SPP Southwest Power Pool

System Impact Study
SPP-2008-002
For Transmission Service
Requested By:
Oklahoma Municipal Power Authority

From McClain to OKGE

For a Reserved Amount Of
2 MW
From 06/01/2008
To 10/01/2008

SPP Transmission Planning

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1. Executive Summary

Oklahoma Municipal Power Authority (OMPA) has requested a system impact study for monthly firm transmission service from McClain to OKGE. The period of the transaction is from 06/01/2008 to 10/01/2008. The request is for reservation 1429641 for the amount of 2 MW.

The 2 MW transaction from McClain to OKGE has an impact on the following flowgates with no AFC: CEDCANMIDFRA and CIMHAYCIMCZE. 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 flowgates in question.

2. Introduction

Oklahoma Municipal Power Authority has requested a system impact study for transmission service from McClain to OKGE.

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

- CEDCANMIDFRA: Cedar Lane to Canadian 138 kV line for the loss of the Midwest to Franklin 138 kV line.

- CIMHAYCIMCZE: Cimmarron to Haymaker 138 kV line for the loss of the Cimmarron to Czech Hall 138 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 2008 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 request 1429641, two flowgates require relief. The flowgates and the associated amount of relief are as follows:

Table 1

Flowgates	Sensitivity (%)	Duration	Required Relief (MW)
CEDCANMIDFRA	8.3	June 1 – Oct 1	.17
CIMHAYCIMCZE	3.3	June 1 – Oct 1	.07

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

Table 2

Source	Sink	CEDCANMIDFRA Sensitivity (%)	CIMHAYCIMCZE Sensitivity (%)
Seminole (OKGE)	Tinker (OKGE)	8.2	-
AES (OKGE)	Tinker (OKGE)	8.2	-
Seminole (OKGE)	Smith (OKGE)	8.1	-
AES (OKGE)	Smith (OKGE)	8.0	-
Muskogee (OKGE)	Tinker (OKGE)	7.9	-
Muskogee (OKGE)	Smith (OKGE)	7.7	-
Muskogee (OKGE)	Tinker (OKGE)	7.3	-
Seminole (OKGE)	Mustang (OKGE)	7.2	-
Muskogee (OKGE)	Smith (OKGE)	7.1	-
Muskogee (OKGE)	Mustang (OKGE)	7.0	-
Mustang (OKGE)	Centwind (OKGE)	-	21.0
Mustang (OKGE)	Woodring (OKGE)	-	21.0
Mustang (OKGE)	OMKINGF2 (OKGE)	-	19.8
Smith (OKGE)	Centwind (OKGE)	-	18.9
Smith (OKGE)	Woodring (OKGE)	-	18.9
Smith (OKGE)	OMKINGF2 (OKGE)	-	17.8
Mustang (OKGE)	Centwind (OKGE)	-	17.6
Mustang (OKGE)	Woodring (OKGE)	-	17.6

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

Table 3

Source	Sink	CEDCANMIDFRA Capacity (MW)	CIMHAYCIMCZE Capacity (MW)
Seminole (OKGE)	Tinker (OKGE)	2	-
AES (OKGE)	Tinker (OKGE)	2	-
Seminole (OKGE)	Smith (OKGE)	2	-
AES (OKGE)	Smith (OKGE)	2	-
Muskogee (OKGE)	Tinker (OKGE)	2	-
Muskogee (OKGE)	Smith (OKGE)	2	-
Muskogee (OKGE)	Tinker (OKGE)	2.5	-
Seminole (OKGE)	Mustang (OKGE)	2.5	-
Muskogee (OKGE)	Smith (OKGE)	2.5	-
Muskogee (OKGE)	Mustang (OKGE)	2.5	-
Mustang (OKGE)	Centwind (OKGE)	-	.5
Mustang (OKGE)	Woodring (OKGE)	-	.5
Mustang (OKGE)	OMKINGF2 (OKGE)	-	.5
Smith (OKGE)	Centwind (OKGE)	-	.5
Smith (OKGE)	Woodring (OKGE)	-	.5
Smith (OKGE)	OMKINGF2 (OKGE)	-	.5
Mustang (OKGE)	Centwind (OKGE)	-	.5
Mustang (OKGE)	Woodring (OKGE)	-	.5

If a dispatch pair is used to provide relief, a source and sink must be available to respectively raise and lower generation by the MW amount listed in Table 3.

5. Conclusion

Generation redispatch options were studied in order to relieve the necessary constraints. The results of this study show 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.