



SPP *Southwest Power Pool*

*System Impact Study
SPP-2003-012-1
For Transmission Service
Requested By
Cargill - Alliant*

From BLKW To OKGE

*For a Reserved Amount Of
50MW From 1/1/2004 To 1/1/2005*

SPP Engineering, Tariff Studies

System Impact Study

Cargill - Alliant has requested a system impact study for long-term Firm Point-to-Point transmission service from BLKW to OKGE for 50 MW. The period of the service requested is from 1/1/2004 to 1/1/2005. The OASIS reservation number is 473099. 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.

The BLKW to OKGE request was studied using two System Scenarios to determine the potential facility upgrades required. The results of the transfer analyses are documented in Tables 1 and 2 of the report. Table 1 summarizes the results of the Scenario 1 system impact analysis. Table 2 summarizes the results of the Scenario 2 system impact analysis. The results of this study gives the customer an estimated cost of the facility upgrades that may be required in order to accommodate the BLKW to OKGE 50 MW request.

Six seasonal models were used to study the BLKW to OKGE 50 MW request for the requested service period. The SPP 2003 Series Cases 2003/04 Winter Peak (03WP), 2004 April Min (04AP), 2004 Spring Peak (04G), 2004 Summer Peak (04SP), 2004 Fall Peak (04FA), and 2004/05 Winter Peak (04WP) were used to study the impact of the 50 MW request on the SPP system during a the requested service period of 1/1/2004 to 1/1/2005. The chosen base case models were modified to reflect the most current modeling information. From the six seasonal models, two system scenarios were developed. Scenario 1 includes confirmed West to East transfers not already included in the January 2003 base case series models, SPS Exporting, and the Lamar HVDC Tie flowing from SPS to Lamar. Scenario 2 includes confirmed East to West transfers not already included in the January 2003 base case series models, SPS Importing, and the Lamar HVDC Tie flowing from Lamar to SPS. The Lamar HVDC Tie is modeled starting in the 04WP based on a 12/1/2004 in service date.

PTI's MUST First Contingency Incremental Transfer Capability (FCITC) DC analysis was used to study the request. The MUST option to convert MVA branch ratings to estimated MW ratings was used to partially compensate for reactive loading. Due to small number of limitations identified, the limitations identified were AC verified using PTI's PSS/E.

The study results of the BLKW to OKGE 50 MW transfer show that limiting constraints exist. Due to the limiting constraints identified, the Transmission Service Request cannot be granted. Any solutions, upgrades, and costs provided in the System Impact Study are planning estimates only. The final ATC and upgrades required may vary from these results due to 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. Evaluation of the right to renew for future years was not performed. Renewal rights 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 and cost assignments will be determined upon the completion of the facility study.

Table 1 – SPP facility overloads identified for the BLKW to OKGE transfer using System Scenario 1

Study Case	From Area - To Area	Branch Overload	Rating <MVA>	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
03WP		None Identified			50		-
04AP		None Identified			50		-
04G		None Identified			50		-
04SP		None Identified			50		-
04FA		None Identified			50		-
04WP	AEPW-AEPW	ELK CITY 230/138KV Transformer Ckt 1	263	Multiple Outage Contingency: OKLAUNION - TUCO INTERCHANGE 345KV TUCO INTERCHANGE 345/230KV Transformer Ckt 1	23	Replace free standing metering CT. Replace switches 1302, 1303, 1306, & 1307. Changeout breaker 1305A	300,000
04WP	AEPW-AEPW	ELK CITY 230/138KV Transformer Ckt 1	263	OKLAUNION - TUCO INTERCHANGE 345KV	23	See Previous	See Previous
04WP	AEPW-AEPW	ELK CITY 230/138KV Transformer Ckt 1	263	TUCO INTERCHANGE 345/230KV Transformer Ckt 1	23	"	"
						Total Estimated Cost	300,000

Table 2 – SPP facility overloads identified for the BLKW to OKGE transfer using System Scenario 2

Study Case	From Area - To Area	Branch Overload	Rating <MVA>	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
03WP		None Identified			50		
04AP		None Identified			50		
04G		None Identified			50		
04SP	OKGE-OKGE	FT SMITH 500/161KV Transformer Ckt 1	480	FT SMITH 161/345kV Transformer Ckt 1	0	Convert Ft. Smith 161kv to 1-1/2 breaker design and install 2nd 500-161kV transformer bank	7,000,000
04FA		None Identified			50		
04WP		None Identified			50		
Total Estimated Cost							7,000,000