SPP
Southwest Power Pool

System Impact Study
SPP-2004-111
For Transmission Service
Requested By:
Cargill Power Marketers, LLC

From KCPL to ERCOTN

For a Reserved Amount Of
100 MW
From 08/01/04
To 12/01/04

SPP Transmission Planning

1. Executive Summary

Cargill Power Marketers, LLC has requested a system impact study for monthly firm transmission service from KCPL to ERCOTN. The period of the transaction is from 08/01/04 to 12/01/04. The requests are for reservations 694824 and 694825 for the amount of 100 MW and are redirects of reservation 631525 for the transaction path WR to ERCOTN

The 50 MW transactions from KCPL to ERCOTN has an impact on the following flowgates with no ATC: FTSXFR345161 and FTSXFR500345 To provide the ATC 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 several feasible scenarios that will relieve the flowgate(s) in question.

2. Introduction

Cargill Power Marketers, LLC has requested a system impact study for transmission service from KCPL to ERCOTN.

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

- FTSXFR345161: Fort Smith 500/161 kV XFR for the loss of the Fort Smith 345/161 kV XFR

- FTSXFR500345: Fort Smith 500/161 kV XFR for the loss of the Fort Smith 500/345 kV XFR

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 requests 694824 and 694825, two flowgates require relief. The flowgates and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity Redirect (%)	Sensitivity Original (%)	Duration	Required Relief (MW)
FTSXFR345161	5.4	3.9	October1 – December 1	2
FTSXFR500345	5.4	3.9	October 1 – December 1	2

Table 2 displays a list of reservation paths that offer relief for the flowgates in question.

Table 2

Transactions Path	FTSXFR345161 Sensitivity (%)	FTSXFR500345 Sensitivity (%)
AMRN – SPS	-	3.1

Note: - denotes an impact less than a positive 3%

Table 3 displays the amount of capacity required for each reservation path to relieve the flowgates in question.

Table 3

Transactions Path	FTSXFR345161 Sensitivity (MW)	FTSXFR500345 Sensitivity (MW)
AMRN – SPS	-	33

Table 4 displays a list of generator pairs that are possible relief options for the flowgates in question.

Table 4

Source	Sink	FTSXFR345161 Sensitivity (%)	FTSXFR500345 Sensitivity (%)
AES (OKGE)	Muskogee (OKGE)	- 45.6	- 20

Table 5 displays the amount of redispatch capacity necessary for each generator pair.

Table 5

Source	Sink	FTSXFR345161 Sensitivity (MW)	FTSXFR500345 Sensitivity (MW)
AES (OKGE)	Muskogee (OKGE)	5	10

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 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 one of these relief options must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.