



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2005-105
For Transmission Service
Requested By:
Western Resources***

From WERE to KACY

***For a Reserved Amount Of
77 MW
From 08/02/05
To 08/03/05***

SPP Transmission Planning

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1. Executive Summary

Western Resources has requested a system impact study for monthly firm transmission service from WERE to KACY. The period of the transaction is from 08/02/05 to 08/03/05. The request is for reservation 936878 for the amount of 77 MW.

The 77 MW transaction from WERE to KACY has an impact on the following flowgates with no AFC: LACWGRLACSTI and STIREDSTIPEC 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 several feasible scenarios that will relieve the flowgate(s) in question.

2. Introduction

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

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

- LACWGRLACSTI: Lacygne to West Gardner 345 kV line for the loss of Lacygne to Stilwell 345 kV line
- STIREDSTIPEC: Stilwell to Redel 161 kV line for the loss of Stilwell to Peculiar 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 request 936878, two flowgates require relief. The flowgates and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity (%)	Duration	Required Relief (MW)
LACWGRLACSTI	15	August 2	12
STIREDSTIPEC	6.7	August 2	6

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

Table 2

Transactions Path	LACWGRLACSTI Sensitivity (%)	STIREDSTIPEC Sensitivity (%)
WERE - AMRN	-	5.0
WERE – AECI	-	5.7

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

Table 3

Transactions Path	LACWGRLACSTI Sensitivity (MW)	STIREDSTIPEC Sensitivity (MW)
WERE – AMRN	–	104
WERE - AECI	-	91

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

Table 4

Source	Sink	LACWGRLACSTI Sensitivity (%)	STIREDSTIPEC Sensitivity (%)
Gordon Evans (WERE)	Lacygne (WERE)	35.4	-
Murray Gill (WERE)	Lacygne (WERE)	40	-
McPherson (WERE)	Lacygne (WERE)	48	-

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

Table 5

Source	Sink	LACWGRLACSTI Sensitivity (MW)	STIREDSTIPEC Sensitivity (MW)
Gordon Evans (WERE)	Lacygne (WERE)	33	-
Murray Gill (WERE)	Lacygne (WERE)	29	-
McPherson (WERE)	Lacygne (WERE)	24	-

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.