SPP Southwest Power Pool

System Impact Study
SPP-2004-031D
For Transmission Service
Requested By:
Western Resources

From OKGE to WR

For a Reserved Amount Of
300 MW
From 06/01/04
To 09/01/04

SPP Transmission Planning

1. Executive Summary

Western Resources has requested a system impact study for monthly firm transmission service from OKGE to WR. The period of the transaction is from 06/01/04 to 09/1/04. The request is for reservation 645630 for the amount of 300 MW.

The 300 MW transaction from OKGE to WR has an impact on the following flowgate: LACWGRLACSTI. To provide the ATC necessary for this transfer, the impact on this flowgate must be relieved.

After studying many scenarios using curtailment of reservations and generation redispatch, there are several feasible scenarios that will relieve that flowgates in question.

2. Introduction

Western Resources has requested a system impact study for transmission service from OKGE to WR.

There is a constrained flowgate that require relief in order for this reservation to be accepted. The flowgate and explanation is as follows:

- LACWRGLACSTI: Lacyne to West Gardner 345 KV line for the loss of the Lacyne to Stillwell 345 KV line

3. Study Methodology

A. Description

Southwest Power Pool used the NERC Generator Sensitivity Factor (GSF) Viewer to obtain possible unit pairings that would relieve the constraint. The GSF viewer calculates impacts on monitored facilities for all units above 20MW in the Eastern Interconnection. The SPP ATC Calculator is used to determine response factors for the time period of the reservation.

B. Model Updates

The 2004 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 the NERC Generator Sensitivity Factor (GSF) Viewer, 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 the Viewer is the amount of redispatch necessary to relieve the impact on the affected flowgate.

4. Study Results

After studying the impacts of request 645630, one flowgate requires relief. The flowgate and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity (%)	Required Relief (MW)
LACWGRLACSTI	18.51	56

Table 2 represents reservations that, if curtailed, would offer relief for the flowgate in question.

Table 2

Transactions Path	LACWGRLACSTI Sensitivity (%)
CSWS - ERCOTE	6.7
CSWS – AMRN	9.5
OKGE – EES	6.3
SPA – WR	5.8
SPS - AMRN	7.3
WR – KCPL	13.4

Table 3 represents reservation paths with amount necessary to relieve the flowgate in question.

Transactions Path	LACWGRLACSTI (MW)
CSWS - ERCOTE	836
CSWS – AMRN	590
OKGE – EES	889
SPA – WR	966
SPS - AMRN	768
WR – KCPL	418

Table 4 represents generation redispatch options that would offer relief for the flowgate in question.

Table 4

Source	Sink	LACWGRLACSTI Sensitivity (%)
Bull Creek (KCPL)	Neosho (WR)	- 41.8
Bull Creek (KCPL)	Riverton (EDE)	-35.7
Bull Creek (KCPL)	Larussel Entergy Center (EDE)	-33.6
Nearman (KACY)	Neosho (WR)	-33.6
Nearman (KACY)	Riverton (EDE)	-27.5
Nearman (KACY)	Larussel Entergy Center (EDE)	-25.3
Quindaro (KACY)	Neosho (WR)	-33.3
Quindaro (KACY)	Riverton (EDE)	-27.2
Quindaro (KACY)	Larussel Entergy Center (EDE)	-25.0

Table 5 represents the required generation that is necessary to relieve the flowgate in question.

Table 5

Source	Sink	LACWGRLACSTI Sensitivity (MW)
Bull Creek (KCPL)	Neosho (WR)	134
Bull Creek (KCPL)	Riverton (EDE)	157
Bull Creek (KCPL)	Larussel Entergy Center (EDE)	167
Nearman (KACY)	Neosho (WR)	167
Nearman (KACY)	Riverton (EDE)	204
Nearman (KACY)	Larussel Entergy Center (EDE)	222
Quindaro (KACY)	Neosho (WR)	169
Quindaro (KACY)	Riverton (EDE)	206
Quindaro (KACY)	Larussel Entergy Center (EDE)	224

5. Conclusion

Reservation curtailment and generation redispatch options were studied in order to relieve the necessary constraint. The results of this study shows that the constraint on the flowgate in question could be relieved by executing one of the options described in the Study Results section of this document. Before the Transmission Customer accepts the reservations, proof of one of these relief options must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.