
SECI Garden City	SPS Harrington	40%	5.0
SECI Colby	SPS Harrington	36%	5.5
SECI Holcomb	SPS Nichols	39%	5.2
SECI Garden City	SPS Nichols	38%	5.2
SECI Colby	SPS Nichols	35%	5.7
SECI Holcomb	SPS Plant X	37%	5.4
SECI Garden City	SPS Plant X	37%	5.4
SECI Colby	SPS Plant X	34%	6.0

GENTLMREDWIL			
Increment	Decrement	Sensitivity	MW
NPPD Gentleman	NPPD McCook	57%	1.8
NPPD Canaday	NPPD McCook	42%	2.4
NPPD Sheldon	NPPD McCook	40%	2.5
NPPD Gentleman	SECI Garden City	50%	2.0
NPPD Canaday	SECI Garden City	35%	2.9
NPPD Sheldon	SECI Garden City	33%	3.1
NPPD Gentleman	SECI Holcomb	50%	2.0
NPPD Canaday	SECI Holcomb	35%	2.9
NPPD Sheldon	SECI Holcomb	32%	3.1

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.