



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2005-069
For Transmission Service
Requested By:
Western Resources***

From OKGE to OKGE

***For a Reserved Amount Of
440 MW
From 06/30/05
To 09/3/05***

SPP Transmission Planning

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1. Executive Summary

Western Resources has requested a system impact study for monthly firm transmission service from OKGE to OKGE. The period of the transaction is from 06/30/05 to 09/3/05. The request is for reservations 913349, 913350, 913351, and 913354 for the amount of 440 MW.

The 440 MW transactions from OKGE to OKGE has an impact on the following flowgates with no AFC: REDARCREARC and SILXIVNWSCIM. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

After studying many scenarios using curtailment of reservations and generation redispatch, there are no feasible scenarios that will relieve the flowgate(s) in question.

2. Introduction

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

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

- REDARCREDARC: Redbud to Arcadia 345 kV line for the loss of Redbud to Arcadia 345 kV line
- SILDIVNWSCIM: Silverlake to Division 138 kV line for the loss of Northwest Station to Cimaron 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 2005 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 requests 913349, 913350, 913351, and 913354, two flowgates require relief. The flowgates and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity (%)	Duration	Required Relief (MW)
REDARCREDDARC	67.4	June 30 – September 3	297
SILDIVNWSCIM	7.6	June 30 – September 3	34

Table 2 displays a list of generator pairs that are possible relief options for the flowgates in question.

Table 2

Source	Sink	REDARCREDDARC Sensitivity (%)	SILDIVNWSCIM Sensitivity (%)
Mustang (OKGE)	Muskogee (OKGE)	21.2	14.6
Horseshoe Lake (OKGE)	Muskogee (OKGE)	21.2	-
Seminole (OKGE)	Muskogee (OKGE)	19.2	3.2
Sooner (OKGE)	Muskogee (OKGE)	16.9	-
McClain (OKGE)	Muskogee (OKGE)	21	11
OneOk (OKGE)	Mustang (OKGE)	-	27.4
Mustang (OKGE)	AES (OKGE)	19.9	14.2
Horseshoe Lake (OKGE)	AES (OKGE)	19.5	-
Seminole (OKGE)	AES (OKGE)	17.4	-
Sooner (OKGE)	AES (OKGE)	15.2	-
McClain (OKGE)	AES (OKGE)	19.2	10.3

Table 3 displays the amount of redispach capacity necessary for each generator pair.

Table 3

Source	Sink	REDARC Sensitivity (%)	SILDIVN Sensitivity (%)
Mustang (OKGE)	Muskogee (OKGE)	1399	229
Horseshoe Lake (OKGe)	Muskogee (OKGE)	1399	-
Seminole (OKGE)	Muskogee (OKGE)	1539	1045
Sooner (OKGE)	Muskogee (OKGE)	1754	-
McClain (OKGe)	Muskogee (OKGE)	1412	304
OneOk (OKGE)	Mustange (OKGE)	-	122
Mustang (OKGE)	AES (OKGE)	1490	236
Horseshoe Lake (OKGe)	AES (OKGE)	1520	-
Seminole (OKGE)	AES (OKGE)	1704	-
Sooner (OKGE)	AES (OKGE)	1951	-
McClain (OKGe)	AES (OKGE)	1545	325

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 constraints on the flowgates in question could not be relieved by executing one of the options described in the Study Results section of this document. The reservation will be refused due to no ATC on the impacted flowgates.