



SPP *Southwest
Power Pool*

***System Impact Study
SPP-2007-010
For Transmission Service
Requested By:
American Electric Power***

From AEPW to AEPW

***For a Reserved Amount Of
200 MW
From 03/31/07
To 5/01/07***

1. Executive Summary

American Electric Power has requested a system impact study for monthly firm transmission service from AEPW to AEPW. The period of the transaction is from 03/31/2007 to 5/01/2007. The request is for reservation 1236216.

The 200 MW transaction from AEPW to AEPW has an impact on the following flowgates with no AFC: MANIPMDOLSWS, CRAASHVALLYD, HPPVALPITVAL, LONSARPITVAL, VALHUGVALLYD, and WEBRERICHARD. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

After studying many scenarios using generation redispatch, there are several feasible scenarios that will relieve the flowgate(s) in question.

2. Introduction

American Electric Power has requested a system impact study for transmission service from AEPW to AEPW.

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

- MANIPMDOLSWS: Mansfield to International Paper 138 kV line for the loss of Dolet Hills to S.W. Shreveport 345 kV line
- CRAASHVALLYD: Craig Junction to Ashdown West 138 kV line for the loss of Valliant to Lydia 345 kV line
- HPPVALPITVAL: Hugo to Valiant 138kV line for the loss of Pittsburg to Valiant 345kV line

LONSARPITVAL: Lone Oak to Sardis 138 kV line for the loss of Pittsburg to Valliant 345 kV line

VALHUGVALLYD: Valliant to Hugo-Tap 138 kV line for the loss of Valliant to Lydia 345 kV line

WEBRERICHARD: Webre to Richard 500 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 2006 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 the request, six flowgates require relief. The flowgates and associated amount of relief are as follows:

Table 1

Flowgates	Sensitivity (%)	Duration	Required Relief (MW)
MANIPMDOLSWS	3.8	April 2007	8
CRAASHVALLYD	8.4	April 2007	17
HPPVALPITVAL	7.4	April 2007	15
LONSARPITVAL	4.4	April 2007	9
VALHUGVALLYD	5.4	April 2007	11
*WEBRERICHARD	6.2	April 2007	12

* WEBRERICHARD is an ENTERGY owned flowgate. The required relief for this constraint must be agreed upon by AEPW and Entergy, and coordinated with SPP. Proof of the agreement between AEPW and Entergy must be presented to SPP.

Tables 2 and 3 in conjunction display a list of generator pairs that are possible relief options for the flowgates in question.

Table 2

Source	Sink	MANIPMDOLSWS Sensitivity (%)	CRAASHVALLYD Sensitivity (%)	HPPVALPITVAL Sensitivity (%)
Wilkes (AEPW)	SWS (AEPW)	6.3	17.0	16.7
Welsh (AEPW)	SWS (AEPW)	5.7	17.2	17.0
Welsh (AEPW)	NES (AEPW)	6.7	14.5	14.0
Wilkes (AEPW)	NES (AEPW)	7.3	14.3	13.6
Wilkes (AEPW)	RSS (AEPW)	7.1	14.9	14.1

Table 3

Source	Sink	LONSARPITVAL Sensitivity (%)	VALHUGVALLYD Sensitivity (%)
Wilkes (AEPW)	SWS (AEPW)	7.4	10.2
Welsh (AEPW)	SWS (AEPW)	7.6	10.3
Welsh (AEPW)	NES (AEPW)	7.5	9.0
Wilkes (AEPW)	NES (AEPW)	7.2	8.8
Wilkes (AEPW)	RSS (AEPW)	7.7	8.9
Winfld 2 (WR)	LEC (WR)	-	-
Winfld 2(WR)	TEC (WR)	-	-
Winfld 2(WR)	JEC (WR)	-	-
Winfld 2(WR)	HEC (WR)	-	-
Redbud (OKGE)	CONTEMPG (OKGE)	-	-

Tables 4 and 5 in conjunction display the amount of redispatch capacity necessary for each generator pair.

Table 4

Source	Sink	MANIPMDOLSWS Relief (MW)	CRAASHVALLYD Relief (MW)	HPPVALPITVAL Relief (MW)
Wilkes (AEPW)	SWS (AEPW)	127	100	90
Welsh (AEPW)	SWS (AEPW)	140	99	88
Welsh (AEPW)	NES (AEPW)	119	117	107
Wilkes (AEPW)	NES (AEPW)	110	119	110
Wilkes (AEPW)	RSS (AEPW)	113	114	106

Table 5

Source	Sink	LONSARPITVAL Relief (MW)	VALHUGVALLYD Relief (MW)
Wilkes (AEPW)	SWS (AEPW)	122	108
Welsh (AEPW)	SWS (AEPW)	118	107
Welsh (AEPW)	NES (AEPW)	120	122
Wilkes (AEPW)	NES (AEPW)	125	125
Wilkes (AEPW)	RSS (AEPW)	117	124
Winfld 2 (WR)	LEC (WR)	-	-
Winfld 2(WR)	TEC (WR)	-	-
Winfld 2(WR)	JEC (WR)	-	-
Winfld 2(WR)	HEC (WR)	-	-
Redbud (OKGE)	CONTEMPG (OKGE)	-	-

5. Conclusion

Generation redispatch options were studied in order to relieve the necessary constraints. 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 the necessary relief options including relief options made with Entergy for the WEBRERICHARD flowgate must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.