SPP Southwest Power Pool

System Impact Study
SPP-2003-159
For Transmission Service
Requested By:
Cargill - Alliant, LLC

From KCPL to ERCOTN

For a Reserved Amount Of
100 MW
From 06/10/03
To 06/16/03

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1. Executive Summary

Cargill – Alliant, L.L.C. has requested a system impact study for Daily Firm transmission service from KCPL to ERCOTN. The period of the transaction is from 06/10/03 to 06/16/03. The request is for reservation 538697 for the amount of 100 MW and is a redirect of original confirmed service 497187 from MCLN to ERCOTN.

The 100 MW transaction from KCPL to ERCOTN has created greater impacts on the BLANDFRANKS, NESONENESTUL, and the PITSUMPITSUN flowgates. To provide the ATC necessary for this transfer, the impact on these flowgates must be relieved.

It has been determined that there is not sufficient time available to complete upgrades to the system that would relieve these flowgates.

After studying many scenarios using curtailment of reservations, there is a scenario that will relieve the flowgates in question.

2. Introduction

Cargill – Alliant, L.L.C. has requested an impact study for transmission service from KCPL to ERCOTN.

There are three constrained flowgates that need relief in order for this reservation to be accepted. The flowgates and their explanations are as follows:

- BLANDFRANKS: Bland to Franks, 345 KV.

- NESONENESTUL: Northeastern Station 345KV line for the loss of the Northeastern Station to Tulsa North 345 KV line.

- PITSUMPITSUN: Pittsburg to Seminole 345 KV for the loss of the Pittsburg to Sunnyside 345 KV.

There are no facility upgrades available to relieve this flowgate that can be completed in the time period available. This impact study reviews curtailment of existing reservations as an option to relieving the transmission constraints.

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 2003 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 comparing impacts of original request 497187 and redirect request 538697, three flowgates remain unrelieved. These flowgates with the amount that is needed to be relieved are as follows:

Table 1

Flowgates	Sensitivity Numbers (%)	MW of relief required
BLANDFRANKS	5.6	6
NESONENESTUL	14.5	15
PITSUMPITSUN	15.8	16

The following table represents the amount of relief offered by a transaction from CSWS to OKGE:

Table 2

Flowgates	Sensitivity Numbers (%)	MW needed to be available for curtailment
BLANDFRANKS	-	-
NESONENESTUL	-	-
PITSUMPITSUN	23	70

The following table represents the amount of relief offered by a reservation from AMRN to SPS:

Table 3

Flowgates	Sensitivity Numbers (%)	MW needed to be available for curtailment
BLANDFRANKS	13.2	46
NESONENESTUL	5.2	288
PITSUMPITSUN	16.2	99

5. Conclusion

Curtailment options given by Cargill – Alliant, LLC were exhausted in this study to relieve the constraints necessary. The results of the study showed that the constraints on the flowgates in question could be relieved by the curtailment of an AMRN to SPS schedule or a counter flow reservation from SPS to AMRN.