SPP Southwest Power Pool

System Impact Study SPP-2005-055 For Transmission Service Requested By: Cargill Energy Services L.P.

From WR to ERCOTN

For a Reserved Amount Of 207 MW From 07/01/05 To 09/01/05

SPP Transmission Planning

1. Executive Summary

Cargill Energy Services, L.P. has requested a system impact study for monthly firm transmission service from WR to ERCOTN. The period of the transaction is from 07/01/05 to 09/01/05. The request is for reservations 883683, 883684 for the amount of 207 MW.

The 207 MW transaction from WR to ERCOTN has an impact on the following flowgates with no ATC: BRIKEYRIVRED, REDARCREDARC, SILDIVNWSCIM, SPSNorth_Sth, and POTXFROKLTUC. 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

Cargill Energy Services, L.P. has requested a system impact study for transmission service from WR to ERCOTN.

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

- BRIKEYRIVRED: Bristow to Keystone West 138 kV line for the loss of Riverside Station to Redbud 345 kV line

- REDARCREDARC: Redbud to Arcadia 345 kV line for the loss of Redbud to Arcadia 345 kV line

- SILDIVNWSCIM: Silverlake to Division 138 kV line for the loss of Northwest Station to Cimaron 345 kV line

- SPSNorth_Sth: Bushland to Deaf Smith 230 kV line
  Potter County to Plant X 230 kV
  Osage Switch to Canyon 115 kV
  Randall County to Palodur 115 kV
  Nichols Plant to Amarillo South 230 kV

- POTXFROKLTUC: Potter 345/230 kV XFR for the loss of Oklaunion to Tuco 345 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 requests 883683 and 883684, five flowgates require relief. The flowgates and associated amount of relief is as follows:

Table 1

Flowgates	Sensitivity Redirect (%)	Sensitivity Original (%)	Duration	Required Relief (MW)
BRIKEYRIVRED	3.6	-	July	8
REDARCREDARC	10.9	-	July	23
SILDIVNWSCIM	5.8	-	July	12
SPSNorth_Sth	18.9	-	August	39
POTXFROKLTUC	5.9	-	August	12

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

Table 2

Transactions Path	BRIKEYRIVRED Sensitivity (%)	REDARCREDARC Sensitivity (%)	SILDIVNWSCIM Sensitivity (%)
AMRN – SPS	3.3	10.7	4.6
CSWS – ERCOTE	-	6.2	-
GRDA - WFEC	6.3	19.1	7.0
OKGE – WR	-	7.1	-
OKGE - EES		8.0	
CSWS - SPS	3.0	-	3.7

Table 3 displays a list of reservation paths that offer relief for the flowgates in question within the month of August.

Table 3

Transactions Path	SPSNorth_Sth Sensitivity (%)	POTXFROKLTUC Sensitivity (%)
AMRN – SPS	26.9	50.1
CSWS - SPS	22.0	46.4

Table 4 displays the amount of capacity required for each reservation path to relieve the flowgates in question within the month of July

Table 4

Transactions Path	BRIKEYRIVRED Sensitivity (MW)	REDARCREDARC Sensitivity (MW)	SILDIVNWSCIM Sensitivity (MW)
AMRN – SPS	226	211	239
CSWS – ERCOTE	-	364	-
GRDA - WFEC	119	119	157
OKGE – WR	-	318	-
OKGE - EES		282	
CSWS - SPS	249	-	297

Table 5 displays the amount of capacity required for each reservation path to relieve the flowgates in question within the month of August

Table 5

Transactions Path	SPSNorth_Sth Sensitivity (MW)	POTXFROKLTUC Sensitivity (MW)
AMRN – SPS	146	25
CSWS – SPS	178	27

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.