



SPP *Southwest Power Pool*

*Preliminary
System Impact Study
SPP-2004-084-1P
For Transmission Service
Requested By
Xcel Energy Marketing*

From SPS to EDDY

*For a Reserved Amount Of 35MW
From 1/1/2005
To 1/1/2007*

SPP Engineering, Tariff Studies

System Impact Study

Xcel Energy Marketing has requested a system impact study for long-term Firm Point-to-Point transmission service from SPS to EDDY for 35MW. The period of the service requested is from 1/1/2005 to 1/1/2007. The OASIS reservation number is 678686. The principal objective of this study is to identify system constraints on the SPP Regional Tariff System and potential system facility upgrades that may be necessary to provide the requested service.

This study was performed for the SPS to EDDY request in order to provide preliminary results identifying facility upgrades that may be required for the requested service. The preliminary study is performed with only confirmed reservations included in the models. The models do not include any reservations, even those with a higher priority, that are still in study mode. The results of the transfer analyses are documented in Table 1 of the report. Table 1 summarizes the results of the Scenario 1 system impact analysis. The results given in Table 1 include upgrades that may be assigned to higher priority requests. If a facility identified for the SPS to EDDY study is also identified for a study with higher priority, the facility will be assigned to the request with the highest priority. If the higher priority customer does not take service, the facility would then be assigned to the SPS to EDDY request. The primary purpose of this preliminary study is to provide the customer with an estimated cost of the facility upgrades that may be required in order to accommodate the requested service. The preliminary study is performed by monitoring each facility at 90% of its rating. This is done to provide an estimate of possible overloads that may be assigned to the customer if requests with higher priority are accepted.

Nine seasonal models were used to study the SPS to EDDY request for the requested service period. The SPP 2004 Series Cases Update 5, 2004/05 Winter Peak (04WP), 2005 April Minimum (05AP), 2005 Spring Peak (05G), 2005 Summer Peak (05SP), 2005 Summer Shoulder (05SH), 2005 Fall Peak (05FA), 2005/06 Winter Peak (05WP), 2007 Summer Peak (07SP), and 2007/08 Winter Peak (07WP) were used to study the impact of the request on the SPP system during the requested service period of 1/1/2005 to 1/1/2007. The chosen base case models were modified to reflect the most current modeling information. The cases were modified to reflect firm transfers during the requested service period that were not already included in the January 2004 base case series models. From the nine seasonal models, one system scenario was developed. Scenario 1 includes confirmed West to East transfers not already included in the January 2004 base case series models, SPS Exporting, and the Lamar HVDC Tie flowing from SPS to Lamar, and ERCOT exporting.

PTI's MUST First Contingency Incremental Transfer Capability (FCITC) DC analysis was used to study the request. The MUST options chosen to conduct the System Impact Study analysis can be found in Appendix A. The MUST option to convert MVA branch ratings to estimated MW ratings was used to partially compensate for reactive loading.

These study results are preliminary estimates only and are not intended for use in final determination of the granting of service. These results do not include an evaluation of potential constraints in the planning horizon beyond the reservation period that may limit the right to renew service. Any solutions, upgrades, and costs provided in the preliminary System Impact Study are planning estimates only. The final ATC and upgrades required may vary from these results due to the status of higher priority requests, unknown facility upgrades and proposed transmission plans that will be identified during the facility study process, and the final results of the full AC analysis.

SPP will also review the possibility of curtailment of previously confirmed service and/or the redispatch of units as an option for relieving the additional impacts on the SPP facilities caused by the SPS to EDDY request. It is the responsibility of the customer to reach an agreement with the applicable party concerning the curtailment of confirmed service and the redispatch of units. The curtailment and redispatch requirements would be called upon prior to implementing NERC TLR Level 5a. These options will be evaluated as part of the Facility Study. Execution of a Facility Study Agreement is now required to maintain queue position. The final upgrade solutions, cost assignments and available redispatch and curtailment options will be determined upon the completion of the facility study.

Table 1 – SPP facility overloads identified for the SPS to EDDY transfer using Scenario 1

Study Case	From Area - To Area	Branch Overload	Rating <MW>	BC % Loading	TC % Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
04WP		NONE IDENTIFIED								
05AP		NONE IDENTIFIED								
05G	AEPW-AEPW	54121 ELKCTY-4 138 *B101 1 1	256	90.9	91.9	7.3070	50858 FINNEY7 345 50888 POTTRC7 345 1	35	Replace free standing metering CT. Replace switches 1302, 1303, 1306, & 1307. Changeout breaker 1305A	\$ 300,000
05G	AEPW-AEPW	54153 ELKCITY6 230 *B101 1 1	257	90.4	91.4	7.3070	50858 FINNEY7 345 50888 POTTRC7 345 1	35	See Previous Upgrade Specified For Facility	
05SP		NONE IDENTIFIED								
05SH		NONE IDENTIFIED								
05FA		NONE IDENTIFIED								
05WP		NONE IDENTIFIED								
07SP		NONE IDENTIFIED								
07WP		NONE IDENTIFIED								
									This cost may be higher due to additional facilities whose solutions will be determined during the Facility Study process	\$*
									Total Cost with Facilities Monitored @ 90% Loading	\$ 300,000
									Total Cost with Facilities Monitored @ 100% Loading	\$ -

Appendix A

MUST CHOICES IN RUNNING FCITC DC ANALYSIS

CONSTRAINTS/CONTINGENCY INPUT OPTIONS

1. AC Mismatch Tolerance – 2 MW
2. Base Case Rating – Rate A
3. Base Case % of Rating – 90%
4. Contingency Case Rating – Rate B
5. Contingency Case % of Rating – 90%
6. Base Case Load Flow – Do not solve AC
7. Convert branch ratings to estimated MW ratings – Yes
8. Contingency ID Reporting – Labels
9. Maximum number of contingencies to process - 50000

MUST CALCULATION OPTIONS

1. Phase Shifters Model for DC Linear Analysis – Constant flow for Base Case and Contingencies
2. Report Base Case Violations with FCITC – Yes
3. Maximum number of violations to report in FCITC table - 50000
4. Distribution Factor (OTDF and PTDF) Cutoff – 0.03
5. Maximum times to report the same elements - 10
6. Apply Distribution Factor to Contingency Analysis – Yes
7. Apply Distribution Factor to FCITC Reports – Yes
8. Minimum Contingency Case flow change – 1 MW
9. Minimum Contingency Case Distribution Factor change – 0.0
10. Minimum Distribution Factor for Transfer Sensitivity Analysis – 0.0