



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2005-063
For Transmission Service
Requested By:
Tenaska Power Services
Company***

From KCPL to ENTR

***For a Reserved Amount Of
50 MW
From 07/01/05
To 09/01/05***

SPP Transmission Planning

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1. Executive Summary

Tenaska Power Service Company has requested a system impact study for monthly firm transmission service from KCPL to ENTR. The period of the transaction is from 07/01/05 to 09/01/05. The request is for reservations 895110 and 895111 for the amount of 50 MW.

The 50 MW transactions from KCPL to ENTR has an impact on the following flowgate with no AFC: HPPVALPITVAL 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

Tenaska Power Service Company has requested a system impact study for transmission service from KCPL to ENTR.

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

- HPPVALPITVAL: Hugo Power Plant to Valliant 138 kV line for the loss of Pittsburg to Valliant 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 895110 and 895111, one flowgate requires relief. The flowgates and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity Redirect (%)	Sensitivity Original (%)	Duration	Required Relief (MW)
HPPVALPITVAL	4.9	-	July	3
HPPVALPITVAL	4.3	-	August	3

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

Table 2

Transactions Path	HPPVALPITVAL Sensitivity for July (%)	HPPVALPITVAL Sensitivity for August (%)
CLEC – ERCOTE	5.7	5.7
CSWS - ERCOTE	9.3	6.5
WERE – ENTR	5.5	4.7
OKGE – ENTR	7.4	6.7

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

Table 3

Transactions Path	HPPVALPITVAL Sensitivity for July (MW)	HPPVALPITVAL Sensitivity for August (MW)
CLEC – ERCOTE	43	38
CSWS – ERCOTE	27	33
WERE – ENTR	63	46
OKGE - ENTR	33	32

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

Table 4

Source	Sink	HPPVALPITVAL Sensitivity (%)
Wilkes (AEPW)	Northeastern (AEPW)	12
Wilkes (AEPW)	Riverside Station (AEPW)	12.4
Wilkes (AEPW)	Southwestern Station (AEPW)	15
Welsh (AEPW)	Northeastern (AEPW)	13
Welsh (AEPW)	Riverside Station (AEPW)	13.4
Welsh (AEPW)	Southwestern Station (AEPW)	16
Pirkey (AEPW)	Northeastern (AEPW)	11.8
Pirkey (AEPW)	Riverside Station (AEPW)	12.2
Pirkey (AEPW)	Southwestern Station (AEPW)	14.7

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

Table 5

Source	Sink	HPPVALPITVAL Sensitivity for July (MW)	HPPVALPITVAL Sensitivity for August (MW)
Wilkes (AEPW)	Northeastern (AEPW)	21	18
Wilkes (AEPW)	Riverside Station (AEPW)	20	18
Wilkes (AEPW)	Southwestern Station (AEPW)	17	15
Welsh (AEPW)	Northeastern (AEPW)	19	17
Welsh (AEPW)	Riverside Station (AEPW)	19	17
Welsh (AEPW)	Southwestern Station (AEPW)	16	14
Pirkey (AEPW)	Northeastern (AEPW)	21	19
Pirkey (AEPW)	Riverside Station (AEPW)	20	18
Pirkey (AEPW)	Southwestern Station (AEPW)	17	15

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.