



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2005-012
For Transmission Service
Requested By:
Southwestern Public Service
Company***

From WR to SPS

***For a Reserved Amount Of
50 MW***

***From 02/01/05
To 05/01/05***

SPP Transmission Planning

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1. Executive Summary

Southwestern Public Service Company has requested a system impact study for monthly firm transmission service from WR to SPS. The period of the transaction is from 02/01/05 to 05/01/05. The request is for reservation 810280 for the amount of 50 MW.

The 50 MW transaction from WR to SPS has an impact on the following flowgate with no ATC: SPHWMCSUMEMC 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

Southwestern Public Service Company has requested a system impact study for transmission service from WR to SPS.

There is one constrained flowgate that requires relief in order for this reservation to be accepted. The flowgate and explanation is as follows:

- SPHWMCSUMEMC: South Phillips to West McPherson 115 kV line for the loss of Summit to East McPherson 230 kV line

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 request 810280, one flowgate requires relief. The flowgate and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity Redirect (%)	Sensitivity Original (%)	Duration	Required Relief (MW)
SPHWMCSUMEMC	7.3	4.6	February – March	1.35

Table 2 displays a reservation path that offers relief for the flowgate in question.

Table 2

Transactions Path	SPHWMCSUMEMC Sensitivity (%)
AMRN – SPS	4.6

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

Table 3

Transactions Path	SPHWMCSUMEMC Sensitivity (%)
AMRN – SPS	30

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

Table 4

Source	Sink	SPHWMCSUMEMC Sensitivity (%)
HEC (WR)	JEC (WR)	38
HEC (WR)	HEC (WR)	36

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

Table 5

Source	Sink	SPHWMCSUMEMC Sensitivity (MW)
HEC (WR)	JEC (WR)	4
HEC (WR)	HEC (WR)	4

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.