



SPP *Southwest Power Pool*

***System Impact Study SPP-2002-211
For Transmission Service***

***Requested By
Cargill - Alliant***

From MCLN To ERCOTN

***For a Reserved Amount Of
150MW From 3/1/2003 To 3/1/2004***

SPP Coordinated Planning

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 3/1/2003 to 3/1/2004. The request is for OASIS reservations 441906, 441907, and 441908 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 four seasonal models to study the MCLN to ERCOTN 150 MW transfer for the requested service period. The SPP 2002 Series Cases 2003 Spring, 2003 Summer Peak, 2003 Fall Peak, and 2003/04 were used to study the impact of the 150 MW transfer on the SPP system during the requested service period of 3/1/2004 to 3/1/2004. 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 2002 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	Outaged Branch Causing Overload	ATC	Solution	Estimated Cost
03G	WFEC-WFEC	Acme - Franklin Sw 69kV	34	Canadian Sw 69/138kV Transformer	0	Solution Undetermined	Not Available
03G	WERE-WERE	Athens Switching Sta - Coffey County No. 4 Vernon 69kV	45	Wolf Creek - Lacygne 345kV	0	May be relieved due to Westar Transmission Operating Directive 1304	Not Available
03G	WERE-WERE	Auburn Road - Indian Hills 115kV	118	Hoyt - Jeffery Energy Center 345kV	0	May be relieved due to Westar Transmission Operating Directive 400	Not Available
03G	WERE-WERE	Auburn Road - Jeffrey Energy Center 230kV	565	Hoyt - Jeffery Energy Center 345kV	0	May be relieved due to Westar Transmission Operating Directive 400	Not Available
03G	WERE-WERE	Auburn Road - South Gage (West) 115kV	75	Hoyt - Jeffery Energy Center 345kV	0	May be relieved due to Westar Transmission Operating Directive 400	Not Available
03G	WERE-WERE	Auburn Road - South Gage (West) 115kV ckt 2	97	Hoyt - Jeffery Energy Center 345kV Ckt 1	0	May be relieved due to Westar Transmission Operating Directive 400	Not Available
03G	WERE-WERE	Circleville - Hoyt Hti Switching Jct 115kV	97	Hoyt - Stranger Creek 345kV	0	Replace 82 structures	\$ 742,000
03G	WERE-WERE	Circleville - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	May be relieved due to Westar Transmission Operating Directive 803	Not Available
03G	WERE-WERE	Coffey County No. 4 Vernon - Green 69kV	45	Wolf Creek - Lacygne 345kV	0	May be relieved due to Westar Transmission Operating Directive 1304	Not Available
03G	WFEC-WFEC	Goldsby - Oklahoma University Sw 69kV	34	Franklin Sw 69/138kV Transformer	54	Solution Undetermined	Not Available
03G	WERE-WERE	Kelly - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	May be relieved due to Westar Transmission Operating Directive 803	Not Available
03G	WERE-WERE	Mockingbird Hill Switching Sta - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	May be relieved due to Westar Transmission Operating Directive 803	Not Available
03G	WERE-WERE	Tecumseh Hill - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	May be relieved due to Westar Transmission Operating Directive 803	Not Available
03SP	WERE-WERE	166Th Street - Jarbalo Jct Switching Sta 115kV	97	Midland Jct - Pentagon 115kV	0	May be relieved due to Westar Transmission Operating Directive 1202	Not Available
03SP	WFEC-WFEC	Acme - Franklin Sw 69kV	34	Canadian Sw - Goldsby 69kV	0	See Previous	See Previous
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	50	Miami - Afton 161kV	0	Replace 50 MVA Transformer with 84 MVA unit	\$ 833,000
03SP	WERE-WERE	Auburn Road - Jeffrey Energy Center 230kV	565	Hoyt - Jeffery Energy Center 345kV	0	See Previous	See Previous
03SP	WERE-WERE	Auburn Road - South Gage (West) 115kV	75	Hoyt - Jeffery Energy Center 345kV	0	See Previous	See Previous
03SP	WERE-WERE	Auburn Road - South Gage (West) 115kV ckt 2	97	Hoyt - Jeffery Energy Center 345kV Ckt 1	0	See Previous	See Previous
03SP	SWPA-EES	Bull Shoals - Midway 161kV	162	Bull Shoals - Buford Tap 161kV	0	Replace disconnect switches, metering CTs and wave trap at Bull Shoals	\$ 150,000
03SP	WERE-WERE	Circleville - Hoyt Hti Switching Jct 115kV	97	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03SP	WERE-WERE	Circleville - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03SP	GRRD-GRRD	Claremore 161/69kV Transformer ckt 1	84	Claremore 161/69kV Transformer Ckt 2	0	Solution Undetermined	Not Available
03SP	GRRD-GRRD	Claremore 161/69kV Transformer ckt 2	84	Claremore 161/69kV Transformer Ckt 1	0	Solution Undetermined	Not Available
03SP	AEPW-AEPW	Dyess - Chamber Springs 161kV	244	Chamber Springs - Farmington Aecc 161kV	0	AEPW Planned Tontitown Project	\$ -
03SP	AEPW-AEPW	Dyess - East Rogers 161kV	244	Flint Creek - Gentry Rec 161kV	0	AEPW Planned Tontitown Project	\$ -
03SP	AEPW-AEPW	East Centerton - Gentry Rec 161kV	353	Flint Creek - Elm Springs Rec 161kV	0	Rebuild 19.16 miles of 2-397.5 ACSR with 2156 ACSR	\$ 8,000,000
03SP	AEPW-AEPW	Flint Creek - Elm Springs Rec 161kV	312	Flint Creek - Gentry Rec 161kV	0	AEPW Planned Tontitown Project	\$ -
03SP	AEPW-AEPW	Flint Creek - Gentry Rec 161kV	353	Flint Creek - Elm Springs Rec 161kV	0	Rebuild 1.09 miles of 2-397.5 ACSR with 2156 ACSR.	\$ 400,000
03SP	WFEC-WFEC	Goldsby - Oklahoma University Sw 69kV	34	Franklin Sw 69/138kV Transformer	0	See Previous	See Previous
03SP	WERE-WERE	Kelly - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03SP	WERE-WERE	Mockingbird Hill Switching Sta - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03SP	SWPS-SWPS	Northwest Interchange 69/115kV Transformer	46	East Plant Interchange - Van Buren 1 Tap 69kV	0	Solution Undetermined	Not Available
03SP	MIDW-WEPL	Seward 69/115kV Transformer	44	Heizer 115/230kV Transformer	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	Outaged Branch Causing Overload	ATC	Solution	Estimated Cost
03SP	KACP-KACP	Stilwell - Lacygne 345kV	1251	West Gardner - Lacygne 345kV	0	Upgrade to be completed 7/1/2003	\$ -
03SP	WERE-WERE	Tecumseh Hill - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03FA	WFEC-WFEC	Acme - Franklin Sw 69kV	34	Canadian Sw 69/138kV Transformer	0	See Previous	See Previous
03FA	WERE-WERE	Athens Switching Sta - Coffey County No. 4 Vernon 69kV	45	Wolf Creek - Lacygne 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Auburn Road - Jeffery Energy Center 230kV	565	Hoyt - Jeffery Energy Center 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Auburn Road - South Gage (West) 115kV	75	Hoyt - Jeffery Energy Center 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Auburn Road - South Gage (West) 115kV ckt 2	97	Hoyt - Jeffery Energy Center 345kV Ckt 1	0	See Previous	See Previous
03FA	WERE-WERE	Circleville - Hoyt Hti Switching Jct 115kV	97	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Circleville - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Coffey County No. 4 Vernon - Green 69kV	45	Wolf Creek - Lacygne 345kV	0	See Previous	See Previous
03FA	WFEC-WFEC	Goldsby - Oklahoma University Sw 69kV	34	Franklin Sw 69/138kV Transformer	0	See Previous	See Previous
03FA	WERE-WERE	Kelly - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Mockingbird Hill Switching Sta - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03FA	WERE-WERE	Tecumseh Hill - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	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	WERE-WERE	Auburn Road - Jeffery Energy Center 230kV	565	Hoyt - Jeffery Energy Center 345kV	0	See Previous	See Previous
03WP	WERE-WERE	Auburn Road - South Gage (West) 115kV	75	Hoyt - Jeffery Energy Center 345kV	0	See Previous	See Previous
03WP	WERE-WERE	Auburn Road - South Gage (West) 115kV ckt 2	97	Hoyt - Jeffery Energy Center 345kV Ckt 1	0	See Previous	See Previous
03WP	WERE-WERE	Circleville - Hoyt Hti Switching Jct 115kV	97	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03WP	WERE-WERE	Circleville - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03WP	AEPW-AEPW	Diana - Perdue 138kV	237	Harrison Road - Liberty City Tap 138kV	113	Replace Breaker 10070 @ Perdue	\$ 150,000
03WP	WERE-WERE	El Paso - Gill Energy Center South 138kV	210	Evans Energy Ctr Nth - Evans Energy Ctr Sth 138kV	0	Solution Undetermined	Not Available
03WP	WFEC-WFEC	Goldsby - Oklahoma University Sw 69kV	34	Franklin Sw 69/138kV Transformer	0	See Previous	See Previous
03WP	WERE-WERE	Kelly - King Hill N.M. Coop 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03WP	WFEC-WFEC	Lexington - Paoli 69kV	34	Canadian Sw 69/138kV Transformer	43	Solution Undetermined	Not Available
03WP	WFEC-WFEC	Little Axe - Noble 69kV	26	Paoli 69/138kV Transformer	0	Solution Undetermined	Not Available
03WP	WEPL-WEPL	Medicine Lodge - Sun City 115kV	80	Mullergren - Spearville 230kV	9	Solution Undetermined	Not Available
03WP	WERE-WERE	Mockingbird Hill Switching Sta - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
03WP	WERE-WERE	Tecumseh Hill - Stull Switching Sta 115kV	92	Hoyt - Stranger Creek 345kV	0	See Previous	See Previous
Total (Excludes Costs Not Available)							\$ 10,275,000