



**SPP**

*Southwest  
Power Pool*

***System Impact Study SPP-2002-189-  
2***

***For Transmission Service  
Requested By  
Xcel Energy***

***From CSWS to SPS***

***For a Reserved Amount Of 50MW  
From 10/1/02  
To 1/1/03***

***SPP Transmission Planning***

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## **1. Executive Summary**

Xcel Energy has requested a system impact study for Monthly Firm transmission service from CSWS to SPS. The period of the transaction is from 10/1/02 to 1/1/03. The request is for reservation 417206 for the amount of 50MW.

The 50MW transaction from CSWS to SPS has a positive response that must be relieved through curtailment on the following flowgates:

?? DOLXFRELDXFR

?? LACSTILACWGR

?? NWTPATLYDVAL

To provide the ATC that is necessary for this transfer, the impact on these flowgates must be relieved.

It has been determined that there is not sufficient time available to complete any upgrades to the system that would relieve these flowgates.

The Owner of existing firm transmission reservations 381154 (20MW available) and 297076 (both SPS to AMRN) agrees to a pre-TLR 5a curtailment in order to allow this new request for monthly service to flow. Therefore the requests for monthly service from CSWS to SPS will be counteroffered at a capacity of 31MW with this limitation for the modified transaction period of 11/1-1/1/03 (October not available due to NWTPATLYDVAL).

## **2. Introduction**

Xcel Energy has requested an impact study for transmission service from CSWS to SPS.

An option available to relieve the impact on these flowgates caused by the 50MW CSWS to SPS transfer is curtailment of existing service. In this method, the impact of curtailed service on a particular flowgate can be allotted to the new service requested. Both the new request and curtailment request can be allowed to flow until reaching a TLR level of 5a. At this point, either the new request or the curtailment request must be curtailed up to the maximum determined by this study.

The Dolet Hills Transformer, Eldorado Transformer flowgate (DOLXFRELDXFR) has been identified as a limiting constraint for the CSWS to SPS transfer. For this flowgate, the Dolet Hills Transformer is monitored for the loss of the Eldorado Transformer. It has been determined that the 50MW transfer from CSWS to SPS will cause the Dolet Hills Transformer to overload should the loss of the Eldorado Transformer occur.

The La Cygne to Stillwell, La Cygne to West Gardner flowgate (LACSTILACWGR) has been identified as a limiting constraint for the CSWS to SPS transfer. For this flowgate, the La Cygne to Stillwell, 345kV line is monitored during the loss of the La Cygne to West Gardner, 345kV line. It has been determined that the 50MW transfer from CSWS to SPS will cause the La Cygne to Stillwell line to overload should the loss of the La Cygne to West Gardner line occur.

The N.W. Texarkana to Patterson, Lydia to Valliant flowgate (NWTPATLYDVAL) has been identified as a limiting constraint for the CSWS to SPS transfer. For this flowgate, the N.W. Texarkana to Patterson, 138kV line is monitored during the loss of the Lydia to Valliant, 345kV line. It has been determined that the 50MW transfer from CSWS to SPS will cause the N.W. Texarkana to Patterson line to overload should the loss of the Lydia to Valliant line occur.

There are no facility upgrades available to relieve these flowgates that can be completed in the time period available. This impact study reviews curtailment as an option to relieving the transmission constraints.

### **3. Study Methodology**

#### **A. Description**

Southwest Power Pool has determined the amount of new transmission capacity available through curtailment of existing firm transmission service.

#### **B. Model Updates**

The 2001 Southwest Power Pool Summer Peak, Fall, and Winter Peak models were used for the study. These models were updated to reflect the most current information available.

#### **C. Transfer Analysis**

Using the short-term calculator, the limiting constraint for the transfer is identified. The response factor of the transfer on that constraint is also determined.

The product of the transfer amount and the response factor is the impact of the transfer on a limiting flowgate that must be relieved. With multiple flowgates affected by a transfer, relief of the largest impact will also provide relief of smaller impacts.

## **4. Study Results**

Curtailement of existing firm transmission service can provide for affect or relief on the concerning flowgates. The Customer seeks to curtail existing firm service 381154, of which 20MW have not been put up for curtailment, and existing firm service 297076, of which all 25MW not redirected SPS to WR are available for curtailment as of 10/1/02.

The distribution factor of the Dolet Hills Transformer, Eldorado Transformer flowgate for the CSWS to SPS transfer is 7.5% for the transaction period. The 3MW impact cannot be completely relieved by curtailment of existing firm transmission reservations 381154 and 297076 (SPS to AMRN) which offer a 5.2% response factor for the transaction period. The impact of a 31MW CSWS to SPS transfer is relieved by curtailment of the entire 45MW of 381154 and 297076.

The distribution factor of the La Cygne to Stillwell, La Cygne to West Gardner flowgate for the CSWS to SPS transfer is 5.3% for the transaction period. The 3MW impact can be relieved by curtailment of existing firm transmission reservations 381154 and 297076 (SPS to AMRN) which offer an 8.1% response factor for the transaction period. The impact of the 50MW CSWS to SPS transfer is relieved by curtailment of 33MW of 381154 and 297076. A 31MW CSWS to SPS transfer is relieved by curtailment of 20MW of 381154 and 297076.

The n-1 overload caused by this transaction on the N.W. Texarkana to Patterson, Lydia to Valliant flowgate cannot be relieved by the chosen Attachment K requests (381154, 297076). The original requests do not have a positive impact on this flowgate. This flowgate is only a limitation for the month of October 2002 (not November or December 2002).

## **5. Conclusion**

Southwest Power Pool has determined the amount of new transmission capacity available through curtailment of existing firm transmission service. The Owner of existing firm transmission reservations 381154 (20MW available) and 297076 (25MW available), which are both SPS to AMRN, agrees to curtail said service prior to reaching TLR 5a on the impacted flowgates. These curtailable reservations have no relieving impact on the N.W. Texarkana to Patterson, Lydia to Valliant flowgate, so this service is not available for the month of October 2002. Therefore, the request for monthly service (417206) from CSWS to SPS will be counteroffered at a capacity of 31MW with a transaction period of 11/1-1/1/03 with the limitation of pre-TLR 5a curtailment of 45MW of existing firm transmission reservations 381154 (remaining 20MW) and 297076 (25MW not redirected SPS to WR).