



SPP *Southwest
Power Pool*

***System Impact Study
SPP-2013-006
For Transmission Service
Requested By:
CRGL***

From WFECC to ERCOTN

***For a Reserved Amount Of
198 MW
From 06/01/2013
To 09/01/2013***

1. Executive Summary

CRGL has requested a system impact study for monthly firm transmission service from WFEC to ERCOTN. The period of the transaction is from 06/01/2013 00:00 to 09/01/2013 00:00. The request is for reservations 77880419 and 77891795.

The 198 MW transaction total from WFEC has an impact on the following flowgates with no AFC: SPSNORTH_STH, ANACORSWSNOR, POTXFRHITXFR, and GRAXFRGRANIC. 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

CRGL has requested a system impact study for transmission service from WFEC to ERCOTN.

There are 4 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- SPSNORTH_STH: SPS North Region to SPS South Region stability interface.
- ANACORSWSNOR: Anadarko – Corn Tap 138 kV line for the loss of the SW Station – Norge 138 kV line.
- POTXFRHITXFR: Potter 345/230 kV transformer for the loss of the Hitchland 345/230 kV transformer.
- GRAXFRGRANIC: Grapevine 230/115 kV transformer for the loss of the Grapevine – Nichols 230 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, four flowgates require relief. The flowgates and associated amount of relief are as follows:

Table 1

Flowgate	Duration	Sensitivity (%)	Required Relief (MW)
5196 : SPSNORTH_STH	06/01/2013 - 09/01/2013	15.1%	30
5358 : ANACORSWSNOR	06/01/2013 - 09/01/2013	5.5%	11
5420 : POTXFRHITXFR	06/01/2013 - 09/01/2013	5.0%	10
5421 : GRAXFRGRANIC	06/01/2013 - 09/01/2013	5.3%	10

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

5196 : SPSNORTH_STH			
Increment	Decrement	Sensitivity	MW
Plant X SPS	Harrington SPS	89.4%	34
Plant X SPS	Nichols SPS	89.4%	34
Tolk SPS	Harrington SPS	89.1%	34
Tolk SPS	Nichols SPS	89.0%	34
Plant X SPS	Blackhawk SPS	88.5%	34
Cunningham SPS	Harrington SPS	88.3%	34
Cunningham SPS	Nichols SPS	88.3%	34
Maddox SPS	Harrington SPS	88.3%	34
Hobbs SPS	Harrington SPS	88.3%	34
Maddox SPS	Nichols SPS	88.3%	34
Hobbs SPS	Nichols SPS	88.3%	34
Tolk SPS	Blackhawk SPS	88.1%	34
Cunningham SPS	Blackhawk SPS	87.4%	34
Maddox SPS	Blackhawk SPS	87.4%	34
Hobbs SPS	Blackhawk SPS	87.4%	34

5358 : ANACORSWSNOR			
Increment	Decrement	Sensitivity	MW
Mustang OKGE	Anadarko\Genco\ORME WFEC	15.3%	72
Smith OKGE	Anadarko\Genco\ORME WFEC	15.2%	72
Seminole OKGE	Anadarko\Genco\ORME WFEC	15.2%	72
Horseshoe Lake OKGE	Anadarko\Genco\ORME WFEC	15.1%	73
McClain OKGE	Anadarko\Genco\ORME WFEC	15.0%	74
Mustang OKGE	Southwest Station CSWS	8.8%	125
Smith OKGE	Southwest Station CSWS	8.7%	126
Seminole OKGE	Southwest Station CSWS	8.7%	126
Horseshoe Lake OKGE	Southwest Station CSWS	8.6%	128
McClain OKGE	Southwest Station CSWS	8.5%	130

5420 : POTXFRHITXFR			
Increment	Decrement	Sensitivity	MW
Harrington SPS	Holcomb SECI	44.8%	22
Nichols SPS	Holcomb SECI	44.7%	22
Harrington SPS	Garden City SECI	44.6%	22
Nichols SPS	Garden City SECI	44.5%	22
Harrington SPS	Cimarron River MKEC	43.1%	23
Nichols SPS	Cimarron River MKEC	43.0%	23
Plant X SPS	Holcomb SECI	41.8%	24
Blackhawk SPS	Holcomb SECI	41.8%	24
Tolk SPS	Holcomb SECI	41.7%	24
Plant X SPS	Garden City SECI	41.6%	24
Blackhawk SPS	Garden City SECI	41.6%	24
Tolk SPS	Garden City SECI	41.6%	24

5421 : GRAXFRGRANIC			
Increment	Decrement	Sensitivity	MW
Riverview SPS	Mooreland WFEC	12.8%	78
Blackhawk SPS	Mooreland WFEC	12.8%	78
Nichols SPS	Mooreland WFEC	12.8%	78
Harrington SPS	Mooreland WFEC	12.7%	78
Riverview SPS	Southwest Station CSWS	10.9%	92
Blackhawk SPS	Southwest Station CSWS	10.9%	92
Nichols SPS	Southwest Station CSWS	10.8%	92
Harrington SPS	Southwest Station CSWS	10.8%	93
Riverview SPS	Anadarko\Genco\ORME WFEC	10.7%	93
Blackhawk SPS	Anadarko\Genco\ORME WFEC	10.7%	93
Nichols SPS	Anadarko\Genco\ORME WFEC	10.7%	94
Harrington SPS	Anadarko\Genco\ORME WFEC	10.6%	94

5. Conclusion

Generation redispatch (and reservation curtailment) 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.