



# **SPP** *Southwest Power Pool*

*System Impact Study  
For Settlement Process  
Requested By  
Tenaska Power Service Co.*

*AEPW To AMRN 500 MW  
OKGE To EES 500 MW*

*From 6/1/03  
To 6/1/09*

*SPP Coordinated Planning*

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## **1. Executive Summary**

Tenaska Power Service Co. (TNSK) has requested a system impact study for the settlement process to study possible Point-to-Point transmission service from AEPW to Ameren in the amount of 500 MW and from OKGE to Entergy in the amount of 500 MW. The period of the transactions is from 6/1/03 to 6/1/09. The transaction period was calculated to match the transmission revenue for the proposal to group transmission requests, which was approximately \$49 Million for 1250 MW. The transfer level of 1000 MW was selected because the La Cygne to Stillwell, La Cygne to West Gardner Flowgate is loaded at 99.7% of 1251 MVA rating in the 2005 Summer Peak with the Linn County Solution and with the hypothetical transfers.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the two 500MW transfers while maintaining system reliability. New overloads caused by the two 500MW transfers were monitored along with any previously assigned and identified facilities that were further overloaded by the transfer.

The two 500MW transfers overload new facilities as well as impacting facilities that have been identified as limiting constraints for previously studied transfers, which includes facilities identified in the SPP-2000-108 extension, designated by SPP-2002-046; and the Linn County Study, designated by SPP-2002-127. Tables 1A, 2A, and Table 3A document the facilities identified for the AEPW to AMRN 500 MW transfer. Tables 1B, 2B, and Table 3B document the facilities identified for the OKGE to EES 500 MW transfer.

In addition to the transmission limitations identified, the SPP to AMRN interface is firm contract path limited to 1,287 MW. The tie lines that make up the 1,287 MW interface are listed in Table 4. Currently, SPP has reserved 1,265 MW of long-term firm transmission service during the hypothetical service period. To accommodate the 500 MW transfer to Ameren, transmission upgrades will be required to increase the firm contract path capacity between SPP and Ameren by 478 MW.

## **2. Introduction**

Tenaska Power Service Co. has requested an impact study for the settlement process to study possible Point-to-Point transmission service from AEPW to Ameren in the amount of 500 MW and from OKGE to Entergy in the amount of 500 MW.

The principal objective of this study is to identify the restraints on the SPP Regional Tariff System that may limit the transfers to less than 500 MW. This study includes steady-state contingency analyses (PSS/E function ACCC) and Available Transfer Capability (ATC) analyses.

The steady-state analyses consider the impact of the 2-500 MW transfers on transmission line loading and transmission bus voltages for outages of single and selected multiple transmission lines and transformers on the SPP system.

The 500 MW transfer from AEPW to Ameren will require additional firm contract path capacity between SPP and Ameren. Currently, SPP has sold yearly firm point-to-point transmission service in the amount of 1,265 MW. The Firm Contract Path Capacity limit between SPP and Ameren is 1,287 MW. To provide the firm contract path capacity that is needed for the additional 500 MW request, existing ties lines must be upgraded between SPP and Ameren. A 345kV transmission line that connects Ameren's Callaway Sub to Kansas City Power & Light's Montrose and La Cygne Subs was considered in the previous System Impact Studies to provide the necessary firm contract path capacity, but the cost of the line is not justified compared to upgrading the existing 161 kV tie lines.

### **3. Study Methodology**

#### **A. Description**

Two analyses were conducted to determine the impact of the 2-500 MW transfers on the system. The first analysis was conducted to identify any new overloads caused by the 2-500 MW transfers. The second analysis was done to ensure that available capacity exists on previously identified circuits.

The first analysis was to study the steady-state analysis impact of the 2-500 MW transfers on the SPP system. The second step was to study Available Transfer Capability (ATC) of the facilities identified in the steady-state analysis impact. 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. The previously assigned facilities include facilities identified in previously conducted System Impact Studies. The facilities were included to determine what impact the assigned upgrades and transmission owners' transmission mitigation plans have on the loading of the previously identified facilities and whether additional incremental upgrades are required to accommodate the 2-500 MW transfers. Facilities identified in the first 500 MW transfer analysis were monitored for the subsequent 500 MW transfer.

#### **B. Model Updates**

SPP used eight seasonal models to study the 2-500 MW transfers request. The SPP 2002 Series Cases: 2003 Summer Peak, 2003 Fall Peak, 2003/04 Winter Peak, 2005 Summer Peak, 2005/06 Winter Peak, 2008 Summer Peak, and 2008/2009 Winter Peak were used to study the impact of 2-500 MW transfers on the SPP system during a transaction period from 6/1/03 to 6/1/09. The 2004 Spring Peak model is considered representative of the Spring Seasons throughout the length of the reservation.

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 request period that were not already included in the January 2002 base case series models.

The Network Facility Upgrades assigned to the PRG AEPW to EES 620 MW transfer and mitigation plans submitted by the transmission owners are included as required. These facilities do not include the Facility Upgrades identified for the extension of the 620 MW request.

### **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 1A, 1B, 2A, 2B, 3A, 3B contain the steady-state 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 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 previously received from the transmission owners.

Table 1A, 1B shows the new facility overloads caused by each of the 500 MW transfers. Upgrades associated with these new overloads can be directly assigned to the AEPW to AMRN 500 MW transfer and the OKGE to EES 500 MW transfer, respectively. Available solutions are given in the table.

Table 2A, 2B documents overloads on Non SPP Regional Tariff participants' transmission systems caused by the AEPW to AMRN 500 MW transfer and the OKGE to EES 500 MW transfer, respectively.

Table 3A documents the AEPW to AMRN 500 MW transfer impact on previously assigned and identified facilities. Table 3B documents the OKGE to EES 500 MW impact on the previously assigned and identified facilities, which includes facilities documented in Table 1A and Table 3A for the AEPW to AMRN 500 MW transfer.

### **B. SPP to AMRN Interface**

The SPP to AMRN interface is contract path limited to 1,287 MW. SPP currently has 1,265 MW of higher priority yearly firm reservations over the AMRN interface for the reservation period. The current available capacity over the interface for the service period is 22 MW. Therefore, the SPP to Ameren Firm Contract Path Capacity needs to be increased by 478 MW.

SPP proposed a 345kV line from KCPL's La Cygne Substation to KCPL's Montrose Substation to Ameren's Callaway Substation to increase the Contract Path Limit and increase System Reliability for System Impact Study SPP-2000-109, for an AEPW to Ameren 670MW request. SPP requested the assistance of Ameren Transmission Services in proposing possible tie capacity expansion to accommodate the additional 670MW transfer. SPP and Ameren agreed that the Callaway to Montrose to La Cygne 345kV line would be the most beneficial to the transmission system in providing the needed firm contract path capacity and maintaining system reliability. The addition of the 345kV transmission line provided substantial relief on the La Cygne to Stillwell Flowgate, which was the most significant benefit of the line. The rough estimated cost of the line was determined to be \$95 million.

The other possible system upgrades to increase the capacity by 478 MW include upgrading the two existing 161 kV ties between SPP and Ameren, which would add 487 MW at a rough estimated cost of \$8.2 million. The upgrades of the existing ties do not improve overall system reliability and are proposed only to increase the firm contract path capacity between SPP and Ameren. Table 4 lists the tie lines that make up the 1,287 MW interface and the contributions of each.

The KCPL and Ameren Salisbury to Moberly 161 kV line is 19.8 miles long and contributes 180 MW of capacity. The 180 MVA rating is based on the 556.5 MCM ACSR conductor. The percent ownership of the line is KCPL owns 39.65% and Ameren owns 60.35%. The estimated cost to reconductor the line with 556.5 MCM ACSS is \$4 million, the estimated cost to replace the terminal equipment at Salisbury and Moberly with 1200 Amp equipment is \$500,000. The increased capability of the line, normal rating, is 335 MVA with a 155 MW increase in the contract path capacity. If the terminal equipment at Salisbury and Moberly is replaced with 2000 Amp equipment (\$600,000), the increased capability of the line is raised to the normal rating of the 556.5 MCM ACSS conductor, which is 1282 Amps (357 MVA). The increase in the contract path capacity is 177 MW.

The SWPA and Ameren Sikeston to Miner 161kV line is 10 miles long and contributes 248 MW of capacity. The 248 MVA rating is based on the 954 MCM ACSR conductor. The percent ownership of the line is SWPA owns 0% and Ameren owns 100%. The substation equipment on both ends is rated 1200 Amps (335 MVA). The estimated cost to upgrade the equipment at the SWPA end to 2000 Amps (558 MVA) is \$300,000 (3-disconnect switches, 1-circuit breaker, 3-metering CTs, and jumpers). The estimated cost to upgrade the equipment at Ameren's end should be similar at \$300,000. The estimated cost to reconductor the transmission line to 558 MVA is \$3 million. The increase in the contract path capacity is 310 MW.

The rough estimated cost to increase the SPP to Ameren Firm Contract Capacity by 487 MW is \$8.2 million. Before planning the upgrades, Ameren, SWPA, and KCPL would want to study the effects on the surrounding system. These upgrades were not included in the System Impact Study Analysis as the upgrades only provide Firm Contract Path Capacity not improved transfer capability.



**Table 1A** - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% RateB  | RATE B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Solution   |
|------------|-------------------|---|--------|-------------|-------------|--|-----|--|
| 03SP       | WERE-WERE         | AUBURN ROAD TO SOUTH GAGE (WEST), 115 KV<br>57151*AUBURN 3 115 57179 S GAGEW3 115 1                   | 75     | 100.0       | 100.7       | HOYT 345/115/14.4 TRANSFORMER<br>56765 HOYT 7345 57163 HOYT 3115 56804 HOYT 114.4 1  | 0   | Undetermined   |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.9        | 102.7       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT, 345KV<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 18  | Rebuild 1.09 miles of 2-397.5 ACSR with 2156 ACSR. Replace wavetraps jumpers.                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.9        | 102.7       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1   | 10  | See Previous   |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.9        | 102.7       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  | 16  | See Previous   |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                 | 353    | 97.6        | 100.4       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT, 345KV<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 429 | Rebuild 19.16 miles of 2-397.5 ACSR with 2156 ACSR   |
| 03SP       | GRRD-GRRD         | AFTON 161/69KV TRANSFORMER<br>54432 AFTON 5 161 to 54433 AFTON 269.0 CKT 1                            | 50     | 97.1        | 101.8       | MIAMI TO AFTON, 161KV<br>54431 MIAMI 5 161 to 54432 AFTON 5 161 CKT1   | 310 | Undetermined   |
| 03SP       | AEPW-AEPW         | SCROGGINS TO FERNDAL LAKE TAP, 69KV<br>53316 SCROGNS269.0 to 53531 FERNDTP269.0 CKT 1                 | 85     | 99.6        | 100.2       | ADORA REC TO ADORA T, 69KV<br>53243 ADORA 269.0 to 53244 ADRWTPL269.0 CKT1   | 349 | Rebuild 6.53 miles of 477 ACSR with 1272 ACSR.   |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 98.6        | 100.5       | CHAMBER SPRINGS TO FARMINGTON AECC, 161KV<br>53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1   | 381 | See Previous   |
| 03SP       | AEPW-AEPW         | BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV<br>53940 BV-SE--4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 91.8        | 102.1       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1  | 398 | Replace Bartlesville Southeast Wavetraps. New Summer Emergency Rating 235 MVA 11.9% Increase |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                 | 353    | 97.6        | 100.4       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1   | 426 | See Previous   |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                 | 353    | 97.6        | 100.4       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  | 431 | See Previous   |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                 | 353    | 98.6        | 100.1       | DYESS TO ELM SPRINGS REC, 161KV<br>53131 DYESS 5 161 to 53194 ELMSPRR5 161 CKT1  | 470 | See Previous   |

**Table 1A continued** – SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% RateB   | RATE B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Solution  |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|
| 03SP       | WERE-WERE         | <b>STULL SS 115 KV TO MOCKINGBIRD HILL SS 115 KV</b><br>57270 STULL T3 115 to 57253 MOCKBRD3 115 CKT 1       | 92     | 99.3        | 102.9       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1                       | 500 | Westar Transmission OP Directive 803  |
| 03SP       | WERE-WERE         | <b>CIRCLEVILLE TO KING HILL, 115KV</b><br>57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1                     | 92     | 98.2        | 101.8       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1                       | 500 | Westar Transmission OP Directive 803  |
| 03SP       | WERE-WERE         | <b>COUNTY LINE 115/69/34.5KV TRANSFORMER</b><br>57456*COLINE 269.0 COLINE5X 1                                | 66     | 98.6        | 100.8       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 [HOYT 7345.00] TO BUS 56772 [STRANGR7345.00] CKT 1          | 500 | Westar Transmission OP Directive 803  |
| 03FA       | AEPW-SWPA         | <b>CRAIG JUNCTION TO BROKEN BOW, 138KV</b><br>54015 CRAIGJT4 138 to 52814 BRKN BW4 138 CKT 1                 | 122    | 98.6        | 101.3       | <b>BBDAMTP4 TO MOUNTAIN RIVER, 138KV</b><br>55823 BBDAMTP4 138 to 56004 MTRIVER4 138 CKT1                 | 258 | Undetermined  |
| 03FA       | AEPW-AEPW         | <b>ALUMAX TAP TO NORTHWEST TEXARKANA, 138KV</b><br>53245 ALUMXT 4 138 to 53300 NWTXARK4 138 CKT 1            | 294    | 98.3        | 101.3       | <b>NW TEXARKANA-BANN T TO NORTHWEST TEXARKANA, 138KV</b><br>53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1 | 285 | Undetermined  |
| 03WP       | AEPW-AEPW         | <b>BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV</b><br>53940 BV-SE--4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 92.5        | 102.8       | <b>DELWARE TO NORTHEAST STATION, 345KV</b><br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1               | 362 | Replace Bartlesville Southeast Wavetrap. New Winter Emergency Rating 237 MVA 12.9% Increase |
| 03WP       | WERE-WERE         | <b>CIRCLEVILLE TO KING HILL, 115KV</b><br>57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1                     | 92     | 99.6        | 103.0       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1                       | 500 | Westar Transmission OP Directive 803  |
| 03WP       | WERE-WERE         | <b>KING HILL TO KELLY, 115KV</b><br>57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1                            | 92     | 97.7        | 101.1       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1                       | 500 | Westar Transmission OP Directive 803  |
| 04G        | AEPW-OKGE         | <b>PITTSBURG TO SEMINOLE, 345KV</b><br>54033 PITTSB-7 345 to 55045 SEMINOL7 345 CKT 1                        | 717    | 75.9        | 104.4       | <b>PITTSBURG TO SUNNYSIDE, 345KV</b><br>54033 PITTSB-7 345 to 55136 SUNNYSID7 345 CKT1                    | 423 | OKGE: At OKGE Seminole, replace 1200A trap with 1600A, raise relaying CTR to 1600-5.        |
| 04G        | WERE-WERE         | <b>CIRCLEVILLE TO KING HILL N.M. COOP, 115KV</b><br>57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1           | 92     | 96.8        | 100.1       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1                       | 500 | Westar Transmission OP Directive 803  |
| 05SP       | GRRD-GRRD         | <b>AFTON 161/69KV TRANSFORMER</b><br>54432 AFTON 5 161 to 54433 AFTON 269.0 CKT 1                            | 50     | 100.0       | 104.7       | <b>MIAMI TO AFTON, 161KV</b><br>54431 MIAMI 5 161 to 54432 AFTON 5 161 CKT1                               | 0   | See Previous  |
| 05SP       | AEPW-AEPW         | <b>GENTRY REC TO FLINT CREEK, 161KV</b><br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 100.0       | 101.6       | <b>SILLOAM SPRINGS TO SILOAM CITY, 161KV</b><br>53158 SILOAM 5 161 to 54443 SILMCTY5 161 CKT1             | 4   | See Previous  |
| 05SP       | AEPW-AEPW         | <b>EAST CENTERTON TO GENTRY REC, 161KV</b><br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1                 | 353    | 100.0       | 101.8       | <b>HYLAND TO EAST FAYETTEVILLE REC, 161KV</b><br>53143 HYLAND 5 161 to 53193 EFAYTVL5 161 CKT1            | 7   | See Previous  |
| 05SP       | AEPW-AEPW         | <b>EAST CENTERTON TO GENTRY REC, 161KV</b><br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1                 | 353    | 100.0       | 101.7       | <b>TIPTON FORD TO JOPLIN SOUTHWEST, 161KV</b><br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1            | 11  | See Previous  |
| 05SP       | AEPW-AEPW         | <b>EAST CENTERTON TO GENTRY REC, 161KV</b><br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1                 | 353    | 99.9        | 102.1       | <b>FORT SMITH TO ARKANSAS NUCLEAR ONE, 500KV</b><br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1          | 18  | See Previous  |

**Table 1A continued** – SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% RateB   | RATE B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Solution  |
|------------|-------------------|--|--------|-------------|-------------|--|-----|---|
| 05SP       | AEPW-AEPW         | <b>GENTRY REC TO FLINT CREEK, 161KV</b><br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.9        | 101.7       | <b>FLINT CREEK 345/161KV TRANSFORMER</b><br>53139 FLINTCR5 161 to 53140 FLINTCR7 345 CKT1  | 21  | See Previous  |
| 05SP       | AEPW-AEPW         | <b>GENTRY REC TO FLINT CREEK, 161KV</b><br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.9        | 101.7       | <b>FLINT CREEK 345/161KV TRANSFORMER</b><br>53139 FLINTCR5 161 to 53140 FLINTCR7 345 CKT1  | 24  | See Previous  |
| 05SP       | AEPW-AEPW         | <b>EAST CENTERTON TO GENTRY REC, 161KV</b><br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1                 | 353    | 99.9        | 101.6       | <b>LINCOLN REC TO SILOAM SPRINGS, 69KV</b><br>53199 LINCOLN269.0 to 53204 SILOAM 269.0 CKT1  | 29  | See Previous  |
| 05SP       | AEPW-AEPW         | <b>GENTRY REC TO FLINT CREEK, 161KV</b><br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.8        | 101.0       | <b>TABLE ROCK TO EUREKA SPRINGS, 161KV</b><br>52672 TABLE R5 161 to 53136 EUREKA 5 161 CKT1  | 80  | See Previous  |
| 05SP       | AEPW-AEPW         | <b>EAST CENTERTON TO GENTRY REC, 161KV</b><br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1                 | 353    | 99.6        | 101.6       | <b>HUBEN TO MORGAN, 345KV</b><br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1  | 101 | See Previous  |
| 05SP       | AEPW-AEPW         | <b>GENTRY REC TO FLINT CREEK, 161KV</b><br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                    | 353    | 99.2        | 101.1       | <b>NORTH ROGERS TO ROGERS, 69KV</b><br>53150 NROGERS269.0 to 53152 ROGERS 269.0 CKT1   | 216 | See Previous  |
| 05SP       | AEPW-AEPW         | <b>NORTH MARSHALL TO WOODLAWN, 69KV</b><br>53579 NMARSHL2 69 to 53621 WOODLWN2 69 CKT 1                      | 51     | 97.3        | 101.7       | <b>Multiple Outage Contingency</b><br><b>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV</b><br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br><b>SOUTHWEST SHREVEPORT TO DIANA, 345KV</b><br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 307 | Replace 3/0 CU jumpers @ North Marshall New Summer Emergency Rating 59 MVA 15.7% Increase |
| 05SP       | AEPW-AEPW         | <b>FARMINGTON AECG TO SOUTH FAYETTEVILLE, 161KV</b><br>53195 FARMGTN5 161 to 53157 SFAYTVL5 161 CKT 1        | 313    | 98.1        | 101.0       | <b>DYESS TO CHAMBER SPRINGS, 161KV</b><br>53131 DYESS 5 161 to 53154 CHAMSPR5 161 CKT1   | 325 | Undetermined  |
| 05SP       | AEPW-AEPW         | <b>VALLEY TIMBER TO HUGO, 69KV</b><br>54019 VALYTIM269.0 to 54018 HUGO--269.0 CKT 1                          | 48     | 98.4        | 100.3       | <b>TUPELO TO ALLEN NATURAL GAS TAP, 138KV</b><br>52800 TUPELO 4 138 to 54006 ALLENGT4 138 CKT1   | 425 | Undetermined  |
| 05SP       | AEPW-AEPW         | <b>CHAMBER SPRINGS TO DYESS, 161KV</b><br>53154 CHAMSPR5 161 to 53131 DYESS 5 161 CKT 1                      | 247    | 97.3        | 100.1       | <b>DYESS TO ELM SPRINGS REC, 161KV</b><br>53131 DYESS 5 161 to 53194 ELMSPRR5 161 CKT1   | 480 | Reconductor 18.73 miles of 666 ACSR with 1590 ACSR  |
| 05SP       | WERE-WERE         | <b>CIRCLEVILLE TO KING HILL N.M. COOP, 115KV</b><br>57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1           | 92     | 97.9        | 101.6       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1  | 500 | Westar Transmission OP Directive 803  |
| 05WP       | AEPW-OKGE         | <b>PITTSBURG TO SEMINOLE, 345KV</b><br>54033 PITTSB-7 345 to 55045 SEMINOL7 345 CKT 1                        | 717    | 76.5        | 104.8       | <b>PITTSBURG TO SUNNYSIDE, 345KV</b><br>54033 PITTSB-7 345 to 55136 SUNNYSID7 345 CKT1   | 416 | See Previous  |
| 05WP       | AEPW-AEPW         | <b>BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV</b><br>53940 BV-SE--4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 91.4        | 101.6       | <b>DELAWARE TO NORTHEAST STATION, 345KV</b><br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1   | 421 | See Previous  |
| 05WP       | OKGE-OKGE         | <b>SUNNYSIDE 345/138KV TRANSFORMER</b><br>55136 SUNNYSID7 345 to 55135 SUNNYSID4 138 CKT 1                   | 330    | 88.2        | 100.1       | <b>PITTSBURG TO SEMINOLE, 345KV</b><br>54033 PITTSB-7 345 to 55045 SEMINOL7 345 CKT1   | 497 | Add second 300MVA 345-138kV Transformer at Sunnyside.                                     |

**Table 1A continued** – SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% RateB  | RATE B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Solution   |
|------------|-------------------|---|--------|-------------|-------------|---|-----|--|
| 05WP       | WERE-WERE         | CIRCLEVILLE TO KING HILL N.M. COOP, 115KV<br>57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1               | 92     | 97.8        | 101.1       | HOYT TO STRANGER CREEK, 345KV<br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1  | 500 | Westar Transmission OP Directive 803   |
| 05WP       | WERE-WERE         | TECUMSEH HILL TO STULL SWITCHING STATION, 115KV<br>57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1         | 92     | 96.2        | 100.1       | HOYT TO STRANGER CREEK, 345KV<br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1  | 500 | Westar Transmission OP Directive 803   |
| 08SP       | SWPA-OKGE         | MUSKOGEE TAP TO MUSKOGEE, 161KV<br>52758 MUSKTAP5 161 to 55222 MUSKOGEE5 161 CKT 1                        | 223    | 100.1       | 108.9       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | OKGE: Replace 800A wave trap at Muskogee and increase relay CTR to 1200-5. SPA: None. New Summer Emergency Rating 312 MVA 39.9% Increase   |
| 08SP       | OKGE-OKGE         | FT SMITH 345/161 KV TRANSFORMER CKT 1<br>55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1                   | 493    | 99.4        | 106.7       | FT SMITH 500/345 KV TRANSFORMER CKT 1<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1  | 44  | Convert Ft. Smith 161kv to 1-1/2 breaker design and install 2nd 500-161kv transformer bank.  |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH - SOUTH TAP TO LYNN LANE TAP, 138 KV<br>53798 BA.N-ST4 138 to 53816 LLANETP4 138 CKT 1 | 235    | 99.2        | 104.2       | TULSA NORTH TO NORTHEAST STATION, 345KV<br>53866 T.NO.--7 345 to 53955 N.E.S.-7 345 CKT1  | 81  | Undetermined   |
| 08SP       | GRRD-GRRD         | KANSAS TAP TO WEST SILOAM SPRINGS, 161 KV<br>54514 KANSATP5 161 to 54442 SILSPWW5 161 CKT 1               | 328    | 98.9        | 103.1       | FLINT CREEK TO GRDA1, 345 KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1  | 129 | Undetermined   |
| 08SP       | OKGE-OKGE         | ADA OC PUMP TAP TO ADA OC PUMP, 69 KV<br>55190 AOCP2 269.0 to 55189 AOCP4 269.0 CKT 1                     | 52     | 98.7        | 103.8       | PARKLN TO AHLOSO TAP, 69 KV<br>55177 PARKLN 269.0 to 55187 AHLOSTP269.0 CKT1  | 130 | Undetermined   |
| 08SP       | AEPW-AEPW         | FORBING TAP TO SOUTH SHREVEPORT, 69KV<br>53406 FORBNGT269.0 to 53445 S SHV 269.0 CKT 1                    | 95     | 99.6        | 100.8       | BROADMOOR TO FORT HUMBURG, 69 KV<br>53394 BROADMR269.0 to 53408 FTHUMBG269.0 CKT1   | 186 | Undetermined   |
| 08SP       | AEPW-AEPW         | NORTH MARSHALL TO WOODLAWN, 69KV<br>53579 NMARSHL269.0 to 53621 WOODLWN269.0 CKT 1                        | 51     | 98.4        | 102.5       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 200 | See Previous   |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1                  | 244    | 98.2        | 102.2       | FAYETTEVILLE TO SOUTH FAYETTEVILL, 161KV<br>53138 FAYETVL5 161 to 53157 SFAYTVL5 161 CKT1   | 227 | Rebuild 15 miles of 666 ACSR with 1590 ACSR.   |
| 08SP       | OKGE-OKGE         | HIGHWAY 59 TO VBI, 161KV<br>55347 HWY59 5 161 to 55339 VBI 5 161 CKT 1                                    | 167    | 95.9        | 104.4       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 243 | OKGE: Replace 600A Switch131 @ VBI Sub with 1200A & rebuild 1.12mi with 477ACSR. New Summer Emergency Rating 259 MVA Rating 55.1% Increase |
| 08SP       | EMDE-EMDE         | BILLINGS NORTHEAST TO REPUBLIC EAST, 69KV<br>59546 BIL221 269.0 to 59580 REP359 269.0 CKT 1               | 38     | 99.4        | 100.6       | BOLIVAR BURNS TO BOLIVAR SOUTH, 161KV<br>59464 BOL 73 5 161 to 59493 BOL431 5 161 CKT1  | 246 | In-house plans to reconductor in 2004 for own needs due to outage of Black Hawk JCT - Jamesville.  |
| 08SP       | GRRD-GRRD         | WEST SILOAM SPRINGS TO SILOAM CITY, 161KV<br>54442 SILSPWW5 161 to 54443 SILMCTY5 161 CKT 1               | 328    | 97.8        | 102.0       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 261 | Undetermined   |

**Table 1A continued** – SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% RateB   | RATE B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Solution  |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|
| 08SP       | WERE-WERE         | <b>HOYT HTI SWITCHING JUNCTION TO CIRCLEVILLE, 115KV</b><br>57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1   | 97     | 98.3        | 101.3       | <b>IATAN TO ST JOE, 345KV</b><br>57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1                       | 279 | Rebuild 15.5 mile line with 1192.5 kamil ACSR.  |
| 08SP       | AEPW-AEPW         | <b>CHAMBER SPRINGS TO LAKE ELMDALE, 161KV</b><br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1              | 244    | 97.5        | 101.8       | <b>DELAWARE TO NORTHEAST STATION, 345KV</b><br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1        | 294 | See Previous  |
| 08SP       | AEPW-AEPW         | <b>CHAMBER SPRINGS TO LAKE ELMDALE, 161KV</b><br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1              | 244    | 97.7        | 101.5       | <b>HYLAND TO SOUTHEAST FAYETTEVILLE+G98, 161KV</b><br>53143 HYLAND 5 161 to 53153 SEFAYTV5 161 CKT1 | 304 | See Previous  |
| 08SP       | WERE-WERE         | <b>JARBALO JUNCTION SS TO 166TH STREET, 115KV</b><br>57244 JARBALO3 115 to 57233 166TH 3 115 CKT 1           | 97     | 98.8        | 100.5       | <b>IATAN TO ST JOE, 345KV</b><br>57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1                       | 352 | Undetermined  |
| 08SP       | AEPW-AEPW         | <b>CHAMBER SPRINGS TO LAKE ELMDALE, 161KV</b><br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1              | 244    | 97.3        | 101.0       | <b>FLINT CREEK TO GENTRY REC, 161KV</b><br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1            | 367 | See Previous  |
| 08SP       | AEPW-AEPW         | <b>BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV</b><br>53940 BV-SE--4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 92.4        | 102.3       | <b>DELAWARE TO NORTHEAST STATION, 345KV</b><br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1        | 385 | See Previous  |
| 08SP       | OKGE-OKGE         | <b>GLASSES TO RUSSETT, 138KV</b><br>55147 GLASSES4 138 to 55120 RUSSETT4 138 CKT 1                           | 96     | 98.5        | 100.4       | <b>EXPLORER TAP TO BROWN, 138KV</b><br>55153 EXPLRTP4 138 to 55157 BROWN 4 138 CKT1                 | 401 | Replace 400Amp Wave Trap at Russett in 2003 at OKGE's expense. New Summer Emergency Rating 143 MVA 49.0% Increase |
| 08SP       | AEPW-AEPW         | <b>CHAMBER SPRINGS TO LAKE ELMDALE, 161KV</b><br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1              | 244    | 96.9        | 100.7       | <b>EAST CENTERTON TO GENTRY REC, 161KV</b><br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1         | 410 | See Previous  |
| 08SP       | AEPW-AEPW         | <b>PATTERSON TO SOUTH NASHVILLE, 138KV</b><br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1                 | 118    | 90.7        | 101.7       | <b>LONGWOOD TO ELDORADO-EHV, 345KV</b><br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1              | 421 | Rebuild 17.72 miles of 4/0 CU with 795 ACSR.  |
| 08SP       | AEPW-AEPW         | <b>PATTERSON TO SOUTH NASHVILLE, 138KV</b><br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1                 | 118    | 90.6        | 101.6       | <b>ELDORADO-EHV 500/345KV TRANSFORMER</b><br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1            | 427 | See Previous  |
| 08SP       | OKGE-OKGE         | <b>HANCOCK TO 5 TRIBES, 161KV</b><br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                          | 223    | 93.3        | 101.0       | <b>AGENCY TO PECAN CREEK, 161KV</b><br>55230 AGENCY 5 161 to 55234 PECANCK5 161 CKT1                | 436 | Replace 800A Wave Trap, increase Relay CTR to 1200-5A. New Summer Emergency Rating 312 MVA 39.9% Increase         |
| 08SP       | WERE-WERE         | <b>EVANS ENERGY CENTER NORTH TO CHISHOLM, 138KV</b><br>57040 EVANS N4 138 to 57035 CHISHLM4 138 CKT 1        | 382    | 99.1        | 100.1       | <b>HOOVER NORTH TO LAKERIDGE+G137, 138KV</b><br>57049 HOOVERN4 138 to 57053 LAKERDGA 138 CKT1       | 437 | Undetermined  |
| 08SP       | OKGE-OKGE         | <b>CONTINENTAL BLACKS TO CHEROKEE PL TAP, 69KV</b><br>54763 CONBLKS269.0 to 54745 CHERPLT269.0 CKT 1         | 111    | 95.0        | 100.5       | <b>KILDARE4 TO WHITE EAGLE, 138KV</b><br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1              | 452 | Undetermined  |
| 08SP       | OKGE-OKGE         | <b>CHILOCCO TO CHIKASKIA TAP, 69KV</b><br>54744 CHILOCCO269.0 to 54751 CHIKSTP269.0 CKT 1                    | 57     | 94.5        | 100.3       | <b>KILDARE4 TO WHITE EAGLE, 138KV</b><br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1              | 473 | Undetermined  |
| 08SP       | AEPW-AEPW         | <b>DIANA TO NWMOUNT7, 345KV</b><br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT 1                             | 1059   | 95.3        | 100.2       | <b>DIANA TO NWMOUNT7, 345KV</b><br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT2                     | 500 | Invalid Contingency Due To CPS Interconnection on Welsh to Diana 345 kV Double Circuit                            |

**Table 1A continued** – SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% RateB  | RATE B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Solution  |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|
| 08SP       | WERE-WERE         | <b>KING HILL N.M. COOP TO KELLY, 115KV</b><br>57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1     | 92     | 98.8        | 102.1       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1         | 500 | Westar Transmission OP Directive 803                    |
| 08WP       | AEPW-AEPW         | <b>IDABEL TO HUGO TAP, 138KV</b><br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1              | 186    | 99.9        | 106.3       | <b>HUGO POWER PLANT TO VALLIANT, 138KV</b><br>55948 HUGO PP4 138 to 56079 VALLANT4 138 CKT1 | 9   | Undetermined  |
| 08WP       | AEPW-AEPW         | <b>IDABEL TO HUGO TAP, 138KV</b><br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1              | 186    | 98.3        | 104.7       | <b>IDABEL TO VALLANT, 138KV</b><br>55953 IDABEL 4 138 to 56079 VALLANT4 138 CKT1            | 133 | See Previous  |
| 08WP       | AEPW-AEPW         | <b>IDABEL TO HUGO TAP, 138KV</b><br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1              | 186    | 95.9        | 102.3       | <b>HOLY CREEK TO IDABEL, 138KV</b><br>55946 HOLYCRK4 138 to 55953 IDABEL 4 138 CKT1         | 322 | See Previous  |
| 08WP       | AEPW-AEPW         | <b>HUGO TAP TO VALLIANT, 138KV</b><br>54014 HUGOTAP4 138 to 54044 VALIANT4 138 CKT 1            | 210    | 96.1        | 102.1       | <b>BBDAMTP4 TO DOMINAN4, 138KV</b><br>55823 BBDAMTP4 138 to 55878 DOMINAN4 138 CKT1         | 324 | Undetermined  |
| 08WP       | KACP-KACP         | <b>LINN COUNTY 345/161KV TRANSFORMER</b><br>58201 LINNC2 7 345 to 58200 LINNC1 5 161 CKT 1      | 440    | 97.8        | 100.4       | <b>STILWELL TO LACYGNE, 345KV</b><br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1          | 428 | Undetermined  |
| 08WP       | EMDE-EMDE         | <b>MONETT TO AURORA H.T., 161KV</b><br>59480 MON383 5 161 to 59468 AUR124 5 161 CKT 1           | 268    | 94.3        | 100.8       | <b>MONETT TO BROOKLINE, 345KV</b><br>59481 MON383 7 345 to 59984 BRKLNE 7 345 CKT1          | 440 | EMDE Reconductor Project Modeled. Solution Undetermined |
| 08WP       | AEPW-AEPW         | <b>IDABEL TO HUGO TAP, 138KV</b><br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1              | 186    | 93.9        | 100.3       | <b>BROKEN BOW TO HOLY CREEK, 138KV</b><br>55834 BROKNBW4 138 to 55946 HOLYCRK4 138 CKT1     | 478 | See Previous  |
| 08WP       | WERE-WERE         | <b>STULL SS TO MOCKINGBIRD HILL SS, 115KV</b><br>57270 STULL T3 115 to 57253 MOCKBRD3 115 CKT 1 | 92     | 97.5        | 101.2       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1         | 500 | Westar Transmission OP Directive 803                    |

**Table 2A – Non-SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer**

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 03SP       | ALTW-MEC          | 34060 WNTRST 5 161 to 64068 GRENFLD5 161 CKT 1 | 112    | 99.8        | 102.9       | 63800 CBLUFFS3 345 to 64056 MADISON3 345 CKT1  |
| 03SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 97.3        | 104.2       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 99.2        | 103.8       | 59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1  |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 97.8        | 102.4       | 59216 BUTLER 5 161 to 59240 ADRIAN 5 161 CKT1  |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 96.3        | 101.8       | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT1   |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 97.3        | 101.6       | 96070 5CLARK 161 to 96802 2CLARK 69.0 CKT1     |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 95.3        | 100.7       | 57968 STILLWEL7 345 to 57981 LACYGNE7 345 CKT1 |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 97.1        | 102.8       | 54431 MIAMI 5 161 to 54432 AFTON 5 161 CKT1    |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 97.0        | 102.8       | 54448 MAID 5 161 to 54454 PENZA 5 161 CKT1     |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 96.8        | 102.6       | 59618 CPK446 269.0 to 96658 2BILLNG 69.0 CKT1  |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 96.7        | 102.3       | 59484 DEC392 5 161 to 59496 NOL435 5 161 CKT1  |
| 03SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 96.3        | 102.1       | 59470 JOP145 5 161 to 59498 STL439 5 161 CKT1  |
| 03SP       | SUNC-SUNC         | 56391 PIONEER3 115 to 56390 PIONEER269.0 CKT 1 | 50     | 100.0       | 100.5       | 56420 FLETCHR3 115 to 56440 WILLIAM3 115 CKT1  |
| 03SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 99.6        | 109.0       | 52702 TRUMAN 5 161 to 96555 5GRAVOI 161 CKT1   |
| 03SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 95.2        | 103.0       | 59242 CLINTON5 161 to 96071 5CLINTN 161 CKT1   |
| 03SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 92.8        | 100.7       | 31408 OVERTON 345 to 31409 OVERTON 161 CKT1    |
| 03SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 90.6        | 100.4       | 59228 WBURGE 5 161 to 59234 WAFB 5 161 CKT1    |
| 03SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 93.8        | 100.3       | 58064 NORTON-5 161 to 96105 5NORTON 161 CKT1   |
| 03SP       | MIPU-MIPU         | 59253 ST JOE 5 161 to 59252 MIDWAY 5 161 CKT 1 | 164    | 98.0        | 101.1       | 96097 5MARYVL 161 to 96104 5NODWAY 161 CKT1    |
| 03SP       | MEC-MEC           | 64000 LEMARST5 161 to 63889 PLYMOTH5 161 CKT 1 | 163    | 99.3        | 100.2       | 64200 WEBSTER3 345 to 64202 LEHIGH 3 345 CKT1  |
| 03SP       | MEC-MEC           | 64000 LEMARST5 161 to 63889 PLYMOTH5 161 CKT 1 | 163    | 99.2        | 100.1       | 64200 WEBSTER3 345 to 64645 WEB MID5 161 CKT1  |
| 03SP       | MEC-MEC           | 64000 LEMARST5 161 to 63889 PLYMOTH5 161 CKT 1 | 163    | 99.2        | 100.1       | 64201 WEBSTER5 161 to 64645 WEB MID5 161 CKT1  |
| 03SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.1        | 101.7       | 97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1    |
| 03SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 96.4        | 101.1       | 97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1   |
| 03SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 98.5        | 104.1       | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT1     |
| 03SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.2        | 102.7       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1    |
| 03SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 94.6        | 100.2       | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1   |
| 03SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.4        | 101.6       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |
| 03SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.5        | 102.8       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |
| 03SP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 97.3        | 102.5       | 99112 3WINFLD 115 to 99113 6WINFLD 230 CKT1    |
| 03SP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 97.3        | 102.4       | 99113 6WINFLD 230 to 99116 6MONTGY 230 CKT1    |
| 03SP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 92.4        | 100.1       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 03SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 97.2        | 113.5       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 03SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 95.6        | 111.9       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 03SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 94.9        | 111.7       | 53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT1  |
| 03SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 94.7        | 111.2       | 55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1   |
| 03SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 94.3        | 111.1       | 99263 3LEWIS # 115 to 99303 3PATMOS# 115 CKT1  |
| 03SP       | EES-EES           | 99764 5NEWPO 161 to 99817 5ISES 1 161 CKT 1    | 372    | 98.5        | 100.4       | 99764 5NEWPO 161 to 99817 5ISES 1 161 CKT2     |
| 03SP       | EES-EES           | 99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1  | 162    | 94.3        | 101.0       | 52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1  |
| 03SP       | EES-EES           | 99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1  | 162    | 93.5        | 100.1       | 52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT1  |
| 03FA       | CELE-CELE         | 50031 COCODR 6 230 to 50039 COUGH 4 138 CKT 1  | 386    | 99.0        | 101.0       | 50214 WSTFORK6 230 to 50310 PMOUTON6 230 CKT1  |
| 03FA       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 97.9        | 101.2       | 97508 4NAVSOA 138 to 97522 4TUBULAR 138 CKT1   |
| 03FA       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 95.6        | 100.2       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 03FA       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 96.5        | 100.2       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 03FA       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 95.6        | 100.1       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 03FA       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.1        | 101.4       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 03FA       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 94.6        | 101.1       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 03FA       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.1        | 101.0       | 97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1   |
| 03FA       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 94.5        | 100.9       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 03FA       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.0        | 100.8       | 97506 4BRYAN 138 to 97507 4COLSTTA 138 CKT1    |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.2        | 103.8       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |

**Table 2A continued – Non - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer**

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.2        | 103.7       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 97.7        | 100.6       | 97461 4LEWIS 138 to 97544 4ALDEN 138 CKT1      |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 97.2        | 100.5       | 99162 8MTOLIV 500 to 99295 8ELDEHV 500 CKT1    |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 97.5        | 100.4       | 97484 4HUNTSVL 138 to 97519 4GEORGIA 138 CKT1  |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.2        | 104.4       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.6        | 104.1       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.2        | 104.0       | 97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1   |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.5        | 103.9       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 03FA       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.0        | 103.9       | 97506 4BRYAN 138 to 97507 4COLSTTA 138 CKT1    |
| 03FA       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 99.7        | 104.5       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1    |
| 03FA       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 98.8        | 103.3       | 97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1   |
| 03FA       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 97.5        | 102.0       | 97480 L558T485 138 to 97487 4MT.ZION 138 CKT1  |
| 03FA       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 96.8        | 101.6       | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1   |
| 03FA       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 96.3        | 101.1       | 97459 4CONROE 138 to 97539 4WDHAVN 138 CKT1    |
| 03FA       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.1        | 103.4       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 03FA       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.9        | 104.2       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 03FA       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 88.7        | 107.8       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 03FA       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 88.6        | 107.6       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 03FA       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 89.5        | 105.8       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   |
| 03FA       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 84.1        | 100.1       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |
| 03WP       | CELE-CELE         | 50031 COCODR 6 230 to 50039 COUGH 4 138 CKT 1  | 386    | 98.7        | 100.8       | 50214 WSTFORK6 230 to 50310 PMOUTON6 230 CKT1  |
| 03WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 97.6        | 103.9       | 59481 MON383 7 345 to 59984 BRKLN 7 345 CKT1   |
| 03WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 97.4        | 103.8       | 53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  |
| 03WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 96.8        | 102.9       | 56793 NEOSHO 7 345 to 96045 7MORGAN 345 CKT1   |
| 03WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 96.2        | 102.0       | 52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT1  |
| 03WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 95.8        | 101.0       | 59479 LAR382 5 161 to 59480 MON383 5 161 CKT 1 |
| 03WP       | MEC-MEC           | 64062 DMOINES5 161 to 64632 DMSMID2869.0 CKT 2 | 90     | 99.7        | 101.1       | 64062 DMOINES5 161 to 64631 DMSMID1869.0 CKT1  |
| 03WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 99.5        | 105.9       | 30233 CALIF 161 to 31409 OVERTON 161 CKT1      |
| 03WP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 99.8        | 106.7       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 03WP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 98.9        | 106.0       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 03WP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 94.5        | 101.4       | 50027 CLARN 6 230 to 50126 MESSICK6 230 CKT1   |
| 03WP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 94.2        | 101.3       | 50027 CLARN 6 230 to 50126 MESSICK6 230 CKT1   |
| 03WP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 97.6        | 105.2       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 03WP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 92.6        | 100.2       | 50027 CLARN 6 230 to 50126 MESSICK6 230 CKT1   |
| 03WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 85.2        | 101.6       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |
| 03WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 84.4        | 101.0       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 03WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 84.6        | 100.8       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 03WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 88.6        | 105.3       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   |
| 04G        | CELE-CELE         | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT 1 | 700    | 97.0        | 101.2       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   |
| 04G        | CELE-CELE         | 50046 DOLHILL6 230 to 50045 DOLHILL7 345 CKT 1 | 700    | 93.6        | 100.1       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 04G        | MIPU-MIPU         | 59239 HSNVL 5 161 to 59295 HSNVL 2 69.0 CKT 1  | 63     | 99.7        | 100.5       | 59225 PHILL 5 161 to 59280 PHILL 2 69.0 CKT1   |
| 04G        | AECI-MIPU         | 96071 5CLINTN 161 to 59217 WINDSR 5 161 CKT 1  | 123    | 93.9        | 103.5       | 52702 TRUMAN 5 161 to 96555 5GRAVOI 161 CKT1   |
| 04G        | AECI-MIPU         | 96071 5CLINTN 161 to 59217 WINDSR 5 161 CKT 1  | 123    | 91.2        | 100.8       | 59228 WBURGE 5 161 to 59229 ODESSA 5 161 CKT1  |
| 04G        | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.2        | 102.1       | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT1   |
| 04G        | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.3        | 102.1       | 97484 4HUNTSVL 138 to 97519 4GEORGIA 138 CKT1  |
| 04G        | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.3        | 101.7       | 99162 8MTOLIV 500 to 99295 8ELDEHV 500 CKT1    |
| 04G        | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.2        | 101.6       | 97461 4LEWIS 138 to 97544 4ALDEN 138 CKT1      |
| 04G        | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 97.7        | 101.5       | 97488 4TEMCO 138 to 97519 4GEORGIA 138 CKT1    |
| 04G        | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 100.0       | 104.7       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 04G        | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.5        | 103.5       | 97453 4DOBBIN 138 to 97522 4TUBULAR 138 CKT1   |
| 04G        | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.5        | 102.3       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 04G        | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 98.8        | 102.0       | 97458 4CONAIR 138 to 97461 4LEWIS 138 CKT1     |



**Table 2A continued** – Non - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload           |
|------------|-------------------|--|--------|-------------|-------------|---|
| 04G        | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.6        | 102.0       | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1   |
| 04G        | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.7        | 106.6       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  |
| 04G        | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.6        | 106.4       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   |
| 04G        | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.7        | 106.0       | 97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1  |
| 04G        | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.6        | 105.9       | 97506 4BRYAN 138 to 97507 4COLSTTA 138 CKT1   |
| 04G        | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.1        | 104.1       | 97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1 |
| 04G        | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 98.9        | 103.9       | 97506 4BRYAN 138 to 97512 4PEE DEE 138 CKT1   |
| 04G        | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 98.1        | 102.5       | 99162 8MTOLIV 500 to 99295 8ELDEHV 500 CKT1   |
| 04G        | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 97.2        | 102.3       | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT1  |
| 04G        | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.4        | 101.4       | 97481 4CEDAR 138 to 97512 4PEE DEE 138 CKT1   |
| 04G        | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 95.9        | 100.8       | 97481 4CEDAR 138 to 97482 4CINCINT 138 CKT1   |
| 04G        | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.0        | 100.1       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1  |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.1        | 102.8       | 97506 4BRYAN 138 to 97512 4PEE DEE 138 CKT1   |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.4        | 102.7       | 97476 4JACINTO 138 to 97478 6JACINTO 230 CKT1 |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.1        | 102.4       | 97478 6JACINTO 230 to 97714 6CHINA 230 CKT1   |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.1        | 102.4       | 97476 4JACINTO 138 to 97534 4SPLENDR 138 CKT1 |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 98.8        | 102.1       | 97531 4APOLLO 138 to 97534 4SPLENDR 138 CKT1  |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.5        | 104.5       | 97481 4CEDAR 138 to 97512 4PEE DEE 138 CKT1   |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 98.9        | 103.9       | 97481 4CEDAR 138 to 97482 4CINCINT 138 CKT1   |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.0        | 103.2       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1  |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 96.2        | 101.2       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1 |
| 04G        | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 95.2        | 100.9       | 97530 4WALKER 138 to 97536 4RIVTRIN 138 CKT1  |
| 04G        | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.7        | 103.3       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1  |
| 04G        | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.9        | 102.3       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1 |
| 04G        | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 97.3        | 100.8       | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1   |
| 04G        | EES-EES           | 97698 4JASPER 138 to 97704 4RAYBURN 138 CKT 1  | 112    | 99.0        | 102.5       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1  |
| 04G        | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.6        | 103.0       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1 |
| 04G        | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 98.0        | 101.5       | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1   |
| 04G        | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 91.7        | 100.9       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   |
| 04G        | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 91.7        | 100.9       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  |
| 04G        | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 97.1        | 116.1       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   |
| 04G        | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 96.2        | 112.7       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1  |
| 04G        | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 90.0        | 106.5       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1 |
| 04G        | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 97.3        | 116.4       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  |
| 05SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 98.0        | 105.0       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1 |
| 05SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 97.3        | 101.6       | 97346 3TRUS 115 to 99161 3VIENNA 115 CKT1     |
| 05SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 96.9        | 101.0       | 97346 3TRUS 115 to 99161 3VIENNA 115 CKT1     |
| 05SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 95.3        | 100.5       | 99112 3WINFLD 115 to 99182 3DANVLL 115 CKT99  |
| 05SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 96.1        | 100.4       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1  |
| 05SP       | CELE-CELE         | 50039 COUGH 4 138 to 50031 COCODR 6 230 CKT 1  | 386    | 98.1        | 100.2       | 50214 WSTFORK6 230 to 50310 PMOUTON6 230 CKT1 |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 98.1        | 103.4       | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT1  |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 95.1        | 100.3       | 57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1 |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 99.9        | 105.7       | 59468 AUR124 5 161 to 59473 RDS295 5 161 CKT1 |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 99.5        | 105.6       | 58065 CNTRVIL5 161 to 58200 LINNC1 5 161 CKT1 |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 99.5        | 105.2       | 59470 JOP145 5 161 to 59498 STL439 5 161 CKT1 |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 99.7        | 105.0       | 59471 NEO184 5 161 to 59496 NOL435 5 161 CKT1 |
| 05SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 99.2        | 104.7       | 54432 AFTON 5 161 to 54454 PENZA 5 161 CKT1   |
| 05SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 98.1        | 107.7       | 59228 WBURGE 5 161 to 59234 WAFB 5 161 CKT1   |
| 05SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 96.8        | 107.5       | 59201 SIBLEY 7 345 to 31408 OVERTON 345 CKT1  |
| 05SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 98.9        | 107.1       | 59205 BLSPE 5 161 to 59226 GRAINVLS 161 CKT1  |
| 05SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 97.0        | 105.1       | 59226 GRAINVLS 161 to 59227 OAKGRV 5 161 CKT1 |
| 05SP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 96.1        | 103.8       | 59202 SIBLEY 5 161 to 59244 ORRICK 5 161 CKT1 |

**Table 2A continued** – Non - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 05SP       | MEC-MEC           | 64000 LEMARST5 161 to 63889 PLYMOTH5 161 CKT 1 | 163    | 99.8        | 100.7       | 64200 WEBSTER3 345 to 64202 LEHIGH 3 345 CKT1  |
| 05SP       | MEC-MEC           | 64000 LEMARST5 161 to 63889 PLYMOTH5 161 CKT 1 | 163    | 99.8        | 100.7       | 64200 WEBSTER3 345 to 64645 WEB MID5 161 CKT1  |
| 05SP       | MEC-MEC           | 64000 LEMARST5 161 to 63889 PLYMOTH5 161 CKT 1 | 163    | 99.8        | 100.7       | 64201 WEBSTER5 161 to 64645 WEB MID5 161 CKT1  |
| 05SP       | AECI-AECI         | 96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1  | 56     | 97.8        | 100.8       | 52648 NORFORK5 161 to 96123 5WPLAIN 161 CKT1   |
| 05SP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 94.5        | 100.2       | 97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1    |
| 05SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.8        | 105.4       | 97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1    |
| 05SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 97.5        | 103.1       | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT1     |
| 05SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 96.2        | 101.8       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1    |
| 05SP       | EES-EES           | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT 1   | 525    | 97.0        | 101.2       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT2    |
| 05SP       | EES-EES           | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT 2   | 525    | 97.0        | 101.2       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT1    |
| 05SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.6        | 103.8       | 97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1   |
| 05SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 98.0        | 102.8       | 97480 L558T485 138 to 97487 4MT.ZION 138 CKT1  |
| 05SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 96.3        | 101.0       | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT1  |
| 05SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 98.3        | 103.5       | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1   |
| 05SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.6        | 102.8       | 97459 4CONROE 138 to 97539 4WDHAVN 138 CKT1    |
| 05SP       | EES-CELE          | 99167 3RINGLD 115 to 50024 CARROLL4 138 CKT 1  | 125    | 96.0        | 100.3       | 99162 8MTOLIV 500 to 99163 6MTOLIV 230 CKT1    |
| 05SP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 95.3        | 101.1       | 99112 3WINFLD 115 to 99113 6WINFLD 230 CKT1    |
| 05SP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 95.3        | 101.1       | 99113 6WINFLD 230 to 99116 6MONTGY 230 CKT1    |
| 05SP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 93.2        | 101.0       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 05SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 95.4        | 111.5       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 05SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 93.1        | 110.1       | 53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT1  |
| 05SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 93.9        | 110.0       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 05SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 93.1        | 109.6       | 55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1 |
| 05SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 92.5        | 109.5       | 99263 3LEWIS # 115 to 99303 3PATMOS# 115 CKT1  |
| 05SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 97.9        | 101.7       | 99808 5CUSHMN 161 to 99834 5SAGE * 161 CKT1    |
| 05SP       | EES-EES           | 99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1  | 162    | 96.7        | 103.0       | 52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1  |
| 05SP       | EES-EES           | 99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1  | 162    | 95.8        | 102.1       | 52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT1  |
| 05WP       | AMRN-AMRN         | 30026 APCH FLT 161 to 30027 APCH FLT69.0 CKT 1 | 84     | 98.8        | 100.3       | 31195 MILLER S 138 to 31196 MILLER 138 CKT1    |
| 05WP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 96.9        | 103.7       | 50027 CLARN 6 230 to 99116 6MONTGY 230 CKT1    |
| 05WP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 95.9        | 101.0       | 99112 3WINFLD 115 to 99113 6WINFLD 230 CKT1    |
| 05WP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 95.9        | 101.0       | 99113 6WINFLD 230 to 99116 6MONTGY 230 CKT1    |
| 05WP       | CELE-CELE         | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT 1 | 700    | 98.0        | 104.0       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 05WP       | CELE-CELE         | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT 1 | 700    | 97.7        | 103.7       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 05WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 99.7        | 105.0       | 59537 AUR124 269.0 to 59578 AUR355 269.0 CKT1  |
| 05WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 99.1        | 104.9       | 52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT1  |
| 05WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.6        | 104.0       | 59472 TIP292 5 161 to 59480 MON383 5 161 CKT1  |
| 05WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 97.8        | 103.4       | 59468 AUR124 5 161 to 59499 CPK446 5 161 CKT1  |
| 05WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 96.8        | 102.4       | 52692 SPRGFLD5 161 to 59479 LAR382 5 161 CKT1  |
| 05WP       | MEC-MEC           | 64062 DMOINES5 161 to 64632 DMSMID2869.0 CKT 2 | 90     | 98.7        | 100.1       | 64062 DMOINES5 161 to 64631 DMSMID1869.0 CKT1  |
| 05WP       | NPPD-NPPD         | 64895 MCCOOK 869.0 to 64894 MCCOOK 7 115 CKT 2 | 28     | 100.0       | 100.1       | 64894 MCCOOK 7 115 to 64895 MCCOOK 869.0 CKT1  |
| 05WP       | AECI-AECI         | 96089 5JAMESV 161 to 96673 2JAMESV 69.0 CKT 2  | 64     | 99.2        | 100.1       | 96089 5JAMESV 161 to 96673 2JAMESV 69.0 CKT1   |
| 05WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 97.8        | 110.9       | 30532 ELDON 161 to 96057 5BARNET 161 CKT1      |
| 05WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 99.7        | 105.9       | 30233 CALIF 161 to 31409 OVERTON 161 CKT1      |
| 05WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 97.3        | 101.3       | 30361 CLARK S 138 to 31516 PLPS S 138 CKT1     |
| 05WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 95.2        | 100.8       | 97454 4WALDEN 138 to 97514 4GRIMES 138 CKT1    |
| 05WP       | EES-EES           | 99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1   | 115    | 95.9        | 103.6       | 50027 CLARN 6 230 to 99116 6MONTGY 230 CKT1    |
| 05WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 99.2        | 115.7       | 53526 CROCKETT7 345 to 53637 TENRUSK7 345 CKT1 |
| 05WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 98.1        | 114.4       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 05WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 94.8        | 111.2       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 05WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 92.8        | 110.3       | 53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT1  |
| 05WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 92.4        | 109.8       | 99263 3LEWIS # 115 to 99303 3PATMOS# 115 CKT1  |
| 08SP       | CELE-EES          | 50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1  | 125    | 98.9        | 100.6       | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT1  |

**Table 2A continued** – Non - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload           |
|------------|-------------------|--|--------|-------------|-------------|---|
| 08SP       | CELE-CELE         | 50179 SHOAKS 4 138 to 50154 PINEV 4 138 CKT 1  | 148    | 98.3        | 100.4       | 50154 PINEV 4 138 to 50158 PVKFTAP4 138 CKT1  |
| 08SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 99.7        | 105.0       | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT1  |
| 08SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 98.4        | 102.7       | 59208 NEVADA 5 161 to 59216 BUTLER_5 161 CKT1 |
| 08SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 47     | 95.8        | 100.9       | 57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1 |
| 08SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 99.1        | 104.7       | 59466 ATL109 5 161 to 59494 OAK432 5 161 CKT1 |
| 08SP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 36     | 98.1        | 103.7       | 59467 ORO110 5 161 to 59494 OAK432 5 161 CKT1 |
| 08SP       | MIPU -AECI        | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 123    | 95.3        | 102.6       | 96044 7MCCRED 345 to 96049 7THOMHL 345 CKT1   |
| 08SP       | AECI-AECI         | 96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1  | 56     | 100.0       | 102.6       | 96095 5MANSFD 161 to 97168 2MANSFL 69.0 CKT2  |
| 08SP       | AECI-AECI         | 96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1  | 56     | 99.9        | 102.6       | 96095 5MANSFD 161 to 97168 2MANSFL 69.0 CKT1  |
| 08SP       | AECI-AECI         | 96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1  | 56     | 98.5        | 102.3       | 99764 5NEWPO 161 to 99778 5SWIFTN 161 CKT1    |
| 08SP       | AECI-AECI         | 96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1  | 56     | 98.3        | 101.3       | 99784 5WALNUT 161 to 99796 5BLKRK# 161 CKT1   |
| 08SP       | AECI-AECI         | 96081 5GAINES 161 to 97090 2GNSVL2 69.0 CKT 1  | 56     | 97.7        | 100.7       | 99778 5SWIFTN 161 to 99784 5WALNUT 161 CKT1   |
| 08SP       | AECI-AECI         | 96108 5OSCEOL 161 to 96811 2OSCEOL 69.0 CKT 1  | 56     | 97.5        | 101.3       | 52702 TRUMAN 5 161 to 96552 2EDMONS 161 CKT1  |
| 08SP       | AECI-AECI         | 96108 5OSCEOL 161 to 96811 2OSCEOL 69.0 CKT 1  | 56     | 96.7        | 100.6       | 96552 2EDMONS 161 to 96555 5GRAVOI 161 CKT1   |
| 08SP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.6        | 103.1       | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT1 |
| 08SP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 98.8        | 103.3       | 97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1  |
| 08SP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 96.8        | 101.3       | 97480 L558T485 138 to 97487 4MT.ZION 138 CKT1 |
| 08SP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 98.6        | 104.0       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1   |
| 08SP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 96.1        | 101.4       | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1  |
| 08SP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 95.2        | 100.6       | 97459 4CONROE 138 to 97539 4WDHAVN 138 CKT1   |
| 08SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.4        | 104.2       | 97508 4NAVSOTA 138 to 97510 4SOTA 1 138 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.5        | 102.6       | 97458 4CONAIR 138 to 97461 4LEWIS 138 CKT1    |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 95.1        | 100.1       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.6        | 103.9       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.5        | 103.8       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.5        | 103.5       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1 |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.4        | 103.3       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 96.2        | 101.5       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1 |
| 08SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.1        | 100.1       | 97690 4CYPRESS 138 to 97700 4KOUNTZE 138 CKT1 |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.3        | 101.4       | 97690 4CYPRESS 138 to 97700 4KOUNTZE 138 CKT1 |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 96.6        | 100.6       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 96.6        | 100.5       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  |
| 08SP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 97.3        | 107.3       | 99171 3SPRINGH 115 to 99172 3SAREPT 115 CKT1  |
| 08SP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 94.5        | 106.0       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1  |
| 08SP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 92.1        | 103.3       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1 |
| 08SP       | EES-EES           | 99310 3MCNEIL 115 to 99230 3COUCH 115 CKT 1    | 167    | 96.3        | 102.6       | 99309 8MCNEIL 500 to 99310 3MCNEIL 115 CKT1   |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 96.1        | 111.3       | 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1  |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 92.9        | 109.7       | 54033 PITTSB-7 345 to 55045 SEMINOL7 345 CKT1 |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 94.1        | 109.2       | 50023 CARROLL6 230 to 50046 DOLHILL6 230 CKT1 |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 94.5        | 109.1       | 99235 8MCKNT 500 to 99027 8FRKLIN 500 CKT1    |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 93.0        | 107.5       | 55918 FROGVIL4 138 to 55948 HUGO PP4 138 CKT1 |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 97.6        | 114.4       | 55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1  |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 96.5        | 111.8       | 53609 LEBROCK7 345 to 53637 TENRUSK7 345 CKT1 |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 95.3        | 110.2       | 53615 WELSH 7 345 to 53620 WILKES 7 345 CKT1  |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 94.7        | 110.2       | 55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1 |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 94.6        | 110.0       | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT1    |
| 08SP       | EES-EES           | 99782 5TRUMAN 161 to 99750 5HRBORG* 161 CKT 1  | 148    | 99.8        | 101.8       | 99736 5CASH 1 161 to 99755 5JONES 161 CKT1    |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 99.8        | 104.8       | 99627 8KEO 50 500 to 99818 8ISES 5 500 CKT1   |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 99.9        | 103.8       | 99197 8P HILL 500 to 99486 8ANO 50 500 CKT1   |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 98.3        | 103.6       | 96041 7FRANKS 345 to 96042 7HUBEN 345 CKT1    |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 99.4        | 103.6       | 52708 DARDANE5 161 to 99491 5RUSL-S 161 CKT1  |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 99.3        | 103.5       | 55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1 |

**Table 2A continued** – Non - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 08WP       | AMRN-AMRN         | 31408 OVERTON 345 to 31409 OVERTON 161 CKT 1   | 300    | 99.4        | 100.7       | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT1   |
| 08WP       | AMRN-AMRN         | 31408 OVERTON 345 to 31409 OVERTON 161 CKT 1   | 300    | 99.1        | 100.4       | 59209 SEDALIA5 161 to 59217 WINDSR 5 161 CKT1  |
| 08WP       | AMRN-AMRN         | 31408 OVERTON 345 to 31409 OVERTON 161 CKT 1   | 300    | 99.1        | 100.1       | 52702 TRUMAN 5 161 to 96552 2EDMONS 161 CKT1   |
| 08WP       | IP-MEC            | 32415 GALESBRG 138 to 64411 GALESBR5 161 CKT 1 | 100    | 98.1        | 100.9       | 64411 GALESBR5 161 to 32415 GALESBRG 138 CKT2  |
| 08WP       | IP-MEC            | 32415 GALESBRG 138 to 64411 GALESBR5 161 CKT 2 | 100    | 99.5        | 102.3       | 64411 GALESBR5 161 to 32415 GALESBRG 138 CKT1  |
| 08WP       | ALTW-MEC          | 34060 WNRTR5 5 161 to 64068 GRENFLD5 161 CKT 1 | 112    | 97.5        | 100.8       | 64060 BOONVIL3 345 to 64786 COOPER 3 345 CKT1  |
| 08WP       | CELE-CELE         | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT 1 | 700    | 99.2        | 103.2       | 53526 CROCKETT7 345 to 97513 7GRIMES 345 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 98.5        | 103.7       | 96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1     |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 98.5        | 103.6       | 59481 MON383 7 345 to 59984 BRKLN E 7 345 CKT1 |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 100.0       | 103.6       | 96070 5CLARK 161 to 96802 2CLARK 69.0 CKT1     |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 98.1        | 102.6       | 59468 AUR124 5 161 to 59480 MON383 5 161 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 97.5        | 102.1       | 57995 MONTROS5 161 to 96071 5CLINTN 161 CKT1   |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.5        | 103.3       | 59536 ASH121 269.0 to 59586 WIL445 269.0 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.6        | 103.2       | 59471 NEO184 5 161 to 59496 NOL435 5 161 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.0        | 102.8       | 59470 JOP145 5 161 to 59498 STL439 5 161 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.0        | 102.7       | 54432 AFTON 5 161 to 54454 PENZA 5 161 CKT1    |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 97.1        | 101.9       | 52688 CARTHAG5 161 to 59485 CAR395 5 161 CKT1  |
| 08WP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 131    | 98.6        | 107.2       | 59228 WBURGE 5 161 to 59229 ODESSA 5 161 CKT1  |
| 08WP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 131    | 98.5        | 107.0       | 96552 2EDMONS 161 to 96555 5GRAVOI 161 CKT1    |
| 08WP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 131    | 94.1        | 101.2       | 31408 OVERTON 345 to 31409 OVERTON 161 CKT1    |
| 08WP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 131    | 91.3        | 100.1       | 59228 WBURGE 5 161 to 59234 WAFB 5 161 CKT1    |
| 08WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 98.4        | 112.6       | 30532 ELDON 161 to 31400 OSAGE 138 CKT1        |
| 08WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 96.6        | 110.0       | 30532 ELDON 161 to 31400 OSAGE 138 CKT1        |
| 08WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 99.6        | 106.2       | 30648 GRAYSUM1 345 to 30650 GRAY SUM 138 CKT1  |
| 08WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 99.0        | 106.2       | 57995 MONTROS5 161 to 96071 5CLINTN 161 CKT1   |
| 08WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 99.7        | 105.9       | 30282 CAPE GIR 161 to 31975 WEDEKIND 161 CKT1  |
| 08WP       | EES-EES           | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1  | 112    | 99.8        | 104.9       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1    |
| 08WP       | EES-EES           | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1  | 112    | 98.7        | 104.3       | 97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1   |
| 08WP       | EES-EES           | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1  | 112    | 97.2        | 102.8       | 97480 L558T485 138 to 97487 4MT.ZION 138 CKT1  |
| 08WP       | EES-EES           | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1  | 112    | 97.0        | 102.2       | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT1   |
| 08WP       | EES-EES           | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT 1  | 112    | 96.5        | 101.6       | 97459 4CONROE 138 to 97539 4WDHAVN 138 CKT1    |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 99.6        | 103.0       | 97518 4CAMDEN 138 to 97685 4DEER 1 138 CKT1    |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 99.6        | 102.9       | 97685 4DEER 1 138 to 97694 4DOUCETT 138 CKT1   |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 99.7        | 102.9       | 53690 EXPLORE4 138 to 53693 MABANK 4 138 CKT1  |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 99.3        | 102.9       | 97457 4LONGMIR 138 to 97464 4PANORAM 138 CKT1  |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 99.6        | 102.9       | 53687 CANTONT4 138 to 53691 GLENPIN4 138 CKT1  |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 100.0       | 103.7       | 50027 CLARN 6 230 to 50126 MESSICK6 230 CKT1   |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.8        | 103.5       | 55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1 |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.7        | 103.1       | 50046 DOLHILL6 230 to 50056 FISHER 6 230 CKT1  |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.6        | 103.1       | 97530 4WALKER 138 to 97536 4RIVTRIN 138 CKT1   |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.7        | 103.1       | 50056 FISHER 6 230 to 50057 FISHER 4 138 CKT1  |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.8        | 103.5       | 97461 4LEWIS 138 to 97545 4LACON 138.0 CKT1    |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.3        | 102.5       | 97461 4LEWIS 138 to 97544 4ALDEN 138.0 CKT1    |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.7        | 102.3       | 97478 6JACINTO 230 to 97714 6CHINA 230 CKT1    |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.7        | 102.2       | 97476 4JACINTO 138 to 97478 6JACINTO 230 CKT1  |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 98.2        | 101.5       | 97632 4ADAYTON 138 to 97723 6L533TP8 138 CKT1  |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.6        | 104.5       | 97482 4CINCINT 138 to 97530 4WALKER 138 CKT1   |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 98.7        | 103.5       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.2        | 103.4       | 97690 4CYPRESS 138 to 97697 4HONEY 138 CKT1    |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 98.5        | 103.3       | 97530 4WALKER 138 to 97536 4RIVTRIN 138 CKT1   |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.0        | 103.2       | 97697 4HONEY 138 to 97758 4BRAGG 138 CKT1      |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.6        | 104.3       | 50027 CLARN 6 230 to 99116 6MONTGY 230 CKT1    |

**Table 2A continued** – Non - SPP Facility Overloads caused by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.5        | 104.0       | 53615 WELSH 7 345 to 53620 WILKES 7 345 CKT1   |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.5        | 103.9       | 53592 PIRKEY 4 138 to 53602 SABMINT4 138 CKT1  |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.6        | 103.9       | 97698 4JASPER 138 to 97704 4RAYBURN 138 CKT1   |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.5        | 103.8       | 50050 ELEESV 6 230 to 50177 RODEMR 6 230 CKT1  |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.8        | 102.9       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT1    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.8        | 102.9       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT2    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.4        | 102.6       | 97459 4CONROE 138 to 97468 4GOSLIN 138 CKT1    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.7        | 105.0       | 97457 4LONGMIR 138 to 97464 4PANORAM 138 CKT1  |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.6        | 104.7       | 97461 4LEWIS 138 to 97464 4PANORAM 138 CKT1    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.9        | 104.2       | 98937 8B.WLSN 500 to 98952 8G.GULF 500 CKT1    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 99.9        | 104.1       | 53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT2   |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 100.0       | 104.1       | 98235 8MCKNT 500 to 99027 8FRKLN 500 CKT1      |
| 08WP       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 96.4        | 100.6       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.5        | 103.4       | 97453 4DOBBIN 138 to 97457 4LONGMIR 138 CKT1   |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.6        | 103.3       | 97488 4TEMCO 138 to 97519 4GEORGIA 138 CKT1    |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.2        | 102.9       | 97488 4TEMCO 138 to 97538 8LNG 413 138 CKT1    |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.0        | 102.7       | 97538 8LNG 413 138 to 97545 4LACON 138.0 CKT1  |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.0        | 102.7       | 97507 4COLSTTA 138 to 97514 4GRIMES 138 CKT1   |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.8        | 102.5       | 98235 8MCKNT 500 to 15035 8DANIEL 500 CKT1     |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.9        | 102.4       | 97700 4KOUNTZE 138 to 97712 4MCDNALD 138 CKT1  |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.8        | 102.4       | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT1     |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.7        | 102.3       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1    |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.9        | 102.2       | 97715 6HARTBRG 230 to 97718 6INLAND 230 CKT1   |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.6        | 103.2       | 98235 8MCKNT 500 to 15035 8DANIEL 500 CKT1     |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.6        | 103.1       | 97700 4KOUNTZE 138 to 97712 4MCDNALD 138 CKT1  |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.5        | 103.1       | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT1     |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.4        | 103.0       | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT1    |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.3        | 102.9       | 97712 4MCDNALD 138 to 97753 4EVADALE 138 CKT1  |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 93.2        | 106.1       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 93.1        | 106.0       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 94.8        | 105.0       | 99230 3COUCH 115 to 99280 3TAYLOR 115 CKT99    |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 93.2        | 103.4       | 99171 3SPRINGH 115 to 99280 3TAYLOR 115 CKT1   |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 90.2        | 100.5       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 98.6        | 113.6       | 53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1   |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 98.6        | 113.4       | 50023 CARROLL6 230 to 50046 DOLHILL6 230 CKT1  |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 95.9        | 112.1       | 55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1   |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 95.3        | 111.9       | 54033 PITTSB-7 345 to 55045 SEMINOL7 345 CKT1  |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 99.6        | 111.5       | 99309 8MCNEIL 500 to 99310 3MCNEIL 115 CKT1    |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 97.9        | 115.6       | 54033 PITTSB-7 345 to 55224 MUSKOGEE7 345 CKT1 |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 99.6        | 114.4       | 50858 FINNEY7 345 to 56449 HOLCOMB7 345 CKT1   |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 100.0       | 114.2       | 57968 STILWEL7 345 to 59200 PHILL 7 345 CKT1   |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 100.0       | 114.2       | 50098 LEESV 4 138 to 97708 4TOLEDO 138 CKT1    |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 100.0       | 114.2       | 53136 EUREKA 5 161 to 99832 5OSAGE # 161 CKT1  |
| 08WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 88.5        | 108.1       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 08WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 88.4        | 107.9       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 08WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 88.2        | 104.7       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |
| 08WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 92.1        | 108.7       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   |

**Table 3A** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|--|-----------------------------|
| 03SP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1          | 244    | 105.0       | 109.8       | FLINT CREEK TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1   | 0   | Flowgate   | Undetermined                |
| 03SP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1          | 244    | 103.1       | 107.9       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-004   | See Previous                |
| 03SP       | AEPW-AEPW         | LONGWOOD TO NORAM, 138KV<br>53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1             | 234    | 104.6       | 107.3       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase      | None                        |
| 03SP       | AEPW-AEPW         | NORAM TO RAINES, 138KV<br>53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1               | 234    | 103.4       | 106.2       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase      | None                        |
| 03SP       | AEPW-AEPW         | CHEROKEE REC TO KNOX LEE, 138KV<br>53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1     | 209    | 116.7       | 121.5       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 287 MVA 37.3% Increase      | None                        |
| 03SP       | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1   | 136    | 106.8       | 115.9       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 | Undetermined                |
| 03SP       | AEPW-AEPW         | TATUM TO CHEROKEE REC, 138KV<br>53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1         | 209    | 110.8       | 115.5       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 287 MVA 37.3% Increase      | None                        |
| 03SP       | AEPW-AEPW         | TATUM TO ROCK HILL, 138KV<br>53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1            | 209    | 109.1       | 113.8       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 235 MVA 12.4% Increase      | Undetermined                |
| 03SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1 | 493    | 107.4       | 112.1       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                                 | None                        |
| 03SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2 | 493    | 107.4       | 112.1       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                                 | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 03SP       | OKGE-OKGE         | PECAN CREEK 345/161KV TRANSFORMER<br>55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1            | 369    | 102.3       | 110.4       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-108  | None                        |
| 03SP       | WERE-WERE         | CRESWELL TO PARIS, 69KV<br>57543 CRESWLN269.0 to 57548 PARIS 269.0 CKT 1                       | 80     | 102.0       | 103.8       | CRESWELL TO OAK, 69KV<br>57543 CRESWLN269.0 to 57547 OAK 269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-003  | Undetermined                |
| 03SP       | KACP-KACP         | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT 1                   | 1251   | 110.4       | 115.5       | WEST GARDNER TO LACYGNE, 345KV<br>57965 W.GRDNR7 345 to 57981 LACYGNE7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 Linn County Project Relieves Facility                | None                        |
| 03SP       | EMDE-EMDE         | ORONOJO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1  | 214    | 101.8       | 104.4       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 03SP       | AEPW-WERE         | COFFEYVILLE TAP TO DEARING, 138KV<br>53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1            | 210    | 99.6        | 110.4       | DELAWARE TO NEOSHO, 345KV<br>53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1  | 16  | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 232 MVA 10.5% Increase   | None                        |
| 03SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1              | 274    | 96.7        | 105.6       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLN 7 345 CKT1  | 184 | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | Undetermined                |
| 03SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 53136 EUREKA 5 161 1                     | 274    | 96.7        | 105.6       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLN 7345.00] CKT 1<br>FLINT CREEK TO MONETT<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 185 | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1              | 274    | 96.6        | 105.5       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 189 | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03SP       | KACP-KACP         | WEST GARDNER TO LACYGNE, 345KV<br>57965 W.GRDNR7 345 to 57981 LACYGNE7 345 CKT 1               | 1251   | 97.1        | 101.5       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1   | 326 | Upgrade Not Modeled Assigned to SPP-2000-108 Linn County Project Relieves Facility                | None                        |
| 03SP       | SWPA-SWPA         | NORFORK TO BUFORD TAP, 161KV<br>52648 NORFORK5 161 to 52661 BUFDRTP5 161 CKT 1                 | 189    | 95.7        | 101.3       | BULL SHOALS TO MIDWAY, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1   | 383 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18% Increase     | None                        |
| 03SP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 47     | 99.2        | 103.8       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1  | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | Undetermined                |
| 03SP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 36     | 123.6       | 130.9       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | Undetermined                |
| 03SP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                 | 162    | 123.6       | 130.1       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | Undetermined                |
| 03SP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 235    | 100.9       | 104.2       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1   | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |
| 03FA       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 99.4        | 104.2       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 03FA       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 99.4        | 104.2       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 03FA       | EMDE-SWPA         | ATLAS JCT TO CARTHAGE, 161KV<br>59466 ATL109 5 161 to 52688 CARTHAG5 161 CKT 1                 | 167    | 99.9        | 104.2       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 15  | Upgrade Not Modeled Assigned to SPP-2002-127  | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|--|-----|---|-----------------------------|
| 03FA       | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1          | 100    | 98.2        | 102.0       | HORSESHOE LAKE TO MIDWAY, 138KV<br>54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT1                  | 500 | Excluded Per OKGE   | None                        |
| 03FA       | AEPW-AEPW         | SOUTH SHREVEPORT TO WALLACE LAKE, 138KV<br>53446 S SHV 4 138 to 53461 WALLAKE4 138 CKT 1 | 210    | 95.5        | 102.5       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1             | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 03FA       | SWPA-EES          | MIDWAY TO BULL SHOALS, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT 1           | 162    | 110.3       | 116.9       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1              | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                              | Undetermined                |
| 03WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1    | 493    | 100.7       | 105.4       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2           | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | None                        |
| 03WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2    | 493    | 100.7       | 105.4       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1           | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | None                        |
| 03WP       | OKGE-OKGE         | PECAN CREEK 345/161KV TRANSFORMER<br>55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1      | 369    | 104.8       | 112.7       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1                | 0   | Upgrade Not Modeled Assigned to SPP-2000-108  | None                        |
| 03WP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                  | 237    | 100.0       | 100.8       | COFFEE (RAYBURN) TO NEW YORK (RAYBURN), 138KV<br>53689 COFFEE 4 138 to 53694 NEWYORK4 138 CKT1 | 0   | AEPW Upgrade Not Modeled  | Undetermined                |
| 03WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1        | 287    | 91.9        | 100.5       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1                   | 469 | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 03WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1        | 287    | 91.9        | 100.5       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1                  | 471 | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 03WP       | AEPW-AEPW         | SOUTH SHREVEPORT TO WALLACE LAKE, 138KV<br>53446 S SHV 4 138 to 53461 WALLAKE4 138 CKT 1 | 210    | 94.4        | 101.5       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1             | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 03WP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                 | 43     | 105.4       | 111.5       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1                  | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                              | Undetermined                |
| 04G        | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1              | 112    | 104.2       | 108.9       | NEWPORT-INDUSTRIAL TO NEWPORT, 161KV<br>99763 5NEW-IN 161 to 99764 5NEWPO 161 CKT1             | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                    | None                        |
| 04G        | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1              | 112    | 103.6       | 108.2       | NEW-AB TO NEW-IN, 161KV<br>99762 5NEW-AB 161 to 99763 5NEW-IN 161 CKT1                         | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                    | None                        |
| 04G        | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1              | 112    | 98.1        | 103.2       | KEO TO WEST MEMPHIS-EHV, 500KV<br>99627 8KEO 50 500 to 99788 8WMEHV 500 CKT1                   | 182 | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                    | None                        |
| 04G        | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1        | 478    | 95.2        | 102.5       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1                | 331 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 896 MVA 87.4% Increase | None                        |
| 04G        | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1 | 210    | 103.4       | 110.6       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1             | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 04G        | SWPA-EES          | MIDWAY TO BULL SHOALS, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT 1           | 162    | 105.0       | 111.8       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1              | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                              | Undetermined                |
| 05SP       | AEPW-AEPW         | EAST ROGERS TO DYESS, 161KV<br>53135 EROGERS5 161 to 53131 DYESS 5 161 CKT 1             | 244    | 117.5       | 122.7       | EAST CENTERTON TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1           | 0   | Flowgate  | See Previous                |



**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|--|-----------------------------|
| 05SP       | AEPW-AEPW         | EAST ROGERS TO DYESS, 161KV<br>53135 EROGERS5 161 to 53131 DYESS 5 161 CKT 1                  | 244    | 115.1       | 120.3       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-004   | See Previous                |
| 05SP       | AEPW-AEPW         | LONGWOOD TO NORAM, 138KV<br>53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1                     | 234    | 105.9       | 108.6       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase  | None                        |
| 05SP       | AEPW-AEPW         | NORAM TO RAINES, 138KV<br>53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1                       | 234    | 104.6       | 107.3       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase  | None                        |
| 05SP       | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1           | 151    | 103.4       | 112.0       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 | See Previous                |
| 05SP       | WERE-WERE         | CRESWELL TO OAK, 69KV<br>57543 CRESWLN269.0 to 57547 OAK 269.0 CKT 1                          | 90     | 103.2       | 104.7       | CRESWELL TO PARIS, 69KV<br>57543 CRESWLN269.0 to 57548 PARIS 269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-004   | Undetermined                |
| 05SP       | WERE-WERE         | CRESWELL TO PARIS, 69KV<br>57543 CRESWLN269.0 to 57548 PARIS 269.0 CKT 1                      | 80     | 108.8       | 110.9       | CRESWELL TO OAK, 69KV<br>57543 CRESWLN269.0 to 57547 OAK 269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-003   | See Previous                |
| 05SP       | AEPW-AEPW         | TATUM TO ROCK HILL, 138KV<br>53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1                    | 235    | 104.6       | 109.2       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 05SP       | EMDE-EMDE         | ORONOGO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1 | 214    | 104.9       | 108.1       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 05SP       | KACP-KACP         | PAOLA TO CENTENNIAL, 161KV<br>58067 CENTENL5 161 to 58069 PAOLA 5 161 CKT 1                   | 174    | 151.7       | 159.7       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Summer Emergency Rating 335 MVA 92.5% Increase  | None                        |
| 05SP       | SPRM-AECI         | CLAY TO LOGAN, 161KV<br>59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1                            | 185    | 105.1       | 127.6       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 22.7% Increase  | Undetermined                |
| 05SP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1             | 478    | 99.7        | 107.1       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 22  | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 896 MVA 87.4% Increase  | None                        |
| 05SP       | SWPA-SWPA         | SPRINGFIELD 161/69KV TRANSFORMER 3<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3          | 25     | 99.4        | 103.4       | JAMES RIVER TO PLAINVIEW, 69KV<br>59904 JRPS 269.0 to 59905 PLAINV1269.0 CKT1   | 78  | Upgrade Not Modeled Assigned to SPP-2002-046   | Undetermined                |
| 05SP       | SWPA-SWPA         | MUSKOGEE TAP TO GORE, 161KV<br>52758 MUSKTAP5 161 to 52752 GORE 5 161 CKT 1                   | 206    | 99.6        | 105.7       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 33  | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18% Increase    | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|--|-----------------------------|
| 05SP       | AEPW-AEPW         | MARSHALL TO NORTH MARSHALL, 69KV<br>53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1             | 72     | 99.5        | 102.7       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 83  | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 118 MVA 63.9% Increase   | None                        |
| 05SP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1                | 167    | 95.9        | 104.7       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 232 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer<br>Emergency Rating 184 MVA 10.2% Increase   | None                        |
| 05SP       | SWPA-OKGE         | VAN BUREN TO VBI, 161KV<br>52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1                         | 335    | 97.1        | 103.3       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 234 | Upgrade Not Modeled Assigned to SPP-2002-046   | Undetermined                |
| 05SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59500* RNM393 5 161 544 WND 1 REINMILL 1               | 75     | 99.6        | 100.4       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT 1  | 250 | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 05SP       | AEPW-AEPW         | OAK HILL #2 TO KNOX LEE, 138KV<br>53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1               | 210    | 99.6        | 100.2       | KNOX LEE TO MONROE CORNERS REC, 138KV<br>53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1  | 327 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 36.7% Increase   | None                        |
| 05SP       | AEPW-WFEC         | SOUTHWEST STATION TO ANADARK, 138KV<br>54140 S.W.S.-4 138 to 55814 ANADARK4 138 CKT 1          | 210    | 99.5        | 100.2       | VERDEN TO NORTH 29TH CHICKASHA, 138KV<br>54084 VERDEN 4 138 to 54165 N29CHIC4 138 CKT1  | 327 | Upgrade Modeled Assigned to SPP-2000-108   | Undetermined                |
| 05SP       | EMDE-SWPA         | ATLAS JCT TO CARTHAGE, 161KV<br>59466 ATL109 5 161 to 52688 CARTHAG5 161 CKT 1                 | 167    | 96.3        | 100.9       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 402 | Upgrade Not Modeled Assigned to SPP-2002-127   | None                        |
| 05SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1              | 274    | 92.3        | 101.4       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1  | 424 | SWPA Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 05SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1              | 274    | 92.2        | 101.3       | FLINT CREEK TO MONETT, 161KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 429 | SWPA Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 05SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 108.8       | 113.4       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by<br>2004                              | None                        |
| 05SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 108.8       | 113.4       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by<br>2004                              | None                        |
| 05SP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 47     | 102.1       | 106.5       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1  | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                   | See Previous                |
| 05SP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 36     | 128.0       | 135.1       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                   | See Previous                |
| 05SP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                 | 162    | 126.1       | 132.3       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                   | See Previous                |
| 05SP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 235    | 106.1       | 109.7       | CROCKETT TO TE NASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not<br>Modeled Assigned to SPP-2002-046 | None                        |
| 05WP       | AECI-SPRM         | CLAY TO LOGAN, 161KV<br>97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1                             | 232    | 102.4       | 120.0       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | See Previous                |
| 05WP       | KACP-KACP         | LINN COUNTY TO PAOLA, 161KV<br>58069 PAOLA 5 161 to 58200 LINNC1 5 161 CKT 1                   | 237    | 136.6       | 143.8       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Winter<br>Emergency Rating 449 MVA                  | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 05WP       | KACP-KACP         | PAOLA TO CENTENNIAL, 161KV<br>58067 CENTENL5 161 to 58069 PAOLA 5 161 CKT 1                    | 192    | 117.1       | 124.2       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Winter Emergency Rating 449 MVA  | None                        |
| 05WP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1                   | 245    | 99.2        | 104.1       | FLINT CREEK TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1   | 83  | Flowgate  | See Previous                |
| 05WP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1                   | 245    | 98.0        | 102.9       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1  | 205 | Upgrade Modeled Assigned to SPP-2000-004  | See Previous                |
| 05WP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1              | 478    | 93.9        | 101.3       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 415 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 896 MVA 87.4% Increase   | None                        |
| 05WP       | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1       | 210    | 105.1       | 112.2       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 05WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 97.5        | 102.1       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004  | None                        |
| 05WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 97.5        | 102.1       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004  | None                        |
| 08SP       | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1                    | 112    | 102.8       | 106.8       | NEWPORT-INDUSTRIAL TO NEWPORT, 161KV<br>99763 5NEW-IN 161 to 99764 5NEWPO 161 CKT1  | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase  | None                        |
| 08SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1              | 274    | 101.2       | 110.3       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1              | 274    | 100.6       | 109.2       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08SP       | SWPA-OKGE         | VAN BUREN TO VBI, 161KV<br>52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1                         | 335    | 103.1       | 109.2       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08SP       | SWPA-SWPA         | MUSKOGEE TAP TO GORE, 161KV<br>52758 MUSKTAP5 161 to 52752 GORE 5 161 CKT 1                    | 223    | 101.2       | 106.7       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 286 MVA 28.3% Increase | None                        |
| 08SP       | AEPW-AEPW         | SOUTH TEXARKANA REC TO TEXARKANA PLANT, 69KV<br>53189 STEXREC269.0 to 53329 TEXARK 269.0 CKT 1 | 59     | 102.6       | 105.1       | ATLANTA TO WEST ATLANTA, 69KV<br>53248 ATLANTA269.0 to 53333 WATLANT269.0 CKT1  | 0   | Previously Identified   | Undetermined                |
| 08SP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 113.9       | 127.5       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 1272 ACSR Conductor Summer Emergency Rating 309 MVA 31.5% Increase   | Undetermined                |
| 08SP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 113.8       | 127.3       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 1272 ACSR Conductor Summer Emergency Rating 309 MVA 31.5% Increase   | See Previous                |
| 08SP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 112.5       | 123.7       | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 1272 ACSR Conductor Summer Emergency Rating 309 MVA 31.5% Increase   | See Previous                |
| 08SP       | AEPW-AEPW         | LONGWOOD TO NORAM, 138KV<br>53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1                      | 234    | 114.4       | 116.9       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase   | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|--|-----|--|-----------------------------|
| 08SP       | AEPW-AEPW         | <b>RAINES TO ARSENAL HILL, 138KV</b><br>53439 RAINES 4 138 to 53386 ARSHILL4 138 CKT 1      | 234    | 102.4       | 104.9       | <b>Multiple Outage Contingency</b><br><b>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV</b><br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br><b>SOUTHWEST SHREVEPORT TO DIANA, 345KV</b><br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 268 MVA 14.5% Increase  | None                        |
| 08SP       | AEPW-AEPW         | <b>OAK PAN-HARR REC TO LONGWOOD, 138KV</b><br>53457 OAKPH 4 138 to 53423 LONGWD 4 138 CKT 1 | 209    | 102.8       | 106.3       | <b>Multiple Outage Contingency</b><br><b>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV</b><br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br><b>SOUTHWEST SHREVEPORT TO DIANA, 345KV</b><br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 236 MVA 12.9% Increase  | None                        |
| 08SP       | AEPW-AEPW         | <b>NORAM TO RAINES, 138KV</b><br>53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1              | 234    | 113.1       | 115.6       | <b>Multiple Outage Contingency</b><br><b>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV</b><br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br><b>SOUTHWESTSHREVEPORT TO DIANA, 345KV</b><br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase  | None                        |
| 08SP       | AEPW-AEPW         | <b>IPC JEFFERSON TO LIEBERMAN, 138KV</b><br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1  | 151    | 108.0       | 116.2       | <b>LONGWOOD TO WILKES, 345KV</b><br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 | See Previous                |
| 08SP       | AEPW-AEPW         | <b>MARSHALL TO NORTH MARSHALL, 69KV</b><br>53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1   | 72     | 102.7       | 105.8       | <b>Multiple Outage Contingency</b><br><b>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV</b><br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br><b>SOUTHWEST SHREVEPORT TO DIANA, 345KV</b><br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 118 MVA 63.9% Increase  | None                        |
| 08SP       | AEPW-AEPW         | <b>ROCK HILL TO TATUM, 138KV</b><br>53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1           | 235    | 106.6       | 110.9       | <b>Multiple Outage Contingency</b><br><b>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV</b><br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br><b>SOUTHWEST SHREVEPORT TO DIANA, 345KV</b><br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08SP       | GRRD-GRRD         | <b>KERR TO 412SUB, 161KV</b><br>54435 KERR GR5 161 to 54437 412SUB 5 161 CKT 1              | 338    | 107.2       | 111.4       | <b>FLINT CREEK TO GRDA1, 345KV</b><br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 403 MVA 19.2% Increase  | None                        |
| 08SP       | GRRD-GRRD         | <b>412SUB TO KANSAS TAP, 161KV</b><br>54437 412SUB 5 161 to 54514 KANSATP5 161 CKT 1        | 338    | 106.5       | 110.7       | <b>FLINT CREEK TO GRDA1, 345KV</b><br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 403 MVA 19.2% Increase  | None                        |
| 08SP       | OKGE-OKGE         | <b>OSAGE TO CONTINENTAL BLACKS, 69KV</b><br>54742 OSAGE 269.0 to 54763 CONBLKS269.0 CKT 1   | 111    | 100.5       | 106.1       | <b>KILDARE TO WHITE EAGLE, 138KV</b><br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 143 MVA 28.8% Increase  | None                        |
| 08SP       | OKGE-OKGE         | <b>HARDEN CITY TO AHLOSO TAP, 69KV</b><br>55186 HARDEN 269.0 to 55187 AHLOSTP269.0 CKT 1    | 52     | 101.7       | 106.1       | <b>VALLEY VIEW TAP TO VALLEY VIEW, 69KV</b><br>55181 VALYVUT269.0 to 55182 VALLYVU269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 143 MVA 38.5% Increase  | None                        |
| 08SP       | OKGE-OKGE         | <b>PECAN CREEK TO MUSKOGEE, 345KV</b><br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1    | 478    | 111.5       | 118.7       | <b>MUSKOGEE TO FORT SMITH, 345KV</b><br>55224 MUSKOGEE7 345 to 55302 FTSMTIH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 896 MVA 87.4% Increase  | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|--|-----------------------------|
| 08SP       | OKGE-AEPW         | BONANZA TAP TO BONANZA, 161KV<br>55261 BONANZT5 161 to 53126 BONANZA5 161 CKT 1               | 177    | 101.2       | 107.4       | FORT SMITH TO ARKANSAS NUCLEAR ONE, 500KV<br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 276 MVA 55.9% Increase | None                        |
| 08SP       | AECI-GRRD         | TITANTP TO TAHLEQUAH, 69KV<br>96986 2TITANTP69.0 to 54447 TAHLOH 269.0 CKT 1                  | 47     | 101.1       | 101.8       | KANSAS TO WATTS, 69KV<br>54515 KANSAS 269.0 to 96987 2WATTS 69.0 CKT1                     | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH TO ONETA, 138KV<br>53798 BA-N-ST4 138 to 53818 ONETA-4 138 CKT 1           | 235    | 105.4       | 112.3       | CHAMBER SPRINGS ROAD 345/161KV<br>53154 CHAMSPR5 161 to 53155 CHAMSPR7 345 CKT1           | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 22.1% Increase | None                        |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH TO ONETA, 138KV<br>53798 BA-N-ST4 138 to 53818 ONETA-4 138 CKT 1           | 235    | 105.4       | 112.3       | CHAMBER SPRINGS TO CLARKSVILLE, 345KV<br>53155 CHAMSPR7 345 to 53756 CLARKSV7 345 CKT1    | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 22.1% Increase | None                        |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS ROAD 345/161KV TRANSFORMER<br>53155 CHAMSPR7 345 to 53154 CHAMSPR5 161 CKT 1  | 660    | 102.9       | 108.6       | FLINT CREEK TO GRDA, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1                | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 08SP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                       | 237    | 101.4       | 102.6       | SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1      | 0   | AEPW Upgrade Not Modeled   | Undetermined                |
| 08SP       | AEPW-AEPW         | NORTHWEST HENDERSON TO OAK HILL, 138KV<br>53584 NWHENDR4 138 to 53585 OAK1HIL4 138 CKT 1      | 210    | 101.0       | 101.6       | KILGORE REC TO MONROE CORNERS REC, 138KV<br>53555 KILGORR4 138 to 53574 MONROCR4 138 CKT1 | 0   | AEPW Upgrade Not Modeled New Summer Emergency Rating 237<br>MVA 12.9% Increase                     | None                        |
| 08SP       | AEPW-AEPW         | OAK HILL TO KNOX LEE, 138KV<br>53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1                 | 210    | 100.5       | 101.1       | LEVERETTS CHAPEL TO OVERTON, 138KV<br>53560 LEVERET4 138 to 53588 OVERTON4 138 CKT1       | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 36.7% Increase | None                        |
| 08SP       | EMDE-EMDE         | ORONOGO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1 | 214    | 102.1       | 105.1       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1             | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 08SP       | SPRM-AECI         | CLAY TO LOGAN, 161KV<br>59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1                            | 185    | 110.2       | 132.1       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1                      | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 227 MVA 22.7% Increase | See Previous                |
| 08SP       | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1                   | 112    | 101.4       | 105.4       | NEW-AB TO NEW-IN, 161KV<br>99762 5NEW-AB 161 to 99763 5NEW-IN 161 CKT1                    | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167<br>MVA 49.1 % Increase                    | None                        |
| 08SP       | SWPA-SWPA         | SPRINGFIELD 161/69KV TRANSFORMER 1<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 1          | 80     | 102.1       | 103.4       | NICHOLS 161/69KV TRANSFORMER<br>59925 NICHOLS269.0 to 59956 NICHOLS5 161 CKT1             | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | Undetermined                |
| 08SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59500* RNM393 5 161 544 WND 1 REINMILL 1              | 75     | 100.5       | 101.3       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 TO 59483 JOP389 5 161 CKT 1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 08SP       | AEPW-AEPW         | WINFIELD TO ADORA REC, 69KD<br>53335 WINFIEL269.0 to 53243 ADORA 269.0 CKT 1                  | 85     | 99.2        | 103.8       | NORTH MINEOLA TO LAKE HAWKINS, 138KV<br>53581 NMINEOL4 138 to 53666 LHAWKIN4 138 CKT1     | 92  | AEPW Upgrade Not Modeled   | Undetermined                |
| 08SP       | AEPW-AEPW         | FERNDALE LAKE TAP TO PITTSBURG, 69KV<br>53531 FERNDTP269.0 to 53310 PITTSB_269.0 CKT 1        | 79     | 99.9        | 100.5       | HOPEWELL REC TO WINFIELD, 69KV<br>53262 HOPEWEL269.0 to 53335 WINFIEL269.0 CKT1           | 102 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 85 MVA 7.6% Increase   | None                        |
| 08SP       | SWPA-SWPA         | SPRINGFIELD 161/69 KV TRANSFORMER CKT 3<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3     | 25     | 98.2        | 101.5       | MAIN TO BATTLEFIELD, 161KV<br>59958 MAIN 5 161 to 59959 BATFLD 5 161 CKT1                 | 269 | Upgrade Not Modeled Assigned to SPP-2002-046   | See Previous                |
| 08SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1             | 274    | 95.0        | 103.5       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1              | 293 | SWPA Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08SP       | AEPW-WERE         | COFFEYVILLE TAP TO DEARING, 138KV<br>53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1           | 232    | 93.1        | 102.4       | DELAWARE TO NEOSHO, 345KV<br>53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1                | 372 | Upgrade Modeled Assigned to SPP-2000-108   | Undetermined                |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 08SP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1                | 184    | 93.6        | 101.3       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 414 | Upgrade Modeled Assigned to SPP-2000-108  | Undetermined                |
| 08SP       | SWPA-SPRM         | SPRINGFIELD TO CLAY, 161KV<br>52692 SPRGFLD5 161 to 59970 CLAY 5 161 CKT 1                     | 167    | 90.0        | 101.7       | Multiple Outage Contingency<br>HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT 1<br>FRANKS TO HUBEN, 345KV<br>96041 7FRANKS 345 to 96042 7HUBEN 345 CKT 1 | 427 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 188 MVA 12.6% Increase   | None                        |
| 08SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59595*RNM393 269.0 REINMILL 1                          | 75     | 99.3        | 100.1       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 TO 59483 JOP389 5 161 CKT 1  | 438 | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 08SP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                   | 160    | 82.9        | 100.2       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 495 | New Summer Emergency Rating 168 MVA 5% Increase   | None                        |
| 08SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 110.2       | 114.8       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 08SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 110.2       | 114.8       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 08SP       | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1                | 100    | 97.0        | 102.0       | TINKER TAP TO SE15TH, 69KV<br>54989 TINKRTP269.0 to 54992 SE15TH 269.0 CKT1   | 500 | Excluded Per OKGE   | None                        |
| 08SP       | SWPA-AECI         | WSHBRN 161/69KV TRANSFORMER<br>52681 5WSHBRN 161 to 96763 2WSHBRN 69.0 CKT 1                   | 56     | 102.9       | 106.9       | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT1  | N/A | Third Party Facility  | None                        |
| 08SP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 47     | 104.8       | 109.4       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1  | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08SP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 36     | 132.2       | 139.1       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08SP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                 | 162    | 137.9       | 144.2       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFRDTP5 161 to 52660 BULL SH5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08SP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 235    | 124.4       | 128.6       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1   | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |
| 08WP       | AEPW-AEPW         | HUGO TAP TO VALLIANT, 138KV<br>54014 HUGOTAP4 138 to 54044 VALIANT4 138 CKT 1                  | 210    | 103.5       | 109.5       | HUGO POWER PLANT TO VALLIANT, 138KV<br>55948 HUGO PP4 138 to 56079 VALLANT4 138 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 8.1 % Increase   | Undetermined                |
| 08WP       | AEPW-AEPW         | HUGO TAP TO VALLIANT, 138KV<br>54014 HUGOTAP4 138 to 54044 VALIANT4 138 CKT 1                  | 210    | 102.1       | 108.1       | IDABEL TO VALLANT, 138KV<br>55953 IDABEL 4 138 to 56079 VALLANT4 138 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 8.1 % Increase   | See Previous                |
| 08WP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                        | 237    | 101.5       | 102.5       | DIANA TO SPRING HILL, 138KV<br>53527 DIANA 4 138 to 53608 SPRHILL4 138 CKT1   | 0   | AEPW Upgrade Not Modeled  | Undetermined                |
| 08WP       | AEPW-AEPW         | LONDON TO FRIARS WEST, 138KV<br>53566 LONDON 4 138 to 53533 FRIARSW4 138 CKT 1                 | 143    | 100.2       | 101.0       | KNOX LEE TO MONROE CORNERS REC, 138KV<br>53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1  | 0   | New Summer Emergency Rating 287 MVA 100.7% Increase   | None                        |
| 08WP       | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1                     | 789    | 103.7       | 106.9       | HARTBURG TO MT. OLIVE, 500KV<br>97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1  | 0   | AEPW Upgrade Not Modeled New Winter Emergency Rating 1085 MVA 37.5% Increase                      | None                        |

**Table 3A continued** – Previously Assigned and Identified SPP Facilities Impacted by the AEPW to AMRN 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC  | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|------|---|-----------------------------|
| 08WP       | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1                     | 789    | 103.3       | 106.1       | RICHARD TO WEBER, 500KV<br>98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1                  | 0    | AEPW Upgrade Not Modeled New Winter Emergency Rating 1085 MVA 37.5% Increase                      | None                        |
| 08WP       | KACP-KACP         | LINN COUNTY TO PAOLA, 161KV<br>58069 PAOLA 5 161 to 58200 LINNC1 5 161 CKT 1                   | 237    | 160.8       | 168.2       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1             | 0    | Upgrade Not Modeled Assigned to SPP-2002-127 New Winter Emergency Rating 449 MVA                  | None                        |
| 08WP       | SPRM-AECI         | CLAY TO LOGAN, 161KV<br>59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1                             | 232    | 116.8       | 134.1       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1                    | 0    | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08WP       | SPRM-SWPA         | CLAY TO SPRINGFIELD, 161KV<br>59970 CLAY 5 161 to 52692 SPRGLD5 161 CKT 1                      | 167    | 101.7       | 109.9       | JAMES RIVER TO MENTOR, 161KV<br>59961 JRPS 5 161 to 59963 MENTOR 5 161 CKT1             | 0    | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency 223 MVA 33.5% Increase          | None                        |
| 08WP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1              | 478    | 98.9        | 106.2       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1         | 0    | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 896 MVA 87.4% Increase   | None                        |
| 08WP       | AEPW-EES          | FULTON TO PATMOS, 115 KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                     | 235    | 95.7        | 106.9       | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1               | 192  | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08WP       | AEPW-AEPW         | MARSHALL 138/69KV TRANSFORMER CKT 1<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 1          | 121    | 100.7       | 101.7       | MARSHALL 138/69KV TRANSFORMER CKT 2<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT2    | -350 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 143 MVA 18.2% Increase   | None                        |
| 08WP       | AEPW-AEPW         | MARSHALL 138/69KV TRANSFORMER CKT 2<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 2          | 121    | 100.7       | 101.7       | MARSHALL 138/69KV TRANSFORMER CKT 1<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT1    | -350 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 143 MVA 18.2% Increase   | None                        |
| 08WP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 91.4        | 104.8       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1         | 320  | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08WP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 91.3        | 104.7       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1       | 324  | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08WP       | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1       | 210    | 104.3       | 111.3       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1      | 500  | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 08WP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                   | 160    | 104.4       | 121.9       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1             | 500  | New Winter Emergency Rating 195 MVA 21.9% Increase  | None                        |
| 08WP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 52     | 102.2       | 106.4       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1                | N/A  | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08WP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 43     | 122.0       | 127.7       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1           | N/A  | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08WP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 265    | 126.1       | 129.4       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1 | N/A  | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |

**Table 1B** – SPP Facility Overloads caused by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Solution                             |
|------------|-------------------|--|--------|-------------|-------------|---|-----|--------------------------------------|
| 03SP       | AEPW-AEPW         | <b>ADORA T TO WEST MT. PLEASANT</b><br>53244 ADRWTP269.0 to 53338 WMTPLES269.0 CKT 1                               | 72     | 100.0       | 100.6       | <b>PETTY 69 TO PILGRIM'S PRIDE</b><br>53307 PETTY 269.0 to 53309 PILGPRD269.0 CKT1                | 21  | Undetermined                         |
| 03SP       | SWPA-AECI         | <b>SALISAW TO LIBERTY TAP 161KV</b><br>52750 SALISAW5 161 to 96867 5LBRTYTP 161 CKT 1                              | 189    | 86.2        | 103.4       | <b>MUSKOGEE TO FORT SMITH, 345KV</b><br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1            | 402 | Undetermined                         |
| 03SP       | AEPW-AEPW         | <b>SOUTHEAST MARSHALL TO SABINE MINING CO. T</b><br>53605 SEMRSHL4 138 to 53602 SABMINT4 138 CKT 1                 | 287    | 95.5        | 100.6       | <b>LONGWOOD 345KV TO WILKES 345KV</b><br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1            | 442 | Undetermined                         |
| 03SP       | AECI-SWPA         | <b>LBRTYTP TO VAN BUREN, 161KV</b><br>96867 5LBRTYTP 161 to 52722 VAN BUR5 161 CKT 1                               | 189    | 83.2        | 100.4       | <b>MUSKOGEE TO FT SMITH, 345KV</b><br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1              | 487 | Undetermined                         |
| 03FA       | AEPW-AEPW         | <b>BANN TO ALUMAX TAP 138KV</b><br>53250 BANN 4 138 to 53245 ALUMXT 4 138 CKT 1                                    | 287    | 98.4        | 101.7       | <b>NW TEXARKANA-BANN T TO NW TEXARKANA SWAEC</b><br>53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1 | 244 | Undetermined                         |
| 03WP       | AEPW-AEPW         | <b>OKAY 115 TO MCNAB REC</b><br>53303 OKAY 3 115 to 53232 MCNAB 3 115 CKT 1  | 149    | 99.4        | 110.0       | <b>LONGW OOD TOELDORADO-EHV, 345KV</b><br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1            | 27  | Undetermined                         |
| 03WP       | AEPW-AEPW         | <b>OKAY 115 TO MCNAB REC</b><br>53303 OKAY 3 115 to 53232 MCNAB 3 115 CKT 1  | 149    | 99.3        | 109.7       | <b>ELDORADO-EHV 500/345KV TRANSFORMER</b><br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1          | 33  | See Previous                         |
| 03WP       | OKGE-OKGE         | <b>WHITE EAGLE 138 TO KILDARE4 138</b><br>54761 WHEAGLE4 138 to 54760 KILDARE4 138 CKT 1                           | 191    | 93.8        | 105.7       | <b>WOODRING TO WICHITA 345KV</b><br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1                 | 260 | Undetermined                         |
| 03WP       | AEPW-AEPW         | <b>ASHDOWN REC (MILLWOOD) TO OKAY 115KV</b><br>53225 ASHDWNR3 115 to 53303 OKAY 3 115 CKT 1                        | 149    | 95.4        | 103.1       | <b>LONGWOOD TOELDORADO-EHV, 345KV</b><br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1             | 300 | Undetermined                         |
| 03WP       | AEPW-AEPW         | <b>ASHDOWN REC (MILLWOOD) TO OKAY 115KV</b><br>53225 ASHDWNR3 115 to 53303 OKAY 3 115 CKT 1                        | 149    | 95.3        | 102.9       | <b>ELDORADO-EHV 500/345KV TRANSFORMER</b><br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1          | 310 | See Previous                         |
| 03WP       | AEPW-AEPW         | <b>BANN 138 TO ALUMAX TAP 138KV</b><br>53250 BANN 4 138 to 53245 ALUMXT 4 138 CKT 1                                | 287    | 96.7        | 100.2       | <b>NW TEXARKANA-BANN T TO NW TEXARKANA 138KV</b><br>53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1 | 473 | See Previous                         |
| 04G        | WERE-WERE         | <b>KING HILL N.M. COOP TO KELLY, 115KV</b><br>57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1                        | 92     | 97.8        | 100.5       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1               | 412 | Westar Transmission OP Directive 803 |
| 05SP       | AEPW-AEPW         | <b>ADORA REC TO ADORA T, 69KV</b><br>53243 ADORA 269.0 to 53244 ADRWTP269.0 CKT 1                                  | 85     | 100.0       | 100.9       | <b>PITTSBURG 138/69KV TRANSFORMER</b><br>53310 PITTSB_269.0 to 53311 PITTSB_4 138 CKT1            | 13  | Undetermined                         |
| 05SP       | WERE-WERE         | <b>MIDWEST GRAIN SOLVENTS JCT2 TO ARNOLD, 69KV</b><br>57479 MWSOLJ2269.0 to 57471 ARNOLD 269.0 CKT 1               | 41     | 100.0       | 100.2       | <b>ARNOLD TO PARALLEL, 115KV</b><br>57211 ARNOLD 3 115 to 57218 PARALEL3 115 CKT1                 | 110 | Undetermined                         |
| 05SP       | AEPW-AEPW         | <b>ADORA REC TO ADORA T, 69KV</b><br>53243 ADORA 269.0 to 53244 ADRWTP269.0 CKT 1                                  | 85     | 99.7        | 100.5       | <b>PITTSBURG TO FERNDAL E LAKE TAP, 69KV</b><br>53310 PITTSB_269.0 to 53531 FERNDTP269.0 CKT1     | 175 | See Previous                         |
| 05SP       | WERE-WERE         | <b>29TH &amp; EVENINGSIDE JUNCTION TO 29TH &amp; GAGE, 115KV</b><br>57185 29EVENG3 115 to 57186 29 GAGE3 115 CKT 1 | 141    | 99.3        | 101.3       | <b>HOYT TO JEFFERY ENERGY CENTER, 345KV</b><br>56765 HOYT 7 345 to 56766 JEC N 7 345 CKT1         | 179 | Westar Transmission OP Directive 400 |
| 05SP       | SWPA-AECI         | <b>SALLISAW TO LBRTYTP, 161KV</b><br>52750 SALISAW5 161 to 96867 5LBRTYTP 161 CKT 1                                | 189    | 91.4        | 109.0       | <b>MUSKOGEE TO FT SMITH, 345KV</b><br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1              | 244 | See Previous                         |
| 05SP       | WERE-WERE         | <b>KING HILL N.M. COOP TO KELLY, 115KV</b><br>57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1                        | 92     | 98.5        | 101.2       | <b>HOYT TO STRANGER CREEK, 345KV</b><br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1               | 286 | Westar Transmission OP Directive 803 |
| 05SP       | EMDE-EMDE         | <b>JOPLIN OAKLAND NORTH TO ATLAS JCT., 161KV</b><br>59494 OAK432 5 161 to 59466 ATL109 5 161 CKT 1                 | 299    | 99.4        | 102.2       | <b>TIPTON FORD TO JOPLIN SOUTHWEST, 161KV</b><br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1    | 108 | Undetermined                         |
| 05SP       | AECI-SWPA         | <b>LBRTYTP TO VAN BUREN, 161KV</b><br>96867 5LBRTYTP 161 to 52722 VAN BUR5 161 CKT 1                               | 189    | 88.4        | 105.9       | <b>MUSKOGEE TO FT SMITH, 345KV</b><br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1              | 331 | Undetermined                         |
| 05SP       | EMDE-EMDE         | <b>MONETT 161/69/12.5KV TRANSFORMER</b><br>59480* MON383 5 161 544 VND 1 MONETT 1                                  | 150    | 98.6        | 100.8       | <b>MONETT TO AURORA H.T., 161KV</b><br>59480 MON383 5 161 to 59468 AUR124 5 161 CKT 1             | 323 | Undetermined                         |
| 05SP       | AEPW-AEPW         | <b>SOUTHEAST MARSHALL TO SABINE MINING CO. T, 138KV</b><br>53605 SEMRSHL4 138 to 53602 SABMINT4 138 CKT 1          | 287    | 99.2        | 104.1       | <b>LONGWOOD TO WILKES, 345KV</b><br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1                 | 82  | See Previous                         |
| 05SP       | AEPW-AEPW         | <b>HAWKINS REC TO HOARD REC, 69KV</b><br>53544 HAWKREA269.0 to 53546 HOARD R269.0 CKT 1                            | 85     | 99.1        | 100.6       | <b>PERDUE TO LAKE HAWKINS, 138KV</b><br>53590 PERDUE 4 138 to 53666 LHAWKIN4 138 CKT1             | 297 | Undetermined                         |
| 05SP       | EMDE-EMDE         | <b>MONETT TO MONETT H.T., 69KV</b><br>59591 MON383 269.0 to 59540 MON152 269.0 CKT 1                               | 65     | 96.3        | 101.0       | <b>AURORA H.T. TO MONETT, 161KV</b><br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1              | 395 | Undetermined                         |



**Table 1B continued** – SPP Facility Overloads caused by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Solution                             |
|------------|-------------------|---|--------|-------------|-------------|---|-----|--------------------------------------|
| 05SP       | SWPA-SPRM         | SPRINGFIELD TO BROOKLINE, 161KV<br>52692 SPRGLD5 161 to 59969 BRKLINE 5 161 CKT 1             | 323    | 95.3        | 100.1       | Multiple Outage Contingency<br>HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT 1<br>FRANKS TO HUBEN, 345KV<br>96041 7FRANKS 345 to 96042 7HUBEN 345 CKT 1                                   | 490 | Undetermined                         |
| 05WP       | WERE-WERE         | KING HILL N.M. COOP TO KELLY, 115KV<br>57331 KING HL3 115 to 57217 KELLY 3 115 CKT 1          | 92     | 99.1        | 101.8       | HOYT TO STRANGER CREEK, 345KV<br>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT1  | 169 | Westar Transmission OP Directive 803 |
| 05WP       | AEPW-AEPW         | OKAY TO MCNAB REC, 115KV<br>53303 OKAY 3 115 to 53232 MCNAB 3 115 CKT 1                       | 149    | 90.8        | 102.5       | LONGWOOD TOELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  | 395 | See Previous                         |
| 05WP       | AEPW-AEPW         | OKAY TO MCNAB REC, 115KV<br>53303 OKAY 3 115 to 53232 MCNAB 3 115 CKT 1                       | 149    | 90.6        | 102.2       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   | 404 | See Previous                         |
| 08SP       | AEPW-AEPW         | FLOURNOY TO OAK PAN-HARR REC, 138KV<br>53405 FLOURNY4 138 53457 OAKPH 4 138 1                 | 209    | 99.9        | 105.8       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 8   | Undetermined                         |
| 08SP       | SWPA-AECI         | SALLISAW TO LIBERTY TAP, 161 KV<br>52750 SALLISAW5 161 to 96867 5LBRTYTP 161 CKT 1            | 189    | 99.7        | 116.9       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 8   | See Previous                         |
| 08SP       | SWPA-AEPW         | WELEETKA TO WELEETKA, 138 KV<br>52792 WELEETK4 138 to 54028 WELETK4 138 CKT 1                 | 210    | 99.7        | 107.8       | FRANKLIN TO FRANKLIN SW, 138KV<br>55913 FRANKLN4 138 to 55917 FRNKLNS4 138 CKT1   | 20  | Undetermined                         |
| 08SP       | AEPW-AEPW         | HALLSVILLE TO LONGVIEW HEIGHTS, 69 KV<br>53541 HALLSVL269.0 to 53567 LONGVHT269.0 CKT 1       | 48     | 99.9        | 101.6       | MARSHALL TO MARSHALL AUTO, 69KV<br>53570 MARSHAL269.0 to 53623 MARAUTO269.0 CKT1  | 39  | Undetermined                         |
| 08SP       | WERE-WERE         | NA PHILIPS JCT (SOUTH) TO NA PHILIPS, 115KV<br>57374 SPHILPJ3 115 to 57372 PHILIPS3 115 CKT 1 | 160    | 99.8        | 102.2       | EAST MCPHERSON TO SUMMIT, 230KV<br>56872 EMCIPHER6 230 to 56873 SUMMIT 6 230 CKT1   | 48  | Undetermined                         |
| 08SP       | GRRD-GRRD         | PENSACOLA TO GRAY TAP, 69KV<br>54428 PENZA 269.0 to 54465 GRAY TP269.0 CKT 1                  | 47     | 99.7        | 102.2       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 55  | Undetermined                         |
| 08SP       | OKGE-AEPW         | HOWE INT TO MIDLAND, 69KV<br>55259 HOWEIN 269.0 to 53145 MIDLND-269.0 CKT 1                   | 48     | 99.3        | 104.6       | BONANZA TO BONANZA TAP, 161KV<br>53126 BONANZA5 161 to 55261 BONANZT5 161 CKT1  | 63  | Undetermined                         |
| 08SP       | OKGE-AEPW         | MAUD TO FIXICO TAP, 138KV<br>55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1                       | 107    | 96.6        | 117.8       | MAUD 69/138KV TRANSFORMER<br>55054 MAUD 269.0 to 55055 MAUD 4 138 CKT1  | 79  | Undetermined                         |
| 08SP       | EMDE-EMDE         | MONETT TO MONETT H.T., 69KV<br>59591 MON383 269.0 to 59540 MON152 269.0 CKT 1                 | 65     | 99.3        | 103.8       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1   | 81  | See Previous                         |
| 08SP       | GRRD-GRRD         | PENSACOLA TO GRAY TAP, 69KV<br>54428 PENZA 269.0 to 54465 GRAY TP269.0 CKT 1                  | 47     | 99.6        | 101.6       | KANSAS TAP TO KANSAS, 161KV<br>54514 KANSATP5 161 to 54516 KANSAS 5 161 CKT1  | 98  | See Previous                         |
| 08SP       | AECI-SWPA         | LIBERTY TAP TO VAN BUREN, 161KV<br>96867 5LBRTYTP 161 to 52722 VAN BUR5 161 CKT 1             | 189    | 96.5        | 113.7       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 103 | See Previous                         |
| 08SP       | AEPW-AEPW         | BONANZA TO HACKETT AECC, 161KV<br>53126 BONANZA5 161 to 53196 HACKETT5 161 CKT 1              | 177    | 97.9        | 107.8       | FT SMITH TO ANO, 500KV<br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1  | 105 | Undetermined                         |
| 08SP       | GRRD-GRRD         | PENSACOLA TO GRAY TAP, 69KV<br>54428 PENZA 269.0 to 54465 GRAY TP269.0 CKT 1                  | 47     | 99.6        | 101.2       | KANSAS 69/161KV TRANSFORMER<br>54515 KANSAS 269.0 to 54516 KANSAS 5 161 CKT1  | 120 | See Previous                         |
| 08SP       | AEPW-AEPW         | KEATCHIE REC TO STONEWALL, 138KV<br>53418 KEATCHI4 138 to 53450 STONWAL4 138 CKT 1            | 268    | 98.9        | 103.1       | CARTHAGE REC TO ROCK HILL, 138KV<br>53519 CARTREA4 138 to 53598 ROKHILL4 138 CKT1   | 127 | Undetermined                         |
| 08SP       | OKGE-AEPW         | MAUD TO FIXICO TAP, 138KV<br>55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1                       | 107    | 94.0        | 116.1       | MAUD TO FOREST HILL, 138KV<br>55055 MAUD 4 138 to 55075 FRSTHIL4 138 CKT1   | 136 | See Previous                         |
| 08SP       | OKGE-AEPW         | MAUD TO FIXICO TAP, 138KV<br>55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1                       | 107    | 93.6        | 116.0       | FRANKLIN TO FRANKLIN SW, 138KV<br>55913 FRANKLN4 138 to 55917 FRNKLNS4 138 CKT1   | 142 | See Previous                         |
| 08SP       | AEPW-AEPW         | PITTSBURG TO ATOKA PUMP, 69KV<br>54010 PITTSB-269.0 to 54004 ATOKA P269.0 CKT 1               | 42     | 99.9        | 100.3       | LONE OAK TO SOUTH MCALESTER TAP, 138KV<br>54022 LONEOAK4 138 to 54032 SMCALTP4 138 CKT1   | 142 | Undetermined                         |
| 08SP       | OKGE-AEPW         | MAUD TO FIXICO TAP, 138KV<br>55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1                       | 107    | 89.6        | 115.5       | PITTSBURG TO VALLIANT, 345KV<br>54033 PITTSB-7 345 to 54037 VALIANT7 345 CKT1   | 200 | See Previous                         |
| 08SP       | AEPW-AEPW         | WILKES TO JEFFERSON SWITCHING, 138KV<br>53619 WILKES 4 138 to 53551 JEFFRSN4 138 CKT 1        | 261    | 97.0        | 104.5       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 201 | Undetermined                         |

**Table 1B continued** – SPP Facility Overloads caused by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Solution     |
|------------|-------------------|---|--------|-------------|-------------|--|-----|--------------|
| 08SP       | OKGE-AEPW         | <b>MAUD TO FIXICO TAP, 138KV</b><br>55055 MAUD 4 138 to 54002 FIXCT4 138 CKT 1                            | 107    | 91.0        | 113.3       | <b>FRANKLIN TO PINK SW, 138KV</b><br>55913 FRANKLN4 138 to 56028 PINK SW4 138 CKT1   | 202 | See Previous |
| 08SP       | AEPW-AEPW         | <b>SOUTHEAST MARSHALL TO SABINE MINING CO. T, 138KV</b><br>53605 SEMRSHL4 138 to 53602 SABMINT4 138 CKT 1 | 287    | 98.0        | 102.8       | <b>LONGWOOD TO WILKES, 345KV</b><br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 208 | See Previous |
| 08SP       | AEPW-AEPW         | <b>AVOCA TO EAST ROGERS, 161KV</b><br>53191 AVOCA--5 161 to 53135 EROGERS5 161 CKT 1                      | 244    | 96.7        | 104.5       | <b>FLINT CREEK TO MONETT, 345KV</b><br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 211 | Undetermined |
| 08SP       | AEPW-AEPW         | <b>LOGANSPOUT TO GEORGIA-PACIFIC, 138KV</b><br>53565 LOGANSP4 138 to 53536 GEORPAC4 138 CKT 1             | 261    | 98.1        | 102.3       | <b>CARTHAGE REC TO ROCK HILL, 138 KV</b><br>53519 CARTREA4 138 to 53598 ROKHILL4 138 CKT1  | 222 | Undetermined |
| 08SP       | SWPA-SWPA         | <b>BUFORD TAP TO BULL SHOALS, 161KV</b><br>52661 BUFRDTP5 161 to 52660 BULL SH5 161 CKT 1                 | 223    | 96.1        | 103.3       | <b>MIDWAY TO BULL SHOALS, 161KV</b><br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1   | 269 | Undetermined |
| 08SP       | OKGE-OKGE         | <b>CHIKASKIA TAP TO BRAMAN, 69KV</b><br>54751 CHIKSTP269.0 to 54750 BRAMAN 269.0 CKT 1                    | 54     | 96.9        | 102.2       | <b>KILDARE4 TO WHITE EAGLE, 138KV</b><br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1   | 293 | Undetermined |
| 08SP       | OKGE-OKGE         | <b>5 TRIBES TO PECAN CREEK, 161KV</b><br>55228 5TRIBES5 161 to 55234 PECANCK5 161 CKT 1                   | 312    | 96.9        | 102.1       | <b>AGENCY TO PECAN CREEK, 161KV</b><br>55230 AGENCY 5 161 to 55234 PECANCK5 161 CKT1   | 299 | Undetermined |
| 08SP       | OKGE-OKGE         | <b>CHEROKEE PL TAP TO CHILOCCO, 69KV</b><br>54745 CHERPLT269.0 to 54744 CHILOCO269.0 CKT 1                | 111    | 96.9        | 101.9       | <b>KILDARE4 TO WHITE EAGLE, 138KV</b><br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1   | 311 | Undetermined |
| 08SP       | AEPW-AEPW         | <b>FRIARS WEST REC TO FRIARS WEST, 138KV</b><br>53534 FRIRSWR4 138 to 53533 FRIRSW4 138 CKT 1             | 143    | 98.9        | 100.5       | <b>KNOX LEE TO MONROE CORNERS REC, 138KV</b><br>53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1  | 350 | Undetermined |
| 08SP       | SWPA-AEPW         | <b>WELEETKA TO WELEETKA 138KV, 138KV</b><br>52792 WELEETK4 138 to 54028 WELETK4 138 CKT 1                 | 210    | 93.4        | 101.7       | <b>FRANKLIN TO PINK SW, 138KV</b><br>55913 FRANKLN4 138 to 56028 PINK SW4 138 CKT1   | 396 | See Previous |
| 08SP       | SWPA-SPRM         | <b>SPRINGFIELD TO BROOKLINE, 161KV</b><br>52692 SPRGFLD5 161 59969 BRKLINE 5 161 1                        | 323    | 96.3        | 100.4       | <b>Multiple Outage Contingency</b><br><b>HUBEN TO MORGAN, 345KV</b><br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT 1<br><b>FRANKS TO HUBEN, 345KV</b><br>96041 7FRANKS 345 to 96042 7HUBEN 345 CKT 1 | 451 | Undetermined |
| 08WP       | OKGE-OKGE         | <b>WHITE EAGLE TO KILDARE4, 138KV</b><br>54761 WHEAGLE4 138 to 54760 KILDARE4 138 CKT 1                   | 222    | 95.6        | 105.8       | <b>WOODRING TO WICHITA, 345KV</b><br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 216 | Undetermined |
| 08WP       | AEPW-AEPW         | <b>FOREST HILLS REC TO QUITMAN, 69KV</b><br>53532 FORSTHL269.0 to 53596 QUITMAN269.0 CKT 1                | 72     | 98.8        | 100.5       | <b>NORTH MINEOLA TO LAKE HAWKINS, 138KV</b><br>53581 NMINEOL4 138 to 53666 LHAWKIN4 138 CKT1   | 355 | Undetermined |
| 08WP       | AEPW-AEPW         | <b>FRIARS WEST TO FRIARS WEST REC, 138KV</b><br>53533 FRIRSWR4 138 to 53534 FRIRSWR4 138 CKT 1            | 143    | 98.7        | 100.3       | <b>KILGORE REC TO MONROE CORNERS REC, 138KV</b><br>53555 KILGORR4 138 to 53574 MONROCR4 138 CKT1   | 397 | See Previous |
| 08WP       | OKGE-OKGE         | <b>KILDARE4 TO NEWKIRK4, 138KV</b><br>54760 KILDARE4 138 to 54759 NEWKIRK4 138 CKT 1                      | 222    | 89.3        | 101.4       | <b>WOODRING TO WICHITA, 345KV</b><br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 442 | Undetermined |
| 08WP       | AEPW-AEPW         | <b>BROKEN BOW TAP TO IDABEL, 138KV</b><br>54013 B.BOWTP4 138 to 54011 IDABEL-4 138 CKT 1                  | 186    | 94.4        | 100.6       | <b>HUGO POWER PLANT TO VALLENT, 138KV</b><br>55948 HUGO PP4 138 to 56079 VALLANT4 138 CKT1   | 453 | Undetermined |















**Table 2B continued – Non - SPP Facility Overloads caused by the OKGE to EES 500 MW Transfer**

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 08SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 98.2        | 108.0       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 08SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 97.8        | 105.8       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1  |
| 08SP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 97.7        | 105.4       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1   |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 100.0       | 107.7       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 99.6        | 105.7       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1   |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 97.9        | 105.2       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 97.6        | 104.0       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1   | 206    | 96.7        | 103.5       | 97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 98.3        | 107.1       | 97506 4BRYAN 138 to 97512 4PEE DEE 138 CKT1    |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 98.6        | 107.0       | 97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1  |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 97.4        | 105.8       | 97453 4DOBBIN 138 to 97522 4TUBULAR 138 CKT1   |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 96.4        | 103.4       | 97717 8HARTBRG 500 to 97916 8NELSON 500 CKT1   |
| 08SP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 93.8        | 103.0       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 08SP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 95.6        | 104.0       | 97487 4MT.ZION 138 to 97514 4GRIMES 138 CKT1   |
| 08SP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 93.7        | 102.0       | 97480 L558T485 138 to 97487 4MT.ZION 138 CKT1  |
| 08SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.3        | 106.0       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 08SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.2        | 105.8       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 08SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.1        | 105.7       | 50098 LEESV 4 138 to 97708 4TOLEDO 138 CKT1    |
| 08SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 97.7        | 102.3       | 97717 8HARTBRG 500 to 97916 8NELSON 500 CKT1   |
| 08SP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 93.5        | 101.0       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 08SP       | EES-EES           | 97698 4JASPER 138 to 97704 4RAYBURN 138 CKT 1  | 112    | 97.8        | 102.5       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1  |
| 08SP       | EES-EES           | 97698 4JASPER 138 to 97704 4RAYBURN 138 CKT 1  | 112    | 96.5        | 102.3       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.4        | 107.0       | 50098 LEESV 4 138 to 97708 4TOLEDO 138 CKT1    |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.0        | 103.6       | 97717 8HARTBRG 500 to 97916 8NELSON 500 CKT1   |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 94.8        | 102.3       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 96.0        | 102.0       | 53609 LEBROCK7 345 to 53637 TENRUSK7 345 CKT1  |
| 08SP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.1        | 101.8       | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT1  |
| 08SP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 97.5        | 106.7       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 08SP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 93.7        | 103.4       | 55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1 |
| 08SP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 90.5        | 100.3       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 08SP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 99.8        | 109.5       | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT1     |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 99.8        | 112.9       | 99742 8DELL 5 500 to 99818 8ISES 5 500 CKT1    |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 99.9        | 112.5       | 54011 IDABEL-4 138 to 54013 B.BOWTP4 138 CKT1  |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 99.4        | 112.3       | 99788 8WM-EHV 500 to 18051 8BHAMSTE 500 CKT1   |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 99.4        | 111.9       | 55946 HOLYCRK4 138 to 55953 IDABEL 4 138 CKT1  |
| 08SP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 99.3        | 111.4       | 99162 8MTOLIV 500 to 99295 8ELDEHV 500 CKT1    |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 99.6        | 112.7       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1   |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 99.4        | 112.4       | 53286 MUNZCTY4 138 to 53619 WILKES 4 138 CKT1  |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 98.9        | 111.9       | 97691 8CYPRESS 500 to 97717 8HARTBRG 500 CKT1  |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 97.4        | 111.8       | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT1  |
| 08SP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 97.6        | 110.7       | 53232 MCNAB 3 115 to 53303 OKAY 3 115 CKT1     |
| 08SP       | EES-EES           | 99508 5GLEASN 161 to 99507 5MOR-E 161 CKT 1    | 246    | 97.5        | 100.4       | 99197 8P HILL 500 to 99572 8MAYFL 500 CKT1     |
| 08SP       | EES-EES           | 99797 5HARR-S 161 to 99811 5HARR-E 161 CKT 1   | 223    | 99.1        | 100.8       | 53136 EUREKA 5 161 to 99832 5OSAGE # 161 CKT1  |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 100.0       | 106.2       | 96041 7FRANKS 345 to 96078 5FRANKS 161 CKT1    |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 100.0       | 106.1       | 99595 5BALNOB 161 to 99644 5PRICE 161 CKT1     |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 99.9        | 106.1       | 56793 NEOSHO 7 345 to 57981 LACYGNE7 345 CKT1  |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 99.9        | 106.1       | 97916 8NELSON 500 to 98107 8RICHARD 500 CKT1   |
| 08SP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 100.0       | 106.1       | 53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1  |
| 08SP       | EES-EES           | 99825 5MIDWAY# 161 to 99827 5MT HOM 161 CKT 1  | 162    | 98.1        | 102.7       | 99817 5ISES 1 161 to 99826 5MORFLD 161 CKT1    |
| 08WP       | AMRN-AMRN         | 31408 OVERTON 345 to 31409 OVERTON 161 CKT 1   | 300    | 97.7        | 100.6       | 31088 MCCREDIE 345 to 31230 MONTGMRY 345 CKT1  |
| 08WP       | AMRN-AMRN         | 31408 OVERTON 345 to 31409 OVERTON 161 CKT 1   | 300    | 99.6        | 100.4       | 96057 5BARNET 161 to 96555 5GRAVOI 161 CKT1    |
| 08WP       | AMRN-AMRN         | 31408 OVERTON 345 to 31409 OVERTON 161 CKT 1   | 300    | 99.6        | 100.3       | 96552 2EDMONS 161 to 96555 5GRAVOI 161 CKT1    |
| 08WP       | CELE-CELE         | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT 1 | 700    | 99.6        | 105.4       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1  |

**Table 2B continued** – Non - SPP Facility Overloads caused by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload            |
|------------|-------------------|--|--------|-------------|-------------|--|
| 08WP       | CELE-CELE         | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT 1 | 700    | 97.7        | 105.1       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 08WP       | CELE-CELE         | 50046 DOLHILL6 230 to 50045 DOLHILL7 345 CKT 1 | 700    | 98.0        | 105.5       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |
| 08WP       | CELE-CELE         | 50090 IPAPER 4 138 to 50113 MANSFLD4 138 CKT 1 | 232    | 90.1        | 100.6       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 08WP       | CELE-CELE         | 50098 LEESV 4 138 to 50037 COOPER 4 138 CKT 1  | 296    | 96.4        | 101.5       | 97686 4LEACH 138 to 97708 4TOLEDO 138 CKT1     |
| 08WP       | CELE-CELE         | 50098 LEESV 4 138 to 50037 COOPER 4 138 CKT 1  | 296    | 96.2        | 101.3       | 97618 4NEWTONB 138 to 97686 4LEACH 138 CKT1    |
| 08WP       | CELE-CELE         | 50098 LEESV 4 138 to 50037 COOPER 4 138 CKT 1  | 296    | 96.5        | 101.0       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 99.8        | 102.5       | 55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1 |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 99.6        | 102.2       | 54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 99.8        | 101.8       | 59478 DAD368 5 161 to 59499 CPK466 5 161 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 98.5        | 101.7       | 55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1   |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1 | 52     | 99.3        | 101.6       | 50858 FINNEY7 345 to 50888 POTTTRC7 345 CKT1   |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 99.9        | 103.1       | 59552 LAW260 269.0 to 59573 HTC338 269.0 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 99.8        | 103.0       | 59553 ALB262 269.0 to 59573 HTC338 269.0 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.7        | 101.8       | 59466 ATL109 5 161 to 59494 OAK432 5 161 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 98.4        | 101.3       | 52688 CARTHAG5 161 to 59466 ATL109 5 161 CKT1  |
| 08WP       | SWPA-AECI         | 52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1  | 43     | 97.7        | 100.8       | 59467 ORO110 5 161 to 59494 OAK432 5 161 CKT1  |
| 08WP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 131    | 98.4        | 103.6       | 59201 SIBLEY 7 345 to 31408 OVERTON 345 CKT1   |
| 08WP       | MIPU-AECI         | 59217 WINDSR 5 161 to 96071 5CLINTN 161 CKT 1  | 131    | 96.6        | 101.0       | 59209 SEDALIA5 161 to 59234 WAFB 5 161 CKT1    |
| 08WP       | NPPD-NPPD         | 65037 N.PLT8 Y 230 to 64910 N.PLATT7 115 CKT 1 | 187    | 99.8        | 100.2       | 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    | 99.8        | 100.2       | 64910 N.PLATT7 115 to 65038 N.PLT9 Y 230 CKT1  |
| 08WP       | AECI-AMRN         | 96096 5MARIES 161 to 31024 MARIES 138 CKT 1    | 100    | 99.4        | 100.5       | 30957 LKSIDE 1 138 to 31400 OSAGE 138 CKT1     |
| 08WP       | LAGN-EES          | 97304 3MNDENLG 115 to 99170 3MINDEN 115 CKT 1  | 57     | 99.9        | 107.5       | 99162 8MTOLIV 500 to 99295 8ELDEHV 500 CKT1    |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.9        | 104.3       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT1    |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.9        | 104.3       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT2    |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 98.6        | 104.2       | 97459 4CONROE 138 to 97468 4GOSLIN 138 CKT1    |
| 08WP       | EES-EES           | 97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1    | 206    | 99.5        | 103.2       | 54033 PITTSB-7 345 to 54037 VALIANT7 345 CKT1  |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.1        | 105.6       | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT1  |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 100.0       | 105.5       | 97465 4PLANTAT 138 to 97467 4TAMINA 138 CKT1   |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.7        | 105.3       | 53615 WELSH 7 345 to 53635 NWMOUNT7 345 CKT2   |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.7        | 105.2       | 53615 WELSH 7 345 to 53635 NWMOUNT7 345 CKT1   |
| 08WP       | EES-EES           | 97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1   | 206    | 99.6        | 105.1       | 97459 4CONROE 138 to 97465 4PLANTAT 138 CKT1   |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.6        | 105.9       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.6        | 105.6       | 97689 6AMELIA 230 to 97714 6CHINA 230 CKT1     |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 99.2        | 105.3       | 97481 4CEDAR 138 to 97512 4PEE DEE 138 CKT1    |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 98.8        | 105.2       | 50023 CARROLL6 230 to 50126 MESSICK6 230 CKT1  |
| 08WP       | EES-EES           | 97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1  | 206    | 98.9        | 105.1       | 50023 CARROLL6 230 to 50046 DOLHILL6 230 CKT1  |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.9        | 108.1       | 55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1   |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.9        | 107.6       | 54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1  |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.8        | 107.2       | 50203 VILPLT 6 230 to 50214 WSTFOR6 230 CKT1   |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.9        | 107.1       | 97716 6SABINE 230 to 97925 6BTHREE 230 CKT1    |
| 08WP       | EES-EES           | 97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1 | 206    | 99.8        | 107.1       | 97691 8CYPRESS 500 to 97713 6CYPRESS 230 CKT1  |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.2        | 107.5       | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT1  |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 100.0       | 107.2       | 97468 4GOSLIN 138 to 97544 4ALDEN 138.0 CKT1   |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.4        | 106.8       | 97459 4CONROE 138 to 97462 L523T587 138 CKT1   |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 99.4        | 106.8       | 97458 4CONAIR 138 to 97462 L523T587 138 CKT1   |
| 08WP       | EES-EES           | 97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1 | 206    | 98.7        | 106.0       | 97461 4LEWIS 138 to 97544 4ALDEN 138.0 CKT1    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 100.0       | 106.9       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT1    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1  | 206    | 100.0       | 106.9       | 97513 7GRIMES 345 to 97514 4GRIMES 138 CKT2    |
| 08WP       | EES-EES           | 97514 4GRIMES 138 to 97526 4MAG AND 138 CKT 1  | 206    | 95.1        | 100.7       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1   |
| 08WP       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 99.8        | 109.7       | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1    |
| 08WP       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 97.1        | 105.9       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  |
| 08WP       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 95.9        | 105.0       | 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   |
| 08WP       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 95.8        | 104.9       | 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1    |

**Table 2B continued** – Non - SPP Facility Overloads caused by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B                        | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload           |
|------------|-------------------|--|--------|-------------|-------------|---|
| 08WP       | EES-EES           | 97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1  | 112    | 96.6        | 104.1       | 97484 4HUNTSVL 138 to 97519 4GEORGIA 138 CKT1 |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.8        | 105.5       | 97531 4APOLLO 138 to 97534 4SPLENDR 138 CKT1  |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.6        | 105.3       | 97467 4TAMINA 138 to 97531 4APOLLO 138 CKT1   |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.6        | 104.9       | 97458 4CONAIR 138 to 97462 L523T587 138 CKT1  |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.3        | 104.9       | 97532 4HICKORY 138 to 97627 4EASTGAT 138 CKT1 |
| 08WP       | EES-EES           | 97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1   | 206    | 99.6        | 104.9       | 97459 4CONROE 138 to 97462 L523T587 138 CKT1  |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.4        | 105.5       | 97921 6CARLYSS 230 to 97925 6BTHREE 230 CKT1  |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 98.9        | 105.5       | 99148 8STERL 500 to 99295 8ELDEHV 500 CKT1    |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.2        | 105.4       | 97478 6JACINTO 230 to 97714 6CHINA 230 CKT1   |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.2        | 105.4       | 97716 6SABINE 230 to 97925 6BTHREE 230 CKT1   |
| 08WP       | EES-EES           | 97686 4LEACH 138 to 97618 4NEWTONB 138 CKT 1   | 144.6  | 99.1        | 105.4       | 97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1 |
| 08WP       | EES-EES           | 97689 6AMELIA 230 to 97714 6CHINA 230 CKT 1    | 470    | 99.1        | 103.9       | 53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1  |
| 08WP       | EES-EES           | 97698 4JASPER 138 to 97704 4RAYBURN 138 CKT 1  | 112    | 94.2        | 103.1       | 97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1  |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.7        | 106.3       | 99148 8STERL 500 to 99295 8ELDEHV 500 CKT1    |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.9        | 106.2       | 97478 6JACINTO 230 to 97714 6CHINA 230 CKT1   |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 100.0       | 106.1       | 97716 6SABINE 230 to 97925 6BTHREE 230 CKT1   |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.8        | 106.1       | 97508 4NAVSOTA 138 to 97522 4TUBULAR 138 CKT1 |
| 08WP       | EES-EES           | 97708 4TOLEDO 138 to 97686 4LEACH 138 CKT 1    | 144.6  | 99.9        | 106.1       | 97476 4JACINTO 138 to 97478 6JACINTO 230 CKT1 |
| 08WP       | EES-EES           | 99032 3LIBRTY 115 to 99060 3GILBR* 115 CKT 1   | 69     | 99.5        | 100.8       | 98489 3BOGLSA 115 to 98491 3FRANKLN 115 CKT1  |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99280 3TAYLOR 115 CKT 99   | 108    | 94.9        | 103.3       | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT1    |
| 08WP       | EES-EES           | 99230 3COUCH 115 to 99310 3MCNEIL 115 CKT 1    | 167    | 97.8        | 107.0       | 53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1 |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 99.3        | 113.2       | 99171 3SPRINGH 115 to 99172 3SAREPT 115 CKT1  |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 97.9        | 112.6       | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1   |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 98.6        | 112.5       | 99171 3SPRINGH 115 to 99280 3TAYLOR 115 CKT1  |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 98.2        | 112.1       | 99230 3COUCH 115 to 99280 3TAYLOR 115 CKT99   |
| 08WP       | EES-EES           | 99263 3LEWIS # 115 to 99230 3COUCH 115 CKT 1   | 159    | 96.9        | 110.9       | 99162 8MTOLIV 500 to 99295 8ELDEHV 500 CKT1   |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 98.5        | 110.6       | 53277 LYDIA 7 345 to 53301 NWTXARK7 345 CKT1  |
| 08WP       | EES-EES           | 99303 3PATMOS# 115 to 99263 3LEWIS # 115 CKT 1 | 159    | 95.0        | 100.6       | 54033 PITTSB-7 345 to 54037 VALIANT7 345 CKT1 |
| 08WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 91.2        | 107.7       | 99263 3LEWIS # 115 to 99303 3PATMOS# 115 CKT1 |
| 08WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 90.3        | 105.7       | 53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1 |
| 08WP       | EES-EES           | 99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1   | 60     | 88.2        | 104.7       | 55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1  |
| 08WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 93.8        | 109.9       | 50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1 |
| 08WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 91.4        | 107.9       | 53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT1 |
| 08WP       | EES-EES           | 99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1   | 60     | 89.6        | 105.9       | 99230 3COUCH 115 to 99263 3LEWIS # 115 CKT1   |
| 08WP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 97.0        | 107.2       | 52660 BULL SH5 161 to 52661 BUFRDTP5 161 CKT1 |
| 08WP       | EES-SWPA          | 99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1 | 162    | 96.2        | 106.4       | 52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT1 |

**Table 3B** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|--|-----------------------------|
| 03SP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1          | 244    | 109.8       | 113.9       | FLINT CREEK TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1   | 0   | Flowgate   | Undetermined                |
| 03SP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1          | 244    | 107.9       | 111.9       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-004   | See Previous                |
| 03SP       | AEPW-AEPW         | LONGWOOD TO NORAM, 138KV<br>53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1             | 234    | 107.3       | 111.8       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase      | None                        |
| 03SP       | AEPW-AEPW         | NORAM TO RAINES, 138KV<br>53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1               | 234    | 106.2       | 110.6       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase      | None                        |
| 03SP       | AEPW-AEPW         | CHEROKEE REC TO KNOX LEE, 138KV<br>53522 CHEROKE4 138 to 53557 KNOXLEE4 138 CKT 1     | 209    | 121.5       | 127.4       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 287 MVA 37.3% Increase      | None                        |
| 03SP       | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1   | 136    | 115.9       | 125.4       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 | Undetermined                |
| 03SP       | AEPW-AEPW         | TATUM TO CHEROKEE REC, 138KV<br>53611 TATUM 4 138 to 53522 CHEROKE4 138 CKT 1         | 209    | 115.5       | 121.5       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 287 MVA 37.3% Increase      | None                        |
| 03SP       | AEPW-AEPW         | TATUM TO ROCK HILL, 138KV<br>53611 TATUM 4 138 to 53598 ROKHILL4 138 CKT 1            | 209    | 113.8       | 119.8       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 235 MVA 12.4% Increase      | Undetermined                |
| 03SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1 | 493    | 112.1       | 121.6       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                                 | None                        |
| 03SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2 | 493    | 112.1       | 121.6       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                                 | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|--|-----|---|-----------------------------|
| 03SP       | OKGE-OKGE         | PECAN CREEK 345/161KV TRANSFORMER<br>55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1           | 369    | 110.4       | 117.9       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-108  | None                        |
| 03SP       | WERE-WERE         | CRESWELL TO PARIS, 69KV<br>57543 CRESWLN269.0 to 57548 PARIS 269.0 CKT 1                      | 80     | 103.8       | 105.8       | CRESWELL TO OAK, 69KV<br>57543 CRESWLN269.0 to 57547 OAK 269.0 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-003  | Undetermined                |
| 03SP       | KACP-KACP         | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT 1                  | 1251   | 115.5       | 118.6       | WEST GARDNER TO LACYGNE, 345KV<br>57965 W.GRDNR7 345 to 57981 LACYGNE7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 Linn County Project Relieves Facility              | None                        |
| 03SP       | EMDE-EMDE         | ORONOGO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1 | 214    | 104.4       | 107.4       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 03SP       | AEPW-WERE         | COFFEYVILLE TAP TO DEARING, 138KV<br>53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1           | 210    | 110.4       | 116.2       | DELAWARE TO NEOSHO, 345KV<br>53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 232 MVA 10.5% Increase | Undetermined                |
| 03SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1             | 274    | 105.6       | 114.7       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1   | 0   | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | Undetermined                |
| 03SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 53136 EUREKA 5 161 1                    | 274    | 105.6       | 114.6       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1        | 0   | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1             | 274    | 105.5       | 114.6       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  | 0   | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03SP       | KACP-KACP         | WEST GARDNER TO LACYGNE, 345KV<br>57965 W.GRDNR7 345 to 57981 LACYGNE7 345 CKT 1              | 1251   | 101.5       | 104.3       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 Linn County Project Relieves Facility              | None                        |
| 03SP       | SWPA-SWPA         | NORFORK TO BUFORD TAP, 161KV<br>52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT 1                | 189    | 101.3       | 110.0       | BULL SHOALS TO MIDWAY, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18% Increase   | None                        |
| 03SP       | WERE-WERE         | AUBURN ROAD TO SOUTH GAGE (WEST), 115 KV<br>57151*AUBURN 3 115 57179 S GAGEW3 115 1           | 75     | 100.7       | 100.8       | HOYT 345/115/14.4 TRANSFORMER<br>56765 HOYT 7345 57163 HOYT 3115 56804 HOYT 114.4 1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1            | 353    | 102.7       | 105.0       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT, 345KV<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1            | 353    | 102.7       | 105.1       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1   | 0   | Identified in SPP-2002-140a   | See Previous                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1            | 353    | 102.7       | 105.0       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  | 0   | Identified in SPP-2002-140a   | See Previous                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|--|-----|---|-----------------------------|
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                | 353    | 100.4       | 102.7       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT, 345KV<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | GRRD-GRRD         | AFTON 161/69KV TRANSFORMER<br>54432 AFTON 5 161 to 54433 AFTON 269.0 CKT 1                           | 50     | 101.8       | 104.3       | MIAMI TO AFTON, 161KV<br>54431 MIAMI 5 161 to 54432 AFTON 5 161 CKT1   | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | SCROGGINS TO FERNDALKE LAKE TAP, 69KV<br>53316 SCROGNS269.0 to 53531 FERNDTP269.0 CKT 1              | 85     | 100.2       | 101.0       | ADORA REC TO ADORA T, 69KV<br>53243 ADORA 269.0 to 53244 ADRWTP269.0 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1                   | 353    | 100.5       | 102.5       | CHAMBER SPRINGS TO FARMINGTON AECC, 161KV<br>53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT1   | 0   | Identified in SPP-2002-140a   | See Previous                |
| 03SP       | AEPW-AEPW         | BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV<br>53940 BV-SE-4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 102.1       | 108.1       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1  | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 235 MVA 11.9% Increase                  | None                        |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                | 353    | 100.4       | 102.7       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1   | 0   | Identified in SPP-2002-140a   | See Previous                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                | 353    | 100.4       | 102.7       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 03SP       | AEPW-AEPW         | GENTRY REC TO EAST CENTERTON, 161KV<br>53187 GENTRYR5 161 to 53133 ECNTRTN5 161 CKT 1                | 353    | 100.1       | 101.8       | DYESS TO ELM SPRINGS REC, 161KV<br>53131 DYESS 5 161 to 53194 ELMSPRR5 161 CKT1  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 03SP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1                      | 167    | 99.4        | 115.5       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1  | 19  | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 184 MVA 10.2% Increase | Undetermined                |
| 03SP       | SWPA-OKGE         | VAN BUREN TO VBI, 161KV<br>52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1                               | 335    | 99.1        | 109.5       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1  | 44  | Upgrade Not Modeled Assigned to SPP-2002-046  | Undetermined                |
| 03SP       | AEPW-AEPW         | MARSHALL TO NORTH MARSHALL, 69KV<br>53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1                   | 72     | 99.3        | 103.1       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1        | 95  | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 118 MVA 63.9% Increase | None                        |
| 03SP       | SWPA-SWPA         | GORE TO SALISAW 161KV<br>52752 GORE 5 161 to 52750 SALISAW5 161 CKT 1                                | 189    | 96.8        | 111.3       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1  | 111 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18.0% Increase | None                        |
| 03SP       | OKGE-OKGE         | FT SMITH 345/161 KV TRANSFORMER CKT 1<br>55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1              | 493    | 97.0        | 107.6       | FT SMITH 500/345 KV TRANSFORMER CKT 1<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1   | 142 | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | NORTH MARSHALL TO WOODLAWN, 69KV<br>53579 NMARSHL2 69 to 53621 WOODLWN2 69 CKT 1                     | 51     | 98.5        | 103.6       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1        | 143 | Identified in SPP-2002-140a New Summer Emergency Rating 59 MVA 15.7% Increase                   | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|-----------------------------|
| 03SP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1             | 118    | 96.6        | 106.6       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   | 170 | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1             | 118    | 96.5        | 106.5       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   | 176 | Identified in SPP-2002-140a   | See Previous                |
| 03SP       | AEPW-AEPW         | PERDUE 138 TO DIANA 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                        | 237    | 99.6        | 100.7       | COFFEE (RAYBURN) TO NEW YORK (RAYBURN)<br>53689 COFFEE 4 138 to 53694 NEWYORK4 138 CKT1   | 183 | AEPW Upgrade Not Modeled  | Undetermined                |
| 03SP       | AEPW-AEPW         | LONGWOOD TO OAK PAN-HARR REC, 138KV<br>53457 OAKPH 4 138 to 53423 LONGWD 4 138 CKT 1              | 209    | 97.2        | 103.2       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 232 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 236 MVA 12.9% Increase | None                        |
| 03SP       | OKGE-AEPW         | BONANZA TAP TO BONANZA, 161KV<br>55261 BONANZT5 161 to 53126 BONANZA5 161 CKT 1                   | 177    | 95.3        | 105.3       | FORT SMITH TO ARKANSAS NUCLEAR ONE, 500KV<br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1   | 234 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 276 MVA 55.9% Increase | None                        |
| 03SP       | EMDE-SWPA         | ATLAS JCT TO CARTHAGE, 161KV<br>59466 ATL109 5 161 to 52688 CARTHAG5 161 CKT 1                    | 167    | 98.0        | 102.3       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 235 | Upgrade Not Modeled Assigned to SPP-2002-127  | None                        |
| 03SP       | OKGE-OKGE         | HIGHWAY 59 TO VBI, 161KV<br>55347 HWY59 5 161 to 55339 VBI 5 161 CKT 1                            | 167    | 92.6        | 108.8       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 229 | Identified in SPP-2002-140a New Summer Emergency Rating 259 MVA Rating 55.1% Increase           | None                        |
| 03SP       | KACP-KACP         | WEST GARDNER TO WEST GARDNER 161/345XFRM<br>57965 W.GRDNR7 345 to 57966 WGDNR5 161 CKT 11         | 440    | 98.8        | 101.0       | WEST GARDNER TO CRAIG 345KVM<br>57965 W.GRDNR7 345 to 57977 CRAIG 7 345 CKT1  | 269 | Upgrade Not Modeled Assigned to SPP-2000-108 Linn County Project Relieves Facility              | None                        |
| 03SP       | SWPA-SWPA         | MUSKOGEE TAP TO GORE 161KV<br>52758 MUSKTAP5 161 to 52752 GORE 5 161 CKT 1                        | 206    | 94.2        | 104.5       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 281 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18% Increase   | None                        |
| 03SP       | WFEC-OKGE         | FRANKLIN SW TO MIDWEST TAP, 138KV<br>55917 FRNKLS4 138 to 54946 MIDWEST4 138 CKT 1                | 215    | 94.2        | 104.2       | MIDWEST TAP TO HOLLYWOOD, 138KV<br>54946 MIDWEST4 138 to 54953 HOLLYWD4 138 CKT1  | 291 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 287 MVA 33.5% Increase | None                        |
| 03SP       | AEPW-SWPA         | CRAIG JUNCTION TO BROKEN BOW, 138KV<br>54015 CRAIGJT4 138 to 52814 BRKN BW4 138 CKT 1             | 107    | 89.7        | 102.2       | BBDAMP4 TO MOUNTAIN RIVER, 138KV<br>55823 BBDAMP4 138 to 56004 MTRIVER4 138 CKT1  | 412 | Identified in SPP-2002-140a   | Undetermined                |
| 03SP       | AEPW-AEPW         | RAINES TO ARSENAL HILL, 138KV<br>53439 RAINES 4 138 to 53386 ARSHILL4 138 CKT 1                   | 234    | 96.4        | 100.7       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 421 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 268 MVA 14.5% Increase | None                        |
| 03SP       | AEPW-AEPW         | CHAMBER SPRINGS 161KV TO FARMINGTON AECC<br>53154 CHAMSPR5 161 to 53195 FARMGTN5 161 CKT 1        | 335    | 98.1        | 100.3       | DYESS 161KV TO CHAMBER SPRINGS 161KV<br>53131 DYESS 5 161 to 53154 CHAMSPR5 161 CKT1  | 425 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 353 MVA 5.4% Increase  | None                        |
| 03SP       | AEPW-AEPW         | WALLACE LAKE 138KV TO SOUTHWEST SHREVEPORT 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1 | 209    | 98.6        | 108.8       | DOLET HILLS TO DOLET HILLS<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1   | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 03SP       | AEPW-CELE         | WALLACE LAKE TO INTERNATIONAL PAPER, 138KV<br>53461 WALLAKE4 138 to 50090 IPAPER 4 138 CKT 1      | 209    | 90.8        | 102.5       | DOLET HILLS TO DOLET HILLS<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1   | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|--|-----|---|-----------------------------|
| 03SP       | AEPW-AEPW         | DIANA 345KV TO NWMOUNT7 345KV<br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT 1                 | 1059   | 94.3        | 101.2       | DIANA 345KV TO NWMOUNT7 345KV<br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT2                      | 500 | Invalid Contingency Due To CPS Interconnection on Welsh to Diana 345 kV Double Circuit            | None                        |
| 03SP       | AEPW-AEPW         | DIANA 345KV TO NWMOUNT7 345KV<br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT 2                 | 1059   | 94.2        | 101.0       | DIANA 345KV TO NWMOUNT7 345KV<br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT1                      | 500 | Invalid Contingency Due To CPS Interconnection on Welsh to Diana 345 kV Double Circuit            | None                        |
| 03SP       | OKGE-OKGE         | TINKER #2 138 TO TINKER #4 138<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1               | 100    | 96.9        | 103.3       | NE 10TH 138 TOMIDWAY 138KV<br>54964 NE10TH 4 138 to 54966 MIDWAY 4 138 CKT1                        | 500 | Excluded Per OKGE   | None                        |
| 03SP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                   | 160    | 87.4        | 104.2       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1                        | 500 | New Summer Emergency Rating 168 MVA 5% Increase   | None                        |
| 03SP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 47     | 103.8       | 106.3       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1                           | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | Undetermined                |
| 03SP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 36     | 130.9       | 136.3       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1                      | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | Undetermined                |
| 03SP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                 | 162    | 130.1       | 140.3       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1                  | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | Undetermined                |
| 03SP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 235    | 104.2       | 109.4       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1            | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |
| 03FA       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 104.2       | 114.0       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2               | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 03FA       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 104.2       | 114.0       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1               | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 03FA       | EMDE-SWPA         | ATLAS JCT TO CARTHAGE, 161KV<br>59466 ATL109 5 161 to 52688 CARTHAG5 161 CKT 1                 | 167    | 104.2       | 108.5       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1                      | 0   | Upgrade Not Modeled Assigned to SPP-2002-127  | None                        |
| 03FA       | AEPW-SWPA         | CRAIG JUNCTION TO BROKEN BOW, 138KV<br>54015 CRAIGJT4 138 to 52814 BRKN BW4 138 CKT 1          | 122    | 101.3       | 112.6       | BBDAMTP4 TO MOUNTAIN RIVER, 138KV<br>55823 BBDAMTP4 138 to 56004 MTRIVER4 138 CKT1                 | 0   | Identified in SPP-2002-140a   | See Previous                |
| 03FA       | AEPW-AEPW         | ALUMAX TAP TO NORTHWEST TEXARKANA, 138KV<br>53245 ALUMXT 4 138 to 53300 NWTXARK4 138 CKT 1     | 294    | 101.3       | 104.5       | NW TEXARKANA-BANN T TO NORTHWEST TEXARKANA, 138KV<br>53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1 | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 03FA       | SWPA-SWPA         | NORFORK TO GLENCO 161KV<br>52648 NORFORK5 161 to 52646 GLENCOE5 161 CKT 1                      | 112    | 98.9        | 103.4       | NEW-IN TO NEWPO 161KV<br>99763 5NEW-IN 161 to 99764 5NEWPO 161 CKT1                                | 120 | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                      | None                        |
| 03FA       | SWPA-SWPA         | NORFORK TO GLENCO 161KV<br>52648 NORFORK5 161 to 52646 GLENCOE5 161 CKT 1                      | 112    | 98.8        | 103.3       | DELL TO IASES 500KV<br>99742 8DELL 5 500 to 99818 8ISES 5 500 CKT1                                 | 134 | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                      | None                        |
| 03FA       | EMDE-EMDE         | ORONOGO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1  | 214    | 98.9        | 102.0       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1                      | 172 | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 03FA       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                   | 160    | 91.7        | 108.5       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1                        | 247 | New Winter Emergency Rating 195 MVA 21.9% Increase  | None                        |
| 03FA       | SWPA-SWPA         | NORFORK TO BUFORD TAP, 161KV<br>52661 BUFDRTP5 161 to 52648 NORFORK5 161 CKT 1                 | 189    | 93.2        | 102.0       | BULL SHOALS TO MIDWAY, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1                      | 386 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18% Increase     | None                        |



**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 03FA       | OKGE-OKGE         | PECAN CREEK 345/161KV TRANSFORMER<br>55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1                  | 369    | 94.0        | 101.6       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 394 | Upgrade Not Modeled Assigned to SPP-2000-108  | None                        |
| 03FA       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1                    | 287    | 93.4        | 101.7       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1  | 396 | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03FA       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 53136 EUREKA 5 161 1                           | 287    | 93.4        | 101.7       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 396 | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03FA       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1                    | 287    | 93.3        | 101.6       | FLINT CREEK TO MONETT<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1  | 404 | SWPA Upgrade Not Modeled Assigned to SPP-2000-108   | See Previous                |
| 03FA       | AEPW-AEPW         | SOUTH SHREVEPORT TO WALLACE LAKE, 138KV<br>53446 S SHV 4 138 to 53461 WALLAKE4 138 CKT 1             | 210    | 102.5       | 113.0       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 03FA       | AEPW-CELE         | WALLACE LAKE 138KV TO INTERNATIONAL PAPER<br>53461 WALLAKE4 138 to 50090 IPAPER 4 138 CKT 1          | 236    | 90.7        | 101.4       | DOLET HILLS TO DOLET HILLS<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1   | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 03FA       | OKGE-OKGE         | TINKER #2 138 TO TINKER #4 138<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1                     | 100    | 93.8        | 104.2       | DRAPER TO MIDWEST 138KV<br>54933 DRAPER 4 138 to 54946 MIDWEST4 138 CKT1  | 500 | Excluded Per OKGE   | None                        |
| 03FA       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1              | 265    | 95.5        | 100.5       | CROCKET TO TENASKA RUSK COUNTY<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1   | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |
| 03FA       | SWPA-EES          | MIDWAY TO BULL SHOALS, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT 1                       | 162    | 116.9       | 127.3       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 03WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1                | 493    | 105.4       | 114.8       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 03WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2                | 493    | 105.4       | 114.8       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 0   | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                              | None                        |
| 03WP       | OKGE-OKGE         | PECAN CREEK 345/161KV TRANSFORMER<br>55235 PECANCK7 345 to 55234 PECANCK5 161 CKT 1                  | 369    | 112.7       | 120.4       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-108  | None                        |
| 03WP       | AEPW-AEPW         | BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV<br>53940 BV-SE-4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 102.8       | 108.5       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1   | 0   | Identified in SPP-2002-140a New Winter Emergency Rating 237 MVA 12.9% Increase                    | None                        |
| 03WP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                              | 237    | 100.8       | 102.0       | COFFEE (RAYBURN) TO NEW YORK (RAYBURN), 138KV<br>53689 COFFEE 4 138 to 53694 NEWYORK4 138 CKT1  | 0   | AEPW Upgrade Not Modeled  | See Previous                |
| 03WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1                    | 287    | 100.5       | 109.1       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1  | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 03WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1                    | 287    | 100.5       | 109.1       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|--|-----------------------------|
| 03WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 53136 EUREKA 5 161 1                 | 287    | 100.5       | 109.1       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 03WP       | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1        | 154    | 99.4        | 106.9       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 43  | Upgrade Not Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 | See Previous                |
| 03WP       | AEPW-AEPW         | ALUMAX TAP TO NORTHWEST TEXARKANA, 138KV<br>53245 ALUMXT 4 138 to 53300 NWTXARK4 138 CKT 1 | 294    | 99.6        | 103.0       | NW TEXARKANA-BANN T TO NORTHWEST TEXARKANA, 138KV<br>53299 NWT-BNT4 138 to 53300 NWTXARK4 138 CKT1  | 63  | Identified in SPP-2002-140a  | See Previous                |
| 03WP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53305 PATTERS3 115 to 53225 ASHDWNR3 115 CKT 1      | 149    | 98.5        | 106.3       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   | 94  | Identified in SPP-2002-140a  | See Previous                |
| 03WP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53305 PATTERS3 115 to 53225 ASHDWNR3 115 CKT 1      | 149    | 98.4        | 106.1       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   | 102 | Identified in SPP-2002-140a  | See Previous                |
| 03WP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1               | 160    | 95.9        | 112.8       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 122 | New Winter Emergency Rating 195 MVA 21.9% Increase   | None                        |
| 03WP       | OKGE-OKGE         | FT SMITH TO FTSMITH 345/161 XFRM<br>55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1         | 493    | 93.5        | 105.9       | FT SMITH TO FT SMITH 345/500 XFRM<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1  | 262 | Identified in SPP-2002-140a  | See Previous                |
| 03WP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1               | 245    | 97.5        | 101.6       | FLINT CREEK TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1   | 306 | Flowgate   | See Previous                |
| 03WP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1            | 167    | 89.3        | 105.4       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1   | 332 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 184 MVA 10.2% Increase      | None                        |
| 03WP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1               | 245    | 96.4        | 100.5       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1   | 438 | Upgrade Modeled Assigned to SPP-2000-004   | See Previous                |
| 03WP       | OKGE-OKGE         | HIGHWAY 59 TO VBI, 161KV<br>55347 HWY59 5 161 to 55339 VBI 5 161 CKT 1                     | 167    | 84.8        | 101.0       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1   | 470 | Identified in SPP-2002-140a New Summer Emergency Rating 315 MVA Rating 88.6% Increase                | None                        |
| 03WP       | AEPW-AEPW         | SOUTH SHREVEPORT TO WALLACE LAKE, 138KV<br>53446 S SHV 4 138 to 53461 WALLAKE4 138 CKT 1   | 210    | 101.5       | 111.1       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA  | None                        |
| 03WP       | OKGE-OKGE         | TINKER #2 138 TO TINKER #4 138<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1           | 100    | 94.9        | 106.8       | POOST ROAD 138 TO SOUTHEAST 15TH 138KV<br>54965 POSTRDT4 138 to 54993 SE15TH 4 138 CKT1   | 500 | Excluded Per OKGE  | None                        |
| 03WP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                   | 43     | 111.5       | 116.0       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                   | See Previous                |
| 04G        | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1                | 112    | 108.9       | 113.3       | NEWPORT-INDUSTRIAL TO NEWPORT, 161KV<br>99763 5NEW-IN 161 to 99764 5NEWPO 161 CKT1  | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                         | None                        |
| 04G        | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1                | 112    | 108.2       | 112.7       | NEW-AB TO NEW-IN, 161KV<br>99762 5NEW-AB 161 to 99763 5NEW-IN 161 CKT1  | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                         | None                        |
| 04G        | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOG7 345 CKT 1            | 478    | 102.5       | 109.6       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 896 MVA 87.4% Increase      | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|--|-----------------------------|
| 04G        | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1                   | 789    | 96.2        | 103.2       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   | 275 | AEPW Upgrade Not Modeled New Winter Emergency Rating 1085 MVA 37.5% Increase                     | None                        |
| 04G        | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1                   | 789    | 96.0        | 103.1       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   | 283 | AEPW Upgrade Not Modeled New Winter Emergency Rating 1085 MVA 37.5% Increase                     | None                        |
| 04G        | OKGE-OKGE         | HANCOCK TO TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                   | 223    | 95.0        | 102.7       | AGENCY TO EUCLID, 161KV<br>55230 AGENCY 5 161 to 55251 EUCLID 5 161 CKT1  | 326 | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                   | None                        |
| 04G        | OKGE-OKGE         | HANCOCK TO TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                   | 223    | 94.3        | 101.1       | AGENCY TO PECAN CREEK, 161KV<br>55230 AGENCY 5 161 to 55234 PECANCK5 161 CKT1   | 421 | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                   | None                        |
| 04G        | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1          | 163    | 92.6        | 100.7       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 456 | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 | See Previous                |
| 04G        | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1     | 210    | 110.6       | 121.1       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA  | None                        |
| 04G        | AEPW-CELE         | WALLACE LAKE TO INTERNATIONAL PAPER, 138KV<br>53461 WALLAKE4 138 to 50090 IPAPER 4 138 CKT 1 | 236    | 97.6        | 108.3       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA  | None                        |
| 04G        | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 99.3        | 108.8       | DRAPER LAKE 345/138KV TRANSFORMER<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                             | None                        |
| 04G        | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 99.3        | 108.8       | DRAPER LAKE 345/138KV TRANSFORMER<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT1  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                             | None                        |
| 04G        | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1              | 100    | 92.8        | 104.6       | POOST ROAD TO SE15TH, 138KV<br>54965 POSTRDT4 138 to 54993 SE15TH 4 138 CKT1  | 500 | Excluded Per OKGE  | None                        |
| 04G        | SWPA-EES          | MIDWAY TO BULL SHOALS, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT 1               | 162    | 111.8       | 122.4       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                               | See Previous                |
| 05SP       | AEPW-AEPW         | EAST ROGERS TO DYESS, 161KV<br>53135 EROGERS5 161 to 53131 DYESS 5 161 CKT 1                 | 244    | 122.7       | 126.9       | EAST CENTERTON TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1  | 0   | Flowgate   | See Previous                |
| 05SP       | AEPW-AEPW         | EAST ROGERS TO DYESS, 161KV<br>53135 EROGERS5 161 to 53131 DYESS 5 161 CKT 1                 | 244    | 120.3       | 124.4       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-004   | See Previous                |
| 05SP       | AEPW-AEPW         | LONGWOOD TO NORAM, 138KV<br>53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1                    | 234    | 108.6       | 112.9       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase  | None                        |
| 05SP       | AEPW-AEPW         | NORAM TO RAINES, 138KV<br>53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1                      | 234    | 107.3       | 111.7       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase  | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|-----------------------------|
| 05SP       | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1           | 151    | 112.0       | 120.7       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046                            | See Previous                |
| 05SP       | WERE-WERE         | CRESWELL TO OAK, 69KV<br>57543 CRESWLN269.0 to 57547 OAK 269.0 CKT 1                          | 90     | 104.7       | 106.8       | CRESWELL TO PARIS, 69KV<br>57543 CRESWLN269.0 to 57548 PARIS 269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-004  | Undetermined                |
| 05SP       | WERE-WERE         | CRESWELL TO PARIS, 69KV<br>57543 CRESWLN269.0 to 57548 PARIS 269.0 CKT 1                      | 80     | 110.9       | 112.9       | CRESWELL TO OAK, 69KV<br>57543 CRESWLN269.0 to 57547 OAK 269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-003  | See Previous                |
| 05SP       | AEPW-AEPW         | TATUM TO ROCK HILL, 138KV<br>53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1                    | 235    | 109.2       | 114.7       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 05SP       | EMDE-EMDE         | ORONOGO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1 | 214    | 108.1       | 110.9       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 05SP       | KACP-KACP         | PAOLA TO CENTENNIAL, 161KV<br>58067 CENTENL5 161 to 58069 PAOLA 5 161 CKT 1                   | 174    | 159.7       | 164.6       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Summer Emergency Rating 335 MVA 92.5% Increase                             | None                        |
| 05SP       | SPRMAECI          | CLAY TO LOGAN, 161KV<br>59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1                            | 185    | 127.6       | 142.3       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 22.7% Increase Identified in SPP-2002-140a | Undetermined                |
| 05SP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1             | 478    | 107.1       | 114.3       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 896 MVA 87.4% Increase                             | None                        |
| 05SP       | SWPA-SWPA         | SPRINGFIELD 161/69KV TRANSFORMER 3<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3          | 25     | 103.4       | 105.0       | JAMES RIVER TO PLAINVIEW, 69KV<br>59904 JRPS 269.0 to 59905 PLAINVI269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | Undetermined                |
| 05SP       | SWPA-SWPA         | MUSKOGEE TAP TO GORE, 161KV<br>52758 MUSKTAP5 161 to 52752 GORE 5 161 CKT 1                   | 206    | 105.7       | 116.8       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 223 MVA 18% Increase                               | None                        |
| 05SP       | AEPW-AEPW         | MARSHALL TO NORTH MARSHALL, 69KV<br>53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1            | 72     | 102.7       | 106.4       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 118 MVA 63.9% Increase                             | None                        |
| 05SP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1               | 167    | 104.7       | 121.2       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 184 MVA 10.2% Increase                             | Undetermined                |
| 05SP       | SWPA-OKGE         | VAN BUREN TO VBI, 161KV<br>52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1                        | 335    | 103.3       | 113.8       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 05SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59500* RNM393 5 161 544 WND 1 REINMILL 1              | 75     | 100.4       | 101.7       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT 1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 05SP       | AEPW-AEPW         | OAK HILL #2 TO KNOX LEE, 138KV<br>53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1              | 210    | 100.2       | 101.4       | KNOX LEE TO MONROE CORNERS REC, 138KV<br>53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 36.7% Increase                             | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|-----------------------------|
| 05SP       | EMDE-SWPA         | ATLAS JCT TO CARTHAGE, 161KV<br>59466 ATL109 5 161 to 52688 CARTHAGS 161 CKT 1        | 167    | 100.9       | 104.6       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-127      | None                        |
| 05SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1     | 274    | 101.4       | 110.5       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1  | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108     | See Previous                |
| 05SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1     | 274    | 101.3       | 110.4       | FLINT CREEK TO MONETT, 161KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108     | See Previous                |
| 05SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 53136 EUREKA 5 161 1            | 274    | 101.4       | 110.5       | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT<br>53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1 | 0   | SWPA Upgrade Not Modeled Assigned to SPP-2000-108 | See Previous                |
| 05SP       | GRRD-GRRD         | AFTON 161/69KV TRANSFORMER<br>54432 AFTON 5 161 to 54433 AFTON 269.0 CKT 1            | 50     | 104.7       | 107.2       | MIAMI TO AFTON, 161KV<br>54431 MIAMI 5 161 to 54432 AFTON 5 161 CKT1  | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1    | 353    | 101.6       | 103.3       | SILOAM SPRINGS TO SILOAM CITY, 161KV<br>53158 SILOAM 5 161 to 54443 SILMCTY5 161 CKT1   | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1 | 353    | 101.8       | 103.6       | HYLAND TO EAST FAYETTEVILLE REC, 161KV<br>53143 HYLAND 5 161 to 53193 EFAYTVL5 161 CKT1   | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1 | 353    | 101.7       | 103.6       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1 | 353    | 102.1       | 104.9       | FORT SMITH TO ARKANSAS NUCLEAR ONE, 500KV<br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1   | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1    | 353    | 101.7       | 103.4       | FLINT CREEK 345/161KV TRANSFORMER 2<br>53139 FLINTCR5 161 to 53140 FLINTCR7 345 CKT2  | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1    | 353    | 101.7       | 103.4       | FLINT CREEK 345/161KV TRANSFORMER 1<br>53139 FLINTCR5 161 to 53140 FLINTCR7 345 CKT1  | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1 | 353    | 101.6       | 103.4       | LINCOLN REC TO SILOAM SPRINGS, 69KV<br>53199 LINCOLN269.0 to 53204 SILOAM 269.0 CKT1  | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1    | 353    | 101.0       | 102.3       | TABLE ROCK TO EUREKA SPRINGS, 161KV<br>52672 TABLE R5 161 to 53136 EUREKA 5 161 CKT1  | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT 1 | 353    | 101.6       | 103.5       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1  | 0   | Identified in SPP-2002-140a                       | See Previous                |
| 05SP       | AEPW-AEPW         | GENTRY REC TO FLINT CREEK, 161KV<br>53187 GENTRYR5 161 to 53139 FLINTCR5 161 CKT 1    | 353    | 101.1       | 102.9       | NORTH ROGERS TO ROGERS, 69KV<br>53150 NROGERS269.0 to 53152 ROGERS 269.0 CKT1   | 0   | Identified in SPP-2002-140a                       | See Previous                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|--|-----|---|-----------------------------|
| 05SP       | AEPW-AEPW         | NORTH MARSHALL TO WOODLAWN, 69KV<br>53579 NMARSHL2 69 to 53621 WOODLWN2 69 CKT 1                     | 51     | 101.7       | 106.6       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1  | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 59 MVA 15.7% Increase                   | None                        |
| 05SP       | AEPW-AEPW         | FARMINGTON AECC TO SOUTH FAYETTEVILLE, 161KV<br>53195 FARMGTN5 161 to 53157 SFAYTVL5 161 CKT 1       | 313    | 101.0       | 103.5       | DYESS TO CHAMBER SPRINGS, 161KV<br>53131 DYESS 5 161 to 53154 CHAMSPR5 161 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 05SP       | AEPW-AEPW         | CHAMBER SPRINGS TO DYESS, 161KV<br>53154 CHAMSPR5 161 to 53131 DYESS 5 161 CKT 1                     | 247    | 100.1       | 102.3       | DYESS TO ELM SPRINGS REC, 161KV<br>53131 DYESS 5 161 to 53194 ELMSPRR5 161 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 05SP       | OKGE-OKGE         | GLASSES TO RUSSETT, 138KV<br>55147 GLASSES4 138 to 55120 RUSSETT4 138 CKT 1                          | 96     | 100.0       | 100.4       | EXPLORER TAP TO BROWN, 138KV<br>55153 EXPLRTP4 138 to 55157 BROWN 4 138 CKT1   | 32  | Identified in SPP-2002-140a New Summer Emergency Rating 143 MVA 49.0% Increase                  | None                        |
| 05SP       | OKGE-OKGE         | OSAGE TO CONTINENTAL BLACKS, 69KV<br>54742 OSAGE 269.0 to 54763 CONBLKS269.0 CKT 1                   | 111    | 99.6        | 104.8       | KILDARE TO WHITE EAGLE, 138KV<br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1   | 43  | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 143 MVA 28.8% Increase | None                        |
| 05SP       | AEPW-AEPW         | BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV<br>53940 BV-SE-4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 99.4        | 105.3       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1  | 53  | Replace Bartlesville Southeast Wavetrap. New Summer Emergency Rating 235 MVA 11.9% Increase     | None                        |
| 05SP       | OKGE-OKGE         | HIGHWAY 59 TO VBI, 161KV<br>55347 HWY59 5 161 to 55339 VBI 5 161 CKT 1                               | 167    | 97.7        | 114.3       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1  | 70  | Identified in SPP-2002-140a New Summer Emergency Rating 315 MVA Rating 88.6% Increase           | None                        |
| 05SP       | OKGE-OKGE         | FT SMITH 345/161KV TRANSFORMER<br>55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1                     | 493    | 98.3        | 109.2       | FT SMITH 500/345KV TRANSFORMER<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1  | 76  | Identified in SPP-2002-140a   | See Previous                |
| 05SP       | WFEC-OKGE         | FRANKLIN SW TO MIDWEST TAP, 138KV<br>55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1                  | 215    | 98.4        | 108.5       | MIDWEST TAP TO HOLLYWOOD, 138KV<br>54946 MIDWEST4 138 to 54953 HOLLYWD4 138 CKT1   | 81  | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 287 MVA 33.5% Increase | None                        |
| 05SP       | OKGE-AEPW         | BONANZA TAP TO BONANZA, 161KV<br>55261 BONANZT5 161 to 53126 BONANZA5 161 CKT 1                      | 177    | 98.2        | 108.3       | FT SMITH TO ARKANSAS NUCLEAR ONE, 500KV<br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1  | 90  | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 276 MVA 55.9% Increase | None                        |
| 05SP       | AEPW-AEPW         | LONGWOOD TO OAK PAN-HARR REC, 138KV<br>53423 LONGWD 4 138 to 53457 OAKPH 4 138 CKT 1                 | 209    | 98.8        | 104.7       | Multiple Outage Contingency<br>SOUTHWESTSHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1 | 102 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 236 MVA 12.9% Increase | None                        |
| 05SP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                              | 237    | 99.6        | 100.9       | PITTSBURG 138/69KV TRANSFORMER<br>53310 PITTSB_269.0 to 53311 PITTSB_4 138 CKT1  | 153 | AEPW Upgrade Not Modeled  | Undetermined                |
| 05SP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1                | 118    | 96.8        | 107.0       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1  | 155 | Identified in SPP-2002-140a   | See Previous                |
| 05SP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1                | 118    | 96.7        | 106.8       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1  | 162 | Identified in SPP-2002-140a   | See Previous                |
| 05SP       | AEPW-WERE         | COFFEYVILLE TAP TO DEARING, 138KV<br>53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1                  | 232    | 98.0        | 103.3       | DELAWARE TO NEOSHO, 345KV<br>53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1   | 185 | Upgrade Modeled Assigned to SPP-2000-108 Identified in SPP-2002-140a                            | Undetermined                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|-----------------------------|
| 05SP       | GRRD-GRRD         | KERR TO 412SUB, 161KV<br>54435 KERR GR5 161 to 54437 412SUB 5 161 CKT 1               | 338    | 98.8        | 101.9       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 193 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 403 MVA 19.2% Increase | None                        |
| 05SP       | SWPA-OKGE         | VAN BUREN TO VBI, 161KV<br>52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1                | 335    | 97.1        | 104.2       | BONANZA TAP TO AES, 161KV<br>55261 BONANZT5 161 to 55262 AES 5 161 CKT1   | 205 | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 05SP       | SWPA-OKGE         | MUSKOGEE TAP TO MUSKOGEE, 161KV<br>52758 MUSKTAP5 161 to 55222 MUSKOGEE5 161 CKT 1    | 223    | 94.0        | 104.3       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 290 | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                  | None                        |
| 05SP       | GRRD-GRRD         | 412SUB TO KANSAS TAP, 161KV<br>54437 412SUB 5 161 to 54514 KANSATP5 161 CKT 1         | 338    | 98.1        | 101.3       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 301 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 403 MVA 19.2% Increase | None                        |
| 05SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59595*RN393 269.0 REINMILL 1                  | 75     | 99.2        | 100.5       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 TO 59483 JOP389 5 161 CKT 1  | 308 | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 05SP       | AEPW-SWPA         | CRAIG JUNCTION TO BROKEN BOW, 138KV<br>54015 CRAIGJT4 138 to 52814 BRKN BW4 138 CKT 1 | 107    | 92.1        | 104.7       | BBDAMTP4 TO MOUNTAIN RIVER, 138KV<br>55823 BBDAMTP4 138 to 56004 MTRIVER4 138 CKT1  | 315 | Identified in SPP-2002-140a   | See Previous                |
| 05SP       | AEPW-AEPW         | ARSENAL HILL TO RAINES, 138KV<br>53386 ARSHILL4 138 to 53439 RAINES 4 138 CKT 1       | 234    | 97.2        | 101.5       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT 1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT 1 | 326 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 268 MVA 14.5% Increase | None                        |
| 05SP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1          | 160    | 88.9        | 105.6       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 333 | New Summer Emergency Rating 168 MVA 5% Increase   | Undetermined                |
| 05SP       | SWPA-SPRM         | SPRINGFIELD TO CLAY, 161KV<br>52692 SPRGFLD5 161 to 59970 CLAY 5 161 CKT 1            | 167    | 94.8        | 102.6       | Multiple Outage Contingency<br>HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT 1<br>FRANKS TO HUBEN, 345KV<br>96041 7FRANKS 345 to 96042 7HUBEN 345 CKT 1                                     | 333 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 188 MVA 12.6% Increase | None                        |
| 05SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1 | 493    | 113.4       | 122.9       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 341 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | Undetermined                |
| 05SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2 | 493    | 113.4       | 122.9       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 341 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | See Previous                |
| 05SP       | AEPW-AEPW         | DYESS TO CHAMBER SPRINGS, 161KV<br>53131 DYESS 5 161 to 53154 CHAMSPR5 161 CKT 1      | 247    | 98.3        | 100.7       | SOUTHEAST FAYETTEVILLE TO SOUTH FAYETTEVILLE, 161KV<br>53153 SEFAYTV5 161 to 53157 SFAYTVL5 161 CKT1  | 351 | Identified in SPP-2002-140a   | See Previous                |
| 05SP       | OKGE-OKGE         | HARDEN CITY TO AHLOSO TAP, 69KV<br>55186 HARDEN 269.0 to 55187 AHLOSTP269.0 CKT 1     | 52     | 89.9        | 101.7       | VALLY VIEW TAP TO VALLY VIEW, 69KV<br>55181 VALYVUT269.0 to 55182 VALLYVU269.0 CKT1   | 428 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 143 MVA 38.5% Increase | None                        |
| 05SP       | AEPW-AEPW         | IDABEL TO HUGO TAP, 138KV<br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1           | 164    | 92.8        | 100.5       | HUGO PP TO VALLANT, 138KV<br>55948 HUGO PP4 138 to 56079 VALLANT4 138 CKT1  | 468 | Identified in SPP-2002-140a   | Undetermined                |
| 05SP       | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1           | 112    | 96.0        | 100.2       | NEWPORT-INDUSTRIAL TO NEWPORT, 161KV<br>99763 5NEW-IN 161 to 99764 5NEWPO 161 CKT1  | 476 | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                    | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 05SP       | OKGE-OKGE         | ADA OC PUMP TAP TO ADA OC PUMP, 69KV<br>55190 AOCPT 269.0 to 55189 AOCPTA 269.0 CKT 1                | 52     | 86.4        | 100.3       | PARKLN TO AHLOSO TAP, 69KV<br>55177 PARKLN 269.0 to 55187 AHLOSTP269.0 CKT1             | 490 | Identified in SPP-2002-140a   | Undetermined                |
| 05SP       | AEPW-AEPW         | SOUTH SHREVEPORT TO WALLACE LAKE, 138KV<br>53446 S SHV 4 138 to 53461 WALLACE4 138 CKT 1             | 209    | 99.0        | 109.4       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1      | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 05SP       | AEPW-CELE         | WALLACE LAKE TO INTERNATIONAL PAPER, 138KV<br>53461 WALLACE4 138 to 50090 IPAPER 4 138 CKT 1         | 209    | 90.7        | 102.5       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1      | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 05SP       | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1                      | 100    | 100.0       | 106.4       | NE 10TH TO MIDWAY, 138KV<br>54964 NE10TH 4 138 to 54966 MIDWAY 4 138 CKT1               | 500 | Excluded Per OKGE   | None                        |
| 05SP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1       | 235    | 109.7       | 116.3       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1 | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |
| 05SP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                           | 47     | 106.5       | 109.0       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1                | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 05SP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                             | 36     | 135.1       | 140.5       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1           | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 05SP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                       | 162    | 132.3       | 142.3       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1       | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 05WP       | AECI-SPRM         | CLAY TO LOGAN, 161KV<br>97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1                                   | 232    | 120.0       | 131.3       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1                    | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 05WP       | KACP-KACP         | LINN COUNTY TO PAOLA, 161KV<br>58069 PAOLA 5 161 to 58200 LINNC1 5 161 CKT 1                         | 237    | 143.8       | 148.1       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1             | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Winter Emergency Rating 449 MVA                  | None                        |
| 05WP       | KACP-KACP         | PAOLA TO CENTENNIAL, 161KV<br>58067 CENTENL5 161 to 58069 PAOLA 5 161 CKT 1                          | 192    | 124.2       | 128.3       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1             | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Winter Emergency Rating 449 MVA                  | None                        |
| 05WP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1                         | 245    | 104.1       | 108.2       | FLINT CREEK TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1       | 0   | Flowgate  | See Previous                |
| 05WP       | AEPW-AEPW         | DYESS TO EAST ROGERS, 161KV<br>53131 DYESS 5 161 to 53135 EROGERS5 161 CKT 1                         | 245    | 102.9       | 107.0       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1    | 0   | Upgrade Modeled Assigned to SPP-2000-004  | See Previous                |
| 05WP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1                    | 478    | 101.3       | 108.4       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1         | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 896 MVA 87.4% Increase   | None                        |
| 05WP       | AEPW-AEPW         | BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV<br>53940 BV-SE-4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 101.6       | 107.3       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1   | 0   | Identified in SPP-2002-140a New Winter Emergency Rating 237 MVA 12.9% Increase                    | None                        |
| 05WP       | SPRM-SWPA         | CLAY TO SPRINGFIELD, 161KV<br>59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1                           | 167    | 99.0        | 104.4       | JAMES RIVER TO MENTOR, 161KV<br>59961 JRPS 5 161 to 59963 MENTOR 5 161 CKT1             | 96  | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 223 MVA 33.5% Increase   | None                        |
| 05WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1                    | 287    | 97.6        | 106.0       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1            | 144 | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |



**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
|            |                   |  |        |             |             | Multiple Outage Contingency<br>MONETT TO BROOKLINE, 345KV<br>59481 [MON383 7345.00] TO BUS 59984 [BRKLINE 7345.00] CKT 1<br>FLINT CREEK TO MONETT |     |   |                             |
| 05WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 53136 EUREKA 5 161 1                   | 287    | 97.6        | 106.0       | 53140 [FLINTCR7345.00] TO BUS 59481 [MON383 7345.00] CKT 1  | 144 | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 05WP       | AEPW-SPRM         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1            | 287    | 97.5        | 106.0       | 53140 FLINTCR7 345 to 59984 BRKLINE 7 345 CKT 1   | 148 | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 05WP       | SPRM-SWPA         | CLAY TO SPRINGFIELD, 161KV<br>59970 CLAY 5 161 to 52692 SPRGLD5 161 CKT 1                    | 167    | 97.6        | 102.2       | HUBEN 345/161KV TRANSFORMER<br>96042 7HUBEN 345 to 96088 5HUBEN 161 CKT1  | 261 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency 223 MVA 33.5% Increase        | None                        |
| 05WP       | AECI-SPRM         | LOGAN TO CLAY, 161KV<br>97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1                           | 232    | 96.4        | 102.5       | HUBEN 345/161KV TRANSFORMER<br>96042 7HUBEN 345 to 96088 5HUBEN 161 CKT1  | 295 | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 05WP       | AEPW-AEPW         | MARSHALL TO MARSHALL AUTO, 69KV<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 1            | 121    | 99.3        | 100.2       | MARSHALL 138/69KV TRANSFORMER<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT2  | 372 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 143 MVA 18.2% Increase | None                        |
| 05WP       | AEPW-AEPW         | MARSHALL TO MARSHALL AUTO, 69KV<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 2            | 121    | 99.3        | 100.2       | MARSHALL 138/69KV TRANSFORMER<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT1  | 372 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 143 MVA 18.2% Increase | None                        |
| 05WP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1              | 167    | 84.2        | 100.6       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 483 | Upgrade Not Modeled Assigned to SPP-2000-108 New Summer Emergency Rating 184 MVA 10.2% Increase | None                        |
| 05WP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                 | 160    | 94.2        | 111.2       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 500 | New Winter Emergency Rating 195 MVA 21.9% Increase  | None                        |
| 05WP       | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1     | 210    | 112.2       | 122.1       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 05WP       | AEPW-CELE         | WALLACE LAKE TO INTERNATIONAL PAPER, 138KV<br>53461 WALLAKE4 138 to 50090 IPAPER 4 138 CKT 1 | 236    | 100.0       | 110.2       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 05WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1        | 493    | 102.1       | 111.5       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | None                        |
| 05WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2        | 493    | 102.1       | 111.5       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | None                        |
| 05WP       | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1              | 100    | 96.2        | 102.5       | HORSESHOE LAKE TO MIDWAY, 138KV<br>54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT1   | 500 | Excluded Per OKGE   | None                        |
| 08SP       | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1                  | 112    | 106.8       | 110.8       | NEWPORT-INDUSTRIAL TO NEWPORT, 161KV<br>99763 5NEW-IN 161 to 99764 5NEWPO 161 CKT1  | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                    | None                        |
| 08SP       | SWPA-SWPA         | GLENCOE TO NORFORK, 161KV<br>52646 GLENCOE5 161 to 52648 NORFORK5 161 CKT 1                  | 112    | 105.4       | 109.4       | NEW-AB TO NEW-IN, 161KV<br>99762 5NEW-AB 161 to 99763 5NEW-IN 161 CKT1  | 0   | SWPA Upgrade Not Modeled New Summer Emergency Rating 167 MVA 49.1 % Increase                    | None                        |
| 08SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1            | 274    | 110.3       | 119.6       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1   | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1            | 274    | 109.2       | 120.6       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 08SP       | SWPA-OKGE         | VAN BUREN TO VBI, 161KV<br>52722 VAN BUR5 161 to 55339 VBI 5 161 CKT 1                         | 335    | 109.2       | 119.4       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08SP       | SWPA-SWPA         | MUSKOGEE TAP TO GORE, 161KV<br>52758 MUSKTAP5 161 to 52752 GORE 5 161 CKT 1                    | 223    | 106.7       | 116.7       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 286 MVA 28.3% Increase | None                        |
| 08SP       | AEPW-AEPW         | SOUTH TEXARKANA REC TO TEXARKANA PLANT, 69KV<br>53189 STEXREC269.0 to 53329 TEXARK 269.0 CKT 1 | 59     | 105.1       | 108.6       | ATLANTA TO WEST ATLANTA, 69KV<br>53248 ATLANTA269.0 to 53333 WATLANT269.0 CKT1  | 0   | Previously Identified   | Undetermined                |
| 08SP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 127.5       | 140.4       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 1272 ACSR Conductor Summer Emergency Rating 309 MVA 31.5% Increase   | Undetermined                |
| 08SP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 127.3       | 140.1       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 1272 ACSR Conductor Summer Emergency Rating 309 MVA 31.5% Increase   | See Previous                |
| 08SP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1                      | 235    | 123.7       | 135.5       | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 1272 ACSR Conductor Summer Emergency Rating 309 MVA 31.5% Increase   | See Previous                |
| 08SP       | AEPW-AEPW         | LONGWOOD TO NORAM, 138KV<br>53423 LONGWD 4 138 to 53473 NORAM 4 138 CKT 1                      | 234    | 116.9       | 121.4       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase   | None                        |
| 08SP       | AEPW-AEPW         | RAINES TO ARSENAL HILL, 138KV<br>53439 RAINES 4 138 to 53386 ARSHILL4 138 CKT 1                | 234    | 104.9       | 109.2       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 268 MVA 14.5% Increase   | None                        |
| 08SP       | AEPW-AEPW         | LONGWOOD TO OAK PAN-HARR REC, 138KV<br>53457 OAKPH 4 138 to 53423 LONGWD 4 138 CKT 1           | 209    | 106.3       | 112.3       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 236 MVA 12.9% Increase   | None                        |
| 08SP       | AEPW-AEPW         | NORAM TO RAINES, 138KV<br>53473 NORAM 4 138 to 53439 RAINES 4 138 CKT 1                        | 234    | 115.6       | 120.1       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 287 MVA 22.6% Increase   | None                        |
| 08SP       | AEPW-AEPW         | IPC JEFFERSON TO LIEBERMAN, 138KV<br>53548 IPCJEFF4 138 to 53420 LIEBERM4 138 CKT 1            | 151    | 116.2       | 124.8       | LONGWOOD TO WILKES, 345KV<br>53424 LONGWD 7 345 to 53620 WILKES 7 345 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-108 Additional Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment   | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|--|-----------------------------|
| 08SP       | AEPW-AEPW         | MARSHALL TO NORTH MARSHALL, 69KV<br>53570 MARSHAL269.0 to 53579 NMARSHL269.0 CKT 1           | 72     | 105.8       | 109.7       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 118 MVA 63.9% Increase | None                        |
| 08SP       | AEPW-AEPW         | ROCK HILL TO TATUM, 138KV<br>53598 ROKHILL4 138 to 53611 TATUM 4 138 CKT 1                   | 235    | 110.9       | 116.6       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08SP       | GRRD-GRRD         | KERR TO 412SUB, 161KV<br>54435 KERR GR5 161 to 54437 412SUB 5 161 CKT 1                      | 338    | 111.4       | 114.6       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 403 MVA 19.2% Increase | None                        |
| 08SP       | GRRD-GRRD         | 412SUB TO KANSAS TAP, 161KV<br>54437 412SUB 5 161 to 54514 KANSATP5 161 CKT 1                | 338    | 110.7       | 113.9       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 403 MVA 19.2% Increase | None                        |
| 08SP       | OKGE-OKGE         | OSAGE TO CONTINENTAL BLACKS, 69KV<br>54742 OSAGE 269.0 to 54763 CONBLKS269.0 CKT 1           | 111    | 106.1       | 111.3       | KILDARE TO WHITE EAGLE, 138KV<br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 143 MVA 28.8% Increase | None                        |
| 08SP       | OKGE-OKGE         | HARDEN CITY TO AHLOSO TAP, 69KV<br>55186 HARDEN 269.0 to 55187 AHLOSTP269.0 CKT 1            | 52     | 106.1       | 118.0       | VALLY VIEW TAP TO VALLY VIEW, 69KV<br>55181 VALYVUT269.0 to 55182 VALLYVU269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 143 MVA 38.5% Increase | None                        |
| 08SP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOG7 345 CKT 1              | 478    | 118.7       | 125.7       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 896 MVA 87.4% Increase | None                        |
| 08SP       | OKGE-AEPW         | BONANZA TAP TO BONANZA, 161KV<br>55261 BONANZT5 161 to 53126 BONANZA5 161 CKT 1              | 177    | 107.4       | 117.4       | FORT SMITH TO ARKANSAS NUCLEAR ONE, 500KV<br>55305 FTSMITH8 500 to 99486 8ANO 50 500 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 276 MVA 55.9% Increase | None                        |
| 08SP       | AECI-GRRD         | TITANTP TO TAHLEQUAH, 69KV<br>96986 2TITANTP69.0 to 54447 TAHLQH 269.0 CKT 1                 | 47     | 101.8       | 104.2       | KANSAS TO WATTS, 69KV<br>54515 KANSAS 269.0 to 96987 2WATTS 69.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH TO ONETA, 138KV<br>53798 BA.N-ST4 138 to 53818 ONETA-4 138 CKT 1          | 235    | 112.3       | 116.8       | CHAMBER SPRINGS ROAD 345/161KV<br>53154 CHAMSPR5 161 to 53155 CHAMSPR7 345 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 22.1% Increase | None                        |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH TO ONETA, 138KV<br>53798 BA.N-ST4 138 to 53818 ONETA-4 138 CKT 1          | 235    | 112.3       | 116.8       | CHAMBER SPRINGS TO CLARKSVILLE, 345KV<br>53155 CHAMSPR7 345 to 53756 CLARKSV7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 22.1% Increase | None                        |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS ROAD 345/161KV TRANSFORMER<br>53155 CHAMSPR7 345 to 53154 CHAMSPR5 161 CKT 1 | 660    | 108.6       | 112.3       | FLINT CREEK TO GRDA, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046   | None                        |
| 08SP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1                      | 237    | 102.6       | 104.3       | SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1  | 0   | AEPW Upgrade Not Modeled   | See Previous                |
| 08SP       | AEPW-AEPW         | NORTHWEST HENDERSON TO OAK HILL, 138KV<br>53584 NWHENDR4 138 to 53585 OAK1HIL4 138 CKT 1     | 210    | 101.6       | 102.9       | KILGORE REC TO MONROE CORNERS REC, 138KV<br>53555 KILGORR4 138 to 53574 MONROCR4 138 CKT1   | 0   | AEPW Upgrade Not Modeled New Summer Emergency Rating<br>237 MVA 12.9% Increase                     | None                        |
| 08SP       | AEPW-AEPW         | OAK HILL TO KNOX LEE, 138KV<br>53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1                | 210    | 101.1       | 102.3       | LEVERETTS CHAPEL TO OVERTON, 138KV<br>53560 LEVERET4 138 to 53588 OVERTON4 138 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer<br>Emergency Rating 287 MVA 36.7% Increase | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|-----------------------------|
| 08SP       | EMDE-EMDE         | ORONOGO JCT. TO JOPLIN OAKLAND NORTH, 161KV<br>59467 ORO110 5 161 to 59494 OAK432 5 161 CKT 1             | 214    | 105.1       | 108.2       | TIPTON FORD TO JOPLIN, 161KV<br>59472 TIP292 5 161 to 59483 JOP389 5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 08SP       | SPRMAECI          | CLAY TO LOGAN, 161KV<br>59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1  | 185    | 132.1       | 146.8       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 22.7% Increase Identified In SPP 2002-140a | See Previous                |
| 08SP       | SWPA-SWPA         | SPRINGFIELD 161/69KV TRANSFORMER 1<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 1                      | 80     | 103.4       | 106.1       | NICHOLS 161/69KV TRANSFORMER<br>59925 NICHOLS269.0 to 59956 NICHOLS5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | Undetermined                |
| 08SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59500* RNM393 5 161 544 WND 1 REINMILL 1                          | 75     | 101.3       | 102.3       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 TO 59483 JOP389 5 161 CKT 1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 08SP       | AEPW-AEPW         | WINFIELD TO ADORA REC, 69KD<br>53335 WINFIEL269.0 to 53243 ADORA 269.0 CKT 1                              | 85     | 103.8       | 107.1       | NORTH MINEOLA TO LAKE HAWKINS, 138KV<br>53581 NMINEOLA4 138 to 53666 LHAWKIN4 138 CKT1  | 0   | AEPW Upgrade Not Modeled  | Undetermined                |
| 08SP       | AEPW-AEPW         | FERNDALE LAKE TAP TO PITTSBURG, 69KV<br>53531 FERNDTP269.0 to 53310 PITTSB_269.0 CKT 1                    | 79     | 100.5       | 101.4       | HOPEWELL REC TO WINFIELD, 69KV<br>53262 HOPEWEL269.0 to 53335 WINFIEL269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 85 MVA 7.6% Increase                               | None                        |
| 08SP       | SWPA-SWPA         | SPRINGFIELD 161/69 KV TRANSFORMER CKT 3<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3                 | 25     | 101.5       | 104.4       | MAIN TO BATTLEFIELD, 161KV<br>59958 MAIN 5 161 to 59959 BATFLD 5 161 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | Undetermined                |
| 08SP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1                         | 274    | 103.5       | 112.6       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1  | 0   | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08SP       | AEPW-WERE         | COFFEYVILLE TAP TO DEARING, 138KV<br>53972 COFFEYT4 138 to 57002 DEARING4 138 CKT 1                       | 232    | 102.4       | 107.3       | DELAWARE TO NEOSHO, 345KV<br>53929 DELWARE7 345 to 56793 NEOSHO 7 345 CKT1  | 0   | Upgrade Modeled Assigned to SPP-2000-108 Identified In SPP 2002-140a  | Undetermined                |
| 08SP       | GRRD-OKGE         | TAHLEQUAH TO HIGHWAY 59, 161KV<br>54455 TAHLQH 5 161 to 55347 HWY59 5 161 CKT 1                           | 184    | 101.3       | 116.0       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Upgrade Modeled Assigned to SPP-2000-108 Identified In SPP 2002-140a  | Undetermined                |
| 08SP       | SWPA-SPRM         | SPRINGFIELD TO CLAY, 161KV<br>52692 SPRGFLD5 161 to 59970 CLAY 5 161 CKT 1                                | 167    | 101.7       | 109.7       | Multiple Outage Contingency<br>HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT 1<br>FRANKS TO HUBEN, 345KV<br>96041 7FRANKS 345 to 96042 7HUBEN 345 CKT 1 | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 188 MVA 12.6% Increase                             | None                        |
| 08SP       | EMDE-EMDE         | REINMILLER 161/69/12.5KV TRANSFORMER<br>59595*RNM393 269.0 REINMILL 1                                     | 75     | 100.1       | 101.1       | TIPTON FORD TO JOPLIN SOUTHWEST, 161KV<br>59472 TIP292 5 161 TO 59483 JOP389 5 161 CKT 1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | None                        |
| 08SP       | SWPA-SWPA         | SPRINGFIELD 161/69 KV TRANSFORMER CKT 1<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 1                 | 80     | 100.1       | 103.8       | JUNCTION TO BROOKLINE, 161KV<br>59955 JUNCTN 5 161 to 59969 BRKLINE 5 161 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08SP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                              | 160    | 100.2       | 116.4       | WOODRING TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1   | 0   | New Summer Emergency Rating 168 MVA 5% Increase   | Undetermined                |
| 08SP       | SWPA-OKGE         | MUSKOGEE TAP TO MUSKOGEE, 161KV<br>52758 MUSKTAP5 161 to 55222 MUSKOGEE5 161 CKT 1                        | 223    | 108.9       | 118.9       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase  | None                        |
| 08SP       | OKGE-OKGE         | FT SMITH 345/161 KV TRANSFORMER CKT 1<br>55302 FTSMITH7 345 to 55305 FTSMITH5 161 CKT 1                   | 493    | 106.7       | 116.8       | FT SMITH 500/345 KV TRANSFORMER CKT 1<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH - SOUTH TAP TO LYNN LANE TAP, 138 KV<br>53798 BA.N-ST4 138 to 53816 LLANETP4 138 CKT 1 | 235    | 104.2       | 107.5       | TULSA NORTH TO NORTHEAST STATION, 345KV<br>53866 T.NO. -7 345 to 53955 N.E.S.-7 345 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC % Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|--------------|-------------|---|-----|---|-----------------------------|
| 08SP       | GRRD-GRRD         | KANSAS TAP TO WEST SILOAM SPRINGS, 161 KV<br>54514 KANSATP5 161 to 54442 SILSPWW5 161 CKT 1          | 328    | 103.1        | 106.2       | FLINT CREEK TO GRDA1, 345 KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | OKGE-OKGE         | ADA OC PUMP TAP TO ADA OC PUMP, 69 KV<br>55190 AOCPT 269.0 to 55189 AOCPA 269.0 CKT 1                | 52     | 103.8        | 117.6       | PARKLN TO AHLOSO TAP, 69 KV<br>55177 PARKLN 269.0 to 55187 AHLOSTP269.0 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | AEPW-AEPW         | FORBING TAP TO SOUTH SHREVEPORT, 69KV<br>53406 FORBNGT269.0 to 53445 S SHV 269.0 CKT 1               | 95     | 100.8        | 102.5       | BROADMOOR TO FORT HUMBURG, 69 KV<br>53394 BROADMR269.0 to 53408 FTHUMBG269.0 CKT1   | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | AEPW-AEPW         | NORTH MARSHALL TO WOODLAWN, 69KV<br>53579 NMARSHL269.0 to 53621 WOODLWN269.0 CKT 1                   | 51     | 102.5        | 107.6       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 SW SHV 7 345 to 53528 DIANA 7 345 CKT1 | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 59 MVA 15.7% Increase                     | None                        |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1             | 244    | 102.2        | 104.7       | FAYETTEVILLE TO SOUTH FAYETTEVILL, 161KV<br>53138 FAYETVL5 161 to 53157 SFAYTVL5 161 CKT1   | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | OKGE-OKGE         | HIGHWAY 59 TO VBI, 161KV<br>55347 HWY59 5 161 to 55339 VBI 5 161 CKT 1                               | 167    | 104.4        | 120.7       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1   | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 315 MVA Rating 88.6% Increase             | None                        |
| 08SP       | EMDE-EMDE         | BILLINGS NORTHEAST TO REPUBLIC EAST, 69KV<br>59546 BIL221 269.0 to 59580 REP359 269.0 CKT 1          | 38     | 100.6        | 102.1       | BOLIVAR BURNS TO BOLIVAR SOUTH, 161KV<br>59464 BOL 73 5 161 to 59493 BOL431 5 161 CKT1  | 0   | In-house plans to reconductor in 2004 for own needs due to outage of Black Hawk JCT - Jamesville. | None                        |
| 08SP       | GRRD-GRRD         | WEST SILOAM SPRINGS TO SILOAM CITY, 161KV<br>54442 SILSPWW5 161 to 54443 SILMCTY5 161 CKT 1          | 328    | 102.0        | 105.1       | FLINT CREEK TO GRDA1, 345KV<br>53140 FLINTCR7 345 to 54450 GRDA1 7 345 CKT1   | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | WERE-WERE         | HOYT HTI SWITCHING JUNCTION TO CIRCLEVILLE, 115KV<br>57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1  | 97     | 101.3        | 103.8       | IATAN TO ST JOE, 345KV<br>57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1             | 244    | 101.8        | 104.7       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1   | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1             | 244    | 101.5        | 104.0       | HYLAND TO SOUTHEAST FAYETTEVILLE+G98, 161KV<br>53143 HYLAND 5 161 to 53153 SEFAYTV5 161 CKT1  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | WERE-WERE         | JARBALO JUNCTION SS TO 166TH STREET,115KV<br>57244 JARBALO3 115 to 57233 166TH 3 115 CKT 1           | 97     | 100.5        | 101.5       | IATAN TO ST JOE, 345KV<br>57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT1  | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1             | 244    | 101.0        | 103.5       | FLINT CREEK TO GENTRY REC, 161KV<br>53139 FLINTCR5 161 to 53187 GENTRYR5 161 CKT1   | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | AEPW-AEPW         | BARTLESVILLE SOUTHEAST TO NORTH BARTLESVILLE, 138KV<br>53940 BV-SE-4 138 to 53935 NBVILLE4 138 CKT 1 | 210    | 102.3        | 107.9       | DELAWARE TO NORTHEAST STATION, 345KV<br>53929 DELWARE7 345 to 53955 N.E.S.-7 345 CKT1   | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 235 MVA 11.9% Increase                    | None                        |
| 08SP       | OKGE-OKGE         | GLASSES TO RUSSETT, 138KV<br>55147 GLASSES4 138 to 55120 RUSSETT4 138 CKT 1                          | 96     | 100.4        | 100.7       | EXPLORER TAP TO BROWN, 138KV<br>55153 EXPLRTP4 138 to 55157 BROWN 4 138 CKT1  | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 143 MVA 49.0% Increase                    | None                        |
| 08SP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1             | 244    | 100.7        | 103.2       | EAST CENTERTON TO GENTRY REC, 161KV<br>53133 ECNTRTN5 161 to 53187 GENTRYR5 161 CKT1  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1                | 118    | 101.7        | 112.1       | LONGWOOD TO ELDORADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1   | 0   | Identified in SPP-2002-140a   | See Previous                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|--|-----|---|-----------------------------|
| 08SP       | AEPW-AEPW         | PATTERSON TO SOUTH NASHVILLE, 138KV<br>53306 PATTERS4 138 to 53321 SNASHVL4 138 CKT 1                     | 118    | 101.6       | 111.9       | ELDORADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1      | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | OKGE-OKGE         | HANCOCK TO 5 TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                              | 223    | 101.0       | 107.8       | AGENCY TO PECAN CREEK, 161KV<br>55230 AGENCY 5 161 to 55234 PECANCK5 161 CKT1          | 0   | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                  | None                        |
| 08SP       | WERE-WERE         | EVANS ENERGY CENTER NORTH TO CHISHOLM, 138KV<br>57040 EVANS N4 138 to 57035 CHISHLM4 138 CKT 1            | 382    | 100.1       | 101.3       | HOOVER NORTH TO LAKERIDGE+G137, 138KV<br>57049 HOOVERN4 138 to 57053 LAKERDG4 138 CKT1 | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | OKGE-OKGE         | CONTINENTAL BLACKS TO CHEROKEE PL TAP, 69KV<br>54763 CONBLKS269.0 to 54745 CHERPLT269.0 CKT 1             | 111    | 100.5       | 105.6       | KILDARE4 TO WHITE EAGLE, 138KV<br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1        | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | OKGE-OKGE         | CHILOCCO TO CHIKASKIA TAP, 69KV<br>54744 CHILOCO269.0 to 54751 CHIKSTP269.0 CKT 1                         | 57     | 100.3       | 105.6       | KILDARE4 TO WHITE EAGLE, 138KV<br>54760 KILDARE4 138 to 54761 WHEAGLE4 138 CKT1        | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | AEPW-AEPW         | BROKEN ARROW NORTH - SOUTH TAP TO LYNN LANE TAP, 138 KV<br>53798 BA.N-ST4 138 to 53816 LLANETP4 138 CKT 1 | 235    | 100.0       | 104.5       | CHAMBER SPRINGS TO CLARKSVILLE, 345KV<br>53155 CHAMSPR7 345 to 53756 CLARKSV7 345 CKT1 | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | AEPW-AEPW         | PITTSBURG TO LONE STAR SOUTH, 138KV<br>53311 PITTSB 4 138 to 53276 LSSOUTH4 138 CKT 1                     | 197    | 100.0       | 100.3       | PETTY TO CHAPEL HILL REC, 138KV<br>53308 PETTY 4 138 to 53521 CHAPELH4 138 CKT1        | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 237 MVA 20.3% Increase | None                        |
| 08SP       | WFEC-WFEC         | CYRIL TO ANADARKO, 69KV<br>55870 CYRIL 269.0 to 55810 ANADARK269.0 CKT 1                                  | 61     | 99.9        | 101.2       | ANADARKO TO GEORGIA, 138KV<br>55814 ANADARK4 138 to 55923 GEORGIA4 138 CKT1            | 40  | Upgrade Not Modeled Assigned to SPP-2002-046  | Undetermined                |
| 08SP       | OKGE-OKGE         | HANCOCK TO 5 TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                              | 223    | 98.7        | 108.3       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1            | 68  | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                  | None                        |
| 08SP       | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1                                | 789    | 98.0        | 107.6       | RICHARD TO WEBER, 500KV<br>98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1                 | 104 | AEPW Upgrade Not Modeled  | Undetermined                |
| 08SP       | WERE-WERE         | HOYT HTI SWITCHING JUNCTION TO CIRCLEVILLE, 115KV<br>57165 HTI JCT3 115 to 57152 CIRCLVL3 115 CKT 1       | 97     | 99.5        | 101.4       | CLIFTON TO GREENLEAF, 115KV<br>58756 CLIFTON3 115 to 58765 GRNLEAF3 115 CKT1           | 125 | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | SWPA-SPRM         | SPRINGFIELD TO CLAY, 161KV<br>52692 SPRGFLD5 161 to 59970 CLAY 5 161 CKT 1                                | 167    | 97.5        | 106.7       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1                   | 137 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 188 MVA 12.6% Increase | None                        |
| 08SP       | SWPA-SWPA         | SPRINGFIELD 161/69KV TRANSFORMER 3<br>52692 SPRGFLD5 161 to 52694 SPRGFLD269.0 CKT 3                      | 25     | 97.6        | 104.9       | SUMMIT TO NORTON, 161KV<br>59966 SUMMIT 5 161 to 59967 NORTON 5 161 CKT1               | 165 | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08SP       | EMDE-EMDE         | MONETT TO AURORA H.T., 161KV<br>59480 MON383 5 161 to 59468 AUR124 5 161 CKT 1                            | 267    | 98.0        | 103.1       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1           | 193 | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | OKGE-OKGE         | HANCOCK TO 5 TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                              | 223    | 96.8        | 104.5       | AGENCY TO EUCLID, 161KV<br>55230 AGENCY 5 161 to 55251 EUCLID 5 161 CKT1               | 208 | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                  | None                        |
| 08SP       | SWPA-SWPA         | GORE TO SALLISAW, 161KV<br>52752 GORE 5 161 to 52750 SALLISAW5 161 CKT 1                                  | 223    | 94.0        | 106.4       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1            | 241 | Upgrade Modeled Assigned to SPP-2000-108  | Undetermined                |
| 08SP       | KACP-KACP         | LINN COUNTY 345/161KV TRANSFORMER<br>58201 LINNC2 7 345 to 58200 LINNC1 5 161 CKT 1                       | 440    | 98.9        | 101.0       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1            | 264 | Identified in SPP-2002-140a   | Undetermined                |
| 08SP       | SPRM-SWPA         | CLAY TO SPRINGFIELD, 161KV<br>59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1                                | 167    | 96.8        | 102.5       | JAMES RIVER TO MENTOR, 161KV<br>59961 JRPS 5 161 to 59963 MENTOR 5 161 CKT1            | 281 | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 188 MVA 12.6% Increase | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|---|-----|---|-----------------------------|
| 08SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1          | 493    | 114.8       | 124.1       | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2  | 273 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004  | See Previous                |
| 08SP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2          | 493    | 114.8       | 124.1       | DRAPER LAKE 345/138KV TRANSFORMER 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT1  | 273 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004  | See Previous                |
| 08SP       | AEPW-AEPW         | CHEROKEE REC TO KNOX LEE, 138KV<br>53522 CHEROKEE4 138 53557 KNOXLEE4 138 1                    | 287    | 97.0        | 101.7       | Multiple Outage Contingency<br>SOUTHWEST SHREVEPORT TO LONGWOOD, 345KV<br>53454 SW SHV 7 345 to 53424 LONGWD 7 345 CKT1<br>SOUTHWEST SHREVEPORT TO DIANA, 345KV<br>53454 [SW SHV 7345.00] TO BUS 53424 [LONGWD 7345.00] CKT 1 | 319 | Upgrade Modeled Assigned to SPP-2000-108  | Undetermined                |
| 08SP       | SWPA-SWPA         | NORFORK TO BUFORD TAP, 161KV<br>52648 NORFORK5 161 to 52661 BUFRDTP5 161 CKT 1                 | 223    | 95.0        | 102.2       | MIDWAY TO BULL SHOALS, 161KV<br>52660 BULL SH5 161 to 99825 5MIDWAY# 161 CKT1   | 348 | Upgrade Modeled Assigned to SPP-2000-108  | Undetermined                |
| 08SP       | AEPW-AEPW         | ALUMAX TAP TO NORTHWEST TEXARKANA, 138KV<br>53245 ALUMXT 4 138 to 53300 NWTXARK4 138 CKT 1     | 261    | 98.4        | 100.4       | BANN TO NW TEXARKANA-BANN T, 138KV<br>53250 BANN 4 138 to 53299 NWT-BNT4 138 CKT1   | 391 | Identified in SPP-2002-140a   | See Previous                |
| 08SP       | OKGE-OKGE         | FT SMITH 345/500 TRANSFORMER<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT 1                 | 720    | 89.5        | 101.6       | FT SMITH 161/345KV TRANSFORMER<br>55300 FTSMITH5 161 to 55302 FTSMITH7 345 CKT1   | 435 | Identified in SPP-2002-140a Solution for Fort Smith 345/161KV Overload  | See Previous                |
| 08SP       | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1       | 209    | 94.6        | 104.8       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1  | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 08SP       | AEPW-AEPW         | DIANA TO NWMOUNT7, 345KV<br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT 1                      | 1059   | 100.2       | 106.7       | DIANA TO NWMOUNT7, 345KV<br>53528 DIANA 7 345 to 53635 NWMOUNT7 345 CKT2  | 500 | Invalid Contingency Due To CPS Interconnection on Welsh to Diana 345 kV Double Circuit                                      | None                        |
| 08SP       | AEPW-AEPW         | NWMOUNT7 TO WELSH, 345KV 1<br>53635 NWMOUNT7 345 to 53615 WELSH 7 345 CKT 1                    | 1059   | 95.8        | 102.1       | WELSH TO NWMOUNT7, 345KV 2<br>53615 WELSH 7 345 to 53635 NWMOUNT7 345 CKT2  | 500 | Invalid Contingency Due To CPS Interconnection on Welsh to Diana 345 kV Double Circuit                                      | None                        |
| 08SP       | AEPW-AEPW         | NWMOUNT7 TO WELSH, 345KV 2<br>53635 NWMOUNT7 345 to 53615 WELSH 7 345 CKT 2                    | 1059   | 95.5        | 101.8       | WELSH TO NWMOUNT7, 345KV 1<br>53615 WELSH 7 345 to 53635 NWMOUNT7 345 CKT1  | 500 | Invalid Contingency Due To CPS Interconnection on Welsh to Diana 345 kV Double Circuit                                      | None                        |
| 08SP       | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1                | 100    | 94.7        | 109.4       | CIMARRON TO DRAPER LAKE, 345KV<br>54901 CIMARON7 345 to 54934 DRAPER 7 345 CKT1   | 500 | Excluded Per OKGE   | None                        |
| 08SP       | SWPA-AECI         | WSHBRN 161/69KV TRANSFORMER<br>52681 WSHBRN 161 to 96763 2WSHBRN 69.0 CKT 1                    | 56     | 106.9       | 110.1       | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT1  | N/A | Third Party Facility  | None                        |
| 08SP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 235    | 128.6       | 136.6       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKET7 345 to 53637 TENRUSK7 345 CKT1   | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046                           | None                        |
| 08SP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 47     | 109.4       | 112.0       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1  | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations  | See Previous                |
| 08SP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 36     | 139.1       | 144.3       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations  | See Previous                |
| 08SP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                 | 162    | 144.2       | 154.4       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFRDTP5 161 to 52660 BULL SH5 161 CKT1   | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations  | See Previous                |
| 08WP       | AEPW-AEPW         | HUGO TAP TO VALLIANT, 138KV<br>54014 HUGOTAP4 138 to 54044 VALIANT4 138 CKT 1                  | 210    | 109.5       | 114.5       | HUGO POWER PLANT TO VALLIANT, 138KV<br>55948 HUGO PP4 138 to 56079 VALLANT4 138 CKT1  | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 8.1 % Increase Identified in SPP-2002-140a | Undetermined                |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|--|-----|---|-----------------------------|
| 08WP       | AEPW-AEPW         | HUGO TAP TO VALLIANT, 138KV<br>54014 HUGOTAP4 138 to 54044 VALIANT4 138 CKT 1         | 210    | 108.1       | 113.1       | IDABEL TO VALLANT, 138KV<br>55953 IDABEL 4 138 to 56079 VALLANT4 138 CKT1              | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Summer Emergency Rating 227 MVA 8.1 % Increase Identified in SPP-2002-140a | See Previous                |
| 08WP       | AEPW-AEPW         | PERDUE TO DIANA, 138KV<br>53590 PERDUE 4 138 to 53527 DIANA 4 138 CKT 1               | 237    | 102.5       | 103.8       | DIANA TO SPRING HILL, 138KV<br>53527 DIANA 4 138 to 53608 SPRHILL4 138 CKT1            | 0   | AEPW Upgrade Not Modeled  | See Previous                |
| 08WP       | AEPW-AEPW         | LONDON TO FRIARS WEST, 138KV<br>53566 LONDON 4 138 to 53533 FRIARSW4 138 CKT 1        | 143    | 101.0       | 102.7       | KNOX LEE TO MONROE CORNERS REC, 138KV<br>53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1 | 0   | New Summer Emergency Rating 287 MVA 100.7% Increase   | None                        |
| 08WP       | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1            | 789    | 106.9       | 113.7       | HARTBURG TO MT. OLIVE, 500KV<br>97717 8HARTBRG 500 to 99162 8MTOLIV 500 CKT1           | 0   | AEPW Upgrade Not Modeled New Winter Emergency Rating 1085 MVA 37.5% Increase  | None                        |
| 08WP       | AEPW-EES          | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT 1            | 789    | 106.1       | 111.8       | RICHARD TO WEBER, 500KV<br>98107 8RICHARD 500 to 98430 8WEBRE 500 CKT1                 | 0   | AEPW Upgrade Not Modeled New Winter Emergency Rating 1085 MVA 37.5% Increase  | None                        |
| 08WP       | KACP-KACP         | LINN COUNTY TO PAOLA, 161KV<br>58069 PAOLA 5 161 to 58200 LINNC1 5 161 CKT 1          | 237    | 168.2       | 172.5       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1            | 0   | Upgrade Not Modeled Assigned to SPP-2002-127 New Winter Emergency Rating 449 MVA  | None                        |
| 08WP       | SPRM-AECI         | CLAY TO LOGAN, 161KV<br>59970 CLAY 5 161 to 97161 5LOGAN 161 CKT 1                    | 232    | 134.1       | 145.2       | HUBEN TO MORGAN, 345KV<br>96042 7HUBEN 345 to 96045 7MORGAN 345 CKT1                   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08WP       | SPRMSWPA          | CLAY TO SPRINGFIELD, 161KV<br>59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1            | 167    | 109.9       | 115.4       | JAMES RIVER TO MENTOR, 161KV<br>59961 JRPS 5 161 to 59963 MENTOR 5 161 CKT1            | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency 223 MVA 33.5% Increase                                    | None                        |
| 08WP       | OKGE-OKGE         | PECAN CREEK TO MUSKOGEE, 345KV<br>55235 PECANCK7 345 to 55224 MUSKOGEE7 345 CKT 1     | 478    | 106.2       | 113.2       | MUSKOGEE TO FORT SMITH, 345KV<br>55224 MUSKOGEE7 345 to 55302 FTSMITH7 345 CKT1        | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 896 MVA 87.4% Increase                             | None                        |
| 08WP       | AECI-SPRM         | CLAY TO LOGAN, 161KV<br>97161 5LOGAN 161 to 59970 CLAY 5 161 CKT 1                    | 232    | 106.9       | 113.0       | HUBEN 345/161KV TRANSFORMER<br>96042 7HUBEN 345 to 96088 5HUBEN 161 CKT1               | 0   | Upgrade Not Modeled Assigned to SPP-2002-046  | See Previous                |
| 08WP       | SPRMSWPA          | CLAY TO SPRINGFIELD, 161KV<br>59970 CLAY 5 161 to 52692 SPRGFLD5 161 CKT 1            | 167    | 106.2       | 111.6       | MENTOR TO CLAY, 161KV<br>59963 MENTOR 5 161 to 59970 CLAY 5 161 CKT1                   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency 223 MVA 33.5% Increase                                    | None                        |
| 08WP       | AEPW-AEPW         | MARSHALL 138/69KV TRANSFORMER CKT 1<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 1 | 121    | 101.7       | 102.8       | MARSHALL 138/69KV TRANSFORMER CKT 2<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT2   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 143 MVA 18.2% Increase                             | None                        |
| 08WP       | AEPW-AEPW         | MARSHALL 138/69KV TRANSFORMER CKT 2<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT 2 | 121    | 101.7       | 102.8       | MARSHALL 138/69KV TRANSFORMER CKT 1<br>53571 MARSHL-4 138 to 53623 MARAUTO269.0 CKT1   | 0   | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 143 MVA 18.2% Increase                             | None                        |
| 08WP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1             | 235    | 106.9       | 118.9       | CROCKETT TO GRIMES, 345KV<br>53526 CROCKET7 345 to 97513 7GRIMES 345 CKT1              | 0   | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08WP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1             | 235    | 104.8       | 118.4       | LONGWOOD TO ELDERADO-EHV, 345KV<br>53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1        | 0   | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08WP       | AEPW-EES          | FULTON TO PATMOS, 115KV<br>53374 FULTON 3 115 to 99303 3PATMOS# 115 CKT 1             | 235    | 104.7       | 118.1       | ELDERADO-EHV 500/345KV TRANSFORMER<br>99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1      | 0   | Upgrade Modeled Assigned to SPP-2000-108  | See Previous                |
| 08WP       | AEPW-AEPW         | IDABEL TO HUGO TAP, 138KV<br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1           | 186    | 106.3       | 112.6       | HUGO POWER PLANT TO VALLIANT, 138KV<br>55948 HUGO PP4 138 to 56079 VALLANT4 138 CKT1   | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08WP       | AEPW-AEPW         | IDABEL TO HUGO TAP, 138KV<br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1           | 186    | 104.7       | 111.0       | IDABEL TO VALLANT, 138KV<br>55953 IDABEL 4 138 to 56079 VALLANT4 138 CKT1              | 0   | Identified in SPP-2002-140a   | See Previous                |



**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B   | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload   | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|---|--------|-------------|-------------|---|-----|---|-----------------------------|
| 08WP       | AEPW-AEPW         | IDABEL TO HUGO TAP, 138KV<br>54011 IDABEL-4 138 to 54014 HUGOTAP4 138 CKT 1                 | 186    | 102.3       | 108.6       | HOLY CREEK TO IDABEL, 138KV<br>55946 HOLYCRK4 138 to 55953 IDABEL 4 138 CKT1                  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08WP       | AEPW-AEPW         | HUGO TAP TO VALLIANT, 138KV<br>54014 HUGOTAP4 138 to 54044 VALIANT4 138 CKT 1               | 210    | 102.1       | 107.1       | BBDAMP4 TO DOMINAN4, 138KV<br>55823 BBDAMP4 138 to 55878 DOMINAN4 138 CKT1                    | 0   | Identified in SPP-2002-140a   | Undetermined                |
| 08WP       | KACP-KACP         | LINN COUNTY 345/161KV TRANSFORMER<br>58201 LINNC2 7 345 to 58200 LINNC1 5 161 CKT 1         | 440    | 100.4       | 102.3       | STILWELL TO LACYGNE, 345KV<br>57968 STILWEL7 345 to 57981 LACYGNE7 345 CKT1                   | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08WP       | EMDE-EMDE         | MONETT TO AURORA H.T., 161KV<br>59480 MON383 5 161 to 59468 AUR124 5 161 CKT 1              | 268    | 100.8       | 105.7       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1                  | 0   | Identified in SPP-2002-140a   | See Previous                |
| 08WP       | OKGE-WERE         | NEWKIRK TO CRESWELL, 138KV<br>54759 NEWKIRK4 138 to 56981 CRESWLN4 138 CKT 1                | 160    | 121.9       | 138.5       | WOODRNG TO WICHITA, 345KV<br>54715 WOODRNG7 345 to 56796 WICHITA7 345 CKT1                    | 0   | Previously Identified 2002-046 New Winter Emergency Rating 195 MVA 21.9% Increase               | Undetermined                |
| 08WP       | OKGE-OKGE         | HANCOCK TO 5 TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                | 223    | 99.8        | 107.5       | AGENCY TO EUCLID, 161KV<br>55230 AGENCY 5 161 to 55251 EUCLID 5 161 CKT1                      | 11  | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                  | None                        |
| 08WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1           | 287    | 99.5        | 108.0       | FLINT CREEK TO MONETT, 345KV<br>53140 FLINTCR7 345 to 59481 MON383 7 345 CKT1                 | 30  | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08WP       | OKGE-OKGE         | HANCOCK TO 5 TRIBES, 161KV<br>55250 HANCOCK5 161 to 55228 5TRIBES5 161 CKT 1                | 223    | 99.5        | 106.2       | AGENCY TO PECAN CREEK, 161KV<br>55230 AGENCY 5 161 to 55234 PECANCK5 161 CKT1                 | 39  | Identified in SPP-2002-140a New Summer Emergency Rating 312 MVA 39.9% Increase                  | None                        |
| 08WP       | AEPW-AEPW         | OAK HILL #2 TO KNOX LEE, 138KV<br>53586 OAK2HIL4 138 to 53557 KNOXLEE4 138 CKT 1            | 210    | 99.6        | 100.8       | KILGORE REC TO MONROE CORNERS REC, 138KV<br>53555 KILGORR4 138 to 53574 MONROCR4 138 CKT1     | 169 | Upgrade Not Modeled Assigned to SPP-2002-046 New Winter Emergency Rating 287 MVA 36.7% Increase | None                        |
| 08WP       | AEPW-AEPW         | CHAMBER SPRINGS TO LAKE ELMDALE, 161KV<br>53154 CHAMSPR5 161 to 53175 LELMDAL5 161 CKT 1    | 244    | 98.6        | 102.1       | SOUTH FAYETTEVILLE TO FARMINGTON AECC, 161KV<br>53157 SFAYTVL5 161 to 53195 FARMGTN5 161 CKT1 | 200 | Identified in SPP-2002-140a   | See Previous                |
| 08WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1           | 287    | 92.3        | 102.4       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1                   | 382 | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08WP       | OKGE-OKGE         | FT SMITH 345/161KV TRANSFORMER<br>55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1            | 493    | 89.7        | 101.7       | FT SMITH 345/500KV TRANSFORMER CKT1<br>55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT1          | 429 | Identified in SPP-2002-140a   | See Previous                |
| 08WP       | AEPW-AEPW         | NORTHWEST HENDERSON TO OAK HILL #1, 138KV<br>53584 NWHENDR4 138 to 53585 OAK1HIL4 138 CKT 1 | 210    | 99.0        | 100.2       | KNOX LEE TO MONROE CORNERS REC, 138KV<br>53557 KNOXLEE4 138 to 53574 MONROCR4 138 CKT1        | 435 | AEPW Upgrade Not Modeled New Winter Emergency Rating 237 MVA 12.9% Increase                     | None                        |
| 08WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1           | 287    | 92.3        | 102.4       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1                   | 382 | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1           | 287    | 92.2        | 100.5       | MONETT TO BROOKLINE, 345KV<br>59481 MON383 7 345 to 59984 BRKLINE 7 345 CKT1                  | 470 | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08WP       | SWPA-AEPW         | BEAVER TO EUREKA SPRINGS, 161KV<br>52680 BEAVER 5 161 to 53136 EUREKA 5 161 CKT 1           | 287    | 92.3        | 102.4       | MUSKOGEE TO FT SMITH, 345KV<br>55224 MUSKOG7 345 to 55302 FTSMITH7 345 CKT1                   | 382 | SWPA Upgrade Modeled Assigned to SPP-2000-108   | See Previous                |
| 08WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER CKT 1<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1   | 493    | 93.6        | 103.2       | DRAPER LAKE 138/345KV TRANSFORMER CKT2<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT2       | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | None                        |
| 08WP       | OKGE-OKGE         | DRAPER LAKE 345/138KV TRANSFORMER CKT 2<br>54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2   | 493    | 93.6        | 103.2       | DRAPER LAKE 138/345KV TRANSFORMER CKT1<br>54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT1       | 500 | Flowgate: OKGE Mitigation Plan to Increase Rating to 591 MVA by 2004                            | None                        |

**Table 3B continued** – Previously Assigned and Identified SPP Facilities Impacted by the OKGE to EES 500 MW Transfer

| Study Year | From Area To Area | Branch Over 100% Rate B  | Rate B | BC %Loading | TC %Loading | Outaged Branch That Caused Overload  | ATC | Assignment  | Additional Upgrade Required |
|------------|-------------------|--|--------|-------------|-------------|--|-----|---|-----------------------------|
| 08WP       | AEPW-AEPW         | WALLACE LAKE TO SOUTH SHREVEPORT, 138KV<br>53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1       | 210    | 111.3       | 121.6       | DOLET HILLS 345/230KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1       | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 08WP       | AEPW-CELE         | WALLACE LAKE TO INTERNATIONAL PAPER, 138KV<br>53461 WALLAKE4 138 to 50090 IPAPER 4 138 CKT 1   | 236    | 98.5        | 109.0       | DOLET HILLS 345/260KV TRANSFORMER<br>50045 DOLHILL7 345 to 50046 DOLHILL6 230 CKT1       | 500 | Dolet Hills Operating Guide Monitor Line at 260 MVA   | None                        |
| 08WP       | OKGE-OKGE         | TINKER #2 TO TINKER #4, 138KV<br>54990 TINKER24 138 to 54988 TINKER44 138 CKT 1                | 100    | 97.2        | 103.7       | HORSESHOE LAKE TO MIDWAY, 138KV<br>54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT1            | 500 | Excluded By OKGE  | None                        |
| 08WP       | AEPW-AEPW         | JACKSONVILLE (SWE-RC-ETEC) TO OVERTON, 138KV<br>53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1 | 265    | 129.4       | 135.2       | CROCKETT TO TENASKA RUSK COUNTY, 345KV<br>53526 CROCKETT7 345 to 53637 TENRUSK7 345 CKT1 | N/A | Third Party Facility With AEPW Limitation At 281 MVA Upgrade Not Modeled Assigned to SPP-2002-046 | None                        |
| 08WP       | SWPA-AECI         | CARTHAGE TO JASPER, 69KV<br>52690 CARTHG 269.0 to 96649 2JASPER 69.0 CKT 1                     | 52     | 106.4       | 108.6       | ARCHIE TO ADRIAN, 161KV<br>59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT1                 | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08WP       | SWPA-AECI         | CARTHAGE TO REEDS, 69KV<br>52690 CARTHG 269.0 to 96751 2REEDS 69.0 CKT 1                       | 43     | 127.7       | 132.2       | AURORA H.T. TO MONETT, 161KV<br>59468 AUR124 5 161 to 59480 MON383 5 161 CKT1            | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |
| 08WP       | EES-SWPA          | MIDWAY TO BULL SHOALS, 161KV<br>99825 5MIDWAY# 161 to 52660 BULL SH5 161 CKT 1                 | 162    | 97.0        | 107.2       | BUFORD TAP TO BULL SHOALS, 161KV<br>52661 BUFDRTP5 161 to 52660 BULL SH5 161 CKT1        | N/A | Third Party Facility with Possible SWPA Terminal Equip Limitations                                | See Previous                |

**Table 4** – SPP To Ameren Firm Contract Path Interface Capacity (Ties Lines and Contributions)

| <b>SPP To AMRN Firm Contract Path Capacity</b> |   |                               |                              |  |
|--|---|-------------------------------|------------------------------|--|
| <b>POR</b>                                     | <b>Transmission Tie Lines</b>   | <b>Rate A<br/>&lt;MVA&gt;</b> | <b>Percent<br/>Ownership</b> | <b>Firm Contract<br/>Path Capacity</b> |
| <b>KCPL</b>                                    | <b>MIPU - AMRN / Sibley to Overton, 345 kV</b><br>59201 SIBLEY 7 345 to 31408 OVERTON 345 1   | 956                           | 58.3%                        | 557                                    |
| "  | <b>KACP - AMRN / Salisbury to Moberly, 161 kV</b><br>58062 SALSBR5 161 to 31221 MOBERLY 161 1 | 180                           | 100.0%                       | 180                                    |
| <b>SPA</b>                                     | <b>SWPA - AMRN / Sikeston to Miner, 161 kV</b><br>52628 SIKESTN5 161 to 31203 MINER 161 1     | 248                           | 100.0%                       | 248                                    |
| <b>CSWS (PSO)</b>                              | <b>Mokanok Agreement: Neosho - Morgan - Franks, 345 kV 450MW of Firm Capacity</b>             | N/A                           | 25%                          | 113                                    |
| <b>WR (KGE)</b>                                | "   | N/A                           | 20%                          | 90                                     |
| <b>MOKANOK/AMRN</b>                            | "   | N/A                           | 22%                          | 99                                     |
|  |   |                               | <b>Total</b>                 | <b>1287</b>                            |

## **5. Conclusion**

The results of the study show that before the 500 MW transfers can take place system improvements will need to be completed.

1. The upgrades associated with the facility overloads identified in Tables 1A and 1B will be required.
2. Any previously assigned upgrades and additional upgrades associated with the facilities in Tables 3A and 3B will be required.
3. The SPP to Ameren Firm Contract Path Capacity Interface will require a 478 MW increase in Firm Contract Path Capacity before the start of service.

## 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 -  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 – 1 MW
6. Exclcd 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 -  Phase shift adjustment
  - \_ Flat start
  - \_ Lock DC taps
  - \_ Lock switched shunts