



**SPP**

*Southwest  
Power Pool*

***System Impact Study  
SPP-2005-045  
For Transmission Service  
Requested By:  
Southwestern Public Services  
Company***

***From SPS to EDDY***

***For a Reserved Amount Of  
35 MW***

***From 05/15/05  
To 05/21/05***

# ***SPP Transmission Planning***

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## **1. Executive Summary**

Southwestern Public Service Company has requested a system impact study for daily firm transmission service from SPS to Eddy. The period of the transaction is from 05/15/05 to 05/21/05. The request is for reservation 887462 for the amount of 35 MW.

The 35 MW transaction from SPS to EDDY has an impact on the following flowgates with no ATC: OSACANBUSDEA 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 SPS to EDDY.

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

- OSACANBSUDEA: Osage to Canyon 115 kV line for the loss of Bushland to Deafsmitt 230 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 887462, one flowgate requires relief. The flowgate and associated amount of relief is as follows:

**Table 1**

<b>Flowgates</b>	<b>Sensitivity Original (%)</b>	<b>Duration</b>	<b>Required Relief (MW)</b>
OSACANBUSDEA	4.4	May 15 - 22	2

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

**Table 2**

<b>Transactions Path</b>	<b>OSACANBUSDEA Sensitivity (%)</b>
AMRN – SPS	4

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

**Table 3**

<b>Transactions Path</b>	<b>OSACANBUSDEA Sensitivity (MW)</b>
AMRN – SPS	35

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

**Table 4**

<b>Source</b>	<b>Sink</b>	<b>OSACANBUSDEA Sensitivity (%)</b>
Plant X (SWPS)	Nichols (SWPS)	17
Tolkj (SWPS)	Nichols (SWPS)	15

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

**Table 5**

<b>Source</b>	<b>Sink</b>	<b>OSACANBUSDEA Sensitivity (MW)</b>
Plant X (SWPS)	Nichols (SWPS)	9
Tolkj (SWPS)	Nichols (SWPS)	9

## **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.