



# **SPP** *Southwest Power Pool*

*Preliminary  
System Impact Study  
SPP-2004-067-1P  
For Transmission Service  
Requested By  
Xcel Energy Marketing*

*From SPS to KACY*

*For a Reserved Amount Of 115MW  
From 6/1/2005  
To 6/1/2011*

*SPP Engineering, Tariff Studies*

SPP IMPACT STUDY (SPP-2004-067-1P)

July 21, 2004

Page 1 of 7

## **System Impact Study**

Xcel Energy Marketing has requested a system impact study for long-term Firm Point-to-Point transmission service from SPS to KACY for 115 MW. The period of the service requested is from 6/1/2005 to 6/1/2011. The OASIS reservation number is 668088. 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 KACY 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 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 KACY 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 KACY 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.

Eight seasonal models were used to study the SPS to KACY request for the requested service period. The SPP 2004 Series Cases Update 2, 2005 Summer Peak (05SP), 2005 Summer Shoulder (05SH), 2005 Fall Peak (05FA), 2005/06 Winter Peak (05WP), 2007 Summer Peak (07SP), 2007/08 Winter Peak (07WP), 2010 Summer Peak (10SP), and 2010/11 Winter Peak (10WP) were used to study the impact of the request on the SPP system during the requested service period of 6/1/2005 to 6/1/2011. 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. The eight seasonal models include 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 KACY 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 KACY transfer**

Study Case	From Area - To Area	Branch Overload	Rating <MW>	BC % Loading	TC % Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
05SP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	100.3	104.1	3.1730	57252 MIDLAND3 115 57261 PENTAGN3 115 1	0	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
05SP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	110.7	111.6	4.4010	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAHWHL29X 1 1	299	106.9	108.2	3.4740	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAHWHL29X 1 1	295	108.3	109.7	3.4740	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	57233 166TH 3 115 57243 JAGGARD3 115 1	96	87.4	91.2	3.1730	57252 MIDLAND3 115 57261 PENTAGN3 115 1	115	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
05SP	WFEC-AEPW	55814 ANADARK4 138 54140 S.W.S.-4 138 1	199	91.6	93.5	3.3960	54140 S.W.S.-4 138 54146 NORGE--4 138 1	115	Replace bus, jumpers, switches, supports and foundations at Anadarko Switch Station.	\$ 450,000
05SP	AEPW-AEPW	54121 ELKCTY-4 138 *B118 1 1	257	76.2	91.9	35.0950	54119 O.K.U.-7 345 54131 L.E.S. 345 1 54119 O.K.U.-7 345 59991 Oklaun 7 345 1	115	Replace free standing metering CT. Replace switches 1302, 1303, 1306, & 1307. Changeout breaker 1305A	\$ 300,000
05SP	AEPW-AEPW	54153 ELKCITY6 230 *B118 1 1	258	75.9	91.6	35.0950	54119 O.K.U.-7 345 54131 L.E.S. 345 1 54119 O.K.U.-7 345 59991 Oklaun 7 345 1	115	See Previous Upgrade Specified For Facility	
05SP	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	90.7	91.8	10.6890	56851 AUBURN 6 230 56852 JEC 6 230 1	115	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
05SP	WERE-WERE	57252 MIDLAND3 115 *B362 MIDJ126X 1 1	304	96.5	97.8	3.3680	56853 LAWHILL6 230 *B332 LAHWHL29X 1 1	115	May be relieved due to Westar Operating Procedure 0631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
05SP	WERE-WERE	56855 MIDLAND6 230 *B362 MIDJ126X 1 1	305	96.5	97.8	3.3680	57250 LWRNCHL3 115 *B332 LAHWHL29X 1 1	115	May be relieved due to Westar Operating Procedure 0631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
05SH	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	103.5	104.5	4.7100	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
05SH	AEPW-AEPW	54121 ELKCTY-4 138 *B118 1 1	257	84.2	100.4	36.2840	50858 FINNEY7 345 50888 POTTRC7 345 1	112	See Previous Upgrade Specified For Facility	
05SH	AEPW-AEPW	54153 ELKCITY6 230 *B118 1 1	258	84.0	100.1	36.2840	50858 FINNEY7 345 50888 POTTRC7 345 1	114	See Previous Upgrade Specified For Facility	
05SH	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	93.4	97.3	3.2180	57252 MIDLAND3 115 57261 PENTAGN3 115 1	115	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
05SH	AEPW-AEPW	54121 ELKCTY-4 138 *B118 1 1	257	75.3	91.4	35.9310	54119 O.K.U.-7 345 54131 L.E.S. 345 1 54119 O.K.U.-7 345 59991 Oklaun 7 345 1	115	See Previous Upgrade Specified For Facility	
05SH	AEPW-AEPW	54153 ELKCITY6 230 *B118 1 1	258	75.1	91.1	35.9310	54119 O.K.U.-7 345 54131 L.E.S. 345 1 54119 O.K.U.-7 345 59991 Oklaun 7 345 1	115	See Previous Upgrade Specified For Facility	
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAHWHL29X 1 1	299	96.2	97.6	3.5070	56853 LAWHILL6 230 56855 MIDLAND6 230 1	115	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	56853 LAWHILL6 230 *B332 LAHWHL29X 1 1	296	97.2	98.5	3.5070	56853 LAWHILL6 230 56855 MIDLAND6 230 1	115	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD

Study Case	From Area - To Area	Branch Overload	Rating <MW>	BC % Loading	TC % Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
05FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	100.9	101.8	4.5060	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
05FA	AEPW-AEPW	54121 ELKCTY-4 138 *B129 1 1	258	78.0	93.7	35.2030	54119 O.K.U.-7 345 51534 TUCO7 345 1	115	See Previous Upgrade Specified For Facility	
05FA	AEPW-AEPW	54121 ELKCTY-4 138 *B129 1 1	258	78.3	94.0	35.2030	54119 O.K.U. 7 345 51534 Tuco 345 1 51534 Tuco 345 51533 Tuco 230 1	115	See Previous Upgrade Specified For Facility	
05FA	AEPW-AEPW	54153 ELKCITY6 230 *B129 1 1	259	77.8	93.5	35.2030	54119 O.K.U.-7 345 51534 TUCO7 345 1	115	See Previous Upgrade Specified For Facility	
05FA	AEPW-AEPW	54153 ELKCITY6 230 *B129 1 1	259	78.1	93.8	35.2030	54119 O.K.U. 7 345 51534 Tuco 345 1 51534 Tuco 345 51533 Tuco 230 1	115	See Previous Upgrade Specified For Facility	
05WP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	104.6	105.6	4.8250	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
05WP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	89.6	93.4	3.1940	57252 MIDLAND3 115 57261 PENTAGN3 115 1	115	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
05WP	AEPW-AEPW	54121 ELKCTY-4 138 *B102 1 1	258	82.5	98.7	36.3380	50858 FINNEY7 345 50888 POTTRC7 345 1	115	See Previous Upgrade Specified For Facility	
05WP	AEPW-AEPW	54121 ELKCTY-4 138 *B102 1 1	258	75.3	91.4	35.9460	54119 O.K.U. 7 345 51534 Tuco 345 1 51534 Tuco 345 51533 Tuco 230 1	115	See Previous Upgrade Specified For Facility	
05WP	AEPW-AEPW	54153 ELKCITY6 230 *B102 1 1	259	82.2	98.4	36.3380	50858 FINNEY7 345 50888 POTTRC7 345 1	115	See Previous Upgrade Specified For Facility	
05WP	AEPW-AEPW	54153 ELKCITY6 230 *B102 1 1	259	75.1	91.1	35.9460	54119 O.K.U. 7 345 51534 Tuco 345 1 51534 Tuco 345 51533 Tuco 230 1	115	See Previous Upgrade Specified For Facility	
07SP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	103.9	107.8	3.2500	57252 MIDLAND3 115 57261 PENTAGN3 115 1	0	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
07SP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	111.8	112.7	4.3280	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
07SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	111.9	113.3	3.5210	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
07SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	113.5	114.9	3.5210	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
07SP	WERE-WERE	57252 MIDLAND3 115 *B362 MIDJ126X 1 1	304	100.9	102.2	3.4120	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	0	May be relieved due to Westar Operating Procedure 0631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
07SP	WERE-WERE	56855 MIDLAND6 230 *B362 MIDJ126X 1 1	305	100.9	102.2	3.4120	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	0	May be relieved due to Westar Operating Procedure 0631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
07SP	WERE-WERE	57233 166TH 3 115 57243 JAGGARD3 115 1	96	90.1	94.0	3.2500	57252 MIDLAND3 115 57261 PENTAGN3 115 1	115	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
07SP	AEPW-AEPW	54121 ELKCTY-4 138 *B118 1 1	257	75.2	91.0	35.1520	54119 O.K.U.-7 345 51534 TUCO7 345 1	115	See Previous Upgrade Specified For Facility	
07SP	AEPW-AEPW	54121 ELKCTY-4 138 *B118 1 1	257	75.4	91.2	35.1520	54119 O.K.U. 7 345 51534 Tuco 345 1 51534 Tuco 345 51533 Tuco 230 1	115	See Previous Upgrade Specified For Facility	
07SP	AEPW-AEPW	54153 ELKCITY6 230 *B118 1 1	258	78.1	93.8	35.1520	54119 O.K.U.-7 345 54131 L.E.S. 345 1 54119 O.K.U.-7 345 59991 Oklaun 7 345 1	115	See Previous Upgrade Specified For Facility	
07SP	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	91.1	92.2	10.5350	56851 AUBURN 6 230 56852 JEC 6 230 1	115	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
07WP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	103.7	104.7	4.8090	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD

SPP IMPACT STUDY (SPP-2004-067-1P)

July 21, 2004

Page 4 of 7

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07WP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	91.3	95.3	3.2800	57252 MIDLAND3 115 57261 PENTAGN3 115 1	115	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
07WP	AEPW-AEPW	54121 ELKCTY-4 138 *B102 1 1	258	76.5	92.6	36.1490	50858 FINNEY7 345 50888 POTTRC7 345 1	115	See Previous Upgrade Specified For Facility	
07WP	AEPW-AEPW	54121 ELKCTY-4 138 *B102 1 1	258	75.0	90.9	35.9140	54119 O.K.U. -7 345 54131 L.E.S. 345 1 54119 O.K.U.-7 345 59991 Oklaun 7 345 1	115	See Previous Upgrade Specified For Facility	
07WP	AEPW-AEPW	54153 ELKCITY6 230 *B102 1 1	259	76.4	92.4	36.1490	50858 FINNEY7 345 50888 POTTRC7 345 1	115	See Previous Upgrade Specified For Facility	
10SP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	115.3	119.6	3.5810	57252 MIDLAND3 115 57261 PENTAGN3 115 1	0	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
10SP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	558	109.6	110.5	4.3660	56765 HOYT 7 345 56766 JEC N 7 345 1	0	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
10SP	WERE-WERE	57250 LWRNCHL3 115 *B335 LAHWL29X 1 1	298	109.5	111.0	3.6850	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
10SP	WERE-WERE	56853 LAWHILL6 230 *B335 LAHWL29X 1 1	294	111.1	112.6	3.6850	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 0901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
10SP	WERE-WERE	57233 166TH 3 115 57243 JAGGARD3 115 1	96	99.9	104.2	3.5810	57252 MIDLAND3 115 57261 PENTAGN3 115 1	3	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
10SP	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	97.6	101.5	3.0690	56765 HOYT 7 345 56772 STRANGR7 345 1	71	May be relieved due to Westar Operating Procedure 0803 - Outage of the Hoyt to Stranger 345 kV line	TBD
10SP	KACP-KACP	57965 W.GRDNR7 345 57981 LACYGNE7 345 1	1235	89.8	91.8	22.0420	57968 STILWEL7 345 57981 LACYGNE7 345 1	115	May be relieved due to KCPL Operating Procedure - LaCygne - Stilwell 345 kV Line Operating Procedure	TBD
10SP	WERE-WERE	57252 MIDLAND3 115 *B365 MIDJ126X 1 1	304	98.3	99.7	3.5730	56853 LAWHILL6 230 *B335 LAHWL29X 1 1	115	May be relieved due to Westar Operating Procedure 0631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
10SP	WERE-WERE	56855 MIDLAND6 230 *B365 MIDJ126X 1 1	305	98.3	99.6	3.5730	57250 LWRNCHL3 115 *B335 LAHWL29X 1 1	115	May be relieved due to Westar Operating Procedure 0631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
10SP	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	89.9	93.8	3.0690	56765 HOYT 7 345 56772 STRANGR7 345 1	115	Rebuild 5.67 miles with 1192.5 kcmil ACSR conductor on wood H-frame.	\$ 1,655,172
10SP	KACP-KACP	57969 STILWEL5 161 *B479 STLWL 11 1 11	592	91.6	93.4	9.3810	57969 STILWEL5 161 *B480 STLWL 22 1 22	115	May be relieved due to KCPL Operating Procedure - Stilwell 345/161kV Transformer OG	TBD
10SP	KACP-KACP	57969 STILWEL5 161 *B480 STLWL 22 1 22	592	89.3	91.1	9.1620	57969 STILWEL5 161 *B479 STLWL 11 1 11	115	May be relieved due to KCPL Operating Procedure - Stilwell 345/161kV Transformer OG	TBD
10SP	KACP-KACP	57968 STILWEL7 345 *B479 STLWL 11 1 11	586	92.4	94.2	9.3810	57969 STILWEL5 161 *B480 STLWL 22 1 22	115	May be relieved due to KCPL Operating Procedure - Stilwell 345/161kV Transformer OG	TBD
10SP	KACP-KACP	57968 STILWEL7 345 *B480 STLWL 22 1 22	588	90.1	91.9	9.1620	57968 STILWEL7 345 *B479 STLWL 11 1 11	115	May be relieved due to KCPL Operating Procedure - Stilwell 345/161kV Transformer OG	TBD
10SP	KACP-KACP	57966 WGARDNR5 161 *B528 WGARD 11 1 11	435	88.6	91.1	9.4460	57965 W.GRDNR7 345 57977 CRAIG 7 345 1	115	Solution Undetermined	TBD
10SP	KACP-KACP	57965 W.GRDNR7 345 *B528 WGARD 11 1 11	434	88.7	91.2	9.4460	57965 W.GRDNR7 345 57977 CRAIG 7 345 1	115	Solution Undetermined	TBD
10WP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	106.8	111.1	3.6190	57252 MIDLAND3 115 57261 PENTAGN3 115 1	0	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD

SPP IMPACT STUDY (SPP-2004-067-1P)

July 21, 2004

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10WP	WERE-WERE	57233 166TH 3 115 57243 JAGGARD3 115 1	96	96.5	100.9	3.6190	57252 MIDLAND3 115 57261 PENTAGN3 115 1	91	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
10WP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	98.3	99.3	4.8950	56765 HOYT 7 345 56766 JEC N 7 345 1	115	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
10WP	AEPW-AEPW	54121 ELKCTY-4 138 *B026 1 1	258	76.6	92.7	36.3150	50858 FINNEY7 345 50888 POTTRC7 345 1	115	See Previous Upgrade Specified For Facility	
10WP	AEPW-AEPW	54153 ELKCITY6 230 *B026 1 1	259	76.4	92.6	36.3150	50858 FINNEY7 345 50888 POTTRC7 345 1	115	See Previous Upgrade Specified For Facility	
10WP	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	88.7	92.6	3.0640	56765 HOYT 7 345 56772 STRANGR7 345 1	115	May be relieved due to Westar Operating Procedure 0803 - Outage of the Hoyt to Stranger 345 kV line	TBD
									This cost may be significantly higher due to additional facilities whose solutions will be determined during the Facility Study process	\$*
									Total Cost with Facilities Monitored @ 90% Loading	\$ 2,405,172
									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