SPP Southwest Power Pool

System Impact Study SPP-2002-188
For Transmission Service
Requested By
Energetix L.L.C.

From OKGE To EES

For a Reserved Amount Of 750MW
From 1/1/04
To 1/1/07

SPP Coordinated Planning

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1. Executive Summary

Energetix L.L.C. has requested a system impact study for long-term Firm Point-to-Point transmission service from OKGE to EES. The period of the transaction is from 1/1/04 to 1/1/07. The request is for OASIS reservations 221104, 221106, 221107 and 221109-221114 for a total amount of 750 MW.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the additional 750 MW transfer while maintaining system reliability. Analysis was conducted for the requested service period above and for the remaining planning horizon from 1/1/07 to 4/1/09. The additional evaluation of the planning horizon was conducted to determine any future constraints that may limit the renewal of service.

New overloads caused by the 750 MW transfer were identified along with determining the impact of the transfer on any previously assigned and identified facilities.

The OKGE to EES 750 MW transfer causes new facility overloads on the SPP transmission system, as well as increasing the loading on previously identified facilities. To provide the 750MW of service, upgrades must be completed for those facilities that limit the ATC to less than 750MW for the requested service period.

2. Introduction

Energetix L.L.C has requested an impact study for transmission service from OKGE to EES.

The principal objective of this study is to identify the restraints on the SPP Regional Tariff System that may limit the transfer to less than 750 MW. This study includes steady-state contingency analyses (PSS/E function ACCC) and Available Transfer Capability (ATC) analyses for the requested service period and the remaining planning horizon.

The steady-state analyses consider the impact of the 750 MW transfer on transmission line loading and transmission bus voltages for outages of single and selected multiple transmission lines and transformers on the SPP system.

3. Study Methodology

A. Description

Two analyses were conducted to determine the impact of the 750 MW transfer on the system. The first analysis was conducted to identify any new overloads caused by the 750 MW transfer. The second analysis was done to ensure that available capacity exists on previously identified circuits. Both analyses were performed on the models available for the requested service period and all remaining models available from the 2002-planning horizon.

The first analysis was to study the steady-state analysis impact of the 750 MW transfer on the SPP system. The second step was to study Available Transfer Capability (ATC) of the facilities identified in the steady-state analysis. The steady-state analysis was done to ensure current SPP Criteria and NERC Planning Standards requirements are fulfilled. The Southwest Power Pool (SPP) conforms to the NERC Planning Standards, which provide the strictest requirements, related to thermal overloads with a contingency. It requires that all facilities be within emergency ratings after a contingency.

The second analysis was done to determine the impact of the transfer on previously assigned and identified facilities.

B. Model Updates

SPP used five seasonal models to study the OKGE to EES 750 MW transfers for their requested service periods and the remaining planning horizon. The SPP 2002 Series Cases 2004 Spring Peak, 2005 Summer Peak and 2005/06 Winter Peak were used to study the impact of the 750 MW transfer on the SPP system during the requested service period of 1/1/04 to 1/1/07. The SPP 2002 Series 2008 Summer Peak and 2008/09 Winter Peak were used to study the impact of the 750 MW transfer on the SPP system during the remaining planning horizon from 1/1/07 to 4/1/09. 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 future firm transfers during the requested service period that were not already included in the January 2002 base case series models.

C. Transfer Analysis

Using the created models and the ACCC function of PSS\E, single and select double contingency outages were analyzed. Then full AC solution was used to obtain the most accurate results possible. Any facility overloaded, using MVA ratings, in the transfer case and not overloaded in the base case was flagged. The PSS/E options chosen to conduct the Impact Study analysis can be found in Appendix A.

4. Study Results

A. Study Analysis Results

Tables 1, 2, and 3 contain the analysis results of the System Impact Study. The tables identify the seasonal case in which the event occurred; the emergency rating of the overloaded circuit (Rate B), the contingent loading percentage of the circuit with and without the studied transfer, the estimated ATC value using interpolation if calculated, any SPP identification or assignment of the event, and any solutions received from the transmission owners.

Table 1 shows the new SPP facility overloads caused by the 750 MW transfer. Available solutions are given in the table.

Table 2 documents overloads on Non SPP Regional Tariff participants' transmission systems caused by the 750 MW transfer.

Table 3 documents the 750 MW transfer impact on previously assigned and identified SPP facilities. Available solutions are given in the table.

Tables 1a and 3a of Appendix B documents the modeling representation of the events identified in Tables 1 and 3 respectively to include bus numbers and bus names.

Table 1 – SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
04G	WFEC-WFEC	Acme - West Norman 69kV	38	95.0	100.4	Canadian SW 138/69kV Transformer	697	Solution Undetermined	N/A
04G	OKGE-OKGE	Seminole - Thunderbird 345kV	717	4.0	104.7	Draper Lake - Thunderbird 345kV	715	Solution Undetermined	N/A
04G	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	2.1	104.4	Seminole - Thunderbird 345kV	718	Solution Undetermined	N/A
04G	AEPW-AEPW	Southwest Shreveport - Wallace Lake 138kV	210	90.3	104.3	Dolet Hills 345/230kV Transformer	750	Dolet Hills Operating Guide	-
05SP	AECI – AECI	Stilwell - Titantic Tap 69kV	36	99.7	104.1	Kansas - Watts 69kV	55	Line Owned by GRDA - Solution Undetermined	-
05SP	AEPW-AEPW	North Marshall - Woodlawn 69kV	51	95.5	101.9	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	528	Replace 3/0 CU jumpers @ North Marshall	15,000
05SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	51.5	108.6	Draper Lake - Seminole 345kV	638	See Previous	-
05SP	SWPA-SWPA	Buford Tap - Norfork 161kV	189	88.4	100.9	Bull Shoals - Midway 161KV	695	Resag conductor and replace structures as necessary	250,000
05SP	AEPW-AEPW	North Marshall - Woodlawn 69kV	51	94.5	100.4	Longwood - Wilkes 345kV	695	See Previous	-
05SP	OKGE-OKGE	Seminole - Thunderbird 345kV	717	4.0	104.7	Draper Lake - Thunderbird 345kV	715	See Previous	-
05SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	2.1	104.5	Seminole - Thunderbird 345kV	717	See Previous	-
05SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	44.1	102.5	Draper Lake - Seminole 345kV	718	See Previous	-
05SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	39.6	102.5	Arcadia - Horseshoe Lake 345kV	720	See Previous	-
05SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	39.6	102.5	Horseshoe Lake - Seminole 345kV	721	See Previous	-
05SP	SWPA-OKGE	Van Buren - VBI 161kV	335	84.8	100.1	Fort Smith - Muskogee 345kV	744	SPA: Replace metering CTs, disconnect switches, breakers, and bus differential relaying at Van Buren. OKGE: Replace Switch and reconnect CT ratio at VBI	1,050,000
05WP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	51.5	108.6	Draper Lake - Seminole 345kV	638	See Previous	-
05WP	OKGE-OKGE	Seminole - Thunderbird 345kV	717	4.0	104.7	Draper Lake - Thunderbird 345kV	715	See Previous	-
05WP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	2.1	104.5	Seminole - Thunderbird 345kV	717	See Previous	-
08SP	AEPW-AEPW	Raines - Arsenal Hill 138kV	234	99.7	105.6	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	42	Rebuild 5.32 miles 2-266MCM ACSR with 1590MCM ACSR	3,731,000
08SP	EDE-EDE	Reinmiller 161/69/12.5kV Transformer	75	99.9	101.4	Tipton Ford - Joplin Southwest 161kV	50	Replace 161/69 KV Transformer with a 150 MVA Transformer	1,730,000
08SP	OKGE-OKGE	Osage - Continental Blacks 69kV	111	99.0	106.8	Kildare - White Eagle 138kV	98	Rebuild & Reconductor 0.57 Miles, replace Wavetrap and increase CT ratio	255,000
08SP	AEPW-AEPW	South Texarkana REC - Texarkana Plant 69kV	59	99.2	104.4	Atlanta - West Atlanta 69kV	119	Rebuild 5.92 miles of 266 ACSR with 795 ACSR. Replace 4/0 CU jumpers @ Texarkana Plant	2,400,000
08SP	AEPW-AEPW	Oak Pan-Harr REC - Longwood 138KV	209	98.0	106.3	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	178	Rebuild 1.8 miles of 666 ACSR with 1590 ACSR	750,000
08SP	SWPA-SWPA	Buford Tap - Norfork 161kV	189	96.7	109.1	Bull Shoals - Midway 161KV	200	See Previous	-
08SP	OKGE-AEPW	Bonanza - Bonanza Tap 161kV	177	99.5	100.9	AES - Tarby 161kV	262	Rebuild 0.06 miles of 397.5 ACSR with 795MCM ACSR	50,000
08SP	WERE-WERE	N.A. Philips Junction Sth – N.A. Philips Junction 115kV	160	98.7	102.3	East McPherson - Summit 230kV	275	Solution Undetermined	N/A
08SP	SWPA-AEPW	Beaver - Eureka Springs 161kV	274	94.5	107.8	Multiple Outage Contingency, Monett - Brookline 345kV, Flint Creek - Monett 345kV	310	AEPW Reconductor 1.25 miles with 1590ACSR SWPA Reconnect CT's; Replace metering & reset relays	537,500
08SP	SWPA-AEPW	Beaver - Eureka Springs 161kV	274	94.5	107.7	Brookline - Monet 345kV	311	See Previous	-

Table 1 - continued – SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	SWPA-AEPW	Beaver - Eureka Springs 161kV	274	94.2	107.5	Flint Creek - Monett 345kV	326	See Previous	-
08SP	AEPW-AEPW	North Marshall - Woodlawn 69kV	51	97.0	103.7	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	336	See Previous	-
08SP	OKGE-OKGE	Park Lane - Seminole 138kV	287	94.6	105.2	Seminole - Vanoss 138kV	383	Replace 1200Ct and 1600 Amp switch with 2000Amp equipment	100,000
08SP	AEPW-WERE	Coffeyville Tap - Dearing 138kV	210	96.0	103.6	Delaware - Neosho 345kV	396	Replace wave trap to increase rating to conductor rating (2000 A)	20,000
08SP	SWPA-AEPW	Beaver - Eureka Springs 161kV	274	91.4	106.3	Fort Smith - Muskogee 345kV	433	See Previous	-
08SP	MIPU-MIPU	Grandview West - Martin City 69kV	61	99.7	100.2	Longview 161/69kV Transformer	439	Solution Undetermined	
08SP	AEPW-AEPW	Broken Arrow North - Lynn Lane Tap 138kV	235	97.2	102.0	Tulsa North - Northeast Station 345kV	441	Rebuild 4.63 miles of 795 ACSR with 1590 ACSR	2,600,000
08SP	SWPA-OKGE	Van Buren - VBI 161kV	335	91.0	105.8	Fort Smith - Muskogee 345kV	456	See Previous	-
08SP	OKGE-AEPW	Bonanza - Bonanza Tap 161kV	177	91.1	105.7	ANO - Fort Smith 500kV	457	See Previous	-
08SP	WERE-WERE	County Line - Rock Creek 69kV	41	98.5	100.9	Hoyt - Stranger Creek 345kV	462	Solution Undetermined	N/A
08SP	AEPW-AEPW	Duncan 138/69kV Transformer	55	98.5	100.8	Anadarko - Georgia 138kV	477	Solution Undetermined	N/A
08SP	EDE-EDE	Monett 161/69/12.5kV Transformer	150	98.1	101.0	Aurora H.T. - Monett 161kV	491	Solution Undetermined	N/A
08SP	WERE-WERE	Stockton Northwest 69/34.5/12.5kV Transformer	9.4	99.8	100.1	Fairplay East 69/34.5/12.5kV Transformer	500	Solution Undetermined	N/A
08SP	OKGE-OKGE	Fort Smith 345/161kV Transformer	493	89.0	105.4	Fort Smith 500/345kV Transformer	502	Convert Ft. Smith 161kv to 1-1/2 breaker design and install 2nd 500-161kV transformer bank	10,000,000
08SP	AECI-GRRD	Titantic Tap - Tahlequah 69kV	47	97.7	101.1	Kansas - Watts 69kV	505	Reconductor 9.4 miles with 795MCM ACSR	1,551,000
08SP	GRRD-OKGE	Tahlequa - Hwy 59 161kV	167	84.1	107.2	Fort Smith - Muskogee 345kV	516	Remove switches #130 and #132 to increase rating from 600A to conductor limit of 662 Amps for Rate B and replace structures	30,000
08SP	SWPA-AEPW	Weleetka - Weleetka 138kV	210	92.0	103.5	Franklin - Franklin SW 138kV	522	Solution Undetermined	N/A
08SP	SWPA-SWPA	Gore - Sallisaw 161kV	189	85.4	105.9	Fort Smith - Muskogee 345kV	535	Increase clearances of approximately ten spans to allow operation of line at 100C, This will increase the line capacity to 223MVA	500,000
08SP	OKGE-AEPW	Fixico Tap - Maud 138kV	107	77.5	105.2	Maud 138/69kV Transformer	609	Rebuild 11.83 miles of 3/0 shielded Copperweld with 795 ACSR	3,305,000
08SP	KACP-KACP	Stilwell 345/161kV Transformer #22	605	98.1	100.4	Stilwell 345/161kV Transformer #11	621	Relieved by Linn County substation upgrade for La Cygne to Stilwell limitation	-
08SP	AEPW-AEPW	North Marshall - Woodlawn 69kV	51	95.1	101.0	Longwood - Wilkes 345kV	622	See Previous	-
08SP	OKGE-OKGE	Continental Blacks - Cherokee PL Tap 69kV	111	93.5	101.2	Kildare - White Eagle 138kV	633	Reconstruct and replace 1.54 miles of 477AS33 conductor with 795AS33	462,000
08SP	AEPW-AEPW	Forbing Tap - South Shreveport 69kV	95	98.0	100.3	Broadmoor - Fort Humbug 69kV	639	Solution Undetermined	N/A
08SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	51.1	108.3	Draper Lake - Seminole 345kV	641	See Previous	-
08SP	EMDE-EMDE	Monett - Monett H.T. 69kV	65	94.3	100.9	Aurora H.T. - Monett 161kV	644	Rebuild 1.28 mile 69 kV line and rebuild 69 kV Bus at Monett H.T	1,050,000

Table 1 - continued – SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	GRRD-GRRD	Kansas Tap - West Siloam Springs 161kV	328	96.1	100.6	Flint Creek - GRDA 345kV	646	Solution Undetermined	N/A
08SP	OKGE-AEPW	Fixico Tap - Maud 138kV	107	73.6	103.8	Franklin - Franklin SW 138kV	655	See Previous	-
08SP	OKGE-OKGE	Chilocco - Chikaskia Tap 69kV	57	93.0	101.0	Kildare - White Eagle 138kV	659	Reconstruct and replace 11.34 miles of 00X7 copper line with 477AS33	2,835,000
08SP	SWPA-SWPA	Gore - Muskogee Tap 161kV	206	86.8	101.4	Fort Smith - Muskogee 345kV	677	Reconductor 16 miles of 477 ACSR line with 795 ACSR	4,000,000
08SP	OKGE-OKGE	Seminole - Thunderbird 345kV	717	4.0	104.7	Draper Lake - Thunderbird 345kV	715	See Previous	-
08SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	2.1	104.6	Seminole - Thunderbird 345kV	717	See Previous	-
08SP	OKGE-AEPW	Fixico Tap - Maud 138kV	107	73.5	101.2	Forest Hill - Maud 138kV	718	See Previous	-
08SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	43.8	102.3	Draper Lake - Seminole 345kV	721	See Previous	-
08SP	OKGE-AEPW	Fixico Tap - Maud 138kV	107	71.0	101.2	Franklin - Pink SW 138kV	721	See Previous	-
08SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	39.1	102.1	Arcadia - Horseshoe Lake 345kV	725	See Previous	-
08SP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	39.1	102.1	Horseshoe Lake - Seminole 345kV	725	See Previous	-
08SP	OKGE-OKGE	ADA OC Pump - ADA OC Pump Tap 69kV	52	92.8	110.5	Ahloso Tap - Park Lane 69kV	750	OKGE Operating Guide	-
08SP	OKGE-OKGE	Ahloso Tap - Harden City 69kV	52	96.7	111.6	Valley View Tap - Valley View 69kV	750	OKGE Operating Guide	-
08WP	KACP-KACP	West Gardner 345/161kV Transformer	440	97.4	100.4	Craig - West Gardner 345kV	653	Solution Undetermined	N/A
08WP	OKGE-OKGE	Seminole - Thunderbird 345kV	717	4.0	104.7	Draper Lake - Thunderbird 345kV	715	See Previous	-
08WP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	2.1	104.4	Seminole - Thunderbird 345kV	718	See Previous	-
08WP	AEPW-WERE	Coffeyville Tap - Dearing 138kV	210	92.8	100.1	Delaware - Neosho 345kV	737	See Previous	-
08WP	OKGE-OKGE	Draper Lake - Thunderbird 345kV	717	43.3	100.6	Draper Lake - Seminole 345kV	742	See Previous	-
08WP	AEPW-AEPW	Southwest Shreveport - Wallace Lake 138kV	210	93.9	107.9	Dolet Hills 345/230kV Transformer	750	See Previous	-

Table 2 – Non - SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload
04G	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	94.5	103.8	97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1
04G	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	92.3	102.8	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
04G	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	93.1	102.7	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
04G	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	92.4	101.7	97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1
04G	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	90.2	100.8	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
04G	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	91.0	100.6	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
04G	EES-EES	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1	206	99.3	110.4	97480 L558T485 138 to 97487 4MT.ZION 138 CKT1
04G	EES-EES	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1	206	98.2	109.2	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT1
04G	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	90.0	102.1	97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1
04G	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	89.8	101.9	97506 4BRYAN 138 to 97507 4COLSTTA 138 CKT1
04G	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	88.9	101.4	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
04G	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	93.3	105.3	97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1
04G	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	93.1	105.2	97506 4BRYAN 138 to 97507 4COLSTTA 138 CKT1
04G	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	92.2	104.6	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
04G	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	98.1	107.4	97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1
04G	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	95.9	106.4	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
04G	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	97.0	106.3	97453 4DOBBIN 138 to 97522 4TUBULAR 138 CKT1
04G	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	96.3	108.3	97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1
04G	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	96.2	108.2	97506 4BRYAN 138 to 97507 4COLSTTA 138 CKT1
04G	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	95.2	107.6	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
04G	EES-EES	97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1	112	98.7	110.8	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
04G	EES-EES	97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1	112	97.0	109.2	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
04G	EES-EES	97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1	112	96.1	108.2	97469 4APRIL 138 to 97470 4LFOREST 138 CKT1
04G	EES-EES	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1	206	99.3	110.3	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
04G	EES-EES	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1	206	98.3	109.3	97480 L558T485 138 to 97487 4MT.ZION 138 CKT1
04G	EES-EES	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1	206	97.1	108.1	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT1
04G	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	96.0	108.3	50098 LEESV 4 138 to 97708 4TOLEDO 138 CKT1
04G	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	90.5	100.7	97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1
04G	EES-EES	97698 4JASPER 138 to 97704 4RAYBURN 138 CKT 1	112	89.7	100.1	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1
04G	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	96.7	109.0	50098 LEESV 4 138 to 97708 4TOLEDO 138 CKT1
04G	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	91.3	101.4	97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1
04G	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	92.3	100.5	97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1
04G	EES-EES	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT 1	160	99.4	111.4	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT1
04G	EES-EES	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT 1	160	99.6	111.6	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT1
05SP	ALTW-MEC	34060 WNTRST 5 161 to 64068 GRENFLD5 161 CKT 1	112	98.6	102.6	63800 CBLUFFS3 345 to 64056 MADISON3 345 CKT1
05SP	CELE-EES	50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1	125	97.9	101.8	99113 6WINFLD 230 to 99116 6MONTGY 230 CKT1
05SP	CELE-EES	50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1	125	91.8	100.5	50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1
05SP	CELE-CELE	50031 COCODR 6 230 to 50039 COUGH 4 138 CKT 1	386	95.7	101.5	50203 VILPLT 6 230 to 50214 WSTFORK6 230 CKT1
05SP	CELE-CELE	50154 PINEV 4 138 to 50179 SHOAKS 4 138 CKT 1	148	98.4	102.4	50158 PVKFTAP4 138 to 50179 SHOAKS 4 138 CKT1
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1	47	98.4	101.9	59216 BUTLER_5 161 to 59240 ADRIAN 5 161 CKT1
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1	47	98.4	101.3	96070 5CLARK 161 to 96802 2CLARK 69.0 CKT1
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	98.4	106.6	55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	100.0	106.0	59969 BRKLNE 5 161 to 59984 BRKLNE 7 345 CKT1
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	100.0	105.8	96814 2WALKER 69.0 to 96815 2ELDORTP69.0 CKT1
05SP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	123	99.4	104.9	59242 CLINTON5 161 to 96071 5CLINTN 161 CKT1
05SP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	123	98.1	102.7	58064 NORTON-5 161 to 96105 5NORTON 161 CKT1
05SP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	123	96.8	102.5	31408 OVERTON 345 to 31409 OVERTON 161 CKT1

Table 2 - continued – Non - SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload
05SP	AECI-AECI	96071 5CLINTN 161 to 96692 2CLINTN 69.0 CKT 3	56	99.8	101.0	96071 5CLINTN 161 to 96692 2CLINTN 69.0 CKT1
05SP	AECI-AECI	96649 2JASPER 69.0 to 96651 2LAMAR 69.0 CKT 1	36	96.8	101.8	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT1
05SP	AECI-AECI	96649 2JASPER 69.0 to 96651 2LAMAR 69.0 CKT 1	36	95.6	100.6	96659 2BOWRML 69.0 to 96751 2REEDS 69.0 CKT1
05SP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	36	99.1	105.8	59472 TIP292 5 161 to 59480 MON383 5 161 CKT1
05SP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	36	98.7	105.3	52692 SPRGFLD5 161 to 59479 LAR382 5 161 CKT1
05SP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	36	98.8	104.7	59578 AUR355 269.0 to 59606 MTV420 269.0 CKT1
05SP	AECI-AECI	96986 2TITANTP69.0 to 96983 2STILWEL69.0 CKT 1	36	99.7	104.1	54515 KANSAS 269.0 to 96987 2WATTS 69.0 CKT1
05SP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	89.1	103.0	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
05SP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	86.8	100.8	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
05SP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	90.6	102.3	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
05SP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	89.3	100.8	97480 L558T485 138 to 97487 4MT.ZION 138 CKT1
05SP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	93.8	107.7	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
05SP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	91.6	105.4	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
05SP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	90.2	104.0	97469 4APRIL 138 to 97470 4LFOREST 138 CKT1
05SP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	98.5	108.9	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1
05SP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	94.5	105.3	50037 COOPER 4 138 to 50098 LEESV 4 138 CKT1
05SP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	92.8	102.8	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1
05SP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	99.6	110.0	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1
05SP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	95.6	106.4	50037 COOPER 4 138 to 50098 LEESV 4 138 CKT1
05SP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	93.9	103.9	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1
05SP	EES-EES	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT 1	160	93.6	101.2	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT1
05SP	EES-EES	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT 1	160	93.8	101.4	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT1
05SP	EES-CELE	99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1	125	98.0	101.8	99112 3WINFLD 115 to 99113 6WINFLD 230 CKT1
05SP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	96.1	120.6	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
05SP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	96.1	120.4	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
05SP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	88.6	111.7	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1
05SP	EES-EES	99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1	162	85.2	100.5	52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1
05WP	CELE-EES	50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1	125	91.8	100.5	50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1
05WP	CELE-CELE	50031 COCODR 6 230 to 50039 COUGH 4 138 CKT 1	386	95.7	101.5	50203 VILPLT 6 230 to 50214 WSTFORK6 230 CKT1
05WP	EES-EES	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT 1	160	93.6	101.2	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT1
05WP	EES-EES	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT 1	160	93.8	101.4	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT1
05WP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	96.1	120.6	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
05WP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	96.1	120.4	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
05WP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	88.6	111.7	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1	47	98.8	101.0	96647 2BLLMYTP69.0 to 96654 2MILO 69.0 CKT1
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1	47	96.8	100.6	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT1
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	98.7	104.2	59471 NEO184 5 161 to 59496 NOL435 5 161 CKT1
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	98.5	104.2	56926 BAKER 5 161 to 56937 NEOSHO 5 161 CKT1
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	98.4	104.1	54448 MAID 5 161 to 54454 PENSA 5 161 CKT1
08SP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	123	100.0	105.5	57968 STILWEL7 345 to 57969 STILWEL5 161 CKT22
08SP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	123	99.8	105.3	57968 STILWEL7 345 to 57969 STILWEL5 161 CKT11
08SP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	123	99.6	105.1	59202 SIBLEY 5 161 to 59808 ECKLES 5 161 CKT1
08SP	AECI-AECI	96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1	56	99.9	102.1	52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1
08SP	AECI-AECI	96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1	56	99.3	100.6	96095 5MANSFD 161 to 97168 2MANSFL 69.0 CKT2
08SP	AECI-AECI	96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1	56	99.2	100.6	96095 5MANSFD 161 to 97168 2MANSFL 69.0 CKT1
08SP	AECI-AECI	96110 5PITTSV 161 to 96331 2PITTSV 69.0 CKT 1	50	99.4	100.4	96124 5HOLDEN 161 to 96336 2HOLDEN 69.0 CKT1
08SP	AECI-AECI	96649 2JASPER 69.0 to 96651 2LAMAR 69.0 CKT 1	36	97.3	102.3	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT1
08SP	AECI-AECI	96649 2JASPER 69.0 to 96651 2LAMAR 69.0 CKT 1	36	96.0	101.0	96659 2BOWRML 69.0 to 96751 2REEDS 69.0 CKT1

Table 2 - continued – Non - SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload
08SP	AECI-AECI	96649 2JASPER 69.0 to 96651 2LAMAR 69.0 CKT 1	36	96.4	100.6	59208 NEVADA 5 161 to 59216 BUTLER_5 161 CKT1
08SP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	36	99.1	106.8	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1
08SP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	36	99.8	105.8	59216 BUTLER_5 161 to 59240 ADRIAN 5 161 CKT1
08SP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	36	99.8	105.6	59478 DAD368 5 161 to 96101 5MORGAN 161 CKT1
08SP	AECI-AECI	96819 2CASSVL 69.0 to 96824 2SELIGM 69.0 CKT 1	44	92.1	100.4	52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT1
08SP	AECI-AECI	96824 2SELIGM 69.0 to 96763 2WSHBRN 69.0 CKT 1	51	93.8	101.0	52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT1
08SP	AECI-AECI	96890 2BRISTW 69.0 to 96921 2BRISWES69.0 CKT 1	36	98.8	100.1	96138 4CLEVLND 138 to 96141 4STILWTR 138 CKT1
08SP	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	95.4	106.5	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
08SP	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	93.4	104.4	97480 L558T485 138 to 97487 4MT.ZION 138 CKT1
08SP	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	91.1	102.1	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT1
08SP	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	91.2	102.3	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
08SP	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	89.3	100.3	97480 L558T485 138 to 97487 4MT.ZION 138 CKT1
08SP	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	94.1	107.4	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
08SP	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	91.2	104.5	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
08SP	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	89.5	102.7	97469 4APRIL 138 to 97470 4LFOREST 138 CKT1
08SP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	97.9	111.0	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
08SP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	96.1	109.2	97469 4APRIL 138 to 97470 4LFOREST 138 CKT1
08SP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	93.6	106.6	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1
08SP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	98.1	109.0	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT1
08SP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	96.6	105.9	97514 4GRIMES 138 to 97526 4MAG AND 138 CKT1
08SP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	96.5	105.7	97510 4SOTA 1 138 to 97526 4MAG AND 138 CKT1
08SP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	99.5	112.5	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1
08SP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	98.6	111.6	97459 4CONROE 138 to 97539 4WDHAVN 138 CKT1
08SP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	98.1	109.9	97514 4GRIMES 138 to 97526 4MAG AND 138 CKT1
08SP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	98.5	106.6	97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1
08SP	EES-EES	97698 4JASPER 138 to 97704 4RAYBURN 138 CKT 1	112	95.3	103.6	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1
08SP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	99.8	107.9	97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1
08SP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	93.5	101.0	97690 4CYPRESS 138 to 97700 4KOUNTZE 138 CKT1
08SP	EES-EES	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT 1	160	94.6	101.6	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT1
08SP	EES-EES	97920 6PPG 23 230 to 98052 2PPC SO 69.0 CKT 1	160	94.7	101.7	97920 6PPG 23 230 to 98051 2PPC NO 69.0 CKT1
08SP	EES-EES	99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1	115	96.5	105.1	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
08SP	EES-EES	99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1	115	96.4	104.9	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
08SP	EES-EES	99230 3COUCH 115 to 99280 3TAYLOR 115 CKT 99	108	90.9	100.7	99230 3COUCH 115 to 99310 3MCNEIL 115 CKT1
08SP	EES-EES	99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1	167	89.5	102.4	99230 3COUCH 115 to 99280 3TAYLOR 115 CKT99
08SP	EES-EES	99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1	159	97.6	121.7	55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1
08SP	EES-EES	99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1	159	99.6	119.6	50023 CARROLL6 230 to 50046 DOLHILL6 230 CKT1
08SP	EES-EES	99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1	159	97.4	118.4	55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1
08SP	EES-EES	99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1	159	98.5	119.9	53277 LYDIA 7 345 to 53615 WELSH 7 345 CKT1
08SP	EES-EES	99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1	159	99.6	118.4	99171 3SPRINGH 115 to 99280 3TAYLOR 115 CKT1
08SP	EES-EES	99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1	159	99.0	117.8	99230 3COUCH 115 to 99280 3TAYLOR 115 CKT99
08SP	EES-EES	99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1	60	99.8	122.7	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1
08SP	EES-EES	99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1	60	93.8	116.2	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT1
08SP	EES-EES	99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1	60	93.4	115.8	99263 3LEWIS # 115 to 99303 3PATMOS# 115 CKT1
08SP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	94.4	116.0	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1
08SP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	82.2	102.4	53615 WELSH 7 345 to 53620 WILKES 7 345 CKT1
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	94.8	105.1	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	96.5	105.1	31798 SWEETWTR 161 to 96122 5WILSPG 161 CKT1
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	96.7	104.5	99802 5BULLSH* 161 to 99809 5FLIPN 161 CKT1

Table 2 - continued – Non - SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload
08SP	EES-EES	99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1	162	92.5	107.7	52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1
08SP	EES-EES	99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1	162	91.5	106.6	52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT1
08WP	AMRN-AMRN	31408 OVERTON 345 to 31409 OVERTON 161 CKT 1	300	99.8	101.1	59228 WBURGE 5 161 to 59229 ODESSA 5 161 CKT1
08WP	AMRN-AMRN	31408 OVERTON 345 to 31409 OVERTON 161 CKT 1	300	99.0	100.2	96057 5BARNET 161 to 96555 5GRAVOI 161 CKT1
08WP	AMRN-AMRN	31408 OVERTON 345 to 31409 OVERTON 161 CKT 1	300	99.4	100.2	58062 SALSBRY5 161 to 96120 5THMHIL 161 CKT1
08WP	IP-MEC	32415 GALESBRG 138 to 64411 GALESBR5 161 CKT 2	100	97.3	101.5	64411 GALESBR5 161 to 32415 GALESBRG 138 CKT1
08WP	ALTW-MEC	34060 WNTRST 5 161 to 64068 GRENFLD5 161 CKT 1	112	97.1	101.2	64060 BOONVIL3 345 to 64786 COOPER 3 345 CKT1
08WP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	43	99.5	105.3	59481 MON383 7 345 to 59984 BRKLNE 7 345 CKT1
08WP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	43	99.3	105.1	53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1
08WP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	43	98.6	105.0	52688 CARTHAG5 161 to 59479 LAR382 5 161 CKT1
08WP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	131	97.1	103.6	52702 TRUMAN 5 161 to 96552 2EDMONS 161 CKT1
08WP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	131	97.1	103.6	52702 TRUMAN 5 161 to 96552 2EDMONS 161 CKT1
08WP	MIPU-AECI	59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1	131	98.0	102.2	58062 SALSBRY5 161 to 58064 NORTON-5 161 CKT1
08WP	NPPD-NPPD	65037 N.PLT8 Y 230 to 64910 N.PLATT7 115 CKT 1	187	99.6	100.1	64909 N.PLATT4 230 to 65038 N.PLT9 Y 230 CKT1
08WP	NPPD-NPPD	65037 N.PLT8 Y 230 to 64910 N.PLATT7 115 CKT 1	187	99.6	100.1	64910 N.PLATT7 115 to 65038 N.PLT9 Y 230 CKT1
08WP	AECI-AECI	96089 5JAMESV 161 to 96673 2JAMESV 69.0 CKT 2	64	99.7	100.6	96089 5JAMESV 161 to 96673 2JAMESV 69.0 CKT1
08WP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	43	96.5	101.6	59479 LAR382 5 161 to 59480 MON383 5 161 CKT1
08WP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	43	94.6	100.6	56793 NEOSHO 7 345 to 96045 7MORGAN 345 CKT1
08WP	AECI-AECI	96751 2REEDS 69.0 to 96659 2BOWRML 69.0 CKT 1	43	95.8	100.4	59537 AUR124 269.0 to 59578 AUR355 269.0 CKT1
08WP	EES-EES	97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1	112	93.2	108.0	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
08WP	EES-EES	97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1	112	91.3	106.1	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
08WP	EES-EES	97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1	112	89.7	104.7	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
08WP	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	99.9	107.9	97531 4APOLLO 138 to 97534 4SPLENDR 138 CKT1
08WP	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	99.4	107.4	97506 4BRYAN 138 to 97512 4PEE DEE 138 CKT1
08WP	EES-EES	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1	206	99.7	107.3	97467 4TAMINA 138 to 97531 4APOLLO 138 CKT1
08WP	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	99.7	108.9	97488 4TEMCO 138 to 97519 4GEORGIA 138 CKT1
08WP	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	99.4	108.8	97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT1
08WP	EES-EES	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1	206	99.3	108.6	97488 4TEMCO 138 to 97538 8LNG 413 138 CKT1
08WP	EES-EES	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1	206	98.9	110.6	97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1
08WP	EES-EES	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1	206	98.4	108.0	97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1
08WP	EES-EES	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1	206	97.2	106.9	97453 4DOBBIN 138 to 97522 4TUBULAR 138 CKT1
08WP	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	99.5	112.4	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
08WP	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	99.6	112.3	97453 4DOBBIN 138 to 97522 4TUBULAR 138 CKT1
08WP	EES-EES	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1	206	97.5	110.6	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
08WP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	99.2	111.9	97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT1
08WP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	95.6	107.0	97482 4CINCINT 138 to 97530 4WALKER 138 CKT1
08WP	EES-EES	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1	206	95.3	106.1	97690 4CYPRESS 138 to 97697 4HONEY 138 CKT1
08WP	EES-EES	97510 4SOTA 1 138 to 97508 4NAVSOTA 138 CKT 1	206	98.7	105.9	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
08WP	EES-EES	97510 4SOTA 1 138 to 97508 4NAVSOTA 138 CKT 1	206	97.6	104.9	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
08WP	EES-EES	97510 4SOTA 1 138 to 97508 4NAVSOTA 138 CKT 1	206	97.2	104.6	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	99.8	108.4	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	100.0	108.3	99230 3COUCH 115 to 99263 3LEWIS # 115 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1	206	99.8	108.1	97530 4WALKER 138 to 97536 4RIVTRIN 138 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	99.0	110.3	97482 4CINCINT 138 to 97530 4WALKER 138 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	98.7	109.3	97690 4CYPRESS 138 to 97697 4HONEY 138 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1	206	97.8	109.3	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97526 4MAG AND 138 CKT 1	206	99.3	106.6	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
08WP	EES-EES	97514 4GRIMES 138 to 97526 4MAG AND 138 CKT 1	206	98.9	106.4	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1

Table 2 - continued – Non - SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload
08WP	EES-EES	97514 4GRIMES 138 to 97526 4MAG AND 138 CKT 1	206	98.1	105.5	97480 L558T485 138 to 97487 4MT.ZION 138 CKT1
08WP	EES-EES	97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1	112	87.1	101.1	97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1
08WP	EES-EES	97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1	112	88.4	100.4	98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1
08WP	EES-EES	97526 4MAG AND 138 to 97510 4SOTA 1 138 CKT 1	206	99.8	107.0	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1
08WP	EES-EES	97526 4MAG AND 138 to 97510 4SOTA 1 138 CKT 1	206	98.7	105.9	97454 4WALDEN 138 to 97469 4APRIL 138 CKT1
08WP	EES-EES	97526 4MAG AND 138 to 97510 4SOTA 1 138 CKT 1	206	98.3	105.7	97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1
08WP	EES-EES	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1	206	97.7	109.4	97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1
08WP	EES-EES	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1	206	98.9	108.9	98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1
08WP	EES-EES	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1	206	97.2	106.8	97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1
08WP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	98.1	108.4	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
08WP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	98.0	108.3	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
08WP	EES-EES	97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1	144.6	98.6	108.1	53609 LEBROCK7 345 to 53637 TENRUSK7 345 CKT1
08WP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	98.8	109.1	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
08WP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	98.8	109.0	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
08WP	EES-EES	97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1	144.6	99.3	108.9	53609 LEBROCK7 345 to 53637 TENRUSK7 345 CKT1
08WP	EES-EES	97920 6PPG 23 230 to 97919 6VERDINE 230 CKT 1	470	99.2	102.3	97917 6NLSON 230 to 97921 6CARLYSS 230 CKT1
08WP	EES-EES	99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1	159	100.0	124.6	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
08WP	EES-EES	99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1	159	99.9	124.4	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1
08WP	EES-EES	99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1	159	92.6	114.9	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1
08WP	EES-EES	99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1	159	96.4	117.2	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1
08WP	EES-EES	99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1	159	89.1	111.3	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1
08WP	EES-EES	99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1	159	89.9	110.3	53609 LEBROCK7 345 to 53637 TENRUSK7 345 CKT1
08WP	EES-EES	99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1	60	78.0	103.9	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1
08WP	EES-EES	99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1	60	78.6	102.3	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1
08WP	EES-EES	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1	60	77.9	103.7	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1

Table 3 – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
04G	WFEC-WFEC	Acme - Franklin SW 69kV	34	115.9	121.9	Canadian SW 138/69kV Transformer	0	Solution Undetermined	N/A
04G	WFEC-WFEC	Acme - Franklin SW 69kV	34	102.5	106.1	Canadian SW – Goldsby 69kV	0	See Previous	-
04G	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	101.0	103.3	Concord - East Manhattan 230kV	0	Replace 82 structures	742,000
04G	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	101.0	103.2	Concordia 230/115kV Transformer	0	See Previous	-
04G	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	105.4	109.2	Iatan - St Joe 345kV	0	See Previous	-
04G	WFEC-WFEC	Goldsby - Oklahoma University SW 69kV	34	102.8	106.5	Franklin SW 138/69kV Transformer	0	Solution Undetermined	N/A
04G	EDE-EDE	Joplin Southwest 161/69/12.5kV Transformer	75	104.1	105.5	Tipton Ford - Joplin Southwest 161kV	0	Replace 161/69 KV Transformer with a 150 MVA Transformer	1,565,000
04G	WFEC-WFEC	Lake Creek - Carter Jct 69kV	26	100.8	101.3	Elk City 138/69kV Transformer	0	Solution Undetermined	N/A
04G	KACY-KACY	Owens Corning - Quindaro 69kV Ckt 1	82	109.2	109.6	Owens Corning - Quindaro 69kV Ckt 2	0	Solution Undetermined	N/A
04G	SWPA-EES	Bull Shoals - Midway 161KV	162	93.0	108.8	Buford Tap - Bull Shoals 161kV	332	Replace disconnect switches, metering CTs and wave trap at Bull Shoals	150,000
04G	SWPA-EES	Bull Shoals - Midway 161KV	162	92.4	108.1	Norfork - Buford Tap 161kv	364	See Previous	-
04G	OKGE-OKGE	Pecan Creek 345/161KV Transformer	369	93.2	103.8	Fort Smith - Muskogee 345kV	480	Add 2nd 345/161 kV 369MVA transformer.	3,000,000
04G	WERE-WERE	Auburn Road - Jeffrey Energy Center 230kV	565	105.6	106.9	Hoyt - Jeffery Energy Center 345kV	750	Westar Transmission Operating Directive 400	-
04G	WERE-WERE	Auburn Road - South Gage 115KV #2	97	100.1	102.6	Hoyt - Jeffery Energy Center 345kV	750	Westar Transmission Operating Directive 400	-
04G	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	114.4	119.0	Hoyt - Stranger Creek 345kV	750	Westar Transmission Operating Directive 803	-
04G	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	96.6	100.6	Iatan - St Joe 345kV	750	See Previous	-
04G	WERE-WERE	Coffey County No. 4 - Athens Switching Station 69KV	45	110.1	115.5	La Cygne - Wolf Creek 345kV	750	Westar Transmission Operating Directive 1304	-
04G	WERE-WERE	County Line 115/69/34/5kV Transformer	66	97.9	100.8	Hoyt - Stranger Creek 345kV	750	Westar Transmission Operating Directive 803	-
04G	OKGE-OKGE	Draper 345/138KV Transformer 1	493	89.4	110.0	Draper Lake 345/138kV Transformer #2	750	OKGE Mitigation Plan	-
04G	OKGE-OKGE	Draper 345/138KV Transformer 2	493	89.4	110.0	Draper Lake 345/138kV Transformer #1	750	See Previous	-
04G	WERE-WERE	GREEN - COFFEY COUNTY 4 69KV	45	111.4	116.8	La Cygne - Wolf Creek 345kV	750	Westar Transmission Operating Directive 1304	-
04G	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	112.1	116.7	Hoyt - Stranger Creek 345kV	750	Westar Transmission Operating Directive 803	-
04G	WERE-WERE	Mockingbird Hill Switch - Stull Switch 115kV	92	100.2	105.0	Hoyt - Stranger Creek 345kV	750	Westar Transmission Operating Directive 803	-
04G	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	105.0	109.7	Hoyt - Stranger Creek 345kV	750	Westar Transmission Operating Directive 803	-
04G	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	77.9	100.4	Draper Lake - Midwest Tap 138kV	750	Invalid Overload	-
04G	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	77.9	104.7	Poost Road - SE 15th 138kV	750	See Previous	-
05SP	OKGE-OKGE	ADA OC Pump Tap - Lula 69kV	48	110.9	112.1	Valley View Tap - Valley View 69kV	0	Solution Undetermined	N/A
05SP	OKGE-AEPW	Altus - Fitzhugh 69kV	72	104.7	105.3	Avec Ozark - Helberg 69kV	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	Alumax Tap - Bann 138KV	261	101.3	106.1	NW Texarkana-Bann T - Northwest Texarkana 138KV	0	Replace six (6) 138 kV switches, five at Bann & one at Alumax Tap. Rebuild 0.67 miles of 1024 ACAR with 2156 ACSR. Replace wavetrap jumpers @ Bann. Replace breaker 3300 @ Bann.	630,000
05SP	AEPW-AEPW	Alumax Tap - Northwest Texarkana 138KV	261	107.4	112.1	NW Texarkana-Bann T - Northwest Texarkana 138KV	0	Replace Switches Alumax Tap	30,000
05SP	SWPA-SPRM	Brookline - Springfield 161kV	323	104.4	108.4	Battlefied - Southwest Disposal 161kV	0	Solution Undetermined	N/A
05SP	SWPA-SPRM	Brookline - Springfield 161kV	323	103.7	107.8	Brookline - Junction 161kV	0	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	SWPA-SPRM	Brookline - Springfield 161kV	323	105.3	109.3	Southwest - Soutwest Disposal 161kV	0	See Previous	-
05SP	EES-SWPA	Bull Shoals - Midway 161KV	162	115.0	129.8	Buford Tap - Bull Shoals 161kV	0	See Previous	-
05SP	EES-SWPA	Bull Shoals - Midway 161KV	162	108.1	114.5	Ises - Morefield 161kV	0	See Previous	-
05SP	AEPW-AEPW	Chamber Springs Rd - Farmington AECC 161KV	335	100.0	101.4	Dyess - South Springdale 161kV	0	Replace Farmington switch	60,000
05SP	AEPW-AEPW	Chamber Springs Rd - Farmington AECC 161KV	335	100.0	101.4	Dyess - South Springdale 161kV	0	See Previous	-
05SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	146.4	152.3	Chamber Springs - Farmington AECC 161kV	0	Rebuild 12 miles with 2156ACSR	7,200,000
05SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	114.2	119.1	East Centerton - Gentry REC, 161KV	0	See Previous	-
05SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	115.1	120.0	Flint Creek - Gentry REC 161kV	0	See Previous	-
05SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	139.5	144.2	Flint Creek - Tontitown 161kV	0	See Previous	-
05SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	135.2	141.1	Southwest Fayetteville - Farmington AECC 161kV	0	See Previous	-
05SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	103.5	106.7	Blocker Tap - Marshall 69kV	0	Reconductor 3.25 miles of 666 ACSR with 1272 ACSR	981,000
05SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	103.8	109.8	Crockett - Grimes 345kV	0	See Previous	-
05SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	107.8	114.1	Longwood - Wilkes 345kV	0	See Previous	-
05SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	117.1	125.1	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
05SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	106.8	109.0	Stonewall - Western Electric T 138kV	0	See Previous	-
05SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	101.6	107.9	Longwood - Wilkes 345kV	0	Reconductor 3.25 miles of 666 ACSR with 1272 ACSR	1,641,000
05SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	110.9	118.9	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
05SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	100.6	102.7	Stonewall - Western Electric T 138kV	0	See Previous	-
05SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	108.2	111.2	Clifton - Greenleaf 115kV	0	See Previous	-
05SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	101.6	103.9	Concord - East Manhattan 230kV	0	See Previous	-
05SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	101.6	103.9	Concordia 230/115kV Transformer	0	See Previous	-
05SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	111.2	115.0	Iatan - St Joe 345kV	0	See Previous	-
05SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	100.0	102.2	Jeffrey Energy Center - East Manhattan 230kV	0	See Previous	-
05SP	GRRD-GRRD	Claremore 161/69KV Transformer 1	84	106.2	107.7	Claremore 161/69kV Transformer #2	0	Solution Undetermined	N/A
05SP	GRRD-GRRD	Claremore 161/69KV Transformer 2	84	106.5	108.0	Claremore 161/69kV Transformer #1	0	Solution Undetermined	N/A
05SP	AECI-SPRM	Clay - Logan 161kV	185	104.0	122.7	Multiple Outage Contingency, Franks - Huben 345kV, Huben - Morgan 345kV	0	Replace transmission line structures to allow operation at 100C	250,000
05SP	AEPW-WFEC	Corn Tap - Cornville 138kV	105	111.5	116.2	Anadarko - Southwest Station 138kV	0	Solution Undetermined	N/A
05SP	WERE-WERE	County Line - Hook Jct 115kV	92	102.2	102.5	Tecumseh Energy Center - Tecumseh Hill 115kV	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	East Centerton - Gentry REC 161 KV	353	111.2	113.4	Flint Creek - Tontitown 161kV	0	Rebuild 19.16 miles of 2-397.5 ACSR with 2156 ACSR	8,000,000
05SP	AEPW-AEPW	East Centerton - Gentry REC 161 KV	353	101.3	104.0	Lowell - Tontitown 161kV	0	See Previous	-
05SP	AEPW-AEPW	Elms Springs REC - Tontitown 161kV	306	108.6	110.2	Chamber Springs - Farmington AECC 161kV	0	Replace Switch and Elm Springs Strain Bus	100,000

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	AEPW-AEPW	Elms Springs REC - Tontitown 161kV	306	106.6	107.8	Dyess - Tontitown 161kV	0	See Previous	-
05SP	AEPW-AEPW	Elms Springs REC - Tontitown 161kV	306	101.4	103.0	Southwest Fayetteville - Farmington AECC 161kV	0	See Previous	-
05SP	KACY-KACY	Everett - Kaw 69kV	68	121.5	121.5	Levee - Owens Corning 69kV	0	Solution Undetermined	N/A
05SP	KACY-KACY	Everett - Kaw 69kV	68	121.5	121.5	Levee - Owens Corning 69kV	0	See Previous	-
05SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	109.8	111.0	Chamber Springs - Farmington AECC 161kV	0	Replace switch and jumpers	45,000
05SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	119.6	121.6	Chamber Springs - Tontitown 161kV	0	See Previous	-
05SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	100.0	101.2	East Centerton - Bentonville J Street 161kV	0	See Previous	-
05SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	134.9	136.7	East Centerton - Gentry REC, 161KV	0	See Previous	-
05SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	136.4	138.2	Flint Creek - Gentry REC 161kV	0	See Previous	-
05SP	WFEC-WFEC	Franklin Switch 138/69KV Transformer	70	101.5	104.9	Canadian SW 138/69kV Transformer	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	113.8	116.0	Flint Creek - Tontitown 161kV	0	Rebuild 1.09 miles of 2-397.5 ACSR with 2156 ACSR.	400,000
05SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	101.5	104.3	Lowell - Rogers 161kV	0	See Previous	-
05SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	103.9	106.7	Lowell - Tontitown 161kV	0	See Previous	-
05SP	WERE-WERE	Gill Energy Center East - Macarthur 69KV	68	109.7	110.4	Gill Energy Center East - Oatville 69KV	0	Replace substation bus and jumpers at MacArthur 69 kV	22,000
05SP	WERE-WERE	Gill Energy Center East - Oatville 69KV	72	118.6	119.3	Gill Energy Center East - Macarthur 69KV	0	Replace disconnect switches at Gill 69 kV (use 800 A.), Replace line switch at Oatville 69 kV (use 800 A.)	45,000
05SP	WERE-WERE	Gill Energy Center East - Oatville 69KV	72	108.0	108.7	Gill Energy Center West - Haysville Junction 69kV	0	See Previous	-
05SP	WERE-WERE	Halstead South 138/69/13.2kV Transformer	55	152.4	152.9	Halstead North - Halstead South 138kV	0	Solution Undetermined	N/A
05SP	MIPU-MIPU	Harrisonville 161/69kV Transformer	63	104.7	105.3	Pleasant Hill 161/69kV Transformer	0	Solution Undetermined	N/A
05SP	KACP-KACP	LaCygne - Stilwell 345KV	1251	107.3	111.9	La Cygne - West Gardner 345kV	0	Build new Linn County substation with 345/161kV 400 Mva transformer. Tap Wolf Creek to LaCygne 345kV line and Centerville to Paola 161kV line	6,945,000
05SP	KACY-KACY	Levee - Muncie 69kV	82	106.5	106.6	Everett - Quindaro 69kV	0	Solution Undetermined	N/A
05SP	KACY-KACY	Levee - Owens Corning 69kV	82	116.5	116.6	Everett - Kaw 69kV	0	Solution Undetermined	N/A
05SP	KACY-KACY	Levee - Owens Corning 69kV	82	128.5	128.5	Everett - Quindaro 69kV	0	See Previous	-
05SP	KACY-KACY	Levee - Owens Corning 69kV	82	102.1	102.2	Quindaro - Victory West 69kV	0	See Previous	-
05SP	WFEC-WFEC	Little Axe - Noble 69kV	26	109.9	115.4	Paoli 138/69kV Transformer	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	Marshall 138/69KV Transformer CKT 1	107	128.9	130.5	Marshall 138/69kV Transformer #2	0	Replace 755 ACAR Strain Bus	25,000
05SP	AEPW-AEPW	Marshall 138/69KV Transformer CKT 2	107	128.9	130.5	Marshall 138/69kV Transformer #1	0	Replace 755 ACAR Strain Bus	25,000
05SP	AEPW-AEPW	Noram - Longwood 138kV	234	103.1	108.8	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	Reconductor 4.66 miles of bundled 266 ACSR with 1590 ACSR and replace jumpers & Bus Riser jumpers	1,577,000
05SP	AEPW-AEPW	Noram - Raines 138kV	234	101.9	107.6	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	Rebuild 5.58 miles of 2-266 ACSR with 1590 ACSR	2,000,000
05SP	SWPA-SWPA	Norfork 161/69KV Transformer #1	25	109.8	111.1	Norfork 161/69KV Transformer #2	0	Replace Norfork Transformer by SWPA In-Service Date 6/1/2005	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	AEPW-AEPW	Northwest Henderson - Poynter 69KV	72	100.2	100.6	Evenside - Northwest Henderson 69kV	0	Solution Undetermined	N/A
05SP	KACY-KACY	Owens Corning - Quindaro 69kV Ckt 1	82	110.2	110.3	Owens Corning - Quindaro 69kV Ckt 2	0	See Previous	-
05SP	KACY-KACY	Owens Corning - Quindaro 69kV Ckt 2	82	107.4	107.5	Owens Corning - Quindaro 69kV Ckt 1	0	See Previous	-
05SP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	106.2	106.9	Chapel Hill REC - Petty 138kV	0	Reset CT @ Pittsburg.	10,000
05SP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	117.4	118.1	Chapel Hill REC - Welsh REC 138kV	0	See Previous	-
05SP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	119.1	119.8	Welsh REC - Wilkes 138kV	0	See Previous	-
05SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	109.2	117.1	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	Reconductor 0.81 miles 666MCM to 1272 ACSR - Reconductor other 5.76 miles of 795 ACSR with 1272 ACSR. Reset CTs and relay settings @ Rock Hill	342,970
05SP	MIDW-WEPL	Seward 115/69kV Transformer	44	109.5	110.5	Heizer - Mullergreen 230/115kV Transformer	0	Solution Undetermined	N/A
05SP	OKGE-OKGE	Van Buren Avec - VBI 69kV	96	100.1	100.7	3rd Street - Factory 69kV	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	99.9	106.1	Longwood - Wilkes 345kV	12	See Previous	-
05SP	EMDE-EMDE	Oronogo - Joplin Oakland North 161KV	214	99.9	104.6	Joplin - Tipton Ford 161kV	16	Reconstruct and replace 1.4 miles of 556 ACSR with Bundled 556 ACSR	800,000
05SP	AEPW-AEPW	IPC Jefferson - Lieberman 138KV	136	99.1	111.3	Longwood - Wilkes 345kV	57	Reconductor 26.35 miles of 336 ACSR with 795 ACSR, Replace Switches @ Lieberman, Reset Relays @ Jefferson IPC, & Reconductor 0.65 miles 397MCM to 795MCM	7,411,000
05SP	OKGE-OKGE	Pecan Creek 345/161KV Transformer	369	98.1	108.8	Fort Smith - Muskogee 345kV	130	See Previous	-
05SP	OKGE-OKGE	FACTORY - 3RD ST 69KV	96	99.8	100.6	Van Buren Avec - VBI 69kV	148	Replace 800A Trap & Increase CT Ratio to 1200-5A	30,000
05SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	99.5	101.7	Chamber Springs - Farmington AECC 161kV	179	See Previous	-
05SP	AEPW-AEPW	Jacksonville - Overton 138KV	235	97.9	106.0	Crockett - Tenaska Rusk County 345kV	192	Reset relays at Jacksonville & Overton	15,000
05SP	WERE-WERE	Arnold - Midwest Grain Solvents Jct2 69kv	41	99.9	100.2	Arnold - Parallel 115kV	210	Solution Undetermined	N/A
05SP	SPRM-AECI	Clay - Logan 161kV	185	91.8	113.8	Huben - Morgan 345kV	280	See Previous	-
05SP	AEPW-AEPW	Marshall - North Marshall 69KV	72	98.2	102.9	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	291	Replace 350 CU bus & jumpers @ North Marshall.	23,356
05SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	97.6	103.6	Crockett - Grimes 345kV	297	See Previous	-
05SP	AEPW-AEPW	East Centerton - Gentry REC 161 KV	353	98.9	101.6	Lowell - Rogers 161kV	307	See Previous	-
05SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	99.0	101.4	Chamber Springs - Tontitown 161kV	320	See Previous	-
05SP	GRRD-GRRD	Afton 161/69kV Transformer	50	98.4	101.9	Afton - Miami 161kV	342	Replace 50 MVA Transformer with 84 MVA unit	833,000
05SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	97.3	102.9	Southwest Shreveport - Diana 345kV	361	See Previous	-
05SP	AEPW-AEPW	Marshall - North Marshall 69KV	72	97.5	102.0	Longwood - Wilkes 345kV	418	See Previous	-
05SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	98.8	100.9	Stonewall - Western Electric T 138kV	422	See Previous	-
05SP	WFEC-OKGE	Franklin Switch - Midwest Tap 138KV	215	87.8	108.2	Hollywood - Midwest Tap 138kV	448	Replace 600A metering CTs with 1200A	55,000
05SP	SWPA-SWPA	Springfield 161/69kV Transformer #3	25	97.6	101.5	James River - Plainview 69kV	461	Replace 25/25MVA transformer #3 with 80MVA unit to eliminate overload of both 25MVA #3 and 80MVA #1 transformers	1,300,000
05SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	95.9	101.8	Crockett - Grimes 345kV	518	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	95.6	101.1	Southwest Shreveport - Diana 345kV	596	See Previous	-
05SP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	116.8	121.1	Hoyt - Stranger Creek 345kV	750	See Previous	-
05SP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	96.3	100.3	Iatan - St Joe 345kV	750	See Previous	-
05SP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	116.3	117.3	Arnold - Stranger Creek 115kV	750	Westar Transmission Operating Directive 1200	-
05SP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	119.1	121.8	Hoyt - Stranger Creek 345kV	750	See Previous	-
05SP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	121.4	121.7	Stranger Creek 345/115/14.4kV Transformer	750	Westar Transmission Operating Directive 612	-
05SP	OKGE-OKGE	Draper 345/138KV Transformer 1	493	102.9	123.9	Draper Lake 345/138kV Transformer #2	750	See Previous	-
05SP	OKGE-OKGE	Draper 345/138KV Transformer 2	493	102.9	123.9	Draper Lake 345/138kV Transformer #1	750	See Previous	-
05SP	WERE-WERE	Jarbalo Jct Sw. Sta. - 166th Street 115kV	97	107.8	109.2	Midland Junction - Pentagon 115kV	750	Westar Transmission Operating Directive 1202	-
05SP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	113.7	118.0	Hoyt - Stranger Creek 345kV	750	See Previous	-
05SP	WERE-WERE	Lawrence Hill - Wren 115kV	141	101.2	101.6	Bismark Jct Sw Station - Farmer's Consumer CO-OP 115kV	750	Westar Transmission Operating Directive 1210	-
05SP	WERE-WERE	Lawrence Hill - Wren 115kV	141	103.9	104.6	Mockingbird Hill Switch - Southwest Lawrence 115kV	750	Westar Transmission Operating Directive 1211	-
05SP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	117.9	119.9	Lawrence Hill - Midland Junction 230kV	750	Westar Transmission Operating Directive 901	-
05SP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	117.7	119.8	Midland Junction 230/115/18kV Transformer	750	Westar Transmission Operating Directive 615	-
05SP	WERE-WERE	Midland Junction 230/115/18kV Transformer	308	105.7	107.6	Lawrence Hill 230/115/13.8 Transformer	750	Westar Transmission Operating Directive 631	-
05SP	WERE-WERE	Mockingbird Hill Switch - Stull Switch 115kV	92	114.6	119.1	Hoyt - Stranger Creek 345kV	750	See Previous	-
05SP	WERE-WERE	Northwest Leavenworth - Jarbalo Jct Sw Sta 115kV	118	114.1	114.4	Hallmark - Jarbalo Junction Switching Station 115kV	750	Westar Transmission Operating Directive 1216	-
05SP	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	121.4	126.0	Hoyt - Stranger Creek 345kV	750	See Previous	-
05SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	111.6	125.0	Horseshoe Lake - Midway 138kV	750	See Previous	-
05SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	92.1	105.8	Midway - NE 10th 138kV	750	See Previous	-
05SP	SWPA-AECI	Carthage - Jasper 69kV	47	100.0	103.4	Archie - Adrian 161kV	N/A	Third Party Facility	-
05SP	SWPA-AECI	Carthage - Reeds Spring 69kV	36	121.5	129.2	Aurora H.T. - Monett 161kV	N/A	Third Party Facility	-
05WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	101.4	103.6	Concord - East Manhattan 230kV	0	See Previous	-
05WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	101.4	103.6	Concordia 230/115kV Transformer	0	See Previous	-
05WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	109.5	113.3	Iatan - St Joe 345kV	0	See Previous	-
05WP	AECI-SPRM	Clay - Logan 161kV	232	100.4	114.6	Multiple Outage Contingency, Franks - Huben 345kV, Huben - Morgan 345kV	0	See Previous	-
05WP	MIPU-MIPU	Harrisonville 161/69kV Transformer	63	101.7	102.0	Pleasant Hill 161/69kV Transformer	0	See Previous	-
05WP	WFEC-WFEC	Little Axe - Noble 69kV	26	100.6	104.6	Paoli 138/69kV Transformer	0	See Previous	-
05WP	SWPA-SWPA	Norfork 161/69KV Transformer #1	25	107.3	108.0	Norfork 161/69KV Transformer #2	0	See Previous	-
05WP	SPRM-SWPA	Clay - Springfield 161kV	167	99.9	110.5	Multiple Outage Contingency, Franks - Huben 345kV, Huben - Morgan 345kV	6	Replace disconnect switches at Springfield	200,000
05WP	SPRM-AECI	Clay - Logan 161kV	185	91.8	113.8	Huben - Morgan 345kV	280	See Previous	-
05WP	OKGE-OKGE	Pecan Creek 345/161KV Transformer	369	91.8	102.5	Fort Smith - Muskogee 345kV	575	See Previous	-
05WP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	118.7	122.9	Hoyt - Stranger Creek 345kV	750	See Previous	-
05WP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	102.6	106.5	Iatan - St Joe 345kV	750	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	116.7	120.9	Hoyt - Stranger Creek 345kV	750	See Previous	-
05WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	100.5	104.5	Iatan - St Joe 345kV	750	See Previous	-
05WP	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	103.3	108.2	Hoyt - Stranger Creek 345kV	750	See Previous	-
05WP	SWPA-AECI	Carthage - Reeds Spring 69kV	43	104.2	110.4	Aurora H.T. - Monett 161kV	N/A	See Previous	-
08SP	GRRD-GRRD	412SUB - Kansas Tap 161KV	338	103.7	108.4	Flint Creek - GRDA 345kV	0	Reconductor 9.7 miles with 1590MCM ACSR	1,488,000
08SP	OKGE-OKGE	ADA OC Pump Tap - Lula 69kV	48	121.9	123.7	Valley View Tap - Valley View 69kV	0	See Previous	-
08SP	OKGE-AEPW	Altus - Fitzhugh 69kV	72	103.7	104.4	Avec Ozark - Coal Hill 69kV	0	See Previous	-
08SP	OKGE-AEPW	Altus - Fitzhugh 69kV	72	110.9	111.6	Avec Ozark - Helberg 69kV	0	See Previous	-
08SP	AEPW-AEPW	Alumax Tap - Bann 138KV	261	104.1	107.8	NW Texarkana-Bann T - Northwest Texarkana 138KV	0	See Previous	-
08SP	AEPW-AEPW	Alumax Tap - Northwest Texarkana 138KV	261	110.4	114.2	NW Texarkana-Bann T - Northwest Texarkana 138KV	0	See Previous	-
08SP	WERE-WERE	Arnold - Midwest Grain Solvents Jct2 69kv	41	105.0	105.4	Arnold - Parallel 115kV	0	See Previous	-
08SP	AEPW-AEPW	Broken Arrow 101st North - Oneta 138kV	210	109.1	109.4	Fort Smith - Muskogee 345kV	0	Replace wavetrap	30,000
08SP	AEPW-AEPW	Broken Arrow 101st North - Oneta 138kV	210	108.7	108.9	Oneta - Northeast Station 345kV	0	See Previous	-
08SP	AEPW-AEPW	Broken Arrow North - Oneta 138KV	235	103.0	109.3	Chamber Springs - Clarksville 345kV	0	Rebuild 4.31 miles of 795 ACSR with 1590 ACSR.	2,370,500
08SP	AEPW-AEPW	Broken Arrow North - Oneta 138KV	235	103.0	109.3	Chamber Springs 345/161kV Transformer	0	See Previous	-
08SP	AEPW-AEPW	Broken Arrow North - Oneta 138KV	235	103.0	109.3	Chamber Springs 345/161kV Transformer	0	See Previous	-
08SP	AEPW-AEPW	Broken Arrow North - Oneta 138KV	235	109.6	114.3	Tulsa North - Northeast Station 345kV	0	See Previous	-
08SP	SWPA-SPRM	Brookline - Springfield 161kV	323	115.4	119.4	Battlefied - Southwest Disposal 161kV	0	See Previous	-
08SP	SWPA-SPRM	Brookline - Springfield 161kV	323	116.3	120.3	Southwest - Southwest Disposal 161kV	0	See Previous	-
08SP	EES-SWPA	Bull Shoals - Midway 161KV	162	125.8	140.6	Buford Tap - Bull Shoals 161kV	0	See Previous	-
08SP	EES-SWPA	Bull Shoals - Midway 161KV	162	122.7	129.2	Ises - Morefield 161kV	0	See Previous	-
08SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	158.2	163.8	Chamber Springs - Farmington AECC 161kV	0	See Previous	-
08SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	114.0	119.5	Flint Creek - GRDA 345kV	0	See Previous	-
08SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	136.1	140.1	Flint Creek - Tontitown 161kV	0	See Previous	-
08SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	145.6	151.2	Southwest Fayetteville - Farmington AECC 161kV	0	See Previous	-
08SP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	244	102.2	106.3	Southwest Fayetteville - South Fayetteville 161kV	0	See Previous	-
08SP	AEPW-AEPW	Chamber Springs Road 345/161KV Transformer	660	100.8	106.3	Flint Creek - GRDA 345kV	0	Install 2nd 345/161 kV Auto-transformer	4,000,000
08SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	106.8	112.7	Crockett - Grimes 345kV	0	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	108.5	110.7	Keatchie - Stonewall 138kV	0	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	109.6	115.7	Longwood - Wilkes 345kV	0	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	120.5	128.7	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Knox Lee 138 KV	209	111.2	113.4	Stonewall - Western Electric T 138kV	0	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	103.0	109.1	Longwood - Wilkes 345kV	0	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	113.9	122.1	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	104.5	106.7	Stonewall - Western Electric T 138kV	0	See Previous	-
08SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	115.7	118.6	Clifton - Greenleaf 115kV	0	See Previous	-
08SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	110.4	112.6	Concord - East Manhattan 230kV	0	See Previous	-
08SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	110.4	112.6	Concordia 230/115kV Transformer	0	See Previous	-
08SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	117.4	121.2	Iatan - St Joe 345kV	0	See Previous	-
08SP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	108.2	110.3	Jeffrey Energy Center - East Manhattan 230kV	0	See Previous	-
08SP	GRRD-GRRD	Claremore 161/69KV Transformer 1	84	110.0	111.4	Claremore 161/69kV Transformer #2	0	See Previous	-
08SP	GRRD-GRRD	Claremore 161/69KV Transformer 2	84	110.4	112.2	Claremore 161/69kV Transformer #1	0	See Previous	-
08SP	AECI-SPRM	Clay - Logan 161kV	185	111.3	129.5	Multiple Outage Contingency, Franks - Huben 345kV, Huben - Morgan 345kV	0	See Previous	-
08SP	WFEC-WFEC	Cyril - Anadarko 69KV	61	101.3	104.1	Anadarko - Georgia 138kV	0	Reconductor 13 miles of 336MCM ACSR with 795MCM	2,626,000
08SP	AEPW-AEPW	East Centerton - Gentry REC 161 KV	353	102.5	104.4	East Centerton - Flint Creek 345kV	0	See Previous	-
08SP	AEPW-AEPW	East Centerton - Gentry REC 161 KV	353	102.5	104.4	East Centerton 345/161kV	0	See Previous	-
08SP	AEPW-AEPW	Elms Springs REC - Tontitown 161kV	306	118.4	119.8	Chamber Springs - Farmington AECC 161kV	0	See Previous	-
08SP	AEPW-AEPW	Elms Springs REC - Tontitown 161kV	306	114.7	115.6	Dyess - Tontitown 161kV	0	See Previous	-
08SP	AEPW-AEPW	Elms Springs REC - Tontitown 161kV	306	110.7	112.1	Southwest Fayetteville - Farmington AECC 161kV	0	See Previous	-
08SP	WERE-WERE	Evans Energy Center North - Chisholm 138KV	382	102.6	104.4	Evans Energy Center North - Lakeridge 138kV	0	Solution Undetermined	N/A
08SP	KACY-KACY	Everett - Kaw 69kV	68	107.9	108.0	Levee - Muncie 69kV	0	See Previous	-
08SP	KACY-KACY	Everett - Kaw 69kV	68	107.9	108.0	Levee - Muncie 69kV	0	See Previous	-
08SP	KACY-KACY	Everett - Kaw 69kV	68	120.6	120.7	Levee - Owens Corning 69kV	0	See Previous	-
08SP	KACY-KACY	Everett - Kaw 69kV	68	120.6	120.7	Levee - Owens Corning 69kV	0	See Previous	-
08SP	OKGE-OKGE	FACTORY - 3RD ST 69KV	96	106.1	106.6	Van Buren Avec - VBI 69kV	0	See Previous	-
08SP	AEPW-AEPW	Farmington AECC - South Fayetteville 161kV	313	105.7	109.4	Chamber Springs - Tontitown 161kV	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	106.3	107.2	Bentonville J Street - Bentonville SL 161kV	0	See Previous	-
08SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	103.4	104.0	Chamber Springs - Farmington AECC 161kV	0	See Previous	-
08SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	109.4	110.3	East Centerton - Bentonville J Street 161kV	0	See Previous	-
08SP	WFEC-OKGE	Franklin Switch - Midwest Tap 138KV	215	105.6	120.3	Anadarko - Pocassett 138kV	0	See Previous	-
08SP	WFEC-OKGE	Franklin Switch - Midwest Tap 138KV	215	102.2	109.6	Cromwell - Wetumka 138 kV	0	See Previous	-
08SP	WFEC-OKGE	Franklin Switch - Midwest Tap 138KV	215	101.8	121.5	Hollywood - Midwest Tap 138kV	0	See Previous	-
08SP	WFEC-OKGE	Franklin Switch - Midwest Tap 138KV	215	102.0	109.4	Pharoah - Wetumka 138kV	0	See Previous	-
08SP	WFEC-OKGE	Franklin Switch - Midwest Tap 138KV	215	103.9	118.7	Pocassett - Tuttle 138kV	0	See Previous	-
08SP	WFEC-WFEC	Franklin Switch 138/69KV Transformer	70	107.6	110.6	Canadian SW 138/69kV Transformer	0	See Previous	-
08SP	AEPW-EES	Fulton - Patmos 115KV	174	126.6	148.2	Crockett - Grimes 345kV	0	Using 1590MCM ACSR, reconductor 7.1 miles	2,300,000
08SP	AEPW-EES	Fulton - Patmos 115KV	174	122.6	144.3	Crockett - Tenaska Rusk County 345kV	0	See Previous	-
08SP	AEPW-EES	Fulton - Patmos 115KV	174	114.3	134.7	Dolet Hills 345/230kV Transformer	0	See Previous	-
08SP	AEPW-EES	Fulton - Patmos 115KV	174	127.4	150.3	ELD EHV 500/345kV Transformer	0	See Previous	-
08SP	AEPW-EES	Fulton - Patmos 115KV	174	110.2	131.2	Fort Smith - Muskogee 345kV	0	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	AEPW-EES	Fulton - Patmos 115KV	174	127.4	150.5	Longwood - Eldorado EHV - 345kV	0	See Previous	-
08SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	105.7	107.6	East Centerton - Flint Creek 345kV	0	See Previous	-
08SP	AEPW-AEPW	Gentry REC - Flint Creek 161KV	353	105.7	107.6	East Centerton 345/161kV	0	See Previous	-
08SP	WERE-WERE	Gill Energy Center East - Interstate 138kV	210	100.5	100.6	Evans Energy Center North - Lakeridge 138kV	0	Solution Undetermined	N/A
08SP	WERE-WERE	Gill Energy Center East - Macarthur 69KV	68	125.4	126.2	Gill Energy Center East - Oatville 69KV	0	See Previous	-
08SP	WERE-WERE	Gill Energy Center East - Macarthur 69KV	68	102.9	103.5	MacArthur - Oatville 59kV	0	See Previous	-
08SP	WERE-WERE	Gill Energy Center West - Haysville Junction 69kV	80	104.0	104.1	Canal 138/69/19.5kV Transformer	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	Hallsville - Longview Heights 69KV	48	101.5	103.4	Marshall - Marshall Auto 69kV	0	Rebuild 7.07 miles of 4/0 ACSR with 795 ACSR	3,000,000
08SP	WERE-WERE	Halstead South 138/69/13.2kV Transformer	55	153.4	153.9	Halstead North - Halstead South 138kV	0	See Previous	-
08SP	MIPU-MIPU	Harrisonville 161/69kV Transformer	63	117.6	118.3	Pleasant Hill 161/69kV Transformer	0	See Previous	-
08SP	AEPW-AEPW	IPC Jefferson - Lieberman 138KV	136	104.2	116.4	Longwood - Wilkes 345kV	0	See Previous	-
08SP	AEPW-AEPW	Jacksonville - Overton 138KV	235	113.3	122.2	Crockett - Tenaska Rusk County 345kV	0	See Previous	-
08SP	GRRD-GRRD	Kerr - 412SUB 161KV	338	104.4	109.2	Flint Creek - GRDA 345kV	0	Reconductor 12.5 miles with 1590MCM ACSR.	1,918,000
08SP	KACP-KACP	LaCygne - Stilwell 345KV	1251	105.6	110.1	La Cygne - West Gardner 345kV	0	See Previous	-
08SP	KACY-KACY	Levee - Muncie 69kV	82	105.7	105.8	Everett - Quindaro 69kV	0	See Previous	-
08SP	KACY-KACY	Levee - Owens Corning 69kV	82	115.6	115.7	Everett - Kaw 69kV	0	See Previous	-
08SP	AEPW-AEPW	Marshall - North Marshall 69KV	72	101.3	103.3	Flourney 138/69kV Transformer	0	See Previous	-
08SP	AEPW-AEPW	Marshall - North Marshall 69KV	72	100.4	104.8	Longwood - Wilkes 345kV	0	See Previous	-
08SP	AEPW-AEPW	Marshall - North Marshall 69KV	72	101.6	106.7	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
08SP	AEPW-AEPW	Marshall 138/69KV Transformer CKT 1	107	133.9	135.5	Marshall 138/69kV Transformer #2	0	See Previous	-
08SP	AEPW-AEPW	Marshall 138/69KV Transformer CKT 2	107	133.9	135.5	Marshall 138/69kV Transformer #1	0	See Previous	-
08SP	AEPW-AEPW	Noram - Longwood 138kV	234	111.6	117.7	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
08SP	AEPW-AEPW	Noram - Raines 138kV	234	110.3	116.4	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
08SP	SWPA-SWPA	Norfork 161/69KV Transformer #1	25	105.8	107.5	Norfork - West Plains 161kK	0	See Previous	-
08SP	WERE-WERE	North American Philips Jct (Nth) - Smoky Hill 115kv	68	112.5	113.7	North American Philips Junction (North) - Smoky Hill 115kV	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	Northwest Henderson - Poynter 69KV	72	105.5	106.0	Evenside - Northwest Henderson 69kV	0	See Previous	-
08SP	AEPW-AEPW	Oak Hill - Knox Lee 138KV	210	101.9	103.5	Kilgore REC - Monroe Corners REC 138kV	0	Replace wavetrap @ Knoxlee	20,000
08SP	AEPW-AEPW	Oak Hill - Knox Lee 138KV	210	105.0	106.6	Knox Lee - Monroe Corners REC 138kv	0	See Previous	-
08SP	GRRD-GRRD	Okay 161/69kV Transformer	112	100.1	101.9	Wagoner 161/69kV Transformer	0	Replace with 84MVA transformer.	1,340,000
08SP	EMDE-EMDE	Oronogo - Joplin Oakland North 161KV	214	101.2	105.8	Joplin - Tipton Ford 161kV	0	See Previous	-
08SP	KACY-KACY	Owens Corning - Quindaro 69kV Ckt 1	82	109.4	109.5	Owens Corning - Quindaro 69kV Ckt 2	0	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	KACY-KACY	Owens Corning - Quindaro 69kV Ckt 2	82	106.6	106.7	Owens Corning - Quindaro 69kV Ckt 1	0	See Previous	-
08SP	OKGE-OKGE	Pecan Creek 345/161KV Transformer	369	111.6	121.7	Fort Smith - Muskogee 345kV	0	See Previous	-
08SP	AEPW-AEPW	Perdue - Diana 138KV	237	106.3	107.1	Harrison Road - Liberty City Tap 138kV	0	Replace Breaker 10070 @ Perdue	150,000
08SP	AEPW-AEPW	Perdue - Diana 138KV	237	104.9	105.7	Liberty City Tap - New Gladewater 138kV	0	See Previous	-
08SP	AEPW-AEPW	Perdue - Diana 138KV	237	100.7	101.5	New Gladewater - Perdue 138kV	0	See Previous	-
08SP	WFEC-SWPA	Pharoah - Weleetka 138KV	191	103.8	106.8	FRANKLIN TO FRANKLIN SW 138KV	0	Replace wavetrap at Weleetka and replace jumpers.	75,000
08SP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	115.0	115.8	Chapel Hill REC - Petty 138kV	0	See Previous	-
08SP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	127.1	127.9	Chapel Hill REC - Welsh REC 138kV	0	See Previous	-
08SP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	100.3	101.0	Lake Hawkins - Perdue 138kV	0	See Previous	-
08SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	101.0	107.2	Longwood - Wilkes 345kV	0	See Previous	-
08SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	112.0	120.2	Multiple Outage Contingency , Southwest Shreveport - Longwood 345kV, Southwest Shreveport to Diana 345kV	0	See Previous	-
08SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	102.6	104.8	Stonewall - Western Electric T 138kV	0	See Previous	-
08SP	WEPL-MIDW	Seward 115/69kV Transformer	44	119.0	120.3	Heizer - Mullergreen 230/115kV Transformer	0	See Previous	-
08SP	SWPA-SWPA	Springfield 161/69KV Transformer #1	80	100.6	103.4	Nichols 161/69kV Transformer	0	Replace 25/25MVA transformer #3 with 80MVA unit to eliminate overload of both 25MVA #3 and 80MVA #1 transformers	1,300,000
08SP	SWPA-SWPA	Springfield 161/69kV Transformer #3	25	104.7	108.7	Brookline - Junction 161kV	0	See Previous	-
08SP	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	113.4	115.7	Lawrence Hill 230/115/13.8 Transformer	0	Solution Undetermined	N/A
08SP	OKGE-OKGE	Van Buren Avec - VBI 69kV	96	106.0	106.8	3rd Street - Factory 69kV	0	See Previous	-
08SP	WERE-WERE	Wakarus Jct Sw Sta - Southwest Lawrence 115kV	92	103.9	105.4	19th Street - KU Campus 115kV	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	99.9	102.1	Keatchie - Stonewall 138kV	39	See Previous	-
08SP	SWPA-SWPA	Springfield 161/69kV Transformer #3	25	99.8	103.5	James River - Twin Oak 69kV	49	See Previous	-
08SP	SPRM-AECI	Clay - Logan 161kV	185	98.5	120.0	Huben - Morgan 345kV	53	See Previous	-
08SP	EDE-EDE	Joplin Southwest 161/69/12.5kV Transformer	75	99.9	100.4	Tipton Ford - Joplin Southwest 161kV	150	Replace 161/69 KV Transformer with a 150 MVA Transformer	1,565,000
08SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	99.2	102.3	Blocker Tap - Marshall 69kV	184	See Previous	-
08SP	AEPW-AEPW	Rock Hill - Tatum 138KV	209	98.3	104.2	Crockett - Grimes 345kV	217	See Previous	-
08SP	WERE-WERE	Evans Energy Center North - Chisholm 138KV	382	99.4	101.3	Hoover North - Lakeridge 138kV	230	See Previous	-
08SP	AEPW-AEPW	Cherokee REC - Tatum 138KV	209	98.3	103.8	Southwest Shreveport - Diana 345kV	232	See Previous	-
08SP	EES-SWPA	Bull Shoals - Midway 161KV	162	97.1	105.8	Sweetwater - Fletcher 161kV	248	See Previous	-
08SP	EES-SWPA	Bull Shoals - Midway 161KV	162	97.3	105.3	Bull Shoals - Gaines 161kV	254	See Previous	-
08SP	EES-SWPA	Bull Shoals - Midway 161KV	162	97.2	105.0	Bull Shoals - Bull Shoals 161kV	269	See Previous	-
08SP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	99.5	100.7	Jarbalo Jct Switching Station - Northwest Leavenworth 115kV	312	Solution Undetermined	N/A
08SP	AEPW-AEPW	Marshall - North Marshall 69KV	72	98.2	102.5	Crockett - Grimes 345kV	314	See Previous	-
08SP	AEPW-AEPW	Oak Hill - Knox Lee 138KV	210	99.2	100.8	Kilgore REC - Leveretts Chapel 138kV	380	See Previous	-
08SP	AECI-SPRM	Clay - Logan 161kV	185	94.0	105.4	Huben 345/161kV Transformer	393	See Previous	-

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	SWPA-SWPA	Springfield 161/69KV Transformer #1	80	97.9	101.2	Cox - Plainview 69kV	480	See Previous	
08SP	AEPW-AEPW	Flint Creek - Tontitown 161kV	312	99.2	100.1	East Rogers - Rogers West REC 161kV	655	See Previous	
08SP	OKGE-OKGE	Avec Ozark - Helberg 69KV	72	100.3	101.1	Altus - Fitzhugh 69kV	750	OKGE Mitigation Plan	
08SP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	99.9	102.8	Clifton - Greenleaf 115kV	750	See Previous	
08SP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	123.4	127.7	Hoyt - Stranger Creek 345kV	750	See Previous	
08SP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	101.3	105.2	Iatan - St Joe 345kV	750	See Previous	
08SP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	124.1	125.0	Arnold - Stranger Creek 115kV	750	See Previous	
08SP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	125.5	128.3	Hoyt - Stranger Creek 345kV	750	See Previous	
08SP	OKGE-OKGE	Draper 345/138KV Transformer 1	493	104.5	125.2	Draper Lake 345/138kV Transformer #2	750	See Previous	
08SP	OKGE-OKGE	Draper 345/138KV Transformer 2	493	104.5	125.2	Draper Lake 345/138kV Transformer #1	750	See Previous	
08SP	WERE-WERE	Jarbalo Jct Sw. Sta. - 166th Street 115kV	97	101.9	104.0	Iatan - St Joe 345kV	750	See Previous	
08SP	WERE-WERE	Jarbalo Jct Sw. Sta. - 166th Street 115kV	97	113.2	114.7	Midland Junction - Pentagon 115kV	750	See Previous	
08SP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	120.1	124.4	Hoyt - Stranger Creek 345kV	750	See Previous	
08SP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	98.1	102.0	Iatan - St Joe 345kV	750	See Previous	
08SP	WERE-WERE	Lawrence Hill - Wren 115kV	141	108.5	108.9	Bismark Jct Sw Station - Farmer's Consumer CO-OP 115kV	750	See Previous	
08SP	WERE-WERE	Lawrence Hill - Wren 115kV	141	113.1	113.9	Mockingbird Hill Switch - Southwest Lawrence 115kV	750	See Previous	
08SP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	100.2	101.8	Hoyt - Jeffery Energy Center 345kV	750	Westar Transmission Operating Directive 400	
08SP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	124.4	126.5	Lawrence Hill - Midland Junction 230kV	750	See Previous	
08SP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	124.4	126.5	Midland Junction 230/115/18kV Transformer	750	See Previous	
08SP	WERE-WERE	Midland Junction 230/115/18kV Transformer	308	111.5	113.5	Lawrence Hill 230/115/13.8 Transformer	750	See Previous	
08SP	WERE-WERE	Mockingbird Hill Switch - Stull Switch 115kV	92	128.7	133.3	Hoyt - Stranger Creek 345kV	750	See Previous	
08SP	WERE-WERE	Mockingbird Hill Switch - Stull Switch 115kV	92	105.8	108.1	Lawrence Hill 230/115/13.8 Transformer	750	Westar Mitigation Planned in 2005	
08SP	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	136.1	140.7	Hoyt - Stranger Creek 345kV	750	See Previous	
08SP	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	99.1	103.3	Lawrence Hill - Swissvale 230kV	750	See Previous	
08SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	99.3	122.5	Draper Lake - Midwest Tap 138kV	750	See Previous	
08SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	134.6	148.5	Horseshoe Lake - Midway 138kV	750	See Previous	
08SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	114.4	128.5	Midway - NE 10th 138kV	750	See Previous	
08SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	114.4	128.5	Midway - NE 10th 138kV	750	See Previous	
08SP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	114.4	128.5	Midway - NE 10th 138kV	750	See Previous	
08SP	WERE-WERE	West McPherson - N.A. Philips Jct Sth 115KV Ckt 1	68	107.5	111.4	East McPherson - Summit 230kV	750	Westar Transmission Operating Directive 613	
08SP	WERE-WERE	West McPherson - N.A. Philips Jct Sth 115KV Ckt 1	68	107.0	109.3	N.A. Philips Junction (South) - West Mcpherson 115kV	750	See Previous	
08SP	SWPA-AECI	Carthage - Jasper 69kV	47	102.1	105.6	Archie - Adrian 161kV	N/A	See Previous	
08SP	SWPA-AECI	Carthage - Reeds Spring 69kV	36	127.7	135.3	Aurora H.T. - Monett 161kV	N/A	See Previous	
08SP	SWPA-SWPA	Carthage 161/69 KV Transformer CKT 1	84	119.0	122.5	Carthage 161/69kV Transformer #2	N/A	Third Party Facility	
08SP	SWPA-SWPA	Carthage 161/69KV Transformer CKT 2	84	118.1	121.7	Carthage 161/69kV Transformer #1	N/A	Third Party Facility	

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	102.4	106.1	Clifton - Concord 115kV	0	See Previous	
08WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	109.8	111.9	Concord - East Manhattan 230kV	0	See Previous	
08WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	109.8	111.9	Concordia 230/115kV Transformer	0	See Previous	
08WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	116.7	120.4	Iatan - St Joe 345kV	0	See Previous	
08WP	WERE-WERE	Circleville - Hoyt HTI Switching JCT 115kV	97	102.8	104.9	Jeffrey Energy Center - East Manhattan 230kV	0	See Previous	
08WP	AECI-SPRM	Clay - Logan 161kV	232	103.6	117.4	Multiple Outage Contingency, Franks - Huben 345kV, Huben - Morgan 345kV	0	See Previous	
08WP	SPRM-SWPA	Clay - Springfield 161kV	167	101.0	111.3	Multiple Outage Contingency, Franks - Huben 345kV, Huben - Morgan 345kV	0	See Previous	
08WP	MIPU-MIPU	Harrisonville 161/69kV Transformer	63	110.2	110.8	Pleasant Hill 161/69kV Transformer	0	See Previous	
08WP	AEPW-AEPW	Jacksonville - Overton 138KV	265	115.2	122.9	Crockett - Tenaska Rusk County 345kV	0	See Previous	
08WP	SWPA-SWPA	Norfork 161/69KV Transformer #1	25	107.9	109.1	Norfork - West Plains 161kK	0	See Previous	
08WP	SWPA-SWPA	Norfork 161/69KV Transformer #1	25	117.3	118.0	Norfork 161/69KV Transformer #2	0	See Previous	
08WP	AEPW-AEPW	Perdue - Diana 138KV	237	101.4	102.2	Harrison Road - Liberty City Tap 138kV	0	See Previous	
08WP	AEPW-AEPW	Perdue - Diana 138KV	237	100.4	101.2	Liberty City Tap - New Gladewater 138kV	0	See Previous	
08WP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	109.5	110.2	Chapel Hill REC - Welsh REC 138kV	0	See Previous	
08WP	AEPW-AEPW	Pittsburg - Lone Star South 138KV	197	109.9	110.6	Welsh REC - Wilkes 138kV	0	See Previous	
08WP	WERE-WERE	Wakarus Jct Sw Sta - Southwest Lawrence 115kV	92	104.1	105.6	19th Street - KU Campus 115kV	0	See Previous	
08WP	WERE-WERE	Wakarus Jct Sw Sta - Southwest Lawrence 115kV	92	100.1	101.6	19th Street - KU Campus 115kV	0	See Previous	
08WP	AEPW-AEPW	Marshall 138/69KV Transformer CKT 1	121	99.7	101.1	Marshall 138/69kV Transformer #2	146	See Previous	
08WP	AEPW-AEPW	Marshall 138/69KV Transformer CKT 2	121	99.7	101.1	Marshall 138/69kV Transformer #1	146	See Previous	
08WP	OKGE-OKGE	Pecan Creek 345/161KV Transformer	369	97.7	108.2	Fort Smith - Muskogee 345kV	166	See Previous	
08WP	AECI-SPRM	Clay - Logan 161kV	232	93.4	109.8	Huben - Morgan 345kV	302	See Previous	
08WP	AEPW-AEPW	Chamber Springs Rd - Tontitown 161kV	275	97.4	102.3	Chamber Springs - Farmington AECC 161kV	397	See Previous	
08WP	AEPW-EES	Fulton - Patmos 115KV	197	90.2	108.5	Crockett - Tenaska Rusk County 345kV	401	See Previous	
08WP	SPRM-SWPA	Clay - Springfield 161kV	167	93.2	105.6	Huben - Morgan 345kV	411	See Previous	
08WP	AEPW-EES	Fulton - Patmos 115KV	197	88.7	108.6	Longwood - Eldorado EHV - 345kV	426	See Previous	
08WP	AEPW-EES	Fulton - Patmos 115KV	197	88.7	108.4	ELD EHV 500/345kV Transformer	431	See Previous	
08WP	AEPW-AEPW	Oak Hill - Knox Lee 138KV	210	99.0	100.6	Knox Lee - Monroe Corners REC 138kv	482	See Previous	
08WP	AEPW-EES	Fulton - Patmos 115KV	197	82.8	100.7	Dolet Hills 345/230kV Transformer	720	See Previous	
08WP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	102.1	104.2	Concord - East Manhattan 230kV	750	See Previous	
08WP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	102.0	104.2	Concordia 230/115kV Transformer	750	See Previous	
08WP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	125.0	129.1	Hoyt - Stranger Creek 345kV	750	See Previous	
08WP	WERE-WERE	Circleville - King Hill N.M. Coop 115KV	92	109.2	113.0	Iatan - St Joe 345kV	750	See Previous	
08WP	WERE-WERE	County Line 115/69/34/5kV Transformer	66	103.0	106.0	Hoyt - Stranger Creek 345kV	750	See Previous	
08WP	OKGE-OKGE	Draper 345/138KV Transformer 1	493	87.8	108.7	Draper Lake 345/138kV Transformer #2	750	See Previous	
08WP	OKGE-OKGE	Draper 345/138KV Transformer 2	493	87.8	108.7	Draper Lake 345/138kV Transformer #1	750	See Previous	

Table 3 - continued – Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08WP	WERE-WERE	Jarbalo Jct Sw. Sta. - 166th Street 115kV	97	99.6	100.8	Midland Junction - Pentagon 115kV	750	See Previous	-
08WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	100.0	102.1	Concord - East Manhattan 230kV	750	See Previous	-
08WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	100.0	102.1	Concord - East Manhattan 230kV	750	See Previous	-
08WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	99.9	102.1	Concordia 230/115kV Transformer	750	See Previous	-
08WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	122.8	127.0	Hoyt - Stranger Creek 345kV	750	See Previous	-
08WP	WERE-WERE	King Hill N.M. Coop - Kelly 115KV	92	107.0	110.9	Iatan - St Joe 345kV	750	See Previous	-
08WP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	102.1	104.2	Lawrence Hill - Midland Junction 230kV	750	See Previous	-
08WP	WERE-WERE	Lawrence Hill 230/115/13.8 Transformer	308	102.1	104.0	Midland Junction 230/115/18kV Transformer	750	See Previous	-
08WP	WERE-WERE	Mockingbird Hill Switch - Stull Switch 115kV	92	107.6	112.6	Hoyt - Stranger Creek 345kV	750	See Previous	-
08WP	WERE-WERE	Stull Switch - Tecumseh Hill 115kV	92	112.1	117.1	Hoyt - Stranger Creek 345kV	750	See Previous	-
08WP	OKGE-OKGE	Tinker #4 - Tinker #2 138KV	100	86.9	100.8	Horseshoe Lake - Midway 138kV	750	See Previous	-
08WP	SWPA-AECI	Carthage - Reeds Spring 69kV	43	110.8	117.0	Aurora H.T. - Monett 161kV	N/A	See Previous	-

5. Conclusion

The OKGE to EES 750 MW transfer causes new facility overloads on the SPP transmission system, as well as increasing the loading on previously identified facilities. To provide the 750 MW of service requested, upgrades must be completed for those facilities given in Tables 1 and 3 that limit the ATC to less than 750 MW.

The final cost assignment of facilities and ATC to Energetix L.L.C. will be determined upon the completion of a facility study.

Appendix A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASES:
Solutions - Fixed slope decoupled Newton-Raphson solution (FDNS)
1. Tap adjustment – Stepping
2. Area interchange control – Tie lines only
3. Var limits – Apply immediately
4. Solution options - X Phase shift adjustment
   _ Flat start
   _ Lock DC taps
   _ Lock switched shunts

ACCC CASES:
Solutions – AC contingency checking (ACCC)
1. MW mismatch tolerance – 0.5
2. Contingency case rating – Rate B
3. Percent of rating – 100
4. Output code – Summary
5. Min flow change in overload report – 1mw
6. Excld cases w/ no overloads form report – YES
7. Exclude interfaces from report – NO
8. Perform voltage limit check – YES
9. Elements in available capacity table – 60000
10. Cutoff threshold for available capacity table – 99999.0
11. Min. contng. case Vltg chng for report – 0.02
12. Sorted output – None

Newton Solution:
1. Tap adjustment – Stepping
2. Area interchange control – Tie lines only
3. Var limits - Apply automatically
4. Solution options - X Phase shift adjustment
   _ Flat start
   _ Lock DC taps
   _ Lock switched shunts

Appendix B

Table 1a – Model Data for SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
04G	WFEC-WFEC	56095 WNORMAN269.0 to 55802 ACME 269.0 CKT 1	38	95.0	100.4	55841 CANADNS269.0 to 55842 CANADNS4 138 CKT1	697	Solution Undetermined	N/A
04G	OKGE-OKGE	55045 SEMINOL7 345 to 54998 THNDER 7 345 CKT 1	717	4.0	104.7	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT1	715	Solution Undetermined	N/A
04G	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	2.1	104.4	54998 THNDER 7 345 to 55045 SEMINOL7 345 CKT1	718	Solution Undetermined	N/A
04G	AEPW-AEPW	53446 S SHV 4 138 to 53461 WALLAKE4 138 CKT 1	210	90.3	104.3	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1	750	Dolet Hills Operating Guide	-
05SP	AECI – AECI	96986 2TITANTP69.0 to 96983 2STILWEL69.0 CKT 1	36	99.7	104.1	54515 KANSAS 269.0 to 96987 2WATTS 69.0 CKT1	55	Line Owned by GRDA - Solution Undetermined	-
05SP	AEPW-AEPW	53579 NMARSHL269.0 to 53621 WOODLWN269.0 CKT 1	51	95.5	101.9	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	528	Replace 3/0 CU jumpers @ North Marshall	15,000
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	51.5	108.6	54934 DRAPER 7 345 to 55045 SEMINOL7 345 CKT3	638	See Previous	-
05SP	SWPA-SWPA	52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT 1	189	88.4	100.9	52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1	695	Resag conductor and replace structures as necessary	250,000
05SP	AEPW-AEPW	53579 NMARSHL269.0 to 53621 WOODLWN269.0 CKT 1	51	94.5	100.4	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	695	See Previous	-
05SP	OKGE-OKGE	55045 SEMINOL7 345 to 54998 THNDER 7 345 CKT 1	717	4.0	104.7	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT1	715	See Previous	-
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	2.1	104.5	54998 THNDER 7 345 to 55045 SEMINOL7 345 CKT1	717	See Previous	-
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	44.1	102.5	54934 DRAPER 7 345 to 55045 SEMINOL7 345 CKT1	718	See Previous	-
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	39.6	102.5	54908 ARCADIA7 345 to 54943 HSL 7 345 CKT1	720	See Previous	-
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	39.6	102.5	54943 HSL 7 345 to 55045 SEMINOL7 345 CKT1	721	See Previous	-
05SP	SWPA-OKGE	52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1	335	84.8	100.1	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	744	SPA: Replace metering CTs, disconnect switches, breakers, and bus differential relaying at Van Buren. OKGE: Replace Switch and reconnect CT ratio at VBI	1,050,000
05WP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	51.5	108.6	54934 DRAPER 7 345 to 55045 SEMINOL7 345 CKT3	638	See Previous	-
05WP	OKGE-OKGE	55045 SEMINOL7 345 to 54998 THNDER 7 345 CKT 1	717	4.0	104.7	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT1	715	See Previous	-
05WP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	2.1	104.5	54998 THNDER 7 345 to 55045 SEMINOL7 345 CKT1	717	See Previous	-
08SP	AEPW-AEPW	53439 RAINES 4 138 to 53386 ARSHILL4 138 CKT 1	234	99.7	105.6	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	42	Rebuild 5.32 miles 2-266MCM ACSR with 1590MCM ACSR	3,731,000
08SP	EDE-EDE	59500*RNM393 5 161 REINMILL 1	75	99.9	101.4	59472 TIP292 5161 to 59483 JOP389 5161 1	50	Replace 161/69 KV Transformer with a 150 MVA Transformer	1,730,000
08SP	OKGE-OKGE	54742 OSAGE 269.0 to 54763 CONBLKS269.0 CKT 1	111	99.0	106.8	54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1	98	Rebuild & Reconductor 0.57 Miles, replace Wavetrap and increase CT ratio	255,000
08SP	AEPW-AEPW	53189 STEXREC269.0 to 53329 TEXARK 269.0 CKT 1	59	99.2	104.4	53248 ATLANTA269.0 to 53333 WATLANT269.0 CKT1	119	Rebuild 5.92 miles of 266 ACSR with 795 ACSR. Replace 4/0 CU jumpers @ Texarkana Plant	2,400,000

Table 1a - continued – Model Data for SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	AEPW-AEPW	53457 OAKPH 4 138 to 53423 LONGWD 4 138 CKT 1	209	98.0	106.3	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	178	Rebuild 1.8 miles of 666 ACSR with 1590 ACSR	750,000
08SP	SWPA-SWPA	52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT 1	189	96.7	109.1	52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1	200	See Previous	-
08SP	OKGE-AEPW	55261 BONANZT5 161 to 53126 BONANZA5 161 CKT 1	177	99.5	100.9	55262 AES 5 161 to 55264 TARBY 5 161 CKT1	262	Rebuild 0.06 miles of 397.5 ACSR with 795MCM ACSR	50,000
08SP	WERE-WERE	57374 SPHILPJ3 115 to 57372 PHILIPS3 115 CKT 1	160	98.7	102.3	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT1	275	Solution Undetermined	N/A
08SP	SWPA-AEPW	52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1	274	94.5	107.8	Multiple Outage Contingency, 59481 MON383 7 345 to 59984 BRKLNE 7 345 CKT1, 53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1	310	AEPW Reconductor 1.25 miles with 1590ACSR SWPA Reconnect CT's; Replace metering & reset relays	537,500
08SP	SWPA-AEPW	52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1	274	94.5	107.7	59481 MON383 7 345 to 59984 BRKLNE 7 345 CKT1	311	See Previous	-
08SP	SWPA-AEPW	52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1	274	94.2	107.5	53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1	326	See Previous	-
08SP	AEPW-AEPW	53579 NMARSHL269.0 to 53621 WOODLWN269.0 CKT 1	51	97.0	103.7	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	336	See Previous	-
08SP	OKGE-OKGE	55178 PARKLN 4 138 to 55044 SEMINOL4 138 CKT 1	287	94.6	105.2	55044 SEMINOL4 138 to 55174 VANOSS 4 138 CKT1	383	Replace 1200Ct and 1600 Amp switch with 2000Amp equipment	100,000
08SP	AEPW-WERE	53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1	210	96.0	103.6	53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1	396	Replace wave trap to increase rating to conductor rating (2000 A)	20,000
08SP	SWPA-AEPW	52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1	274	91.4	106.3	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	433	See Previous	-
08SP	MIPU-MIPU	59286 GRDWST 269.0 to 59287 MARTCTY269.0 CKT 1	61	99.7	100.2	59224 LNGVW 5 161 to 59282 LNGVW 2 69.0 CKT1	439	Solution Undetermined	
08SP	AEPW-AEPW	53798 BA.N-ST4 138 to 53816 LLANETP4 138 CKT 1	235	97.2	102.0	53866 T.NO.--7 345 to 53955 N.E.S.-7 345 CKT1	441	Rebuild 4.63 miles of 795 ACSR with 1590 ACSR	2,600,000
08SP	SWPA-OKGE	52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1	335	91.0	105.8	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	456	See Previous	-
08SP	OKGE-AEPW	55261 BONANZT5 161 to 53126 BONANZA5 161 CKT 1	177	91.1	105.7	55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1	457	See Previous	-
08SP	WERE-WERE	57456 COLINE 269.0 to 57458 ROCKCRK269.0 CKT 1	41	98.5	100.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	462	Solution Undetermined	N/A
08SP	AEPW-AEPW	54116 DUNCAN-4 138 to 54115 DUNCAN-269.0 CKT 1	55	98.5	100.8	55814 ANADARK4 138 to 55923 GEORGIA4 138 CKT1	477	Solution Undetermined	N/A
08SP	EDE-EDE	59480*MON383 5 161 MONETT 1	150	98.1	101.0	59468 AUR124 5161 to 59480 MON383 5161 1	491	Solution Undetermined	N/A
08SP	WERE-WERE	59568*STK324 269.0 STOCK34 1	9.4	99.8	100.1	59545 FRP217 269 to 59635 FRP217 134.5 to 59717 FRP217T112.5 CKT 1	500	Solution Undetermined	N/A
08SP	OKGE-OKGE	55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1	493	89.0	105.4	55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1	502	Convert Ft. Smith 161kv to 1-1/2 breaker design and install 2nd 500-161kV transformer bank	10,000,000
08SP	AECI-GRRD	96986 2TITANTP69.0 to 54447 TAHLQH 269.0 CKT 1	47	97.7	101.1	54515 KANSAS 269.0 to 96987 2WATTS 69.0 CKT1	505	Reconductor 9.4 miles with 795MCM ACSR	1,551,000
08SP	GRRD-OKGE	54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1	167	84.1	107.2	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	516	Remove switches #130 and #132 to increase rating from 600A to conductor limit of 662 Amps for Rate B and replace structures	30,000
08SP	SWPA-AEPW	52792 WELEETK4 138 to 54028 WELETK4 138 CKT 1	210	92.0	103.5	55913 FRANKLN4 138 to 55917 FRNKLNS4 138 CKT1	522	Solution Undetermined	N/A
08SP	SWPA-SWPA	52750 SALISAW5 161 to 52752 GORE 5 161 CKT 1	189	85.4	105.9	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	535	Increase clearances of approximately ten spans to allow operation of line at 100C, This will increase the line capacity to 223MVA	500,000

Table 1a - continued – Model Data for SPP Facility Overloads caused by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	OKGE-AEPW	55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1	107	77.5	105.2	55054 MAUD 269.0 to 55055 MAUD 4 138 CKT1	609	Rebuild 11.83 miles of 3/0 shielded Copperweld with 795 ACSR	3,305,000
08SP	KACP-KACP	57968 STILWEL7 345 to 57969 STILWEL5 161 CKT 22	605	98.1	100.4	57968 STILWEL7 345 to 57969 STILWEL5 161 CKT11	621	Relieved by Linn County substation upgrade for La Cygne to Stilwell limitation	-
08SP	AEPW-AEPW	53579 NMARSHL269.0 to 53621 WOODLWN269.0 CKT 1	51	95.1	101.0	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	622	See Previous	-
08SP	OKGE-OKGE	54763 CONBLKS269.0 to 54745 CHERPLT269.0 CKT 1	111	93.5	101.2	54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1	633	Reconstruct and replace 1.54 miles of 477AS33 conductor with 795AS33	462,000
08SP	AEPW-AEPW	53406 FORBNGT269.0 to 53445 S SHV 269.0 CKT 1	95	98.0	100.3	53394 BROADMR269.0 to 53408 FTHUMBG269.0 CKT1	639	Solution Undetermined	N/A
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	51.1	108.3	54934 DRAPER 7 345 to 55045 SEMINOL7 345 CKT3	641	See Previous	-
08SP	EMDE-EMDE	59591 MON383 269.0 to 59540 MON152 269.0 CKT 1	65	94.3	100.9	59468 AUR124 5 161 to 59480 MON383 5 161 CKT1	644	Rebuild 1.28 mile 69 kV line and rebuild 69 kV Bus at Monett H.T	1,050,000
08SP	GRRD-GRRD	54514 KANSATP5 161 to 54442 SILSPWW5 161 CKT 1	328	96.1	100.6	53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1	646	Solution Undetermined	N/A
08SP	OKGE-AEPW	55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1	107	73.6	103.8	55913 FRANKLN4 138 to 55917 FRNKLNS4 138 CKT1	655	See Previous	-
08SP	OKGE-OKGE	54744 CHILOCO269.0 to 54751 CHIKSTP269.0 CKT 1	57	93.0	101.0	54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1	659	Reconstruct and replace 11.34 miles of 00X7 copper line with 477AS33	2,835,000
08SP	SWPA-SWPA	52758 MUSKTAP5 161 to 52752 GORE 5 161 CKT 1	206	86.8	101.4	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	677	Reconductor 16 miles of 477 ACSR line with 795 ACSR	4,000,000
08SP	OKGE-OKGE	55045 SEMINOL7 345 to 54998 THNDER 7 345 CKT 1	717	4.0	104.7	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT1	715	See Previous	-
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	2.1	104.6	54998 THNDER 7 345 to 55045 SEMINOL7 345 CKT1	717	See Previous	-
08SP	OKGE-AEPW	55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1	107	73.5	101.2	55055 MAUD 4 138 to 55075 FRSTHIL4 138 CKT1	718	See Previous	-
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	43.8	102.3	54934 DRAPER 7 345 to 55045 SEMINOL7 345 CKT1	721	See Previous	-
08SP	OKGE-AEPW	55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1	107	71.0	101.2	55913 FRANKLN4 138 to 56028 PINK SW4 138 CKT1	721	See Previous	-
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	39.1	102.1	54908 ARCADIA7 345 to 54943 HSL 7 345 CKT1	725	See Previous	-
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	39.1	102.1	54943 HSL 7 345 to 55045 SEMINOL7 345 CKT1	725	See Previous	-
08SP	OKGE-OKGE	55190 AOCPT 269.0 to 55189 AOCPA 269.0 CKT 1	52	92.8	110.5	55177 PARKLN 269.0 to 55187 AHLOSTP269.0 CKT1	750	OKGE Operating Guide	-
08SP	OKGE-OKGE	55186 HARDEN 269.0 to 55187 AHLOSTP269.0 CKT 1	52	96.7	111.6	55181 VALYVUT269.0 to 55182 VALLYVU269.0 CKT1	750	OKGE Operating Guide	-
08WP	KACP-KACP	57965 W.GRDNR7 345 to 57966 WGARDNR5 161 CKT 11	440	97.4	100.4	57965 W.GRDNR7 345 to 57977 CRAIG 7 345 CKT1	653	Solution Undetermined	N/A
08WP	OKGE-OKGE	55045 SEMINOL7 345 to 54998 THNDER 7 345 CKT 1	717	4.0	104.7	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT1	715	See Previous	-
08WP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	2.1	104.4	54998 THNDER 7 345 to 55045 SEMINOL7 345 CKT1	718	See Previous	-
08WP	AEPW-WERE	53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1	210	92.8	100.1	53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1	737	See Previous	-
08WP	OKGE-OKGE	54934 DRAPER 7 345 to 54998 THNDER 7 345 CKT 1	717	43.3	100.6	54934 DRAPER 7 345 to 55045 SEMINOL7 345 CKT3	742	See Previous	-
08WP	AEPW-AEPW	53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1	210	93.9	107.9	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1	750	See Previous	-

Table 3a – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

tudy Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
04G	WFEC-WFEC	55802 ACME 269.0 to 55916 FRNKLNS269.0 CKT 1	34	115.9	121.9	55841 CANADNS269.0 to 55842 CANADNS4 138 CKT1	0	Solution Undetermined	N/A
04G	WFEC-WFEC	55916 FRNKLNS269.0 to 55802 ACME 269.0 CKT 1	34	102.5	106.1	55841 CANADNS269.0 to 55924 GOLDSBY269.0 CKT1	0	See Previous	-
04G	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	101.0	103.3	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	0	Replace 82 structures	742,000
04G	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	101.0	103.2	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	0	See Previous	-
04G	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	105.4	109.2	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	0	See Previous	-
04G	WFEC-WFEC	55924 GOLDSBY269.0 to 56018 OU SW 269.0 CKT 1	34	102.8	106.5	55916 FRNKLNS269.0 to 55917 FRNKLNS4 138 CKT1	0	Solution Undetermined	N/A
04G	EDE-EDE	59483*JOP389 5 161 JOPLINSW 1	75	104.1	105.5	59472 TIP292 5161 to 59483 JOP389 5161 1	0	Replace 161/69 KV Transformer with a 150 MVA Transformer	1,565,000
04G	WFEC-WFEC	55978 LKCREEK269.0 to 55846 CARTERJ269.0 CKT 1	26	100.8	101.3	54121 ELKCTY-4 138 to 54122 ELKCTY-269.0 CKT1	0	Solution Undetermined	N/A
04G	KACY-KACY	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT 1	82	109.2	109.6	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT2	0	Solution Undetermined	N/A
04G	SWPA-EES	52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT 1	162	93.0	108.8	52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1	332	Replace disconnect switches, metering CTs and wave trap at Bull Shoals	150,000
04G	SWPA-EES	52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT 1	162	92.4	108.1	52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT1	364	See Previous	-
04G	OKGE-OKGE	55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1	369	93.2	103.8	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	480	Add 2nd 345/161 kV 369MVA transformer.	3,000,000
04G	WERE-WERE	56852 JEC 6 230 to 56851 AUBURN 6 230 CKT 1	565	105.6	106.9	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT1	750	Westar Transmission Operating Directive 400	-
04G	WERE-WERE	57151 AUBURN 3 115 to 57179 S GAGEW3 115 CKT 2	97	100.1	102.6	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT1	750	Westar Transmission Operating Directive 400	-
04G	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	114.4	119.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	Westar Transmission Operating Directive 803	-
04G	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	96.6	100.6	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	-
04G	WERE-WERE	57631 CC4VERN269.0 to 57623 ATHENS 269.0 CKT 1	45	110.1	115.5	56797 WOLFCRK7 345 to 57981 LACYGNE7 345 CKT1	750	Westar Transmission Operating Directive 1304	-
04G	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	97.9	100.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	Westar Transmission Operating Directive 803	-
04G	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1	493	89.4	110.0	54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2	750	OKGE Mitigation Plan	-
04G	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2	493	89.4	110.0	54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT1	750	See Previous	-
04G	WERE-WERE	57636 GREEN 269.0 to 57631 CC4VERN269.0 CKT 1	45	111.4	116.8	56797 WOLFCRK7 345 to 57981 LACYGNE7 345 CKT1	750	Westar Transmission Operating Directive 1304	-
04G	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	112.1	116.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	Westar Transmission Operating Directive 803	-
04G	WERE-WERE	57270 STULL T3 115 to 57253 MOCKBRD3 115 CKT 1	92	100.2	105.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	Westar Transmission Operating Directive 803	-
04G	WERE-WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	105.0	109.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	Westar Transmission Operating Directive 803	-
04G	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	77.9	100.4	54933 DRAPER 4 138 to 54946 MIDWEST4 138 CKT1	750	Invalid Overload	-
04G	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	77.9	104.7	54965 POSTRDT4 138 to 54993 SE15TH 4 138 CKT1	750	See Previous	-
05SP	OKGE-OKGE	55190 AOCPT 269.0 to 55191 LULA 269.0 CKT 1	48	110.9	112.1	55181 VALYVUT269.0 to 55182 VALLYVU269.0 CKT1	0	Solution Undetermined	N/A
05SP	OKGE-AEPW	55330 ALTUS 269.0 to 53203 FITZHUG269.0 CKT 1	72	104.7	105.3	55324 AVECOZK269.0 to 55325 HELBERG269.0 CKT1	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	53250 BANN 4 138 to 53245 ALUMXT 4 138 CKT 1	261	101.3	106.1	53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1	0	Replace six (6) 138 kV switches, five at Bann & one at Alumax Tap. Rebuild 0.67 miles of 1024 ACAR with 2156 ACSR. Replace wavetrap jumpers @ Bann. Replace breaker 3300 @ Bann.	630,000
05SP	AEPW-AEPW	53245 ALUMXT 4 138 to 53300 NWTXARK4 138 CKT 1	261	107.4	112.1	53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1	0	Replace Switches Alumax Tap	30,000
05SP	SWPA-SPRM	52692 SPRGFLD5 161 to 59969 BRKLNE 5 161 CKT 1	323	104.4	108.4	59959 BATFLD 5 161 to 59960 SWDISP 5 161 CKT1	0	Solution Undetermined	N/A

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	SWPA-SPRM	52692 SPRGFLD5 161 to 59969 BRKLNE 5 161 CKT 1	323	103.7	107.8	59955 JUNCTN 5 161 to 59969 BRKLNE 5 161 CKT1	0	See Previous	-
05SP	SWPA-SPRM	52692 SPRGFLD5 161 to 59969 BRKLNE 5 161 CKT 1	323	105.3	109.3	59954 SWPS 5 161 to 59960 SWDISP 5 161 CKT1	0	See Previous	-
05SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	115.0	129.8	52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1	0	See Previous	-
05SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	108.1	114.5	99817 5ISES 1 161 to 99826 5MORFLD 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53195 FARMGTN5 161 to 53154 CHAMSPR5 161 CKT 1	335	100.0	101.4	53131 DYESS 5 161 to 53159 SOSPRDL5 161 CKT1	0	Replace Farmington switch	60,000
05SP	AEPW-AEPW	53195 FARMGTN5 161 to 53154 CHAMSPR5 161 CKT 1	335	100.0	101.4	53131 DYESS 5 161 to 53159 SOSPRDL5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53154 CHAMSPR5 161 CKT 1	244	146.4	152.3	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	0	Rebuild 12 miles with 2156ACSR	7,200,000
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53154 CHAMSPR5 161 CKT 1	244	114.2	119.1	53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53154 CHAMSPR5 161 CKT 1	244	115.1	120.0	53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53154 CHAMSPR5 161 CKT 1	244	139.5	144.2	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53154 CHAMSPR5 161 CKT 1	244	135.2	141.1	53157 SFAYTVL5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	103.5	106.7	53516 BLOCKRT269.0 to 53570 MARSHAL269.0 CKT1	0	Reconductor 3.25 miles of 666 ACSR with 1272 ACSR	981,000
05SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	103.8	109.8	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	107.8	114.1	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	117.1	125.1	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	-
05SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	106.8	109.0	53450 STONWAL4 138 to 53464 WESTELT4 138 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	101.6	107.9	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	Reconductor 3.25 miles of 666 ACSR with 1272 ACSR	1,641,000
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	110.9	118.9	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	-
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	100.6	102.7	53450 STONWAL4 138 to 53464 WESTELT4 138 CKT1	0	See Previous	-
05SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	108.2	111.2	58756 CLIFTON3 115 to 58765 GRNLEAF3 115 CKT1	0	See Previous	-
05SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	101.6	103.9	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	0	See Previous	-
05SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	101.6	103.9	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	0	See Previous	-
05SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	111.2	115.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	0	See Previous	-
05SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	100.0	102.2	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT1	0	See Previous	-
05SP	GRRD-GRRD	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT 1	84	106.2	107.7	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT2	0	Solution Undetermined	N/A
05SP	GRRD-GRRD	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT 2	84	106.5	108.0	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT1	0	Solution Undetermined	N/A
05SP	AECI-SPRM	97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1	185	104.0	122.7	Multiple Outage Contingency, 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1, 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	0	Replace transmission line structures to allow operation at 100C	250,000
05SP	AEPW-WFEC	54112 CORNVIL4 138 to 55867 CORN TP4 138 CKT 1	105	111.5	116.2	54140 S.W.S.-4 138 to 55814 ANADARK4 138 CKT1	0	Solution Undetermined	N/A
05SP	WERE-WERE	57153 COLINE 3 115 to 57192 HOOKJCT3 115 CKT 1	92	102.2	102.5	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT1	0	Solution Undetermined	N/A

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	AEPW-AEPW	53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1	353	111.2	113.4	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT1	0	Rebuild 19.16 miles of 2-397.5 ACSR with 2156 ACSR	8,000,000
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1	353	101.3	104.0	53144 LOWELL 5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53194 ELMSPRR5 161 to 53170 TONTITN5 161 CKT 1	306	108.6	110.2	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	0	Replace Switch and Elm Springs Strain Bus	100,000
05SP	AEPW-AEPW	53194 ELMSPRR5 161 to 53170 TONTITN5 161 CKT 1	306	106.6	107.8	53131 DYESS 5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53194 ELMSPRR5 161 CKT 1	306	101.4	103.0	53157 SFAYTVL5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	-
05SP	KACY-KACY	58682 EVERETT269.0 to 58678 KAW 269.0 CKT 1	68	121.5	121.5	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT1	0	Solution Undetermined	N/A
05SP	KACY-KACY	58682 EVERETT269.0 to 58678 KAW 269.0 CKT 1	68	121.5	121.5	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1	312	109.8	111.0	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	0	Replace switch and jumpers	45,000
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1	312	119.6	121.6	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1	312	100.0	101.2	53133 ECNTRTN5 161 to 53185 BENTVJ_5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1	312	134.9	136.7	53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1	312	136.4	138.2	53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1	0	See Previous	-
05SP	WFEC-WFEC	55916 FRNKLNS269.0 to 55917 FRNKLNS4 138 CKT 1	70	101.5	104.9	55841 CANADNS269.0 to 55842 CANADNS4 138 CKT1	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	113.8	116.0	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT1	0	Rebuild 1.09 miles of 2-397.5 ACSR with 2156 ACSR.	400,000
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	101.5	104.3	53144 LOWELL 5 161 to 53152 ROGERS 5 161 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	103.9	106.7	53144 LOWELL 5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	-
05SP	WERE-WERE	57795 GILL E 269.0 to 57813 MACARTH269.0 CKT 1	68	109.7	110.4	57795 GILL E 269.0 to 57825 OATVILL269.0 CKT1	0	Replace substation bus and jumpers at MacArthur 69 kV	22,000
05SP	WERE-WERE	57795 GILL E 269.0 to 57825 OATVILL269.0 CKT 1	72	118.6	119.3	57795 GILL E 269.0 to 57813 MACARTH269.0 CKT1	0	Replace disconnect switches at Gill 69 kV (use 800 A.), Replace line switch at Oatville 69 kV (use 800 A.)	45,000
05SP	WERE-WERE	57795 GILL E 269.0 to 57825 OATVILL269.0 CKT 1	72	108.0	108.7	57796 GILL W 269.0 to 57804 HAYSVLJ269.0 CKT1	0	See Previous	-
05SP	WERE-WERE	57012*HALSTDS4 138 HALSTD1X 1	55	152.4	152.9	57011 HALSTDN4138 to 57012 HALSTDS4138 1	0	Solution Undetermined	N/A
05SP	MIPU-MIPU	59239 HSNVL 5 161 to 59295 HSNVL 2 69.0 CKT 1	63	104.7	105.3	59225 PHILL 5 161 to 59280 PHILL 2 69.0 CKT1	0	Solution Undetermined	N/A
05SP	KACP-KACP	57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT 1	1251	107.3	111.9	57965 W.GRDNR7 345 to 57981 LACYGNE7 345 CKT1	0	Build new Linn County substation with 345/161kV 400 Mva transformer. Tap Wolf Creek to LaCygne 345kV line and Centerville to Paola 161kV line	6,945,000
05SP	KACY-KACY	58686 LEVEE 269.0 to 58681 MUNCIE 269.0 CKT 1	82	106.5	106.6	58682 EVERETT269.0 to 58692 QUIN 269.0 CKT1	0	Solution Undetermined	N/A
05SP	KACY-KACY	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT 1	82	116.5	116.6	58678 KAW 269.0 to 58682 EVERETT269.0 CKT1	0	Solution Undetermined	N/A
05SP	KACY-KACY	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT 1	82	128.5	128.5	58682 EVERETT269.0 to 58692 QUIN 269.0 CKT1	0	See Previous	-
05SP	KACY-KACY	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT 1	82	102.1	102.2	58692 QUIN 269.0 to 58693 V WEST269.0 CKT1	0	See Previous	-
05SP	WFEC-WFEC	55976 LIL AXE269.0 to 56011 NOBLE 269.0 CKT 1	26	109.9	115.4	56022 PAOLI 269.0 to 56023 PAOLI 4 138 CKT1	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 1	107	128.9	130.5	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT2	0	Replace 755 ACAR Strain Bus	25,000
05SP	AEPW-AEPW	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 2	107	128.9	130.5	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT1	0	Replace 755 ACAR Strain Bus	25,000
05SP	AEPW-AEPW	53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1	234	103.1	108.8	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	Reconductor 4.66 miles of bundled 266 ACSR with 1590 ACSR and replace jumpers & Bus Riser jumpers	1,577,000

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	AEPW-AEPW	53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1	234	101.9	107.6	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	Rebuild 5.58 miles of 2- 266 ACSR with 1590 ACSR	2,000,000
05SP	SWPA-SWPA	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT 1	25	109.8	111.1	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT2	0	Replace Norfork Transformer by SWPA In-Service Date 6/1/2005	-
05SP	AEPW-AEPW	53595 POYNTER269.0 to 53583 NWHENDR269.0 CKT 1	72	100.2	100.6	53530 EVENSID269.0 to 53583 NWHENDR269.0 CKT1	0	Solution Undetermined	N/A
05SP	KACY-KACY	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT 1	82	110.2	110.3	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT2	0	See Previous	-
05SP	KACY-KACY	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT 2	82	107.4	107.5	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	106.2	106.9	53308 PETTY 4 138 to 53521 CHAPELH4 138 CKT1	0	Reset CT @ Pittsburg.	10,000
05SP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	117.4	118.1	53521 CHAPELH4 138 to 53622 WELSHRE4 138 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	119.1	119.8	53619 WILKES 4 138 to 53622 WELSHRE4 138 CKT1	0	See Previous	-
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1	209	109.2	117.1	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	Reconductor 0.81 miles 666MCM to 1272 ACSR - Reconductor other 5.76 miles of 795 ACSR with 1272 ACSR. Reset CTs and relay settings @ Rock Hill	342,970
05SP	MIDW-WEPL	56565 SEWARD 269.0 to 58792 SEWARD 3 115 CKT 1	44	109.5	110.5	56601 HEIZER 3 115 to 58779 MULGREN6 230 CKT1	0	Solution Undetermined	N/A
05SP	OKGE-OKGE	55298 VBAVEC 269.0 to 55336 VBI 269.0 CKT 1	96	100.1	100.7	55292 FACTORY269.0 to 55307 3RDST 269.0 CKT1	0	Solution Undetermined	N/A
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1	209	99.9	106.1	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	12	See Previous	-
05SP	EMDE-EMDE	59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1	214	99.9	104.6	59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1	16	Reconstruct and replace 1.4 miles of 556 ACSR with Bundled 556 ACSR	800,000
05SP	AEPW-AEPW	53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1	136	99.1	111.3	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	57	Reconductor 26.35 miles of 336 ACSR with 795 ACSR, Replace Switches @ Lieberman, Reset Relays @ Jefferson IPC, & Reconductor 0.65 miles 397MCM to 795MCM	7,411,000
05SP	OKGE-OKGE	55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1	369	98.1	108.8	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	130	See Previous	-
05SP	OKGE-OKGE	55292 FACTORY269.0 to 55307 3RDST 269.0 CKT 1	96	99.8	100.6	55298 VBAVEC 269.0 to 55336 VBI 269.0 CKT1	148	Replace 800A Trap & Increase CT Ratio to 1200-5A	30,000
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	99.5	101.7	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	179	See Previous	-
05SP	AEPW-AEPW	53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1	235	97.9	106.0	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1	192	Reset relays at Jacksonville & Overton	15,000
05SP	WERE-WERE	57479 MWSOLJ2269.0 to 57471 ARNOLD 269.0 CKT 1	41	99.9	100.2	57211 ARNOLD 3 115 to 57218 PARALEL3 115 CKT1	210	Solution Undetermined	N/A
05SP	SPRM-AECI	59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1	185	91.8	113.8	96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	280	See Previous	-
05SP	AEPW-AEPW	53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1	72	98.2	102.9	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	291	Replace 350 CU bus & jumpers @ North Marshall.	23,356
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	97.6	103.6	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	297	See Previous	-
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1	353	98.9	101.6	53144 LOWELL 5 161 to 53152 ROGERS 5 161 CKT1	307	See Previous	-
05SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	99.0	101.4	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT1	320	See Previous	-
05SP	GRRD-GRRD	54432 AFTON 5 161 to 54433 AFTON 269.0 CKT 1	50	98.4	101.9	54431 MIAMI 5 161 to 54432 AFTON 5 161 CKT1	342	Replace 50 MVA Transformer with 84 MVA unit	833,000
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	97.3	102.9	53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1	361	See Previous	-
05SP	AEPW-AEPW	53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1	72	97.5	102.0	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	418	See Previous	-
05SP	AEPW-AEPW	53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1	209	98.8	100.9	53450 STONWAL4 138 to 53464 WESTELT4 138 CKT1	422	See Previous	-
05SP	WFEC-OKGE	55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	87.8	108.2	54946 MIDWEST4 138 to 54953 HOLLYWD4 138 CKT1	448	Replace 600A metering CTs with 1200A	55,000

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05SP	SWPA-SWPA	52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3	25	97.6	101.5	59904 JRPS 269.0 to 59905 PLAINVI269.0 CKT1	461	Replace 25/25MVA transformer #3 with 80MVA unit to eliminate overload of both 25MVA #3 and 80MVA #1 transformers	1,300,000
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1	209	95.9	101.8	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	518	See Previous	
05SP	AEPW-AEPW	53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1	209	95.6	101.1	53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1	596	See Previous	
05SP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	116.8	121.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
05SP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	96.3	100.3	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	
05SP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	116.3	117.3	57211 ARNOLD 3115 to 57268 STRANGR3115 CKT 1	750	Westar Transmission Operating Directive 1200	
05SP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	119.1	121.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
05SP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	121.4	121.7	56772 STRANGR7345 to 57268 STRANGR3115 to 56811 STRANGR114.4 CKT 1	750	Westar Transmission Operating Directive 612	
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1	493	102.9	123.9	54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2	750	See Previous	
05SP	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2	493	102.9	123.9	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1	750	See Previous	
05SP	WERE-WERE	57244 JARBALO3 115 to 57233 166TH 3 115 CKT 1	97	107.8	109.2	57252 MIDLAND3 115 to 57261 PENTAGN3 115 CKT1	750	Westar Transmission Operating Directive 1202	
05SP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	113.7	118.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
05SP	WERE-WERE	57280 WREN 3 115 to 57250 LWRNCHL3 115 CKT 1	141	101.2	101.6	57234 BISMARK3 115 to 57236 COOP 3 115 CKT1	750	Westar Transmission Operating Directive 1210	
05SP	WERE-WERE	57280 WREN 3 115 to 57250 LWRNCHL3 115 CKT 1	141	103.9	104.6	57253 MOCKBRD3 115 to 57271 SWLWRNC3 115 CKT1	750	Westar Transmission Operating Directive 1211	
05SP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	117.9	119.9	56853 LAWHILL6230 to 56855 MIDLAND6230 CKT 1	750	Westar Transmission Operating Directive 901	
05SP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	117.7	119.8	56855 MIDLAND6230 to 57252 MIDLAND3115 to 56884 MIDLAND118 CKT 1	750	Westar Transmission Operating Directive 615	
05SP	WERE-WERE	56855*MIDLAND6 230 MIDJ126X 1	308	105.7	107.6	56853 LAWHILL6230 to 57250 LWRNCHL3115 to 56882 LAWHILL113.8 CKT 1	750	Westar Transmission Operating Directive 631	
05SP	WERE-WERE	57270 STULL T3 115 to 57253 MOCKBRD3 115 CKT 1	92	114.6	119.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
05SP	WERE-WERE	57259 NW LEAV3 115 to 57244 JARBALO3 115 CKT 1	118	114.1	114.4	57242 HALLMRK3 115 to 57244 JARBALO3 115 CKT1	750	Westar Transmission Operating Directive 1216	
05SP	WERE-WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	121.4	126.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
05SP	OKGE-OKGE	54988 TINKER44 138 to 54990 TINKER24 138 CKT 1	100	111.6	125.0	54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	
05SP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	92.1	105.8	54964 NE10TH 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1	47	100.0	103.4	59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1	N/A	Third Party Facility	
05SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	121.5	129.2	59468 AUR124 5 161 to 59480 MON383 5 161 CKT1	N/A	Third Party Facility	
05WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	101.4	103.6	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	0	See Previous	
05WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	101.4	103.6	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	0	See Previous	
05WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	109.5	113.3	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	0	See Previous	
05WP	AECI-SPRM	97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1	232	100.4	114.6	Multiple Outage Contingency, 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1, 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	0	See Previous	
05WP	MIPU-MIPU	59239 HSNVL 5 161 to 59295 HSNVL 2 69.0 CKT 1	63	101.7	102.0	59225 PHILL 5 161 to 59280 PHILL 2 69.0 CKT1	0	See Previous	
05WP	WFEC-WFEC	55976 LIL AXE269.0 to 56011 NOBLE 269.0 CKT 1	26	100.6	104.6	56022 PAOLI 269.0 to 56023 PAOLI 4 138 CKT1	0	See Previous	

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
05WP	SWPA-SWPA	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT 1	25	107.3	108.0	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT2	0	See Previous	.
05WP	SPRM-SWPA	59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1	167	99.9	110.5	Multiple Outage Contingency, 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1, 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	6	Replace disconnect switches at Springfield	200,000
05WP	SPRM-AECI	59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1	185	91.8	113.8	96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	280	See Previous	.
05WP	OKGE-OKGE	55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1	369	91.8	102.5	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	575	See Previous	.
05WP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	118.7	122.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	.
05WP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	102.6	106.5	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	.
05WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	116.7	120.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	.
05WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	100.5	104.5	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	.
05WP	WERE-WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	103.3	108.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	.
05WP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	43	104.2	110.4	59468 AUR124 5 161 to 59480 MON383 5 161 CKT1	N/A	See Previous	.
08SP	GRRD-GRRD	54437 412SUB 5 161 to 54514 KANSATP5 161 CKT 1	338	103.7	108.4	53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1	0	Reconductor 9.7 miles with 1590MCM ACSR	1,488,000
08SP	OKGE-OKGE	55190 AOCPT 269.0 to 55191 LULA 269.0 CKT 1	48	121.9	123.7	55181 VALYVUT269.0 to 55182 VALLYVU269.0 CKT1	0	See Previous	.
08SP	OKGE-AEPW	55330 ALTUS 269.0 to 53203 FITZHUG269.0 CKT 1	72	103.7	104.4	55322 COALHIL269.0 to 55324 AVECOZK269.0 CKT1	0	See Previous	.
08SP	OKGE-AEPW	55330 ALTUS 269.0 to 53203 FITZHUG269.0 CKT 1	72	110.9	111.6	55324 AVECOZK269.0 to 55325 HELBERG269.0 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53250 BANN 4 138 to 53245 ALUMXT 4 138 CKT 1	261	104.1	107.8	53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53245 ALUMXT 4 138 to 53300 NWTXARK4 138 CKT 1	261	110.4	114.2	53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1	0	See Previous	.
08SP	WERE-WERE	57479 MWSOLJ2269.0 to 57471 ARNOLD 269.0 CKT 1	41	105.0	105.4	57211 ARNOLD 3 115 to 57218 PARALEL3 115 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53818 ONETA--4 138 to 53781 BA101-N4 138 CKT 1	210	109.1	109.4	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	0	Replace wavetrap	30,000
08SP	AEPW-AEPW	53818 ONETA--4 138 to 53781 BA101-N4 138 CKT 1	210	108.7	108.9	53819 ONETA--7 345 to 53955 N.E.S.-7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53798 BA.N-ST4 138 to 53818 ONETA--4 138 CKT 1	235	103.0	109.3	53155 CHAMSPR7 345 to 53756 CLARKSV7 345 CKT1	0	Rebuild 4.31 miles of 795 ACSR with 1590 ACSR.	2,370,500
08SP	AEPW-AEPW	53798 BA.N-ST4 138 to 53818 ONETA--4 138 CKT 1	235	103.0	109.3	53154 CHAMSPR5 161 to 53155 CHAMSPR7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53798 BA.N-ST4 138 to 53818 ONETA--4 138 CKT 1	235	103.0	109.3	53154 CHAMSPR5 161 to 53155 CHAMSPR7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53798 BA.N-ST4 138 to 53818 ONETA--4 138 CKT 1	235	109.6	114.3	53866 T.NO.--7 345 to 53955 N.E.S.-7 345 CKT1	0	See Previous	.
08SP	SWPA-SPRM	52692 SPRGFLD5 161 to 59969 BRKLNE 5 161 CKT 1	323	115.4	119.4	59959 BATFLD 5 161 to 59960 SWDISP 5 161 CKT1	0	See Previous	.
08SP	SWPA-SPRM	52692 SPRGFLD5 161 to 59969 BRKLNE 5 161 CKT 1	323	116.3	120.3	59954 SWPS 5 161 to 59960 SWDISP 5 161 CKT1	0	See Previous	.
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	125.8	140.6	52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1	0	See Previous	.
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	122.7	129.2	99817 5ISES 1 161 to 99826 5MORFLD 161 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT 1	244	158.2	163.8	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT 1	244	114.0	119.5	53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT 1	244	136.1	140.1	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	.

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	AEPW-AEPW	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT 1	244	145.6	151.2	53157 SFAYTVL5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT 1	244	102.2	106.3	53153 SEFAYTV5 161 to 53157 SFAYTVL5 161 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53155 CHAMSPR7 345 to 53154 CHAMSPR5 161 CKT 1	660	100.8	106.3	53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1	0	Install 2nd 345/161 kV Auto-transformer	4,000,000
08SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	106.8	112.7	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	108.5	110.7	53418 KEATCHI4 138 to 53450 STONWAL4 138 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	109.6	115.7	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	120.5	128.7	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	.
08SP	AEPW-AEPW	53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1	209	111.2	113.4	53450 STONWAL4 138 to 53464 WESTELT4 138 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	103.0	109.1	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	113.9	122.1	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	.
08SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	104.5	106.7	53450 STONWAL4 138 to 53464 WESTELT4 138 CKT1	0	See Previous	.
08SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	115.7	118.6	58756 CLIFTON3 115 to 58765 GRNLEAF3 115 CKT1	0	See Previous	.
08SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	110.4	112.6	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	0	See Previous	.
08SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	110.4	112.6	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	0	See Previous	.
08SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	117.4	121.2	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	0	See Previous	.
08SP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	108.2	110.3	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT1	0	See Previous	.
08SP	GRRD-GRRD	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT 1	84	110.0	111.4	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT2	0	See Previous	.
08SP	GRRD-GRRD	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT 2	84	110.4	112.2	54451 CLARMR 5 161 to 54479 CLARMR 269.0 CKT1	0	See Previous	.
08SP	AECI-SPRM	97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1	185	111.3	129.5	Multiple Outage Contingency, 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1, 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	0	See Previous	.
08SP	WFEC-WFEC	55870 CYRIL 269.0 to 55810 ANADARK269.0 CKT 1	61	101.3	104.1	55814 ANADARK4 138 to 55923 GEORGIA4 138 CKT1	0	Reconductor 13 miles of 336MCM ACSR with 795MCM	2,626,000
08SP	AEPW-AEPW	53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1	353	102.5	104.4	53140 FLINTCR7 345 to 53172 ECNTRTN7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1	353	102.5	104.4	53133 ECNTRTN5 161 to 53172 ECNTRTN7 345 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53170 TONTITN5 161 to 53194 ELMSPRR5 161 CKT 1	306	118.4	119.8	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53170 TONTITN5 161 to 53194 ELMSPRR5 161 CKT 1	306	114.7	115.6	53131 DYESS 5 161 to 53170 TONTITN5 161 CKT1	0	See Previous	.
08SP	AEPW-AEPW	53170 TONTITN5 161 to 53194 ELMSPRR5 161 CKT 1	306	110.7	112.1	53157 SFAYTVL5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	.
08SP	WERE-WERE	57040 EVANS N4 138 to 57035 CHISHLM4 138 CKT 1	382	102.6	104.4	57041 EVANS S4 138 to 57053 LAKERDG4 138 CKT1	0	Solution Undetermined	N/A
08SP	KACY-KACY	58682 EVERETT269.0 to 58678 KAW 269.0 CKT 1	68	107.9	108.0	58681 MUNCIE 269.0 to 58686 LEVEE 269.0 CKT1	0	See Previous	.
08SP	KACY-KACY	58682 EVERETT269.0 to 58678 KAW 269.0 CKT 1	68	107.9	108.0	58681 MUNCIE 269.0 to 58686 LEVEE 269.0 CKT1	0	See Previous	.
08SP	KACY-KACY	58682 EVERETT269.0 to 58678 KAW 269.0 CKT 1	68	120.6	120.7	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT1	0	See Previous	.

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	KACY-KACY	58682 EVERETT269.0 to 58678 KAW 269.0 CKT 1	68	120.6	120.7	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT1	0	See Previous	-
08SP	OKGE-OKGE	55292 FACTORY269.0 to 55307 3RDST 269.0 CKT 1	96	106.1	106.6	55298 VBAVEC 269.0 to 55336 VBI 269.0 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53195 FARMGTN5 161 to 53157 SFAYTVL5 161 CKT 1	313	105.7	109.4	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT1	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT 1	312	106.3	107.2	53185 BENTVJ_5 161 to 53186 BENT_SL5 161 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT 1	312	103.4	104.0	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT 1	312	109.4	110.3	53133 ECNTRTN5 161 to 53185 BENTVJ_5 161 CKT1	0	See Previous	-
08SP	WFEC-OKGE	55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	105.6	120.3	55814 ANADARK4 138 to 56031 POCASET4 138 CKT1	0	See Previous	-
08SP	WFEC-OKGE	55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	102.2	109.6	55869 CROMWEL4 138 to 56084 WETUMKA4 138 CKT1	0	See Previous	-
08SP	WFEC-OKGE	55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	101.8	121.5	54946 MIDWEST4 138 to 54953 HOLLYWD4 138 CKT1	0	See Previous	-
08SP	WFEC-OKGE	55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	102.0	109.4	56026 PHAROAH4 138 to 56084 WETUMKA4 138 CKT1	0	See Previous	-
08SP	WFEC-OKGE	55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	103.9	118.7	56031 POCASET4 138 to 56072 TUTTLE 4 138 CKT1	0	See Previous	-
08SP	WFEC-WFEC	55917 FRNKLNS4 138 to 55916 FRNKLNS269.0 CKT 1	70	107.6	110.6	55841 CANADNS269.0 to 55842 CANADNS4 138 CKT1	0	See Previous	-
08SP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	174	126.6	148.2	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	0	Using 1590MCM ACSR, reconductor 7.1 miles	2,300,000
08SP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	174	122.6	144.3	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1	0	See Previous	-
08SP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	174	114.3	134.7	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1	0	See Previous	-
08SP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	174	127.4	150.3	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1	0	See Previous	-
08SP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	174	110.2	131.2	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	0	See Previous	-
08SP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	174	127.4	150.5	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	105.7	107.6	53140 FLINTCR7 345 to 53172 ECNTRTN7 345 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1	353	105.7	107.6	53133 ECNTRTN5 161 to 53172 ECNTRTN7 345 CKT1	0	See Previous	-
08SP	WERE-WERE	57044 GILL E 4 138 to 57051 INTERST4 138 CKT 1	210	100.5	100.6	57041 EVANS S4 138 to 57053 LAKERDG4 138 CKT1	0	Solution Undetermined	N/A
08SP	WERE-WERE	57795 GILL E 269.0 to 57813 MACARTH269.0 CKT 1	68	125.4	126.2	57795 GILL E 269.0 to 57825 OATVILL269.0 CKT1	0	See Previous	-
08SP	WERE-WERE	57795 GILL E 269.0 to 57813 MACARTH269.0 CKT 1	68	102.9	103.5	57813 MACARTH269.0 to 57825 OATVILL269.0 CKT1	0	See Previous	-
08SP	WERE-WERE	57796*GILL W 269.0 57804 HAYSVLJ269.0 1	80	104.0	104.1	57033 CANAL 4138 to 57784 CANAL 269.0 to 57101 CANAL 19.461 1	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	53541 HALLSVL269.0 to 53567 LONGVHT269.0 CKT 1	48	101.5	103.4	53570 MARSHAL269.0 to 53623 MARAUTO269.0 CKT1	0	Rebuild 7.07 miles of 4/0 ACSR with 795 ACSR	3,000,000
08SP	WERE-WERE	57012*HALSTDS4 138 HALSTD1X 1	55	153.4	153.9	57011 HALSTDN4138 to 57012 HALSTDS4138 1	0	See Previous	-
08SP	MIPU-MIPU	59239 HSNVL 5 161 to 59295 HSNVL 2 69.0 CKT 1	63	117.6	118.3	59225 PHILL 5 161 to 59280 PHILL 2 69.0 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1	136	104.2	116.4	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1	235	113.3	122.2	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1	0	See Previous	-
08SP	GRRD-GRRD	54435 KERR GR5 161 to 54437 412SUB 5 161 CKT 1	338	104.4	109.2	53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1	0	Reconductor 12.5 miles with 1590MCM ACSR.	1,918,000
08SP	KACP-KACP	57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT 1	1251	105.6	110.1	57965 W.GRDNR7 345 to 57981 LACYGNE7 345 CKT1	0	See Previous	-

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	KACY-KACY	58686 LEVEE 269.0 to 58681 MUNCIE 269.0 CKT 1	82	105.7	105.8	58682 EVERETT269.0 to 58692 QUIN 269.0 CKT1	0	See Previous	-
08SP	KACY-KACY	58683 OWN COR269.0 to 58686 LEVEE 269.0 CKT 1	82	115.6	115.7	58678 KAW 269.0 to 58682 EVERETT269.0 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1	72	101.3	103.3	53404 FLOURNY269.0 to 53405 FLOURNY4 138 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1	72	100.4	104.8	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1	72	101.6	106.7	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	-
08SP	AEPW-AEPW	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 1	107	133.9	135.5	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT2	0	See Previous	-
08SP	AEPW-AEPW	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 2	107	133.9	135.5	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1	234	111.6	117.7	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	-
08SP	AEPW-AEPW	53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1	234	110.3	116.4	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	-
08SP	SWPA-SWPA	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT 1	25	105.8	107.5	52648 NORFORK5 161 to 96123 5WPLAIN 161 CKT1	0	See Previous	-
08SP	WERE-WERE	57373 NPHILPJ3 115 to 57378 SMOKYHL3 115 CKT 1	68	112.5	113.7	57373 NPHILPJ3 115 to 57378 SMOKYHL3 115 CKT2	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	53595 POYNTER269.0 to 53583 NWHENDR269.0 CKT 1	72	105.5	106.0	53530 EVENSID269.0 to 53583 NWHENDR269.0 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1	210	101.9	103.5	53555 KILGORR4 138 to 53574 MONROCR4 138 CKT1	0	Replace wavetrap @ Knoxlee	20,000
08SP	AEPW-AEPW	53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1	210	105.0	106.6	53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1	0	See Previous	-
08SP	GRRD-GRRD	54440 OKAYGR 5 161 to 54446 OKAYGR 269.0 CKT 1	112	100.1	101.9	54497 WAGNOR 269.0 to 54500 WAGNOR 5 161 CKT1	0	Replace with 84MVA transformer.	1,340,000
08SP	EMDE-EMDE	59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1	214	101.2	105.8	59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1	0	See Previous	-
08SP	KACY-KACY	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT 1	82	109.4	109.5	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT2	0	See Previous	-
08SP	KACY-KACY	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT 2	82	106.6	106.7	58683 OWN COR269.0 to 58692 QUIN 269.0 CKT1	0	See Previous	-
08SP	OKGE-OKGE	55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1	369	111.6	121.7	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1	237	106.3	107.1	53542 HARRISN4 138 to 53561 LIBCYTP4 138 CKT1	0	Replace Breaker 10070 @ Perdue	150,000
08SP	AEPW-AEPW	53527 DIANA 4 138 to 53590 PERDUE 4 138 CKT 1	237	104.9	105.7	53561 LIBCYTP4 138 to 53576 NEWGLAD4 138 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1	237	100.7	101.5	53576 NEWGLAD4 138 to 53590 PERDUE 4 138 CKT1	0	See Previous	-
08SP	WFEC-SWPA	56026 PHAROAH4 138 to 52792 WELEETK4 138 CKT 1	191	103.8	106.8	55913 FRANKLN4 138 to 55917 FRNKLNS4 138 CKT1	0	Replace wavetrap at Weleetka and replace jumpers.	75,000
08SP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	115.0	115.8	53308 PETTY 4 138 to 53521 CHAPELH4 138 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	127.1	127.9	53521 CHAPELH4 138 to 53622 WELSHRE4 138 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	100.3	101.0	53590 PERDUE 4 138 to 53666 LHAWKIN4 138 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1	209	101.0	107.2	53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1	0	See Previous	-
08SP	AEPW-AEPW	53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1	209	112.0	120.2	Multiple Outage Contingency, 53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1, 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1	0	See Previous	-

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	AEPW-AEPW	53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1	209	102.6	104.8	53450 STONWAL4 138 to 53464 WESTELT4 138 CKT1	0	See Previous	-
08SP	WEPL-MIDW	58792 SEWARD 3 115 to 56565 SEWARD 269.0 CKT 1	44	119.0	120.3	56601 HEIZER 3 115 to 58779 MULGREN6 230 CKT1	0	See Previous	-
08SP	SWPA-SWPA	52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 1	80	100.6	103.4	59925 NICHOLS269.0 to 59956 NICHOLS5 161 CKT1	0	Replace 25/25MVA transformer #3 with 80MVA unit to eliminate overload of both 25MVA #3 and 80MVA #1 transformers	1,300,000
08SP	SWPA-SWPA	52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3	25	104.7	108.7	59955 JUNCTN 5 161 to 59969 BRKLNE 5 161 CKT1	0	See Previous	-
08SP	WERE-WERE	57182*TECHILE3 115 57270 STULL T3 115 1	92	113.4	115.7	56853 LAWHILL6230 to 57250 LWRNCHL3115 to 56882 LAWHILL113.8 CKT 1	0	Solution Undetermined	N/A
08SP	OKGE-OKGE	55298 VBAVEC 269.0 to 55336 VBI 269.0 CKT 1	96	106.0	106.8	55292 FACTORY269.0 to 55307 3RDST 269.0 CKT1	0	See Previous	-
08SP	WERE-WERE	57277 WAKARUS3 115 to 57271 SWLWRNC3 115 CKT 1	92	103.9	105.4	57245 KU CAMP3 115 to 57257 19THSTJ3 115 CKT1	0	Solution Undetermined	N/A
08SP	AEPW-AEPW	53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1	209	99.9	102.1	53418 KEATCHI4 138 to 53450 STONWAL4 138 CKT1	39	See Previous	-
08SP	SWPA-SWPA	52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3	25	99.8	103.5	59904 JRPS 269.0 to 59933 TWINOAK269.0 CKT1	49	See Previous	-
08SP	SPRM-AECI	59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1	185	98.5	120.0	96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	53	See Previous	-
08SP	EDE-EDE	59483*JOP389 5 161 JOPLINSW 1	75	99.9	100.4	59472 TIP292 5161 to 59483 JOP389 5161 1	150	Replace 161/69 KV Transformer with a 150 MVA Transformer	1,565,000
08SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	99.2	102.3	53516 BLOCKRT269.0 to 53570 MARSHAL269.0 CKT1	184	See Previous	-
08SP	AEPW-AEPW	53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1	209	98.3	104.2	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	217	See Previous	-
08SP	WERE-WERE	57040 EVANS N4 138 to 57035 CHISHLM4 138 CKT 1	382	99.4	101.3	57049 HOOVERN4 138 to 57053 LAKER DG4 138 CKT1	230	See Previous	-
08SP	AEPW-AEPW	53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1	209	98.3	103.8	53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1	232	See Previous	-
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	97.1	105.8	31798 SWEETWTR 161 to 96077 5FLETCH 161 CKT1	248	See Previous	-
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	97.3	105.3	52660 BULL SH5 161 to 96081 5GAINES 161 CKT1	254	See Previous	-
08SP	EES-SWPA	99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1	162	97.2	105.0	52660 BULL SH5 161 to 99802 5BULLSH* 161 CKT1	269	See Previous	-
08SP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	99.5	100.7	57244 JARBALO3115 to 57259 NW LEAV3115 1	312	Solution Undetermined	N/A
08SP	AEPW-AEPW	53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1	72	98.2	102.5	53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1	314	See Previous	-
08SP	AEPW-AEPW	53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1	210	99.2	100.8	53555 KILGORR4 138 to 53560 LEVERET4 138 CKT1	380	See Previous	-
08SP	AECI-SPRM	97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1	185	94.0	105.4	96042 7HUBEN 345 to 96088 5HUBEN 161 CKT1	393	See Previous	-
08SP	SWPA-SWPA	52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 1	80	97.9	101.2	59905 PLAINVI269.0 to 59910 COX 269.0 CKT1	480	See Previous	-
08SP	AEPW-AEPW	53139 FLINTCR5 161 to 53170 TONTITN5 161 CKT 1	312	99.2	100.1	53135 EROGERS5 161 to 53207 WROGERS5 161 CKT1	655	See Previous	-
08SP	OKGE-OKGE	55324 AVECOZK269.0 to 55325 HELBERG269.0 CKT 1	72	100.3	101.1	53203 FITZHUG269.0 to 55330 ALTUS 269.0 CKT1	750	OKGE Mitigation Plan	-
08SP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	99.9	102.8	58756 CLIFTON3 115 to 58765 GRNLEAF3 115 CKT1	750	See Previous	-
08SP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	123.4	127.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	101.3	105.2	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	124.1	125.0	57211 ARNOLD 3115 to 57268 STRANGR3115 CKT 1	750	See Previous	-
08SP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	125.5	128.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1	493	104.5	125.2	54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2	750	See Previous	-
08SP	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2	493	104.5	125.2	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1	750	See Previous	-

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08SP	WERE-WERE	57244 JARBALO3 115 to 57233 166TH 3 115 CKT 1	97	101.9	104.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57244 JARBALO3 115 to 57233 166TH 3 115 CKT 1	97	113.2	114.7	57252 MIDLAND3 115 to 57261 PENTAGN3 115 CKT1	750	See Previous	-
08SP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	120.1	124.4	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	98.1	102.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57280 WREN 3 115 to 57250 LWRNCHL3 115 CKT 1	141	108.5	108.9	57234 BISMARK3 115 to 57236 COOP 3 115 CKT1	750	See Previous	-
08SP	WERE-WERE	57280 WREN 3 115 to 57250 LWRNCHL3 115 CKT 1	141	113.1	113.9	57253 MOCKBRD3 115 to 57271 SWLWRNC3 115 CKT1	750	See Previous	-
08SP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	100.2	101.8	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT1	750	Westar Transmission Operating Directive 400	-
08SP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	124.4	126.5	56853 LAWHILL6230 to 56855 MIDLAND6230 CKT 1	750	See Previous	-
08SP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	124.4	126.5	56855 MIDLAND6230 to 57252 MIDLAND3115 to 56884 MIDLAND118 CKT 1	750	See Previous	-
08SP	WERE-WERE	56855*MIDLAND6 230 MIDJ126X 1	308	111.5	113.5	56853 LAWHILL6230 to 57250 LWRNCHL3115 to 56882 LAWHILL113.8 CKT 1	750	See Previous	-
08SP	WERE-WERE	57270 STULL T3 115 to 57253 MOCKBRD3 115 CKT 1	92	128.7	133.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57253 MOCKBRD3 115 57270*STULL T3 115 1	92	105.8	108.1	56853 LAWHILL6230 to 57250 LWRNCHL3115 to 56882 LAWHILL113.8 CKT 1	750	Westar Mitigation Planned in 2005	-
08SP	WERE-WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	136.1	140.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08SP	WERE-WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	99.1	103.3	56853 LAWHILL6 230 to 56856 SWISVAL6 230 CKT1	750	See Previous	-
08SP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	99.3	122.5	54933 DRAPER 4 138 to 54946 MIDWEST4 138 CKT1	750	See Previous	-
08SP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	134.6	148.5	54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	-
08SP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	114.4	128.5	54964 NE10TH 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	-
08SP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	114.4	128.5	54964 NE10TH 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	-
08SP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	114.4	128.5	54964 NE10TH 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	-
08SP	WERE-WERE	57438 WMCPHER3 115 to 57374 SPHILPJ3 115 CKT 1	68	107.5	111.4	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT1	750	Westar Transmission Operating Directive 613	-
08SP	WERE-WERE	57438 WMCPHER3 115 to 57374 SPHILPJ3 115 CKT 1	68	107.0	109.3	57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT2	750	See Previous	-
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1	47	102.1	105.6	59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1	N/A	See Previous	-
08SP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	36	127.7	135.3	59468 AUR124 5 161 to 59480 MON383 5 161 CKT1	N/A	See Previous	-
08SP	SWPA-SWPA	52688 CARTHAG5 161 to 52690 CARTHG 269.0 CKT 1	84	119.0	122.5	52688 CARTHAG5 161 to 52690 CARTHG 269.0 CKT2	N/A	Third Party Facility	-
08SP	SWPA-SWPA	52688 CARTHAG5 161 to 52690 CARTHG 269.0 CKT 2	84	118.1	121.7	52688 CARTHAG5 161 to 52690 CARTHG 269.0 CKT1	N/A	Third Party Facility	-
08WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	102.4	106.1	58756 CLIFTON3 115 to 58757 CONCORD3 115 CKT1	0	See Previous	-
08WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	109.8	111.9	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	0	See Previous	-
08WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	109.8	111.9	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	0	See Previous	-
08WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	116.7	120.4	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	0	See Previous	-
08WP	WERE-WERE	57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1	97	102.8	104.9	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT1	0	See Previous	-
08WP	AECI-SPRM	97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1	232	103.6	117.4	Multiple Outage Contingency, 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1, 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	0	See Previous	-

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08WP	SPRM-SWPA	59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1	167	101.0	111.3	Multiple Outage Contingency, 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1, 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	0	See Previous	
08WP	MIPU-MIPU	59239 HSNVL 5 161 to 59295 HSNVL 2 69.0 CKT 1	63	110.2	110.8	59225 PHILL 5 161 to 59280 PHILL 2 69.0 CKT1	0	See Previous	
08WP	AEPW-AEPW	53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1	265	115.2	122.9	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1	0	See Previous	
08WP	SWPA-SWPA	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT 1	25	107.9	109.1	52648 NORFORK5 161 to 96123 5WPLAIN 161 CKT1	0	See Previous	
08WP	SWPA-SWPA	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT 1	25	117.3	118.0	52648 NORFORK5 161 to 52650 NORFORK269.0 CKT2	0	See Previous	
08WP	AEPW-AEPW	53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1	237	101.4	102.2	53542 HARRISN4 138 to 53561 LIBCYTP4 138 CKT1	0	See Previous	
08WP	AEPW-AEPW	53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1	237	100.4	101.2	53561 LIBCYTP4 138 to 53576 NEWGLAD4 138 CKT1	0	See Previous	
08WP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	109.5	110.2	53521 CHAPELH4 138 to 53622 WELSHRE4 138 CKT1	0	See Previous	
08WP	AEPW-AEPW	53311 PITTSB_4 138 to 53276 LSSOUTH4 138 CKT 1	197	109.9	110.6	53619 WILKES 4 138 to 53622 WELSHRE4 138 CKT1	0	See Previous	
08WP	WERE-WERE	57277 WAKARUS3 115 to 57271 SWLWRNC3 115 CKT 1	92	104.1	105.6	57245 KU CAMP3 115 to 57257 19THSTJ3 115 CKT1	0	See Previous	
08WP	WERE-WERE	57277 WAKARUS3 115 to 57271 SWLWRNC3 115 CKT 1	92	100.1	101.6	57245 KU CAMP3 115 to 57256 19THST 3 115 CKT1	0	See Previous	
08WP	AEPW-AEPW	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 1	121	99.7	101.1	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT2	146	See Previous	
08WP	AEPW-AEPW	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 2	121	99.7	101.1	53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT1	146	See Previous	
08WP	OKGE-OKGE	55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1	369	97.7	108.2	55224 MUSKOGE7 345 to 55302 FTSMITH7 345 CKT1	166	See Previous	
08WP	AECI-SPRM	97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1	232	93.4	109.8	96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	302	See Previous	
08WP	AEPW-AEPW	53154 CHAMSPR5 161 to 53170 TONTITN5 161 CKT 1	275	97.4	102.3	53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1	397	See Previous	
08WP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	197	90.2	108.5	53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1	401	See Previous	
08WP	SPRM-SWPA	59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1	167	93.2	105.6	96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1	411	See Previous	
08WP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	197	88.7	108.6	53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1	426	See Previous	
08WP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	197	88.7	108.4	99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1	431	See Previous	
08WP	AEPW-AEPW	53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1	210	99.0	100.6	53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1	482	See Previous	
08WP	AEPW-EES	53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1	197	82.8	100.7	50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1	720	See Previous	
08WP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	102.1	104.2	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	750	See Previous	
08WP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	102.0	104.2	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	750	See Previous	
08WP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	125.0	129.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
08WP	WERE-WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	109.2	113.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	
08WP	WERE-WERE	57153*COLINE 3 115 COLINE5X 1	66	103.0	106.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	
08WP	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1	493	87.8	108.7	54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2	750	See Previous	
08WP	OKGE-OKGE	54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2	493	87.8	108.7	54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT1	750	See Previous	
08WP	WERE-WERE	57244 JARBALO3 115 to 57233 166TH 3 115 CKT 1	97	99.6	100.8	57252 MIDLAND3 115 to 57261 PENTAGN3 115 CKT1	750	See Previous	
08WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	100.0	102.1	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	750	See Previous	

Table 3a - continued – Model Data for Previously Identified SPP Facilities Impacted by the OKGE to EES 750 MW Transfer

Study Year	From Area - To Area	Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	Outaged Branch Causing Overload	ATC (MW)	Comment	Estimated Cost
08WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	100.0	102.1	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT1	750	See Previous	-
08WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	99.9	102.1	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT1	750	See Previous	-
08WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	122.8	127.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08WP	WERE-WERE	57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1	92	107.0	110.9	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1	750	See Previous	-
08WP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	102.1	104.2	56853 LAWHILL6230 to 56855 MIDLAND6230 CKT 1	750	See Previous	-
08WP	WERE-WERE	56853*LAWHILL6 230 LAWHL29X 1	308	102.1	104.0	56855 MIDLAND6230 to 57252 MIDLAND3115 to 56884 MIDLAND118 CKT 1	750	See Previous	-
08WP	WERE-WERE	57270 STULL T3 115 to 57253 MOCKBRD3 115 CKT 1	92	107.6	112.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08WP	WERE-WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	112.1	117.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1	750	See Previous	-
08WP	OKGE-OKGE	54990 TINKER24 138 to 54988 TINKER44 138 CKT 1	100	86.9	100.8	54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT1	750	See Previous	-
08WP	SWPA-AECI	52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1	43	110.8	117.0	59468 AUR124 5 161 to 59480 MON383 5 161 CKT1	N/A	See Previous	-