

SPP-2001-244
(Tables Updated July 2003)

Study Year	From Area	To Area	Monitored Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	ATC (MW)	Outaged Branch Causing Overload	Solution	Cost
03SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	124.4	126.7	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	345 kV Project: Build 20 mile Flint Creek - East Centeron 345 kV line with East Centeron 345/161 kV auto transformer	20,200,000
03SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	118.4	119.8	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	113.2	115.5	0	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV CKT 1	"	-
03SP	GRRD	GRRD	CLAREMORE 161/69KV TRANSFORMER CKT 1	84	100.1	101.3	0	CLAREMORE 161/69KV TRANSFORMER CKT 2	Add 3rd 161/69 KV Transformer	1,250,000
03SP	GRRD	GRRD	CLAREMORE 161/69KV TRANSFORMER CKT 2	84	100.4	101.6	0	CLAREMORE 161/69KV TRANSFORMER CKT 1	See Previous	See Previous
03SP	AEPW	AEPW	DYESS - EAST ROGERS 161KV	244	108.0	110.2	0	FLINT CREEK - GENTRY REC 161KV CKT 1	AEPW Planned Tontitown Projects Estimated Completion 6/1/2004 Modeled in 04SP	-
03SP	AEPW	AEPW	DYESS - EAST ROGERS 161KV	244	106.1	108.3	0	EAST CENTERTON - GENTRY REC 161KV CKT 1	"	-
03SP	AEPW	AEPW	DYESS - SPRINGDALE 69KV	85	115.4	116.3	0	DYESS - SPRINGDALE T 69KV CKT 1	AEPW Planned Tontitown Projects Estimated Completion 6/1/2004 Modeled in 04SP	-
03SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	106.7	107.3	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	104.3	105.7	0	DYESS - EAST ROGERS 161KV CKT 1	"	-
03SP	AEPW	AEPW	ELM SPRINGS REC - TONTITOWN 161KV	335	109.7	110.3	0	DYESS - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	108.6	109.2	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	106.3	107.7	0	DYESS - EAST ROGERS 161KV CKT 1	"	-
03SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	101.1	102.1	0	Multiple Outage Contingency Monett - Brookline 345kV Flint Creek - Monett 345kV	"	-
03SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	101.2	102.0	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	"	-
03SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	101.5	102.0	0	CHAMBER SPRINGS 345/161KV TRANSFORMER CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	101.5	102.0	0	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1	"	-
03SP	AECI	SWPA	2SILDOL - TABLE ROCK 69KV	51	99.0	101.1	47	SUB 438 - RIVERSIDE - TABLE ROCK 161KV CKT 1	Third Party Tie Line Owned by AECI, Not Overloaded in the 04SP and 09SP	-
03SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	99.4	100.2	77	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	GRRD	GRRD	AFTON 161/69KV TRANSFORMER	50	95.5	101.3	78	AFTON - MIAMI 161KV CKT 1	09SP loading 93.5% with selected upgrades Exclude Facility Due to Deferral Period	-
03SP	AEPW	AEPW	ELM SPRINGS REC - TONTITOWN 161KV	335	99.5	100.1	86	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	354	99.1	100.1	90	Multiple Outage Contingency Monett - Brookline 345kV Flint Creek - Monett 345kV	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
03SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	99.2	100.1	93	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	"	-
04SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	100.6	100.9	0	DYESS - SOUTH SPRINGDALE 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	137.9	140.5	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	130.5	132.3	0	FLINT CREEK - TONTITOWN 161KV CKT 1	"	-
04SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	125.8	128.0	0	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV CKT 1	"	-
04SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	107.0	109.2	0	FLINT CREEK - GENTRY REC 161KV CKT 1	"	-
04SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	247	106.2	108.4	0	EAST CENTERTON - GENTRY REC 161KV CKT 1	"	-
04SP	GRRD	GRRD	CLAREMORE 161/69KV TRANSFORMER CKT 1	84	103.5	104.7	0	CLAREMORE 161/69KV TRANSFORMER CKT 2	See Previous	See Previous
04SP	GRRD	GRRD	CLAREMORE 161/69KV TRANSFORMER CKT 2	84	103.4	104.6	0	CLAREMORE 161/69KV TRANSFORMER CKT 1	See Previous	See Previous
04SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	109.2	109.7	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	111.3	111.8	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	102.1	102.9	0	LOWELL - TONTITOWN 161KV CKT 1	"	-
04SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	115.6	115.9	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	113.2	113.8	0	CHAMBER SPRINGS 345/161KV TRANSFORMER CKT 1	"	-
04SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	113.2	113.8	0	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	100.0	100.8	3	LOWELL - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	99.9	100.8	7	LOWELL - ROGERS 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04SP	OKGE	OKGE	PECAN CREEK 345/161KV TRANSFORMER	369	99.0	100.6	62	FT SMITH - MUSKOGEE 345KV CKT 1	Add 2nd 345/161 kV 369MVA transformer.	3,000,000
04SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	99.2	100.4	64	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-

Study Year	From Area	To Area	Monitored Branch Over 100% Rate B	Rate B	BC % Loading	TC % Loading	ATC (MW)	Outaged Branch Causing Overload	Solution	Cost
04SP	GRRD	GRRD	AFTON 161/69KV TRANSFORMER	50	95.0	100.9	85	AFTON - MIAMI 161KV CKT 1	09SP loading 93.5% with selected upgrades Exclude Facility Due to Deferral Period	-
04WP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	275	102.7	104.9	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Relieved or Impact Removed by Selected Upgrades to be Assigned Modeled in 09SP	-
04WP	AEPW	AEPW	EAST CENTRAL HENRYETTA - OKMULGEE 138KV	105	108.7	110.4	0	KELCO - OKMULGEE 138KV CKT 1	09WP Loading with upgrades 93.8% Replace Okmulgee Wavetrap	40,000
04WP	AEPW	AEPW	EAST CENTRAL HENRYETTA - OKMULGEE 138KV	105	103.2	104.8	0	HENRYETTA - KELCO 138KV CKT 1	09WP Loading with upgrades 88.0% Exclude Facility due to Deferral Period	-
04WP	AEPW	AEPW	EAST CENTRAL HENRYETTA - WELEETKA 138KV	105	104.7	106.3	0	KELCO - OKMULGEE 138KV CKT 1	09WP Loading with upgrades 89.2% Exclude Facility due to Deferral Period	-
04WP	AEPW	AEPW	EXPLORER OKMULGEE - RIVERSIDE STATION 138KV	133	110.5	111.7	0	OKMULGEE - RIVERSIDE STATION 138KV CKT 1	Updated Rate B 327MVA	-
04WP	AEPW	AEPW	EAST CENTRAL HENRYETTA - WELEETKA 138KV	105	99.2	100.8	50	HENRYETTA - KELCO 138KV CKT 1	09WP Loading with upgrades 83.5% Exclude Facility due to Deferral Period	-
09SP	OKGE	OKGE	5 TRIBES - PECAN CREEK 161KV	223	103.0	104.6	0	AGENCY - PECAN CREEK 161KV CKT 1	May be able to increase CTR (if relays will coordinate) at Five Tribes sub.	5,000
09SP	SPRM	SPRM	BATTLEFIELD - SOUTHWEST DISPOSAL 161KV	358	100.0	101.3	0	BROOKLINE - SPRINGFIELD 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	128.6	130.6	0	SOUTHWEST - SOUTHWEST DISPOSAL 161KV CKT 1	Impact Removed by Selected Upgrades	-
09SP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	127.7	129.7	0	BATTLEFIELD - SOUTHWEST DISPOSAL 161KV CKT 1	"	-
09SP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	118.5	120.3	0	BROOKLINE - JUNCTION 161KV CKT 1	"	-
09SP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	105.1	107.2	0	BATTLEFIELD - SPRINGFIELD 161KV CKT 1	"	-
09SP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	101.6	103.3	0	JUNCTION - NICHOLS 161KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	125.4	125.7	0	DYESS - SOUTH SPRINGDALE 161KV CKT 1	Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	122.0	123.0	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	113.1	113.7	0	FLINT CREEK - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	112.8	113.6	0	FLINT CREEK - GENTRY REC 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	112.1	112.8	0	EAST CENTERTON - GENTRY REC 161KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FLINT CREEK 161KV	335	110.6	111.1	0	CHAMBER SPRINGS 345/161KV TRANSFORMER CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - FLINT CREEK 161KV	335	110.6	111.1	0	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	174.1	176.7	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	161.9	163.7	0	FLINT CREEK - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	156.8	159.5	0	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV CKT 1	"	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	136.2	138.4	0	FLINT CREEK - GENTRY REC 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	134.7	136.9	0	EAST CENTERTON - GENTRY REC 161KV CKT 1	"	-
09SP	GRRD	GRRD	CLAREMORE 161/69KV TRANSFORMER CKT 1	84	108.8	110.0	0	CLAREMORE 161/69KV TRANSFORMER CKT 2	See Previous	See Previous
09SP	GRRD	GRRD	CLAREMORE 161/69KV TRANSFORMER CKT 2	84	109.1	110.3	0	CLAREMORE 161/69KV TRANSFORMER CKT 1	See Previous	See Previous
09SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	132.7	133.1	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	119.7	120.5	0	LOWELL - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	117.1	117.8	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	"	-
09SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	116.9	117.7	0	LOWELL - ROGERS 161KV CKT 1	"	-
09SP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	353	114.1	114.9	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	ELM SPRINGS REC - TONTITOWN 161KV	335	116.8	117.2	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	ELM SPRINGS REC - TONTITOWN 161KV	335	111.1	111.3	0	DYESS - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	ELM SPRINGS REC - TONTITOWN 161KV	335	106.1	106.5	0	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV	313	112.1	112.4	0	DYESS - SOUTH SPRINGDALE 161KV CKT 1	Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV	313	109.1	110.4	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	135.5	136.0	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	122.6	123.4	0	LOWELL - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	120.0	120.7	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	"	-
09SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	119.7	120.6	0	LOWELL - ROGERS 161KV CKT 1	"	-
09SP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	354	117.1	117.8	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	139.6	140.4	0	CHAMBER SPRINGS 345/161KV TRANSFORMER CKT 1	Impact Removed by Selected Upgrades	-
09SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	139.6	140.4	0	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1	"	-
09SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	138.9	139.2	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	"	-
09SP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	312	100.9	101.1	0	CLARKSVILLE - ONETA 345KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	OKGE	OKGE	PECAN CREEK 345/161KV TRANSFORMER	369	107.5	109.0	0	FT SMITH - MUSKOGEE 345KV CKT 1	See Previous	See Previous

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09SP	OKGE	OKGE	PECAN CREEK 345/161KV TRANSFORMER	369	107.8	108.5	0	CLARKSVILLE - MUSKOGEE 345KV CKT 1	See Previous	See Previous
09SP	SPRM	SPRM	SOUTHWEST - SOUTHWEST DISPOSAL 161KV	358	101.1	102.5	0	BROOKLINE - SPRINGFIELD 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	EMDE	SWPA	SUB 438 - RIVERSIDE - TABLE ROCK 161KV	268	103.7	104.5	0	EUREKA SPRINGS - OSAGE 161KV CKT 1	Contingency is Invalid, Contingency Causes Voltage to Collapse at Osage, With Load removed at Osage, Faci	-
09SP	GRRD	GRRD	412SUB - KERR 161KV	338	99.8	101.3	13	FLINT CREEK - GRDA1 345KV CKT 1	Chouteau Maid Operating Procedure Applied	-
09SP	SWPA	AEPW	WELEETKA - WELEETKA 138KV	187	99.8	100.5	27	FRANKLIN - FRANKLIN SW 138KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09SP	GRRD	GRRD	412SUB - KANSAS TAP 161KV	338	99.1	100.5	62	FLINT CREEK - GRDA1 345KV CKT 1	Chouteau Maid Operating Procedure Applied	-
09WP	SWPA	AEPW	BEAVER - EUREKA SPRINGS 161KV	263	102.8	103.1	0	Multiple Outage Contingency Monett - Brookline 345kV Flint Creek - Monett 345kV	AEPW Replace Wavetrap & Metering CT Jumpers SWPA Reconnect CT's to 1000.5 Tap on Bkrs 42, 32, & half or 22. Replace metering & reset relays for Line 2 & Line 3.	67,500
09WP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	111.6	113.3	0	SOUTHWEST - SOUTHWEST DISPOSAL 161KV CKT 1	Impact Removed by Selected Upgrades	-
09WP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	111.0	112.7	0	BATTLEFIELD - SOUTHWEST DISPOSAL 161KV CKT 1	"	-
09WP	SWPA	SPRM	BROOKLINE - SPRINGFIELD 161KV	323	104.8	106.4	0	BROOKLINE - JUNCTION 161KV CKT 1	"	-
09WP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV	335	100.4	101.7	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	142.8	145.4	0	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	134.1	135.8	0	FLINT CREEK - TONTITOWN 161KV CKT 1	"	-
09WP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	128.3	130.8	0	FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV CKT 1	"	-
09WP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	112.9	115.1	0	FLINT CREEK - GENTRY REC 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	CHAMBER SPRINGS - TONTITOWN 161KV	244	112.2	114.3	0	EAST CENTERTON - GENTRY REC 161KV CKT 1	"	-
09WP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	368	110.5	110.9	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	EAST CENTERTON - GENTRY REC 161KV	368	102.3	103.0	0	LOWELL - ROGERS 161KV CKT 1	"	-
09WP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	368	112.5	112.9	0	FLINT CREEK - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	368	104.2	104.9	0	LOWELL - ROGERS 161KV CKT 1	"	-
09WP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	368	100.1	100.9	0	EAST ROGERS - ROGERS 161KV CKT 1	"	-
09WP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	335	107.7	108.0	0	CHAMBER SPRINGS - TONTITOWN 161KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	335	105.5	106.0	0	CHAMBER SPRINGS 345/161KV TRANSFORMER CKT 1	"	-
09WP	AEPW	AEPW	FLINT CREEK - TONTITOWN 161KV	335	105.5	106.0	0	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1	"	-
09WP	OKGE	OKGE	PECAN CREEK 345/161KV TRANSFORMER	369	103.4	105.0	0	FT SMITH - MUSKOGEE 345KV CKT 1	See Previous	See Previous
09WP	OKGE	OKGE	PECAN CREEK 345/161KV TRANSFORMER	369	102.1	102.8	0	CLARKSVILLE - MUSKOGEE 345KV CKT 1	See Previous	See Previous
09WP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	368	100.0	100.7	3	FLINT CREEK - SUB 383 - MONETT 345KV CKT 1	Relieved And Impact Removed by Selected Upgrades	-
09WP	AEPW	AEPW	FLINT CREEK - GENTRY REC 161KV	368	100.0	100.6	7	BROOKLINE - SUB 383 - MONETT 345KV CKT 1	"	-
09WP	OKGE	OKGE	5 TRIBES - PECAN CREEK 161KV	223	98.5	100.2	89	AGENCY - PECAN CREEK 161KV CKT 1	See Previous	See Previous
Total Engineering & Construction Cost										24,562,500

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03SP	AECI	SWPA	96730 2SILDOL 69 to 52674 TABLE R2 69 CKT 1	51	99.0	101.1	52672 TABLE R5 161 to 59497 RVS438 5 161 CKT 1	Third Party Tie Line Owned by AECI, Not Overloaded in the 04SP and 09SP
09SP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	128.6	130.6	59954 SWPS 5 161 to 59960 SWDISP 5 161 CKT 1	Impact Removed by Selected Upgrades
09SP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	127.7	129.7	59959 BATFLD 5 161 to 59960 SWDISP 5 161 CKT 1	"
09SP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	118.5	120.3	59955 JUNCTN 5 161 to 59969 BRKLINE 5 161 CKT 1	"
09SP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	105.1	107.2	52692 SPRGFLD5 161 to 59959 BATFLD 5 161 CKT 1	"
09SP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	101.6	103.3	59955 JUNCTN 5 161 to 59956 NICHOLS5 161 CKT 1	"
09WP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	111.6	113.3	59954 SWPS 5 161 to 59960 SWDISP 5 161 CKT 1	Impact Removed by Selected Upgrades
09WP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	111.0	112.7	59959 BATFLD 5 161 to 59960 SWDISP 5 161 CKT 1	"
09WP	SWPA	SPRM	52692 SPRGFLD5 161 to 59969 BRKLINE 5 161 CKT 1	323	104.8	106.4	59955 JUNCTN 5 161 to 59969 BRKLINE 5 161 CKT 1	"

Table 3 - SPP Facility Overloads
Caused or Impacted by Selected Upgrades

Southwest Power Pool
System Impact Study

Study Year	From Area	To Area	Monitored Branch Over 100% Rate B	Rate B	BC Without Upgrades %Loading	BC With Upgrades %Loading	TC Without Upgrades %Loading	TC With Upgrades %Loading	Outaged Branch Causing Overload	Solution	Cost
09SP	SWPA	AEPW	BEAVER - EUREKA SPRINGS 161KV	236*	87.6	100.1	87.6	100.2	BASE CASE	* 236 MVA is SWPA & AEPW Normal Conductor Rating, Reconductor 6 miles of 795 ACSR with 1590 ACSR and conduct Environmental Impact Study. Reconductor 1.25 miles of 795 ACSR with 1590 ACSR.	\$ 2,330,000
09SP	ENTR	EMDE	5OMAHA - SUB 312 - POWERSITE 161KV	162	124.4	125.7	123.3	124.6	EUREKA SPRINGS - OSAGE 161KV CKT 1	Contingency is Invalid, Contingency Causes Voltage to Collapse at Osage, With Load removed at Osage, Facility Not Overloaded	-
09SP	WFEC	SWPA	PHAROAH - WELEETKA 138KV	191	107.0	107.7	107.1	107.8	FRANKLIN - FRANKLIN SW 138KV CKT 1	SWPA Replace metering CT's at Weleetka. WFEC Replace wavetrap at Weleetka and replace jumpers.	\$ 135,000
09SP	ENTR	AEPW	EUREKA SPRINGS - OSAGE 161KV	244	111.5	115.6	111.4	115.4	BULL SHOALS - BULL SHOALS 161KV CKT 1	Rebuild 5.34 miles of 666 ACSR with 1590 ACSR. Replace wavetrap jumpers @Eureka Springs	\$ 2,400,000
09SP	ENTR	AEPW	EUREKA SPRINGS - OSAGE 161KV	244	110.0	114.2	109.8	114.0	5FLIPN - BULL SHOALS 161KV CKT 1	See Previous	See Previous
09SP	ENTR	AEPW	EUREKA SPRINGS - OSAGE 161KV	244	106.8	111.0	106.6	110.9	5FLIPN - SUMMIT 161KV CKT 1	See Previous	See Previous
09SP	ENTR	AEPW	EUREKA SPRINGS - OSAGE 161KV	244	103.7	108.2	103.6	108.2	5BEE BR - 5QUITMN 161KV CKT 1	See Previous	See Previous
09SP	ENTR	AEPW	EUREKA SPRINGS - OSAGE 161KV	244	102.8	107.2	102.6	107.1	5HARR-E - SUMMIT 161KV CKT 1	See Previous	See Previous
09WP	SWPA	SPRM	CLAY - SPRINGFIELD 161KV	167	102.0	103.3	101.8	103.1	Multiple Outage Contingency FRANKS TO HUBEN 345KV HUBEN TO MORGAN 345KV	Replace disconnect switches at Springfield.	\$ 200,000
Total Engineering & Construction Cost											\$ 5,065,000

Study Year	From Area	To Area	Monitored Branch Over 100% Rate B	Rate B	BC Without Upgrades %Loading	BC With Upgrades %Loading	TC Without Upgrades %Loading	TC With Upgrades %Loading	Outaged Branch Causing Overload	Comments
09SP	ENTR	EMDE	99831 5OMAHA * 161 to 59474 OZD312 5 161 CKT 1	162	124.4	125.7	123.3	124.6	53136 EUREKA 5 161 to 99832 5OSAGE # 161 CKT 1	Contingency is Invalid, Contingency Causes Voltage to Collapse at Osage, With Load removed at Osage, Facility Not Overloaded
09SP	ENTR	AEPW	99832 5OSAGE # 161 to 53136 EUREKA 5 161 CKT 1	244	111.5	115.6	111.4	115.4	52660 BULL SH5 161 to 99802 5BULLSH* 161 CKT 1	
09SP	ENTR	AEPW	99832 5OSAGE # 161 to 53136 EUREKA 5 161 CKT 1	244	110.0	114.2	109.8	114.0	99802 5BULLSH* 161 to 99809 5FLIPN 161 CKT 1	
09SP	ENTR	AEPW	99832 5OSAGE # 161 to 53136 EUREKA 5 161 CKT 1	244	106.8	111.0	106.6	110.9	99809 5FLIPN 161 to 99837 5SUMMIT 161 CKT 1	
09SP	ENTR	AEPW	99832 5OSAGE # 161 to 53136 EUREKA 5 161 CKT 1	244	103.7	108.2	103.6	108.2	99519 5QUITMN 161 to 99799 5BEE BR 161 CKT 1	
09SP	ENTR	AEPW	99832 5OSAGE # 161 to 53136 EUREKA 5 161 CKT 1	244	102.8	107.2	102.6	107.1	99811 5HARR-E 161 to 99837 5SUMMIT 161 CKT 1	
09SP	ENTR	ENTR	99811 5HARR-E 161 to 99831 5OMAHA * 161 CKT 1	162	112.2	113.6	111.1	112.5	53136 EUREKA 5 161 to 99832 5OSAGE # 161 CKT 1	Contingency is Invalid, Contingency Causes Voltage to Collapse at Osage, With Load removed at Osage, Facility Not Overloaded