



**SPP**

*Southwest  
Power Pool*

***Impact Study SPP-2000-002 for  
Transmission Service Request***

***#159138***

***3/1/00 – 3/1/01***

***SPS to MPS***

**Southwest Power Pool  
Transmission Reliability Assessment  
March, 2000**

## **Description of Request**

This Impact Study is in response to OASIS request #159138 by Southwestern Public Service Co. This request is for a transfer of up to 6 MW of Firm Point-to-Point Transmission Service to be supplied by SPP from Southwestern Public Service Co. to Missouri Public Service Co. The request is for yearly service from 3/1/00 to 3/1/01. The Elk City 230/138 kV transformer has been identified as a constraint upon the outage of the Oklaunion to Lawton 345 kV line with the North DC tie outage. The overloaded facility is owned by CSWS who has put its facilities under the SPP Regional Tariff. The Impact Study identifies switching, redispatch, or firm reservations that, if curtailed, would affect or relieve the transmission constraint.

## **Summary**

Southwest Power Pool (SPP) has reported a zero transfer capability for similar SPS transmission export requests with the Elk City 230/138 kV transformer being the limit. SPP studied system reconfigurations as an option to relieve overloading of the Elk City 230/138 kV transformer with the outage of the Oklaunion to Lawton 345 kV transmission line and North DC tie and determined that a system reconfiguration did not exist which would relieve the overload. Redispatch options for this overload were evaluated to determine which units, if redispatched, could unload the facilities. The redispatch solution required implementing a counter-schedule to SPS from a generator or group of generators east of the constraint. Under the SPP tariff, Transmission Owners may provide redispatch for the service the Transmission Customer has requested, but have no obligation to do so. While SPP has been unable to find generators willing to redispatch subject to Tariff provisions, this does not preclude the Transmission Customer from entering into a bi-lateral agreement outside the tariff, that reasonably achieves the same effect as the redispatch described within this study. Such arrangement will be subject to SPP assessment and approval.

Existing transmission reservations were found which could be curtailed to relieve the constraint pursuant to the SPP Tariff guidelines. SPS exports include 245 MW of firm reservations to the SPP members. Any one of these schedules could be curtailed to relieve the loading on the facility.

SPP denies the request based on the study information unless suitable redispatch or schedule curtailment is found for the request period.

## Procedures

SPP creates a new base case series in January of each year. This new series of models was used for determining the capability of the system. The SPP base case system was modified to reflect current reservations. Four seasonal models were reviewed to determine if the system was capable of handling the requested 6 MW. The Elk City transformer has previously been identified as a limit to exports from the SPS system with the Oklaunion to Lawton 345 kV line and North DC tie outage. SPP studied the base case and outage to determine if the new model updates improved the system transfer capability. Table One reflects the export capability from SPS calculated in the base case models. This includes all confirmed reservations and an SPS export TRM of 34 MW.

**Table One: SPS Base Case Analysis**

(With and without Oklaunion to Lawton 345 kV line and North DC tie outage.)

<b>Base Case</b>	<b>Facility</b>	<b>No Outage % Rate A</b>	<b>With Outage % Rate B</b>
2000 Spring	Elk City transformer 230/138 kV	61%	103%
2000 Summer	Elk City transformer 230/138 kV	73%	101%
2000 Fall	Elk City transformer 230/138 kV	49%	101%
2000 Winter	Elk City transformer 230/138 kV	56%	105%

Table One shows that the existing 245 MW of firm reservations and 34 MW of TRM load the Elk City 230/138 kV transformer to above its emergency rating. The SPS export capability remains at zero for the time period requested.

### **A. System Reconfiguration**

The 2000 Southwest Power Pool (SPP) models completed in January of 2000 were used for the study. These models were updated to reflect current circumstances. With the Oklaunion to Lawton 345 kV line and North DC tie outage in place, system reconfiguration could not be used to resolve the loading and maintain existing firm reservations and load. The SPS system has limited ties with the SPP transmission system and the outage represents loss of the major tie.

### **B. Redispatch**

The SPP reviewed the response factors to obtain possible unit pairings that would relieve the constraint. The calculations show that to obtain the needed relief a counter schedule equal to the 6 MW request would be needed. This could be done from any unit or units east of the constraint counter-scheduled to the SPS system.

### C. Transaction Curtailment

SPP reviewed the existing firm reservations under the SPP Tariff and tariffs of transmission providers that signed the SPP Agency Agreement. Existing firm reservations existed which could be curtailed to relieve the transmission constraint. Reservations that are sourced in SPS and delivered to or through the SPP system could be curtailed. The requesting Transmission Customer is the holder of some of these reservations and would need to determine which could be curtailed on a one-for-one MW basis. Table Two provides the existing reservations that could be selected to implement the curtailment.

**Table 2: Existing SPS Long-Term Firm Reservation Exports**

OASIS #	Customer	Source	Sink	MW	Start Date	Stop Date
94784	SPS	SPS	Empire	45	6/1/98	6/1/01
142062	SPS	SPS	OKGE	50	1/1/00	1/1/01
142064	SPS	SPS	OKGE	50	1/1/00	1/1/01
164675	CSWM	SPS	ERCOTN	13	4/1/00	1/1/01
164676	CSWM	SPS	ERCOTN	87	4/1/00	1/1/01
119194	SPS	SPS	NSP	50	1/1/01	1/1/11
119196	SPS	SPS	NSP	50	1/1/01	1/1/11
119197	SPS	SPS	NSP	50	1/1/01	1/1/11
119198	SPS	SPS	NSP	50	1/1/01	1/1/11

## Study Results

### A. System Reconfiguration

SPP reviewed system reconfigurations in the Elk City area. Because of the limited SPS tie lines the SPP system, no reconfigurations could be derived which would alleviate the overload.

### B. Redispatch

The only viable redispatch options are between units east of the constraint and units west of the constraint. Redispatching and implementing the appropriate counter schedule showed the system was capable of handling the transaction.

