



SPP *Southwest Power Pool*

***System Impact Study SPP-2002-223
For Transmission Service
Requested By
Cargill - Alliant***

From MCLN To ERCOTN

***For a Reserved Amount Of
150MW From 2/1/2003 To 2/1/2004***

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 MCLN to ERCOTN. The period of the transaction is from 2/1/2003 to 2/1/2004. The request is for OASIS reservations 453705, 453706, and 453708 for a total amount of 150 MW.

The principal objective of this study is to identify constraints on the SPP Regional Tariff System and potential facility upgrades that may be necessary to facilitate the additional 150 MW of service requested.

The MCLN to ERCOTN transfer was studied to determine the facility upgrades required based on the actual queue position of the request with only those higher priority requests in Facility Study mode included in the models. Higher priority requests still in study that have not gone to facility study were not included in the models. These results are documented in Table 1 of the report. The results given in Table 1 include upgrades that may be assigned to higher priority requests. The results of this study give the customer an estimated cost of facility upgrades that may be required in order to accommodate the 150 MW MCLN to ERCOTN transfer.

SPP used five seasonal models to study the MCLN to ERCOTN 150 MW transfer for the requested service period. The SPP 2003 Series Cases 2003 Summer Peak, 2003 Fall Peak, 2003/04 Winter Peak, 2004 April Min, and 2004 Spring Peak were used to study the impact of the 150 MW transfer on the SPP system during a deferred service period of 6/1/2003 to 6/1/2004. The Spring Peak models apply to April and May, the Summer Peak models apply to June through September, the Fall Peak models apply to October and November, and the Winter Peak models apply to December through March. 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 2003 base case series models.

With only the higher priority requests that have signed Facility Study Agreements included in the models, the study results of the MCLN to ERCOTN 150 MW show that limiting constraints exist. Due to the number of limiting constraints identified, the Transmission Service Request cannot be granted. 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. The upgrades and cost provided in the 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 that will be identified during the facility study process, and the final results of the full AC analysis. 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 upgrades identified for the MCLN to ERCOTN transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B <MW>	Outaged Branch Causing Overload	ATC	Solution	Estimated Cost
03SP	WFEC-WFEC	ACME - FRANKLIN SW 69KV	34	ANADARKO - BLANCHARD 69KV	0	Upgrade Assigned to SPP-1999-017 Acme Jct to Acme Sub: Upgrade From 3/0 To 795MCM Estimated In-Service Date 12/1/05	Not Available
03SP	WFEC-WFEC	ACME - WEST NORMAN 69KV	38	CANADIAN SW 69/138kV Transformer	0	Solution Undetermined	Not Available
03SP	GRRD-GRRD	AFTON 161/69KV Transformer	49.9	MIAMI - AFTON 161kV	0	Replace 50 MVA Transformer with 84 MVA unit	\$833,000
03SP	AEPW-AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	FLINT CREEK - TONTITOWN 161kV	0	Rebuild 12 miles with 2156ACSR	\$7,200,000
03SP	WERE-WERE	CIRCLEVILLE - HOYT HTI SWITCHING JCT 115KV	95.7	HOYT - STRANGER CREEK 345kV	0	May be relieved due to Westar Transmission Operating Directive 803 Outage of the Hoyt to Stranger 345 kV line	Not Available
03SP	GRRD-GRRD	CLAREMORE 161/69KV Transformer ckt 2	83.8	CLAREMORE 161/69kV Transformer Ckt 1	0	Solution Undetermined	Not Available
03SP	AEPW-AEPW	DYESS - EAST ROGERS 161KV	244	FLINT CREEK - GENTRY REC 161kV	0	Solution Undetermined	Not Available
03SP	AEPW-AEPW	DYESS - SPRINGDALE 69KV	85	DYESS - SPRINGDALE T 69kV	0	Solution Undetermined	Not Available
03SP	AEPW-AEPW	EAST CENTERTON - GENTRY REC 161KV	352.1	FLINT CREEK - TONTITOWN 161kV	0	Rebuild 19.16 miles of 2-397.5 ACSR with 2156 ACSR	\$8,000,000
03SP	SWPS-SWPS	EAST PLANT INTERCHANGE 69/115KV Transformer ckt 1	45.9	EAST PLANT INTERCHANGE 69/115kV Transformer Ckt 2	0	Solution Undetermined	Not Available
03SP	SWPS-SWPS	EAST PLANT INTERCHANGE 69/115KV Transformer ckt 2	45.9	EAST PLANT INTERCHANGE 69/115kV Transformer Ckt 1	0	Solution Undetermined	Not Available
03SP	AEPW-AEPW	FLINT CREEK - GENTRY REC 161KV	353.5	TONTITOWN - ELM SPRINGS REC 161kV	0	Rebuild 1.09 miles of 2-397.5 ACSR with 2156 ACSR.	\$400,000
03SP	AEPW-AEPW	FLINT CREEK - TONTITOWN 161KV	311.2	FLINT CREEK - GENTRY REC 161kV	0	Replace switch and jumpers	\$45,000
03SP	WERE-WERE	GATZ - GOLDEN PLAINS JCT 69KV	31.7	HALSTEAD - MUD CREEK JCT 69kV	0	Local area problem within Newton division	-
03SP	WERE-WERE	GOLDEN PLAINS JCT - HESSTON 69KV	31.7	HALSTEAD - MUD CREEK JCT 69kV	0	Local area problem within Newton division	-
03SP	WFEC-WFEC	GOLDSBY - OKLAHOMA UNIVERSITY SW 69KV	33.8	FRANKLIN SW 69/138kV Transformer	0	Solution Undetermined	Not Available
03SP	OKGE-OKGE	HEMLOCK TAP - CHESTNUT 69KV	72	Single Contingency with Line Closure Open Cleveland Tap - STH 4Th St 69kV Close Cleveland Ave - Hemlock 69kV	0	Solution Undetermined	Not Available
03SP	WERE-WERE	JARBALO JCT SS - NW LEAVENWORTH 115KV	124.7	HALLMARK - JARBALO JCT SS 115kV	0	May be relieved due to Westar Transmission Operating Directive 1216 Outage of the Jarbalo to Hallmark 115 kV Line Section	Not Available
03SP	WERE-WERE	KEREFORD JCT - NW LEAVENWORTH 115KV	67.6	ARNOLD - STRANGER CREEK 115kV	0	Solution Undetermined	Not Available
03SP	OKGE-OKGE	MUSKOGEE 69/161KV Transformer ckt 1	41	MUSKOGEE 69/161kV Transformer Ckt 3	0	Solution Undetermined	Not Available
03SP	OKGE-OKGE	MUSKOGEE 69/161KV Transformer ckt 2	41	MUSKOGEE 69/161kV Transformer Ckt 3	0	Solution Undetermined	Not Available
03SP	SWPS-SWPS	NW INTERCHANGE 69/115KV Transformer	45.3	COULTER INTERCHANGE 69/115kV Transformer	0	Solution Undetermined	Not Available
03SP	OKGE-OKGE	PARKLN - AHLOSO TAP 69KV	72	Single Contingency with Line Closure Open Valley View Tap - Valley View 69kV Close Ahloso - Ada Oc Pump 69kV	0	Solution Undetermined	Not Available
03SP	KACP-MIPU	STHTOWN - MARTIN CITY 161KV	166.8	STILWELL - HICKMAN 161kV	0	Solution Undetermined	Not Available

Table 1 – continued – SPP facility upgrades identified for the MCLN to ERCOTN transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B <MW>	Outaged Branch Causing Overload	ATC	Solution	Estimated Cost
03SP	WERE-WERE	TECUMSEH HILL - 27TH & CROCO 115KV	67.1	AUBURN ROAD 230/115kV Transformer Ckt 1	0	May be relieved due to Westar Transmission Operating Directive 618 Loss of the Auburn 230/115 kV transformer	Not Available
03SP	AEPW-AEPW	TONTITOWN - ELM SPRINGS REC 161KV	335	DYESS - TONTITOWN 161kV	0	Replace Switch & Jumpers	\$100,000
03SP	WFEC-WFEC	PAOLI 69/138KV Transformer	41.8	CANADIAN SW - NOBLE 69kV	79	Solution Undetermined	Not Available
03SP	SWPS-SWPS	OSAGE SS - MANHTP3 115KV	158	EAST PLANT INTERCHANGE - PIERCE TAP 115kV	141	Solution Undetermined	Not Available
03FA	WFEC-WFEC	ACME - FRANKLIN SW 69KV	34	CANADIAN SW 69/138kV Transformer	0	See Previous	See Previous
03FA	WERE-WERE	COFFEY CO NO. 4 VERNON - GREEN 69KV	43.6	WOLF CREEK - LACYGNE 345kV	0	May be relieved due to Westar Transmission Operating Directive 1304 Overload of the Athens to Wolf Creek 69 kV line	Not Available
03FA	WFEC-WFEC	GOLDSBY - OKLAHOMA UNIVERSITY SW 69KV	32.9	FRANKLIN SW 69/138kV Transformer	0	See Previous	See Previous
03WP	WFEC-WFEC	ACME - FRANKLIN SW 69KV	34	CANADIAN SW 69/138kV Transformer	0	See Previous	See Previous
03WP	WFEC-WFEC	ACME - WEST NORMAN 69KV	38	CANADIAN SW 69/138kV Transformer	0	See Previous	See Previous
03WP	WFEC-WFEC	GOLDSBY - OKLAHOMA UNIVERSITY SW 69KV	33.6	FRANKLIN SW 69/138kV Transformer	0	See Previous	See Previous
03WP	WFEC-WFEC	LITTLE AXE - NOBLE 69KV	26	PAOLI 69/138kV Transformer	0	Solution Undetermined	Not Available
03WP	SWPA-SWPA	NORFORK 161/69KV Transformer ckt 1	25	NORFORK 161/69kV Transformer Ckt 2	0	Replace Norfolk Transformer by SWPA In-Service Date 6/1/2005	Not Available
03WP	WFEC-WFEC	PAOLI 69/138KV Transformer	41.5	CANADIAN SW - NOBLE 69kV	0	See Previous	See Previous
03WP	WFEC-WFEC	CANADIAN SW - NOBLE 69KV	37.8	PAOLI 69/138kV Transformer	8	Solution Undetermined	Not Available
04AP	WFEC-WFEC	ACME - FRANKLIN SW 69KV	33.9	CANADIAN SW - GOLDSBY 69kV	0	See Previous	See Previous
04AP	WFEC-WFEC	ACME - WEST NORMAN 69KV	38	CANADIAN SW 69/138kV Transformer	0	See Previous	See Previous
04AP	WFEC-WFEC	GOLDSBY - OKLAHOMA UNIVERSITY SW 69KV	31.4	FRANKLIN SW 69/138kV Transformer	0	See Previous	See Previous
04G	WFEC-WFEC	ACME - FRANKLIN SW 69KV	34	CANADIAN SW 69/138kV Transformer	0	See Previous	See Previous
04G	WFEC-WFEC	GOLDSBY - OKLAHOMA UNIVERSITY SW 69KV	32.5	FRANKLIN SW 69/138kV Transformer	0	See Previous	See Previous
Total (Excludes Costs Not Available)							\$16,578,000