



**SPP**

*Southwest  
Power Pool*

***System Impact Study  
SPP-2005-101  
For Transmission Service  
Requested By:  
NTEC***

***From AEPW to AEPW***

***For a Reserved Amount Of  
165 MW  
From 08/01/05  
To 09/01/05***

# ***SPP Transmission Planning***

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## **1. Executive Summary**

NTEC has requested a system impact study for monthly firm transmission service from AEPW to AEPW. The period of the transaction is from 08/01/05 to 09/01/05. The request is for reservation 901947 for the amount of 165 MW.

The 165 MW transaction from AEPW to AEPW has an impact on the following flowgates with no AFC: REDARCREDARC and RSSEXGSSPPRA. 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 no feasible scenarios that will relieve the flowgate(s) in question.

## 2. Introduction

NTEC has requested a system impact study for transmission service from AEPW to AEPW.

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

- REDARCREDARC: Redbud to Arcadia 345 kV line for the loss of Redbud to Arcadia 345 kV line
- RSSEXGSSPPRA: Riverside Station to Explorer Glenpool 138 kV line for the loss of Sand Springs to Prattville 138 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 901947, two flowgates require relief. The flowgates and associated amount of relief is as follows:

**Table 1**

<b>Flowgates</b>	<b>Sensitivity (%)</b>	<b>Duration</b>	<b>Required Relief (MW)</b>
REDARCREARC	5.6	August	9
RSSEXGSSPPRA	3.1	August	5

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

**Table 2**

<b>Transactions Path</b>	<b>REDARCREARC Sensitivity (%)</b>	<b>RSSEXGSSPPRA Sensitivity (%)</b>
AEPW – AEPW	-	-

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

**Table 3**

<b>Transactions Path</b>	<b>REDARCREARC Sensitivity (MW)</b>	<b>RSSEXGSSPPRA Sensitivity (MW)</b>
AEPW – AEPW	-	-

## **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 not be relieved by executing one of the options described in the Study Results section of this document. The reservation will be refused due to no ATC on the impacted flowgates.