



SPP *Southwest Power Pool*

*Preliminary
System Impact Study
SPP-2004-118-1P
For Transmission Service
Requested By
Westar Energy*

From WR to KACY

*For a Reserved Amount Of 50MW
From 11/1/2004
To 11/1/2005*

SPP Engineering, Tariff Studies

System Impact Study

Westar Energy has requested a system impact study for long-term Firm Point-to-Point transmission service from WR (WERE) to KACY for 50 MW. The period of the service requested is from 11/1/2004 to 11/1/2005. The OASIS reservation number is 730609. 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 WR to KACY request in order to provide preliminary results identifying facility upgrades that may be required for the requested service. The requested service was modeled as a transfer from the specified source in the WR Control Area to marginally dispatched units in the KACY Control Area. 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 Tables 1, 2, and 3 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. Table 3 summarizes the results of the Scenario 3 system impact analysis. The results given in Tables 1, 2, and 3 include upgrades that may be assigned to higher priority requests. If a facility identified for the WR 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 WR 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.

Seven seasonal models were used to study the WR to KACY request for the requested service period. The SPP 2004 Series Cases Update 2, 2004 Fall Peak (04FA), 2004/05 Winter Peak (04WP), 2005 April Minimum (05AP), 2005 Spring Peak (05G), 2005 Summer Peak (05SP), 2005 Summer Shoulder (05SH), and 2005 Fall Peak (05FA) were used to study the impact of the request on the SPP system during the requested service period of 11/1/2004 to 11/1/2005. 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 seven seasonal models, three system scenarios were developed. Scenario 1 includes confirmed West to East transfers not already included in the January 2004 base case series models, SPS Exporting (including the Lamar HVDC Tie flowing from SPS to Lamar), and ERCOT exporting. Scenario 2 includes confirmed East to West transfers not already included in the January 2004 base case series models, SPS Importing (including the Lamar HVDC Tie flowing from Lamar to SPS), and ERCOT importing. Scenario 3 includes confirmed West to East transfers not already included in the January 2004 base case series models, SPS Importing (including the Lamar HVDC Tie flowing from Lamar to SPS), and ERCOT importing.

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 WR 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 WR to KACY 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
04FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	109.7	110.1	4.1890	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
04FA	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	111.4	113.3	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04FA	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	106.6	108.4	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04FA	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	93.6	94.2	12.4120	56851 AUBURN 6 230 56852 JEC 6 230 1	50	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
04FA	WERE-WERE	56853 LAWHILL6 230 *B324 LAWHL29X 1 1	296	91.6	92.3	4.5090	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
04FA	WERE-WERE	56853 LAWHILL6 230 *B324 LAWHL29X 1 1	296	91.6	92.3	4.5090	3Wnd: OPEN *B3 53 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
04FA	WERE-WERE	57233 166TH 3 115 57244 JARBAL03 115 1	96	95.7	97.4	3.2270	57252 MIDLAND3 115 57261 PENTAGN3 115 1	50	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
04FA	WERE-WERE	57250 LWRNCHL3 115 *B324 LAWHL29X 1 1	299	90.7	91.5	4.5090	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
04FA	WERE-WERE	57250 LWRNCHL3 115 *B324 LAWHL29X 1 1	299	90.7	91.4	4.5090	3Wnd: OPEN *B3 53 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
04WP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	104.7	105.1	4.1980	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
04WP	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	105.3	107.1	3.3240	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04WP	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	101.0	102.8	3.3240	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04WP	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	92.9	93.3	9.0670	56766 JEC N 7 345 56770 MORRIS 7 345 1	50	Solution Undetermined	TBD
04WP	WERE-WERE	57233 166TH 3 115 57244 JARBAL03 115 1	96	93.3	95.0	3.2810	57252 MIDLAND3 115 57261 PENTAGN3 115 1	50	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
05AP		NONE IDENTIFIED						50		
05G	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	102.6	103.0	4.1880	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
05G	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	102.0	103.8	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05G	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	92.1	92.5	9.0360	56766 JEC N 7 345 56770 MORRIS 7 345 1	50	Solution Undetermined	TBD
05G	WERE-WERE	56853 LAWHILL6 230 *B325 LAWHL29X 1 1	296	90.9	91.6	4.5090	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD

Table 1 – SPP facility overloads identified for the WR to KACY 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
05G	WERE-WERE	56853 LAWHILL6 230 *B325 LAWHL29X 1 1	296	90.8	91.6	4.5090	3Wnd: OPEN *B3 54 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05G	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	97.2	99.0	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	107.2	107.7	3.2450	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	107.1	107.7	3.2450	3Wnd: OPEN *B3 62 M IDJ126X 1	0	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	105.8	106.4	3.2450	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	105.8	106.3	3.2450	3Wnd: OPEN *B3 62 M IDJ126X 1	0	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SP	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	91.0	91.2	4.8360	56766 JEC N 7 345 56770 MORRIS 7 345 1	50	Solution Undetermined	TBD
05SP	WERE-WERE	56855 MIDLAND6 230 *B362 MIDJ126X 1 1	305	95.5	96.0	3.1390	3Wnd: OPEN *B3 32 L AWHL29X 1	50	May be relieved due to Westar Operating Procedure 631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
05SP	WERE-WERE	57252 MIDLAND3 115 *B362 MIDJ126X 1 1	304	95.5	96.1	3.1390	3Wnd: OPEN *B3 32 L AWHL29X 1	50	May be relieved due to Westar Operating Procedure 631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
05SP	KACP-KACP	57969 STILWEL5 161 58053 REDEL 5 161 1	323	90.7	91.8	7.0480	57968 STILWEL7 345 59200 PHILL 7 345 1	50	Solution Undetermined	TBD
05SH	WERE-WERE	56851 AUBURN 6 230 *B162 AUBRN77X 1 1	303	106.8	107.6	4.6900	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	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	105.7	107.2	16.7840	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	WERE-WERE	57151 AUBURN 3 115 *B162 AUBRN77X 1 1	304	106.3	107.1	4.6900	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	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	296	94.8	95.8	6.0730	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	296	94.7	95.8	6.0730	3Wnd: OPEN *B3 62 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SH	WERE-WERE	57180 TEC E 3 115 57182 TECHILE3 115 1	232	93.5	94.3	3.6750	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SH	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	90.9	94.5	6.5780	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SH	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	90.7	93.0	4.4580	57977 CRAIG 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 800 - Outage of the Stranger Creek to Craig 345 kV Line	TBD

Table 1 – SPP facility overloads identified for the WR to KACY 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
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	93.8	94.8	6.0730	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	93.8	94.8	6.0730	3Wnd: OPEN *B3 62 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	102.7	103.0	3.3410	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	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	97.1	98.7	3.0160	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05FA	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	92.2	93.9	3.0160	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
									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	\$ -
									Total Cost with Facilities Monitored @ 100% Loading	\$ -

Table 2 – SPP facility overloads identified for the WR to KACY transfer using Scenario 2

Study Case	From Area - To Area	Branch Overload	Rating <MW>	BC % Loading	TC % Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
04FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	105.9	106.2	4.1890	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
04FA	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	99.5	101.3	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	15	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04FA	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	92.0	92.5	9.0390	56766 JEC N 7 345 56770 MORRIS 7 345 1	50	Solution Undetermined	TBD
04FA	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	93.2	94.9	3.2270	57252 MIDLAND3 115 57261 PENTAGN3 115 1	50	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
04FA	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	94.8	96.6	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04WP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	102.5	102.8	4.1980	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
04WP	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	95.0	96.8	3.3240	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04WP	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	92.1	93.8	3.2810	57252 MIDLAND3 115 57261 PENTAGN3 115 1	50	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
04WP	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	90.9	92.7	3.3240	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05AP		NONE IDENTIFIED						50		
05G	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	100.1	100.4	4.1880	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
05G	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	90.9	92.7	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	103.4	104.0	3.2450	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	103.4	103.9	3.2450	3Wnd: OPEN *B3 62 M IDJ126X 1	0	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	102.2	102.7	3.2450	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	102.1	102.7	3.2450	3Wnd: OPEN *B3 62 M IDJ126X 1	0	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SP	WERE-WERE	56855 MIDLAND6 230 *B362 MIDJ126X 1 1	305	92.1	92.6	3.1390	3Wnd: OPEN *B3 32 L AWHL29X 1	50	May be relieved due to Westar Operating Procedure 631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
05SP	WERE-WERE	57252 MIDLAND3 115 *B362 MIDJ126X 1 1	304	92.1	92.6	3.1390	3Wnd: OPEN *B3 32 L AWHL29X 1	50	May be relieved due to Westar Operating Procedure 631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD

Table 2 – SPP facility overloads identified for the WR to KACY transfer using Scenario 2

Study Case	From Area - To Area	Branch Overload	Rating <MW>	BC % Loading	TC % Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
05SH	WERE-WERE	56851 AUBURN 6 230 *B162 AUBRN77X 1 1	303	103.4	104.2	4.6900	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	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	103.1	104.6	16.7840	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	WERE-WERE	57151 AUBURN 3 115 *B162 AUBRN77X 1 1	304	102.9	103.7	4.6900	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	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	296	91.2	92.3	6.0730	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	296	91.2	92.2	6.0730	3Wnd: OPEN *B3 62 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SH	WERE-WERE	57180 TEC E 3 115 57182 TECHILE3 115 1	232	93.4	94.2	3.6750	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SH	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	92.2	94.5	4.4580	57977 CRAIG 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 800 - Outage of the Stranger Creek to Craig 345 kV Line	TBD
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	90.4	91.4	6.0730	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	90.3	91.4	6.0730	3Wnd: OPEN *B3 62 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	100.2	100.5	3.3410	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
									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	\$ -
									Total Cost with Facilities Monitored @ 100% Loading	\$ -

Table 3 – SPP facility overloads identified for the WR to KACY transfer using Scenario 3

Study Case	From Area - To Area	Branch Overload	Rating <MW>	BC % Loading	TC % Loading	%TDF	Outaged Branch Causing Overload	ATC <MW>	Solution	Estimated Cost
04FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	107.1	107.5	4.1890	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
04FA	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	104.7	106.6	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04FA	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	99.8	101.6	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	5	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04FA	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	90.3	90.9	12.4120	56851 AUBURN 6 230 56852 JEC 6 230 1	50	May be relieved due to Westar Operating Procedure 400 - Outage of the Jeffrey Energy Center to Hoyt 345kV Line	TBD
04FA	WERE-WERE	57233 166TH 3 115 57244 JARBAL03 115 1	96	94.0	95.7	3.2270	57252 MIDLAND3 115 57261 PENTAGN3 115 1	50	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
04WP	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	103.7	104.1	4.1980	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
04WP	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	100.2	102.1	3.3240	56765 HOYT 7 345 56772 STRANGR7 345 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
04WP	WERE-WERE	56765 HOYT 7 345 56766 JEC N 7 345 1	1065	91.5	91.9	9.0670	56766 JEC N 7 345 56770 MORRIS 7 345 1	50	Solution Undetermined	TBD
04WP	WERE-WERE	57233 166TH 3 115 57244 JARBAL03 115 1	96	92.9	94.6	3.2810	57252 MIDLAND3 115 57261 PENTAGN3 115 1	50	May be relieved due to Westar Operating Procedure 1218 - Outage of the Midland Jct - Pentagon 115kV Line Section	TBD
04WP	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	96.0	97.8	3.3240	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05AP		NONE IDENTIFIED						50		
05G	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	101.3	101.7	4.1880	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
05G	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	96.3	98.1	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05G	WERE-WERE	57253 MOCKBRD3 115 57270 STULL T3 115 1	91	91.6	93.4	3.3030	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	104.8	105.3	3.2450	3Wnd: OPEN *B3 62 M IDJ126X 1	0	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	103.6	104.1	3.2450	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SP	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	103.5	104.1	3.2450	3Wnd: OPEN *B3 62 M IDJ126X 1	0	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SP	WERE-WERE	56855 MIDLAND6 230 *B362 MIDJ126X 1 1	305	93.3	93.9	3.1390	3Wnd: OPEN *B3 32 L AWHL29X 1	50	May be relieved due to Westar Operating Procedure 631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD

Table 3 – SPP facility overloads identified for the WR to KACY transfer using Scenario 3

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	57252 MIDLAND3 115 *B362 MIDJ126X 1 1	304	93.3	93.9	3.1390	3Wnd: OPEN *B3 32 L AWHL29X 1	50	May be relieved due to Westar Operating Procedure 631 - Loss of the Lawrence Hill 230/115kV Transformer	TBD
05SH	WERE-WERE	56851 AUBURN 6 230 *B162 AUBRN77X 1 1	303	105.0	105.7	4.6900	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	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	104.2	105.7	16.7840	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	WERE-WERE	57151 AUBURN 3 115 *B162 AUBRN77X 1 1	304	104.5	105.2	4.6900	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	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	296	92.5	93.6	6.0730	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	296	92.5	93.5	6.0730	3Wnd: OPEN *B3 62 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05SH	WERE-WERE	57180 TEC E 3 115 57182 TECHILE3 115 1	232	93.4	94.2	3.6750	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SH	WERE-WERE	57233 166TH 3 115 57244 JARBALO3 115 1	96	90.7	93.0	4.4580	57977 CRAIG 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 800 - Outage of the Stranger Creek to Craig 345 kV Line	TBD
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	91.6	92.7	6.0730	56853 LAWHILL6 230 56855 MIDLAND6 230 1	50	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
05SH	WERE-WERE	57250 LWRNCHL3 115 *B332 LAWHL29X 1 1	299	91.6	92.6	6.0730	3Wnd: OPEN *B3 62 M IDJ126X 1	50	May be relieved due to Westar Operating Procedure 615 - Loss of the Midland Junction 230/115kV Transformer	TBD
05FA	WERE-WERE	56851 AUBURN 6 230 56852 JEC 6 230 1	559	101.2	101.5	3.3410	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	WERE-WERE	57182 TECHILE3 115 57270 STULL T3 115 1	91	89.9	91.6	3.0160	56765 HOYT 7 345 56772 STRANGR7 345 1	50	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	TBD
05SP	WERE-WERE	56853 LAWHILL6 230 *B332 LAWHL29X 1 1	295	104.9	105.4	3.2450	56853 LAWHILL6 230 56855 MIDLAND6 230 1	0	May be relieved due to Westar Operating Procedure 901 - Outage of the Lawrence Hill-Midland Junction 230kV Line	TBD
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										\$ -
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