

System Impact Study SPP-2002-197
For Transmission Service
Requested By
Rainbow Energy Marketing Corp.

From OPPD To ERCOTN

For a Reserved Amount Of 50 MW From 12/1/2002 To 1/1/2005 With a Deferred Service Period From 10/1/2005 To 11/1/2007

SPP Tariff Studies

SPP IMPACT STUDY (#SPP-2002-197) Revised September 15, 2003 Page 1 of 8

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ATTACHMENT: SPP-2002-197 Tables

1. Executive Summary

Rainbow Energy Marketing Corp. (REMC) has requested a system impact study for Point-to-Point Service from OPPD to ERCOTN for 50 MW. The requested period of service is from 12/1/02 to 1/1/05. The SWPP OASIS Reservation number is 427479.

The principal objective of this study is to identify current system limitations using AC analyses and to determine the system upgrades necessary to provide the requested service.

Table 1 lists the SPP Facility Overloads caused or impacted by the requested service and includes solutions with engineering and construction costs to alleviate the limiting facilities. Table 2 includes Non - SPP Facility Overloads caused or impacted by the requested service. Excluding any third party requirements and additional upgrades that may be required after modeling the assigned upgrades, the total engineering and construction cost to provide the requested service is determined in Table 1. For Non-SPP third-party facilities listed in Table 2, the facility limitations will be mitigated in accordance with Section 21 of the SWPP OATT.

Excluding any third party requirements and additional upgrades that may be required after modeling the assigned upgrades, the total engineering and construction cost required to provide the requested service is \$28,275,000. The ATC is determined to be zero until the majority of the assigned upgrades are constructed. The estimated in-service date of the upgrades to alleviate the most limiting Summer Peak and Winter Peak facilities is 10/1/2005. Three facilities were identified that limit the renewal rights of the requested service. This study does not include overloads that may occur after modeling the assigned upgrades for the OPPD to ERCOTN 50MW request. Modeling the assigned upgrades may create additional upgrades and an increase in the total engineering and construction cost required.

2. Introduction

Rainbow Energy Marketing Corp. (REMC) has requested a system impact study for Point-to-Point Service from OPPD to ERCOTN for 50 MW. The principal objective of this study is to identify the restraints on the SPP Regional Tariff System that may limit the requested service and determine the least cost solutions required to alleviate the limiting facilities.

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 50 MW transfer and the impact of the required upgrades for service on transmission line loading and transmission bus voltages for outages of single and selected multiple transmission lines and transformers on the SPP systems and first tier Non - SPP systems.

3. Study Methodology

A. Description

The system impact analysis was conducted to determine the steady-state impact of the 50 MW transfer on the SPP and first tier Non - SPP systems. The steady-state analysis was done to ensure current SPP Criteria and NERC Planning Standards requirements are fulfilled. The Southwest Power Pool conforms to the NERC Planning Standards, which provide the strictest requirements, related to voltage violations and thermal overloads during normal conditions and during a contingency. It requires that all facilities be within normal operating ratings for normal system conditions and within emergency ratings after a contingency.

B. Model Updates

SPP used ten seasonal models to study the OPPD to ERCOTN 50 MW transfer for the requested service period. The SPP 2003 Series Cases 2003 Summer Peak (03SP), 2003 Fall Peak (03FA), 2003/2004 Winter Peak (03WP), 2004 April Minimum (04AP), 2004 Spring Peak (04G), 2004 Summer Peak (04SP), 2004 Fall Peak (04FA), 2004 Winter Peak (04WP), 2009 Summer Peak (09SP), and 2009/10 Winter Peak (09WP) were used to study the impact of the 50 MW transfer on the SPP system during the requested service period of 12/1/02 to 01/01/2005 and deferred service period of 10/1/05 to 11/1/2007.

The chosen base case models were modified to reflect the most current modeling information. The Lamar HVDC Tie and Designated Network Resource were added to the 2004 models coupled with the 2009 models as a proxy for the study years not included in the SPP 2003 Series Cases. The base case models include confirmed East to West transfers not already included in the January 2003 base case series models, SPS Importing, and the Lamar HVDC Tie flowing from Lamar to SPS.

C. Transfer Analysis

Using the selected cases both with and without the requested transfer modeled, the PSS/E Activity ACCC was run on the cases and compared to determine the facility overloads caused or impacted by the transfer. The PSS/E options chosen to conduct the analysis can be found in Appendix A.

D. Upgrade Analysis

This system impact study does not include analysis with the assigned upgrades modeled. To determine the final cost and possible start date of the requested service, additional analysis will be performed to determine the impact of modeling the assigned upgrades for the 50 MW OPPD to ERCOTN transfer.

4. Study Results

A. Study Analysis Results

Tables 1 and 2 contain the steady-state analysis results of the System Impact Study. The Tables are in the attached workbook *SPP-2002-197 Tables*. The tables identify the seasonal case in which the event occurred, the facility control area location, applicable ratings of the overloaded facility, the loading percentage with and without the studied, and the estimated ATC value using interpolation if calculated. Comments are provided in the tables to document any SPP or Non-SPP identification or assignment of the event, existing mitigations plans or criteria to disregard the event as a limiting constraint, upgrades and costs to mitigate a limiting constraint, or any specific study procedures associated with modeling an event.

Table 1 lists the SPP Facility Overloads caused or impacted by the 50 MW transfer. Solutions with engineering and construction costs are provided in the tables.

Table 2 lists overloads on fist tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 50 MW transfer. Analysis was not conducted to determine the mitigating effects of the selected upgrades on the Non – SPP facilities listed in Table 2.

Table 1a documents the modeling representation of the events identified in Table 1 to include bus numbers and bus names.

Three facilities were identified as limiting the rollover rights of the transmission service. These facilities can be found in Table 1. The date provided with these identified limitations depicts at which point the facility is a limitation for the renewal of the requested transmission service.

5. Conclusion

Excluding any third party requirements and additional upgrades that may be required after modeling the assigned upgrades, the total engineering and construction cost required to provide the requested service is \$28,275,000. The ATC is determined to be zero until the majority of the assigned upgrades are constructed. The estimated in-service date of the upgrades to alleviate the most limiting Summer Peak and Winter Peak facilities is 10/1/2005. Three facilities were identified that limit the renewal rights of the requested service. This study does not include overloads that may occur after modeling the assigned upgrades for the OPPD to ERCOTN 50MW request. Modeling the assigned upgrades may create additional upgrades and an increase in the total engineering and construction cost required.

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 \underline{X} Phase shift adjustment
 - _ Flat start
 - _ Lock DC taps
 - _ Lock switched shunts

ACCC CASES:

Solutions – AC contingency checking (ACCC)

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

Newton Solution:

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

| Study | From | To | | | BC % | TC % | | ATC | | | |
|-------|---------|----------|---|--------|---------|---------|---|------|--|----|------------|
| Year | Area | Area | Monitored Branch Over 100% Rate B | Rate B | Loading | Loading | Outaged Branch Causing Overload | (MW) | Solution | | Cost |
| 03SP | GRRD | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 1 | 150 | 100.7 | 101.3 | CATOOSA 161/138KV TRANSFORMER CKT 2 | 0 | None - GRDA Mitigation Plan | \$ | - |
| 03SP | GRRD | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 2 | 150 | 101.0 | 101.6 | CATOOSA 161/138KV TRANSFORMER CKT 1 | 0 | None - GRDA Mitigation Plan | \$ | - |
| | | | | | | | | | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE | | |
| 03SP | OKGE | OKGE | HORSESHOE LAKE - RENO 138KV | 287 | 101.2 | 101.4 | HORSESHOE LAKE - MIDWAY 138KV | 0 | expense | \$ | - |
| 03SP | CELE | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 209 | 127.4 | 127.9 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | Dolet Hills Operating Guide | \$ | - |
| | | | | | | | | | Move Rose Hill Jct. 69 kV load to Rose Hill 345/138 kV substation. | | |
| | | | | | | | | | Requires new transformer bay and a new 25 MVA 138-12 kV | | |
| 03SP | WERE | WERE | ROSE HILL JUNCTION - WEAVER 69KV | 43 | 106.3 | 107.5 | EL PASO - FARBER 138KV | 0 | transformer. | \$ | 1,400,000 |
| 03SP | WERE | WERE | ROSE HILL JUNCTION - WEAVER 69KV | 43 | 100.1 | 101.4 | FARBER - SUMNER COUNTY NO. 10 BELLE PLAIN 138KV | 0 | See Previous | \$ | - |
| | | | | | | | | | In house upgrade scheduled for May 2004. New Rate B = 263MVA | | |
| 03FA | AEPW | AEPW | 21ST STREET TAP - TULSA SOUTHEAST 138KV | 179 | 100.3 | 101.3 | NORTHEAST STATION - ONETA 345KV | 0 | for Fall | \$ | - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ė | |
| 03FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 108.3 | 109.0 | NORTHEAST STATION - ONETA 345KV | 0 | off peak | \$ | _ |
| 00.71 | 7121 11 | / LE: ** | CATOCOA ETHALE ENCLAND TO THE | 200 | 100.0 | 100.0 | HORTHEROT OTHEROT ONE INCIDEN | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ť | |
| 03FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 107.5 | 108.1 | TULSA NORTH - WEKIWA 345KV | 0 | off peak | \$ | |
| 00171 | /(LI VV | /(L1 VV | CATCOCA ETHIN ETHE EACT TAIL TOOK | 200 | 107.0 | 100.1 | TOLO/THORTH WERRWY 040KV | - | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ψ | |
| 03FA | AEPW | A E DIA/ | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 107.5 | 108.1 | WEKIWA 345/138KV TRANSFORMER | 0 | off peak | | |
| USFA | ALFVV | AEFVV | CATOOSA - LTNN LANE EAST TAF 138KV | 233 | 107.5 | 100.1 | WERIWA 343/130RV TRAINSFORIVIER | U | · | φ | |
| 03FA | AEPW | AEPW | CATOOCA I VAIN I AND EACT TAD 4201/1/ | 225 | 405.0 | 400.0 | DIVERGIDE CTA DIVERGIDE CTA ALITO 420KV | 0 | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off peak | e. | |
| U3FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 105.8 | 106.3 | RIVERSIDE STA - RIVERSIDE STA AUTO 138KV | 0 | · | \$ | |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | | |
| 03FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 105.8 | 106.3 | RIVERSIDE STA AUTO 345/138KV TRANSFORMER | 0 | off peak | \$ | |
| 03FA | WERE | WERE | GOLDEN PLAINS JUNCTION - HESSTON 69KV | 32 | 99.8 | 100.9 | HALSTEAD NORTH - MOUNDRIDGE 138KV | 10 | Local area problem within Newton division | \$ | |
| | | | | | | | | | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE | | |
| 03FA | CELE | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 236 | 106.4 | 106.8 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | expense | \$ | - |
| 03FA | AEPW | AEPW | SAND SPRINGS - SHEFFIELD 138KV | 143 | 105.7 | 106.6 | WEKIWA - WEST EDISON TAP 138KV | 0 | Replace Sand Springs switch 1306, 1307, & 1308 | \$ | 75,000 |
| 03FA | AEPW | AEPW | SAND SPRINGS - WEST EDISON TAP 138KV | 143 | 104.0 | 104.7 | SHEFFIELD - WEKIWA 138KV | 0 | Replace Sand Springs switches 1314, 1315, & 1316 | \$ | 75,000 |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | | |
| 03WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 102.1 | 102.9 | NORTHEAST STATION - ONETA 345KV | 0 | off peak | \$ | - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | | |
| 03WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 100.2 | 100.8 | TULSA NORTH - WEKIWA 345KV | 0 | off peak | \$ | - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | | |
| 03WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 100.2 | 100.8 | WEKIWA 345/138KV TRANSFORMER | 0 | off peak | \$ | - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ť | |
| 03WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 99.6 | 100.2 | CATOOSA - LYNN LANE TAP 138KV | 33 | off peak | \$ | _ |
| 03WP | | GRRD | CATOOSA 161/138KV TRANSFORMER CKT 1 | 150 | 103.9 | 104.5 | CATOOSA 161/138KV TRANSFORMER CKT 2 | 0 | None - GRDA Mitigation Plan | \$ | |
| 03WP | GRRD | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 2 | 150 | 104.2 | 104.8 | CATOOSA 161/138KV TRANSFORMER CKT 1 | 0 | None - GRDA Mitigation Plan | 4 | |
| 03WP | SWPA | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 102.4 | 103.3 | WELEETKA 161\138KV TRANSFORMER | 0 | Replace Eufaula Transformer | \$ | 2,000,000 |
| 03WP | SWPA | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 102.4 | 103.3 | GORE - WELEETKA 161KV | 0 | See Previous | \$ | 2,000,000 |
| USVVF | SWFA | SWFA | EUFAULA 101/130/13.0KV TRANSFORMEK | 100 | 102.1 | 103.0 | GORE - WELEETRA TOTKY | U | Gee i levious | φ | |
| 03WP | WERE | WERE | N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 1 | 68 | 106.7 | 107.4 | EAST MCPHERSON - SUMMIT 230KV | 0 | Tear down double circuit, build single circuit with 1192.5 ACSR. | \$ | 7,800,000 |
| 03VVP | | AEPW | . , | | | | | | Replace Okmulgee Wavetrap | \$ | |
| | | | EAST CENTRAL HENRYETTA - OKMULGEE 138KV | 105 | 99.8 | 100.9 | KELCO - OKMULGEE 138KV | 10 | | - | 40,000 |
| 04G | | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 100.4 | 101.4 | WELEETKA 161\138KV TRANSFORMER | 0 | See Previous | \$ | - |
| 04G | SWPA | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 100.1 | 101.1 | GORE - WELEETKA 161KV | 0 | See Previous | \$ | |
| 04G | CELE | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 236 | 116.4 | 116.8 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | Dolet Hills Operating Guide | \$ | |
| 04G | WERE | WERE | N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 1 | 68 | 101.3 | 102.1 | EAST MCPHERSON - SUMMIT 230KV | 0 | See Previous | \$ | |
| 04G | AEPW | AEPW | SOUTH SHREVEPORT - WALLACE LAKE 138KV | 210 | 100.0 | 100.4 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 1 | Dolet Hills Operating Guide - Spp-Cele-01 Operating Guide 1 | \$ | - |
| 04G | WERE | WERE | WEST JCT CITY - WEST JCT CITY JCT (EAST) 115KV | 141 | 104.0 | 104.4 | JEFFERY ENERGY CENTER - SUMMIT 345KV | 0 | Westar Transmission Operating Directive 402 | \$ | - |
| | | | | | | | | | Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 | | |
| 04SP | SPS | SPS | CANYON EAST - CANYON WEST 115KV | 99 | 99.5 | 100.7 | BUSHLAND INTRCHNG - DEAF SMITH INTRCHNG 230KV | 20 | structures. | \$ | 590,000 |
| | | | | | | | | | Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 | | \neg |
| 04SP | SPS | SPS | CANYON EAST - OSAGE SWITCHING STATION 115KV | 99 | 113.2 | 114.5 | BUSHLAND INTRCHNG - DEAF SMITH INTRCHNG 230KV | 0 | structures. | \$ | 1,910,000 |
| 04SP | GRRD | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 1 | 150 | 105.2 | 105.8 | CATOOSA 161/138KV TRANSFORMER CKT 2 | 0 | None - GRDA Mitigation Plan | \$ | - |
| 04SP | GRRD | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 2 | 150 | 105.5 | 106.1 | CATOOSA 161/138KV TRANSFORMER CKT 1 | 0 | None - GRDA Mitigation Plan | \$ | - |
| 04SP | AEPW | AEPW | EAST CENTRAL HENRYETTA - OKMULGEE 138KV | 105 | 117.5 | 118.6 | KELCO - OKMULGEE 138KV | 0 | See Previous | \$ | - |
| 04SP | | AEPW | EAST CENTRAL HENRYETTA - OKMULGEE 138KV | 105 | 110.2 | 111.3 | HENRYET4 - KELCO 138KV | 0 | See Previous | \$ | - |
| 04SP | AEPW | AEPW | EAST CENTRAL HENRYETTA - WELEETKA 138KV | 105 | 113.3 | 114.4 | KELCO - OKMULGEE 138KV | 0 | Replace Weleetka Wavetrap | \$ | 40,000 |
| 04SP | AEPW | AEPW | EAST CENTRAL HENRYETTA - WELEETKA 138KV | 105 | 106.0 | 107.1 | HENRYET4 - KELCO 138KV | 0 | See Previous | \$ | .0,000 |
| 04SP | | AEPW | FLINT CREEK - TONTITOWN 161KV | 312 | 108.7 | 107.1 | CHAMBER SPRINGS - FLINT CREEK 161KV | 0 | Replace switch and jumpers | \$ | 45,000 |
| 0432 | AEFVV | AEFVV | I LIMI CREEK - IOMITTOWN TOTAL | 312 | 100.7 | 100.9 | GIANDER SPRINGS - FLINT CREEK 181KV | - 0 | Convert Ft. Smith 161kv to 1-1/2 breaker design and install 2nd 500- | φ | 45,000 |
| 04SP | OKGE | OKGE | ET CMITH FOO/464KV/TDANCEODAED | 400 | 104.0 | 104.2 | ET CMITH 245/464/V/ TDANSCODMED | 0 | Convert Ft. Smith 161kV to 1-1/2 breaker design and install 2nd 500- 161kV transformer bank | • | 10,000,000 |
| U45P | UNGE | UNGE | FT SMITH 500/161KV TRANSFORMER | 480 | 104.0 | 104.2 | FT SMITH 345/161KV TRANSFORMER | U | | Ф | 10,000,000 |
| 0.405 | 000 | | HARRY INTERCUINING BALLORIA CONTRACTOR | | | | AMARILLO O INTROLINO COMO PER CUTA INTERIORI | | Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 | _ | |
| 04SP | SPS | SPS | HAPPY INTERCHANGE - PALODU 115KV | 99 | 100.8 | 102.6 | AMARILLO S INTRCHNG - SWISHER CNTY INTRCHNG 230KV | 0 | structures. | \$ | 3,130,000 |

| Study Year | From Area | To Area | Monitored Branch Over 100% Rate B | Rate B | BC % Loading | TC % Loading | Outaged Branch Causing Overload | ATC (MW) | Solution | Cost |
|---------------|--------------|--------------|--|------------|-----------------|-----------------|--|-------------|--|--------------|
| roui | nica | 71100 | Monitored Branch Over 100% Rate B | rate B | Loading | Loading | Outaged Branon Oddsing Overload | (10100) | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE | Cost |
| 04SP | OKGE | OKGE | HORSESHOE LAKE - RENO 138KV | 287 | 103.0 | 103.3 | HORSESHOE LAKE - MIDWAY 138KV | 0 | expense | s - |
| 04SP | | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 209 | 124.7 | 125.1 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | Dolet Hills Operating Guide | \$ - |
| 0401 | OLLL | /\L! ** | INTERNATIONAL FAIR WALESTON DATE TOOK | 200 | 124.7 | 120.1 | DOLL I HILLO GOOTHWEET GITTEVET GITT 545KV | | Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 | Ψ |
| 04SP | SPS | SPS | PALODU - RANDALL COUNTY INTERCHANGE 115KV | 99 | 102.7 | 104.4 | AMARILLO S INTRCHNG - SWISHER CNTY INTRCHNG 230KV | 0 | structures. | \$ 1,170,000 |
| 0.0. | 0.0 | 0. 0 | THE SECTION OF THE PROPERTY OF | - 00 | 102.1 | | AND MALES OF | | | ψ 1,110,000 |
| 04SP | SPS | SPS | RANDALL CO INTRCHNG 230/115KV TRANSFORMER | 259 | 100.9 | 101.4 | AMARILLO S INTERCHANGE - NICHOLS STATION 230KV | 0 | Open Amarillo South 230/115KV Transformer to Relieve Facility | \$ - |
| 04SP | WERE | WERE | ROSE HILL JUNCTION - WEAVER 69KV | 43 | 103.2 | 104.5 | EL PASO - FARBER 138KV | 0 | See Previous | \$ - |
| 0.0. | *** | ******* | TOOL THEE SOMETHON THE THE CONT | .0 | 100.2 | 101.0 | EET/100 T/MBERT 100HV | | In house upgrade scheduled for May 2004. New Rate B = 263MVA | <u> </u> |
| 04FA | AEPW | AEPW | 21ST STREET TAP - TULSA SOUTHEAST 138KV | 179 | 99.6 | 100.6 | NORTHEAST STATION - ONETA 345KV | 21 | for Fall | \$ - |
| 0 / \ | / LE: ** | / LE: ** | ETOT OTKEET IN TOZOK OCCUTENCY TOOK | | 00.0 | 100.0 | HORNIEROT GIATION GILE IN GIGHT | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | <u> </u> |
| 04FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 106.6 | 107.4 | NORTHEAST STATION - ONETA 345KV | 0 | off peak | s - |
| 04171 | /\LI ** | /\L! ** | CATOCOA ETHINEANE EACT TAIL TOOK | 200 | 100.0 | 107.4 | NORTHEROTOTATION ONE IN SHORE | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ψ |
| 04FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 104.7 | 105.3 | TULSA NORTH - WEKIWA 345KV | 0 | off peak | s - |
| 04171 | /\L! ** | /(L1 VV | ONTOGON ETHINEMINE ENOT THE TOOK | 200 | 104.7 | 100.0 | TOZO/(NOICHT WZIGW/CO-OICV | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ψ |
| 04FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 104.7 | 105.3 | WEKIWA 345/138KV TRANSFORMER | 0 | off peak | ¢ . |
| 041 A | ALI VV | ALI W | CATOOSA - ETININ LAINE EAST TAI 130KV | 200 | 104.7 | 100.0 | WERIWA 343/130RV TRANSFORMER | 0 | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ψ - |
| 04FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 102.4 | 102.9 | RIVERSIDE STA AUTO 345/138KV TRANSFORMER | 0 | off peak | ¢ . |
| 041 A | ALI VV | ALI W | CATOOSA - ETININ LAINE EAST TAI 130KV | 200 | 102.4 | 102.3 | KIVERSIDE STA AGTO 343/130KV TRANSI ORIVIER | 0 | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | Ψ - |
| 04FA | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 102.4 | 102.9 | RIVERSIDE STA - RIVERSIDE STA AUTO 138KV | 0 | off peak | ¢ . |
| 041 A | ALI VV | ALI W | CATOOSA - ETININ LAINE EAST TAI 130KV | 200 | 102.4 | 102.3 | KIVEKSIDE STA - KIVEKSIDE STA AGTO 136KV | 0 | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE | Ψ - |
| 04FA | OKGE | OKGE | DRAPER LAKE 345/138KV TRANSFORMER CKT 1 | 493 | 103.7 | 103.8 | DRAPER LAKE 345/138KV TRANSFORMER CKT 2 | 0 | expense and use the operating directive until 2008 | e |
| U4FA | ONGE | ONGE | DRAFER LAKE 343/138KV TRANSFORMER CRT 1 | 493 | 103.7 | 103.0 | DRAFER LAKE 343/136RV TRAINSFORMER CRT 2 | 0 | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE | Φ - |
| 04FA | OKGE | OKGE | DRAPER LAKE 345/138KV TRANSFORMER CKT 2 | 493 | 103.7 | 103.8 | DRAPER LAKE 345/138KV TRANSFORMER CKT 1 | 0 | expense and use the operating directive until 2008 | e |
| U4FA | ONGE | ONGE | DRAFER LAKE 343/138KV TRANSFORMER CRT 2 | 493 | 103.7 | 103.0 | DRAFER LAKE 343/136RV TRAINSFORMER CRT 1 | U | · · · · · | φ - |
| 04FA | WERE | WERE | EXIDE JUNCTION - SUMMIT 115KV | 400 | 105.4 | 105.8 | EAST MCPHERSON - SUMMIT 230KV | 0 | Relieved or Impact Removed by Selected Upgrades to be Assigned, Modeled in 03WP | |
| 04FA | CELE | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 196 236 | 112.4 | 112.8 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | Dolet Hills Operating Guide | \$ - |
| U4FA | CELE | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 130KV | 230 | 112.4 | 112.0 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | U | | ъ - |
| 04FA | WERE | WERE | N. A. DUNING N. A. DUNING NINGTION (COUTU) 445/2/ | 100 | 440.5 | 111.2 | EAST MODIFICANI CUMMIT 22010/ | 0 | Relieved or Impact Removed by Selected Upgrades to be Assigned, Modeled in 03WP | |
| 04FA | WERE | WERE | N. A. PHILIPS - N. A. PHILIPS JUNCTION (SOUTH) 115KV N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 1 | 160 68 | 110.5 119.2 | 120.0 | EAST MCPHERSON - SUMMIT 230KV EAST MCPHERSON - SUMMIT 230KV | 0 | See Previous | \$ - |
| U4FA | WERE | WEKE | N. A. PHILIPS JCT (STH) - W MICPHERSON TISKV CKT T | 00 | 119.2 | 120.0 | EAST MICPHERSON - SUMMIT 230KV | U | **** | ъ - |
| 0.454 | WEDE | WEDE | N. A. BUILLING TOTAL VALUE OF THE PROPERTY OF THE | 00 | 4040 | 4047 | EAST MODUEDOON, OUR MUT 000/0/ | _ | Upgrade Same as North American Phillips Junction (South) - West | |
| 04FA | WERE | WERE | N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 2 | 92 | 104.0 | 104.7 | EAST MCPHERSON - SUMMIT 230KV | 0 | McPherson 115kV Ckt 1 | \$ - |
| 0.454 | OKOE | OKOE | DANTHED ON VED LAKE 100KV | 007 | 400.0 | 400.0 | LONGONIC NODTHINGST 400107 | _ | Replaced 1200A switch with a 2000A switch by OKGE. New Rate A = | |
| 04FA | OKGE AEPW | OKGE | PANTHER - SILVER LAKE 138KV | 287 143 | 109.0 | 109.2 | LONEOAK - NORTHWEST 138KV | 0 | 478MVA, Rate B = 478MVA. See Previous | \$ - |
| 04FA | AEPW | AEPW AEPW | SAND SPRINGS - SHEFFIELD 138KV SAND SPRINGS - WEST EDISON TAP 138KV | 143 | 101.3 99.9 | 102.2 | WEKIWA - WEST EDISON TAP 138KV SHEFFIELD - WEKIWA 138KV | 0 | See Previous See Previous | \$ - |
| 01171 | | WERE | | 143 | | 100.6 | | 6 | | Ÿ |
| 04FA | WERE | WERE | WEST JCT CITY - WEST JCT CITY JCT (EAST) 115KV | 141 | 112.0 | 112.5 | JEFFERY ENERGY CENTER - SUMMIT 345KV | 0 | Westar Transmission Operating Directive 402 | \$ - |
| 0.414/10 | 4 ED)4/ | A E D) A / | CATOOOA LIVABLUANE FACT TAD 400107 | 005 | 404.0 | 400.5 | THE OA MODTH I MERCHANA OAFRO | _ | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | |
| 04WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 101.9 | 102.5 | TULSA NORTH - WEKIWA 345KV | 0 | off peak | \$ - |
| 0.414/10 | 4 ED)4/ | A E D) A / | CATOOOA LIVABLUANE FACT TAD 400107 | 005 | 404.0 | 400.5 | MERCHAN OF HOOK TO THE P | _ | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | |
| 04WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 101.9 | 102.5 | WEKIWA 345/138KV TRANSFORMER | 0 | off peak | \$ - |
| 0.414/5 | 4 EDV4 | A E DIA: | CATOOOA LIVABLI ANE EAGT TAB 400107 | 005 | 404.6 | 404.0 | NORTHEAST STATION ONETA OFFICE | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for | |
| 04WP | AEPW | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV | 235 | 101.2 | 101.9 | NORTHEAST STATION - ONETA 345KV | 0 | off peak | ъ - |
| 04WP | AEPW | AEPW | CATOOCA I VIIII I AND DACT TAD 40000 | 235 | 100.0 | 101.1 | DDOVEN ADDOM 101ST NODTH ONETA 100KG | 0 | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off peak | |
| 04WP | | AEPW | CATOOSA - LYNN LANE EAST TAP 138KV CATOOSA 161/138KV TRANSFORMER CKT 1 | 150 | 100.6 | 101.1 108.7 | BROKEN ARROW 101ST NORTH - ONETA 138KV CATOOSA 161/138KV TRANSFORMER CKT 2 | 0 | None - GRDA Mitigation Plan | \$ - |
| 04WP | GRRD | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 1 CATOOSA 161/138KV TRANSFORMER CKT 2 | 150 | 108.0 | 108.7 | CATOOSA 161/138KV TRANSFORMER CKT 2 CATOOSA 161/138KV TRANSFORMER CKT 1 | | None - GRDA Mitigation Plan None - GRDA Mitigation Plan | • |
| 04WP | AEPW | AEPW | EAST CENTRAL HENRYETTA - OKMULGEE 138KV | 105 | 108.4 | 109.0 | KELCO - OKMULGEE 138KV | 0 | None - GRDA Mittigation Plan See Previous | \$ - \$ - |
| 04WP | | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 101.9 | 102.9 | WELEETKA 161\138KV TRANSFORMER | 0 | See Previous See Previous | \$ - |
| 04WP | SWPA | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 118.2 | 119.1 | GORE - WELEETKA 161KV | 0 | See Previous See Previous | \$ - |
| 04WP | SWPA | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER | 105 | 107.9 | 109.4 | PITTSBURG - MUSKOGEE 345KV | 0 | See Previous See Previous | \$ - |
| 04WP | | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER EUFAULA 161/138/13.8KV TRANSFORMER | | | 109.4 | WISTER - HOWE INT 69KV | | See Previous See Previous | \$ - |
| 04WP | SWPA SWPA | SWPA | EUFAULA 161/138/13.8KV TRANSFORMER EUFAULA 161/138/13.8KV TRANSFORMER | 105 105 | 107.6 106.2 | 108.5 | WISTER - HOWE INT 69KV WISTER - HOWE INT 69KV | 0 | See Previous See Previous | \$ - |
| 04WP | CELE | AEPW | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 236 | 106.2 | 107 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | Dolet Hills Operating Guide | Ÿ |
| U4VVP | CELE | AEPVV | INTERNATIONAL PAPER - WALLAGE LAKE 138KV | 230 | 102.1 | 102.5 | DOLET HILLS - SOUTHWEST SHREVEPURT 343KV | U | | \$ - |
| 04WP | WEDE | WERE | N. A. DUILLIDG, N. A. DUILLIDG, ILINGTION (COURTS) 445101 | 100 | 105.0 | 105.0 | EAST MCDUEDSON, SUMMIT 220/07 | | Relieved or Impact Removed by Selected Upgrades to be Assigned, | |
| 04WP | WERE | | N. A. PHILIPS - N. A. PHILIPS JUNCTION (SOUTH) 115KV N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 1 | 160 68 | 105.2 | 105.9 114.4 | EAST MCPHERSON - SUMMIT 230KV EAST MCPHERSON - SUMMIT 230KV | 0 | Modeled in 03WP See Previous | \$ - \$ - |
| U4VVP | WERE | WEKE | IN. A. FRILIPO JUT (STR) - W MUPHERSUN TISKV CKT 1 | ზთ | 113.6 | 114.4 | EAST MICHTERSON - SUMMIT 23UKV | 0 | | φ - |
| OAME | OKOE | OKCE | DANITHED ON VED LAVE 400VV | 207 | 107.5 | 107.0 | LONEONE NORTHWEST 420KV | _ | Replaced 1200A switch with a 2000A switch by OKGE. New Rate A = 478MVA. Rate B = 478MVA. | e |
| 04WP | OKGE | OKGE | PANTHER - SILVER LAKE 138KV | 287 | 107.5 | 107.8 | LONEOAK - NORTHWEST 138KV | 0 | , | |
| 04WP | WERE | | WEST JCT CITY - WEST JCT CITY JCT (EAST) 115KV | 141 | 100.9 | 101.4 | JEFFERY ENERGY CENTER - SUMMIT 345KV | 0 | Westar Transmission Operating Directive 402 | \$ - |
| 09SP | KACP | KACP | BLUE VALLEY - WINCHESTER JCT SOUTH 161KV | 224 | 101.2 | 101.8 | LEEDS - MIDTOWN 161KV | 0 | Limits Rollover Rights beginning 06/01/2009 See Previous | \$ - |
| nusp | SPS | SPS | CANYON EAST - OSAGE SWITCHING STATION 115KV | 99 | 106.1 | 107.3 | BUSHLAND INTRCHNG - DEAF SMITH INTRCHNG 230KV | 0 | See Previous | \$ - |

| Or | F | т. | | 1 | DO 0/ | TO 0/ | | 4.70 | T | 1 |
|---------------|--------------|------------|--|--------|-----------------|-----------------|---|-------------|---|---------------|
| Study Year | From Area | To Area | Monitored Branch Over 100% Rate B | Rate B | BC % Loading | TC % Loading | Outaged Branch Causing Overload | ATC (MW) | Solution | Cost |
| | | AEPW | CATOOSA 161/138KV TRANSFORMER CKT 2 | 150 | 99.5 | 100.1 | CATOOSA 161/138KV TRANSFORMER CKT 1 | 45 | None - GRDA Mitigation Plan | \$ - |
| 09SP | | KACP | COLLEGE - CRAIG 161KV | 335 | 106.3 | 106.6 | BROOKRIDGE - OVERLAND PARK 161KV | 0 | Limits Rollover Rights beginning 06/01/2008 | \$ - |
| 09SP | | KACP | COLLEGE - CRAIG 161KV | 335 | 100.6 | 100.8 | MOONLIGHT - WEST GARDNER 161KV | 0 | Limits Rollover Rights beginning 06/01/2009 | \$ - |
| | AEPW | | EAST CENTRAL HENRYETTA - OKMULGEE 138KV | 105 | 104.7 | 105.9 | KELCO - OKMULGEE 138KV | 0 | See Previous | \$ - |
| | | AEPW | EAST CENTRAL HENRYETTA - WELEETKA 138KV | 105 | 100.0 | 101.1 | KELCO - OKMULGEE 138KV | 0 | See Previous | \$ - |
| | | AEPW | FLINT CREEK - TONTITOWN 161KV | 312 | 125.5 | 125.6 | CHAMBER SPRINGS - FLINT CREEK 161KV | 0 | See Previous | \$ - |
| | | AEPW | FLINT CREEK - TONTITOWN 161KV | 312 | 107.9 | 108.1 | AVOCA - BEAVER 161KV | 0 | See Previous | \$ - |
| | | AEPW | FLINT CREEK - TONTITOWN 161KV | 312 | 101.3 | 101.4 | AVOCA - BEAVER TOTAL AVOCA - EAST ROGERS 161KV | 0 | See Previous | \$ - |
| 09SP | | OKGE | FRANKLIN SW - MIDWEST TAP 138KV | 215 | 113.6 | 113.9 | HOLLYWOOD - MIDWEST TAP 138KV | 0 | 1200A CT's installed by WFEC New Rate B = 287MVA | \$ - |
| 09SP | | OKGE | FRANKLIN SW - MIDWEST TAP 138KV | 215 | 111.7 | 112.3 | CROMWELL - WETUMKA 138KV | 0 | See Previous | \$ - |
| | | OKGE | FRANKLIN SW - MIDWEST TAP 138KV | 215 | 111.5 | 112.1 | PHAROAH - WETUMKA 138KV | 0 | See Previous | \$ - |
| | | OKGE | FRANKLIN SW - MIDWEST TAP 138KV | 215 | 108.9 | 109.5 | CROMWELL - WEWOKA 138KV | 0 | See Previous | \$ - |
| | | OKGE | FRANKLIN SW - MIDWEST TAP 136KV | 215 | 100.4 | 109.5 | DRAPER LAKE - SOONER TAP 138KV | 0 | See Previous | \$ - |
| 09SP | | OKGE | FT SMITH 345/161KV TRANSFORMER | 493 | 100.4 | 100.6 | FT SMITH 500/161KV TRANSFORMER | 0 | Upgrade Same as Ft. Smith 500/161kV Transformer 04SP | \$ - |
| | | OKGE | FT SMITH 545/161KV TRANSFORMER | 480 | 116.4 | 116.6 | FT SMITH 300/101KV TRANSFORMER | 0 | See Previous | \$ - |
| | | OKGE | FT SMITH 500/161KV TRANSFORMER | 480 | 102.2 | 103.0 | FT SMITH 543/10TKV TRANSFORMER | 0 | See Previous | \$ - |
| | WERE | | GILL ENERGY CENTER WEST - PECK 69KV | 37 | 102.2 | 103.0 | EL PASO - FARBER 138KV | 0 | Limits Rollover Rights beginning 06/01/2008 | \$ - |
| 095P | WEKE | WERE | GILL ENERGY CENTER WEST - PECK 69KV | 31 | 103.2 | 104.7 | EL PASO - FARBER 130NV | U | 0 0 0 | \$ - |
| 0000 | OKCE | OKCE | HORSESHOE LAKE - JONES TAP 138KV | 287 | 100.1 | 402.4 | HORSESHOE LAKE - RENO 138KV | 0 | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE expense | œ. |
| 09SP | OKGE | UNGE | HURSESHUE LAKE - JUNES TAP 136KV | 201 | 103.1 | 103.4 | HORSESHOE LAKE - RENO 136KV | U | | \$ - |
| 0000 | OKOE | OKOE | LIODOFOLIOF LAVE DENO 100101 | 007 | 407.4 | 407.7 | LIODOFOLIOF LAIZE MIDWAY 400KV | | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE | |
| | OKGE | AEPW | HORSESHOE LAKE - RENO 138KV INTERNATIONAL PAPER - WALLACE LAKE 138KV | 287 | 107.4 | 107.7 | HORSESHOE LAKE - MIDWAY 138KV | 0 | expense Dolet Hills Operating Guide | \$ - |
| 09SP | | | | 209 | 126.2 | 126.6 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | | \$ - |
| 09SP | OKGE | OKGE | MORRISON - STILLWATER 138KV | 191 | 104.3 | 104.7 | NORTHWEST - SPRING CREEK 345KV | 0 | Incorrect rating Rate A = 259MVA Rate B = 287MVA | \$ - |
| 09SP | SPS | SPS | RANDALL CO INTRCHNG 230/115KV TRANSFORMER | 259 | 103.8 | 104.4 | AMARILLO S INTERCHANGE - NICHOLS STATION 230KV | 0 | Open Amarillo South 230/115KV Transformer to Relieve Facility | \$ - |
| | | | | | | | | | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE | |
| 09WP | OKGE | OKGE | DRAPER LAKE 345/138KV TRANSFORMER CKT 1 | 493 | 105.0 | 105.1 | DRAPER LAKE 345/138KV TRANSFORMER CKT 2 | 0 | expense and use the operating directive until 2008 | \$ - |
| | | | | | | | | | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE | |
| 09WP | OKGE | OKGE | DRAPER LAKE 345/138KV TRANSFORMER CKT 2 | 493 | 105.0 | 105.1 | DRAPER LAKE 345/138KV TRANSFORMER CKT 1 | 0 | expense and use the operating directive until 2008 | \$ - |
| | | | | | | | | | Relieved or Impact Removed by Selected Upgrades to be Assigned, | |
| 09WP | WERE | WERE | EXIDE JUNCTION - SUMMIT 115KV | 196 | 103.2 | 103.6 | EAST MCPHERSON - SUMMIT 230KV | 0 | Modeled in 03WP | \$ - |
| 09WP | CELE | | INTERNATIONAL PAPER - WALLACE LAKE 138KV | 236 | 120.7 | 121.1 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | Dolet Hills Operating Guide | \$ - |
| | | | | | | | | | Relieved or Impact Removed by Selected Upgrades to be Assigned, | t · |
| 09WP | WERE | WERE | N. A. PHILIPS - N. A. PHILIPS JUNCTION (SOUTH) 115KV | 160 | 113.2 | 114.0 | EAST MCPHERSON - SUMMIT 230KV | 0 | Modeled in 03WP | \$ - |
| 09WP | WERE | WERE | N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 1 | 68 | 122.1 | 123.0 | EAST MCPHERSON - SUMMIT 230KV | 0 | See Previous | \$ - |
| | | | , , | | | | | | Upgrade Same as North American Phillips Junction (South) - West | |
| 09WP | WERE | WERE | N. A. PHILIPS JCT (STH) - W MCPHERSON 115KV CKT 2 | 92 | 106.6 | 107.3 | EAST MCPHERSON - SUMMIT 230KV | 0 | McPherson 115kV Ckt 1 | \$ - |
| | AEPW | | SOUTH SHREVEPORT - WALLACE LAKE 138KV | 210 | 102.6 | 103.0 | DOLET HILLS - SOUTHWEST SHREVEPORT 345KV | 0 | See Previous | \$ - |
| 09WP | WERE | WERE | WEST JCT CITY - WEST JCT CITY JCT (EAST) 115KV | 141 | 100.2 | 100.6 | JEFFERY ENERGY CENTER - SUMMIT 345KV | 0 | Westar Transmission Operating Directive 402 | \$ - |
| | | | | | | | | | Engineering & Construction Costs | \$ 28,275,000 |

| Study | From | То | | | BC % | TC % | |
|-------|------|------|--|--------|---------|---------|--|
| Year | Area | Area | Monitored Branch Over 100% Rate B | Rate B | Loading | Loading | Outaged Branch Causing Overload |
| 04FA | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 112.4 | 112.8 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04G | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 116.4 | 116.8 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04SP | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 209 | 124.7 | 125.1 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04WP | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 102.1 | 102.5 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 09SP | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 209 | 126.2 | 126.6 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 09WP | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 120.7 | 121.1 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04FA | CELE | CELE | 50113 MANSFLD4 138 to 50090 IPAPER 4 138 CKT 1 | 232 | 124.3 | 124.7 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04G | CELE | CELE | 50113 MANSFLD4 138 to 50090 IPAPER 4 138 CKT 1 | 232 | 128.4 | 128.8 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04SP | CELE | CELE | 50113 MANSFLD4 138 to 50090 IPAPER 4 138 CKT 1 | 232 | 122.0 | 122.4 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 04WP | CELE | CELE | 50113 MANSFLD4 138 to 50090 IPAPER 4 138 CKT 1 | 232 | 113.8 | 114.1 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 09SP | CELE | CELE | 50113 MANSFLD4 138 to 50090 IPAPER 4 138 CKT 1 | 232 | 123.3 | 123.7 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 09WP | CELE | CELE | 50113 MANSFLD4 138 to 50090 IPAPER 4 138 CKT 1 | 232 | 132.8 | 133.2 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 |
| 09SP | AECI | AECI | 96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1 | 123 | 112.1 | 113.0 | 59207 ARCHIE 5 161 to 59240 ADRIAN 5 161 CKT 1 |
| 09SP | AECI | AECI | 96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1 | 123 | 110.6 | 111.5 | 59208 NEVADA 5 161 to 59216 BUTLER_5 161 CKT 1 |
| 09SP | AECI | AECI | 96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1 | 123 | 109.9 | 110.9 | 56793 NEOSHO 7 345 to 57981 LACYGNE7 345 CKT 1 |
| 09SP | AECI | AECI | 96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1 | 123 | 110.0 | 110.9 | 59216 BUTLER_5 161 to 59240 ADRIAN 5 161 CKT 1 |
| 09SP | AECI | AECI | 96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1 | 123 | 108.7 | 109.6 | 52702 TRUMAN 5 161 to 96552 5EDMONS 161 CKT 1 |
| 09SP | AECI | AECI | 96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1 | 123 | 107.4 | 108.3 | 30154 BLAND 345 to 96041 7FRANKS 345 CKT 1 |
| 09SP | AECI | AECI | 96109 5PHLIPS 161 to 97071 2PBURG 69 CKT 1 | 84 | 99.0 | 100.3 | 96102 5MRSHFL 161 to 97163 2MRSHFL 69 CKT 1 |
| 04SP | AECI | AECI | 96126 5MOBTAP 161 to 96120 5THMHIL 161 CKT 1 | 372 | 104.2 | 104.5 | 96044 7MCCRED 345 to 96049 7THOMHL 345 CKT 1 |
| 09SP | AECI | AECI | 96126 5MOBTAP 161 to 96120 5THMHIL 161 CKT 1 | 372 | 106.9 | 107.2 | 96044 7MCCRED 345 to 96049 7THOMHL 345 CKT 1 |
| 04G | LAGN | ENTR | 97318 4KSPRGS 138 to 98141 4CHAMPNE 138 CKT 1 | 289 | 109.3 | 109.5 | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT 1 |
| 04SP | LAGN | ENTR | 97318 4KSPRGS 138 to 98141 4CHAMPNE 138 CKT 1 | 289 | 121.5 | 121.7 | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT 1 |
| 09SP | LAGN | ENTR | 97318 4KSPRGS 138 to 98141 4CHAMPNE 138 CKT 1 | 289 | 100.2 | 100.4 | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT 1 |
| 04SP | ENTR | ENTR | 98107 8RICHARD 500 to 98430 8WEBRE 500 CKT 1 | 1732 | 102.5 | 102.6 | 98235 8MCKNT 500 to 99027 8FRKLIN 500 CKT 1 |

| March Aus | - · · | - | - 1 | | 1 | DO 01 | T0.0/ | | 1 | | _ | |
|--|--------|--------------|-----------------|---|--------|-----------------|-------|--|-------------|---|------|-----------|
| Second Control Contr | Study | From Area | To Area | Monitored Branch Over 100% Rate B | Rate B | BC % Loading | TC % | Outaged Branch Causing Overload | ATC (MW) | Solution | | Cost |
| Output Company Marked Carthonic Nation Security Company | | | | | | | | | | | | - |
| 1909 PAPE 1909 | | | | | | | | | | | • | |
| 2006 CRUE | | | | | | | | | | 9 | Ψ | |
| March Name | 0301 | GININD | ALI W | 34430 CATSAGRS 101 to 33002 CATOOSA4 130 CR1 2 | 130 | 101.0 | 101.0 | 33002 CATOOSA4 130 to 34430 CATOAGKS 101 CKT 1 | U | None order minigation han | Ψ | |
| 1985 WERE WERE SPEAK WERVERZ 26 SENSOR PRICE 26 DCT 4.9 Mo. 10.1 | 03SP | OKGE | OKGE | 54941 HSL 4 138 to 54973 RENO 4 138 CKT 1 | 287 | 101.2 | 101.4 | 54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT 1 | 0 | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE expense | \$ | _ |
| 1985 WERE WERE SPEAK WERVERZ 26 SENSOR PRICE 26 DCT 4.9 Mo. 10.1 | | | | | | | | | | | | |
| SEP WINDER VARIEW ASSET ASSE | | | | | | | | | | Move Rose Hill Jct. 69 kV load to Rose Hill 345/138 kV substation. | | |
| OFFICE APPW 59800 CATCOGAN 139 to SST91 LAN EF 139 CCT 25 195.8 195.1 19 | 03SP | WERE | WERE | 57604 WEAVER 2 69 to 57837 RH JCT 2 69 CKT 1 | 43 | 106.3 | 107.5 | 57039 ELPASO 4 138 to 57042 FARBER 4 138 CKT 1 | 0 | Requires new transformer bay and a new 25 MVA 138-12 kV transformer. | . \$ | 1,400,000 |
| APPW APPW APPW SHOP CATOGGAA 198 to SST93 LLAN ET 1 198 CRT 255 107.5 105.1 SST8* WERKWA-7 345 to SST8* OF TAX 1 105 CRT | 03SP | WERE | WERE | 57604 WEAVER 2 69 to 57837 RH JCT 2 69 CKT 1 | 43 | 100.1 | 101.4 | 57042 FARBER 4 138 to 57063 SC10BEL4 138 CKT 1 | 0 | See Previous | \$ | |
| APPW APPW APPW SHOP CATOGGAA 198 to SST93 LLAN ET 1 198 CRT 255 107.5 105.1 SST8* WERKWA-7 345 to SST8* OF TAX 1 105 CRT | | | | | | | | | | | | |
| APP APP APP SOURCE ATOOMA 139 to 5379S LLAN ET 8 196 CKT 1 295 107.5 108.1 53707 WERWAY-7.36 to 53796 WERWAY-8 196 CKT 1 0 Nonrect rating in the non-summer cases. New Ras B = 2869/A for off 5 0 0 0 0 0 0 0 0 0 | 03FA | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 106.4 | 106.8 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE expense | \$ | - |
| GEAN APPW | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | | - |
| Second Carlot Actival | 03FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 107.5 | 108.1 | 53767 WEKIWA-7 345 to 53769 WEKIWA-4 138 CKT 1 | 0 | | \$ | - |
| SSFA APPW APPW SSB0C CATCOCAM 13 to \$2758 LLAN ET 4 38 CKT 250 10.5 10.2 10.5 10.2 10.5 10.2 10.5 | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | | • |
| A APP A APP A APP S000 CATOOSA4 138 is 5738 LAN ET 4 130 CAT 235 10.8 10.6 10.3 10.7 10.3 10.5 10 | 03FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 107.5 | 108.1 | 53767 WEKIWA-7 345 to 53866 T.NO7 345 CKT 1 | 0 | | \$ | - |
| GEFA APPW Page Sales CATCOSAN 13 to 5273 LLANE T1 136 CFT 25 10.8 10.3 23756 RSSAUTON 13 to 52739 R.S. 3. 196 CFT 0 0 1 1 1 1 1 1 1 1 | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | 1 | |
| A RPW A RPW A RPW S3802 CATODSA4 138 to S3738 LLAN ET 4 130 CKT 25 10.6 | 03FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 105.8 | 106.3 | 53785 RSSAUTO4 138 to 53794 R.S.S7 345 CKT 1 | 0 | | \$ | - |
| GEAS APPW APPW S980 CATOOSAA 138 b S783 LLAN ET 4 130 CRT 1 25 10.8 10.8 10.9 5788 SSAUTO 13.0 S 5788 SSAUTO 13.0 SSAUTO 13.0 S 5788 SSAUTO 13.0 S 5788 SSAUTO 13.0 SSAUTO 13.0 SSAUTO 13.0 SSAUTO 13.0 SSAUTO 13.0 SSAUTO 13.0 | | | | | 1 | | | | + - | · | Ť | |
| Decompton Compton Co | 03FA | AFPW | AFPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 105.8 | 106.3 | 53785 RSSAUTO4 138 to 53795 R S S -4 138 CKT 1 | 0 | | s | _ |
| ORFA APPW APPW S8890 CATOOGA4 139 to \$3783 LLAN ET 4 136 CKT 256 0.863 109.0 5894 ONETA-7 346 to \$5960 N. E.S. 745 CKT 0 Replace Sand Springs switch 1500, 1307, 6 1308 5 75.000 | 00.71 | / LE. 11 | / LE: ** | 00002 0711 00 0711 100 10 00 100 10111 111 100 0111 1 | 200 | 100.0 | 100.0 | 0010011001101110010001101111101011111 | | · | Ť | |
| OFFA AFPW AFPW S8826 SHEFFD-4 138 D 0.5827 S.S.—4 138 D 0.5827 S.D.—1 143 D 0.67 106.8 \$75,000 | USEV | ΛΕD\Λ/ | ΛΕ D \Λ/ | 53802 CATOOSA4 138 to 53783 LLAN ETA 138 CKT 1 | 235 | 108.3 | 100.0 | 53810 ONETA7 345 to 53055 N E S -7 345 CKT 1 | 0 | | • | |
| OFFA AFFW AFFW C SART S.F 138 to SARS WED-TAP4 138 CKT 1 | | | | | | | | | | | φ | 75 000 |
| Name Company | | | | | | | | | | | | |
| OFFA WERE WERE ST737 HESSTONZ 98 to 57735 COLDPLIZ 69 CKT 1 32 98.8 100.9 57711 HASS 1704 138 IN 57713 MOUND 4 138 CKT 1 10 See Previous 5 5.000 5.0 | U3FA | AEPW | AEPW | 53827 S.S4 138 to 53835 WED-TAP4 138 CKT 1 | 143 | 104.0 | 104.7 | 53769 WEKIWA-4 138 to 53824 SHEFFD-4 138 CKT 1 | U | Replace Sand Springs switches 1314, 1315, & 1316 | \$ | 75,000 |
| OFFA WERE WERE ST737 HESSTONZ 98 to 57735 COLDPLIZ 69 CKT 1 32 98.8 100.9 57711 HASS 1704 138 IN 57713 MOUND 4 138 CKT 1 10 See Previous 5 5.000 5.0 | | | | ====================================== | .=- | | | | | In house on the desired for Man 2004 New Date D. 2004N/A for E- | | |
| SWPA SWPA SWPA SZYZYELFALLAL1 13 W ND 2 EUFALLAL 1 105 102.4 103.0 SZYZ9 WELEET NG 156 CKT 1 0 Replace Displace Transformer \$ 2,000,000 | | | | | | | | | | | | |
| SWPA | | | | | | | | | | · | \$ | |
| Sample APPW | | | | | | | | | 0 | | \$ | - |
| AEPW AEPW AEPW AEPW S9802 CATOOSAA 138 to 5378 LLAN ET 1 38 CKT 1 25 102 10.8 53767 WEKIWA-7 345 to 53868 T.N.O7 345 CKT 1 0 10 10 10 10 10 10 | 03WP | SWPA | SWPA | 52774*EUFAULA4 138 WND 2 EUFAULA1 1 | 105 | 102.4 | 103.3 | 52790 WELEETK5 161 to 52792 WELEETK4 138 CKT 1 | 0 | Replace Eufaula Transformer | \$ | 2,000,000 |
| September Sept | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | | |
| APPW APPW APPW S3802 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 235 100.2 100.8 \$3576 WEKIWA-7 345 to 53886 T.NO7 345 CKT 1 30 Incorrect rating in the non-summer cases. New Rate B = 255MVA to of F 100.2 100.8 \$3500 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100.8 \$3580 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100.2 \$3802 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100.2 \$3802 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100 | 03WP | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 100.2 | 100.8 | 53767 WEKIWA-7 345 to 53769 WEKIWA-4 138 CKT 1 | 0 | peak | \$ | - |
| APPW APPW APPW S3802 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 235 100.2 100.8 \$3576 WEKIWA-7 345 to 53886 T.NO7 345 CKT 1 30 Incorrect rating in the non-summer cases. New Rate B = 255MVA to of F 100.2 100.8 \$3500 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100.8 \$3580 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100.2 \$3802 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100.2 \$3802 CATOOSA4 138 to 53785 LLAN ET4 138 CKT 1 20.5 100.2 100 | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | | |
| Samp APPW | 03WP | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 100.2 | 100.8 | 53767 WEKIWA-7 345 to 53866 T.NO7 345 CKT 1 | 0 | | \$ | _ |
| AEPW S802 CATOOSA 138 to 53781 LAN ET 4 138 CKT 235 99.6 100.2 53802 CATOOSA 138 to 53816 LAN ET 4 138 CKT 0 100.00 100. | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | 1 | |
| Samp AEPW AEPW AEPW Samp AEPW Samp Samp Samp AEPW Samp Samp AEPW Samp | 03WP | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 99.6 | 100.2 | 53802 CATOOSA4 138 to 53816 LLANETP4 138 CKT 1 | 33 | | \$ | _ |
| SAPP AEPW S3802 CATOOSA 4138 to 53783 LLAN ET4 138 CKT 1 235 102.1 102.9 53819 ONETA7 345 to 53955 N.E.S. 7 345 CKT 1 0 Deek \$ | | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | Ť | - |
| AEPW GRRD 53802 CATOOSA4 138 to 54438 CATSAGRS 161 CKT 1 150 10.3.9 104.5 53802 CATOOSA4 138 to 54438 CATSAGRS 161 CKT 2 0 None - GRDA Mitigation Plan \$ - | U3/V/D | ΛΕD\Λ/ | ΛΕD\Λ/ | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 102.1 | 102.0 | 53810 ONETA 7 345 to 53055 N E S -7 345 CKT 1 | 0 | | • | |
| GRPD AFPW 54438 CATSAGRS 161 to 53932 CATOOSA4 138 CKT 2 194 194 194 53902 CATOOSA4 138 to 54438 CATSAGRS 161 CKT 1 0 None - GRDA Miligation Plan \$ 7,800,000 | | | | | | | | | - | | 9 | |
| WERE WERE | | | | | | | | | | | 9 | |
| OKE AEPW | | | | | | | | | | | ð. | 7,000,000 |
| SWPA SWPA SWPA SWPA SWPA SZ774*EUFAULA1 138 WND 2 EUFAULA1 1 105 100.1 101.1 52750 GORE 5 161 to 52790 WELEETKS 161 CKT 1 0 See Previous \$ | | | | | | | | | | | _ | 7,800,000 |
| 0.4G SWPA SWPA S2774*EUFAULA4 138 WND 2 EUFAULA1 1 105 100.4 101.4 52790 WELEETK5 161 to 52792 WELEETK4 138 CKT 1 0 See Previous \$ | | | | | | | | | | | | |
| AEPW AEPW AEPW AEPW AEPW S3461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1 210 100.0 100.4 50045 DOLHILLT 345 to 53464 S WHV 7 345 CKT 1 1 Dolet Hills Operating Guide - Spp-Cele-01 Operating Guide 1 \$ - 0.04 AEPW AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 99.8 100.0 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 10 Replace Wavetrap \$ 40,000 40 40 40 40 40 40 | | | | | | | | | | | | - |
| 04G AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 99.8 100.9 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 10 Replace Okmulgee Wavetrap \$ 40,000 04G WERE WERE 57343 WJCCTYE3 115 to 57342 WJCCTY3 115 CKT 1 141 104.4 56766 JEC N 7 345 to 56773 SJUMMIT 7 345 CKT 1 0 Westar Transmission Operating Directive 402 \$ - 04SP CELE AEPW 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 209 124.7 125.1 50045 DOLHILLT 345 to 53454 SW SHV 7 345 CKT 1 0 Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS 5104 OSAGE-3 115 to 51080 CANYNE3 115 CKT 1 99 113.2 114.5 50993 BUSHLND6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS 51020 RANDALL3 115 to 51080 CANYNE3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 04SP SPS SPS 51080 CANYNE3 115 to 51092 RANDALL3 115 CKT 1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<> | | | | | | | | | | | | |
| 04G WERE 57343 WJCCTYS 115 to 57342 WJCCTY 3 115 CKT 1 141 104.0 104.4 56766 JEC N 7 345 to 56773 SUMMIT 7 345 CKT 1 0 Westar Transmission Operating Directive 402 \$ 04G WERE WERE 57343 SPHILPJ3 115 to 57342 WJCCTY 3 115 CKT 1 68 101.3 102.1 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 0 See Previous \$ - 04SP CELE AEPW 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 209 124.7 125.1 50045 DOLHILT 7 345 to 53454 SW SHV 7 345 CKT 1 0 Dolet Hills Operating Guide \$ - 04SP SPS 51014 OSAGE-3 115 to 51080 CANYNE3 115 CKT 1 99 113.2 114.5 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 0 Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS SPS 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 04SP SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 | | | | | | | | | | | | |
| 04G WERE 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1 68 101.3 102.1 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 0 See Previous \$ 04SP CELE AEPW 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 209 124.7 125.1 50045 DOLHILLT 345 to 53454 SW SHV 7 345 CKT 1 0 Dolet Hills Operating Guide \$ 04SP SPS SPS 51014 OSAGE3 115 to 51080 CANYNE3 115 CKT 1 99 113.2 114.5 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 0 Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 04SP SPS 51081 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 0 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 04SP SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>40,000</td></t<> | | | | | | | | | | | | 40,000 |
| 04SP CELE AEPW 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 209 124.7 125.1 50045 DOLHILLT 345 to 53454 SW SHV 7 345 CKT 1 0 Dolet Hills Operating Guide \$ - 04SP SPS SPS 51014 OSAGE3 115 to 51080 CANYNE3 115 CKT 1 99 113.2 114.5 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 0 Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS SPS 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS SPS 51021 RANDALL6 230 to 51020 RANDALL3 115 CKT 1 258.75 100.9 101.4 50915 NICHOL6 230 to 51041 AMARLS6 230 CKT 1 0 Open Amarillo South 230/115kV Transformer to Relieve Facility \$ - 04SP SPS SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 20 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 590,000 04SP SPS <td></td> <td>_</td> <td>-</td> | | | | | | | | | | | _ | - |
| 04SP SPS SPS 51014 OSAGE-3 115 to 51080 CANYNE3 115 CKT 1 99 113.2 114.5 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 0 Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,910,000 04SP SPS SPS 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Pebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 04SP SPS SPS 51021 RANDALL6 230 to 51020 RANDALL3 115 CKT 1 258.75 100.9 101.4 50915 NICHOL6 230 to 51041 AMARLS6 230 CKT 1 0 Open Amarillo South 230/115kV Transformer to Relieve Facility \$ - 0.000 04SP SPS SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 20 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 590,000 04SP SPS SPS 51082 PALODU 3 115 to 51302 HAPPY3 115 CKT 1 99 100.8 102.6 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 590,000 04SP AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 0.000 04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welterku Wavetrap \$ 40,000 04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welterku Wavetrap \$ 40,000 04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welterku Wavetrap \$ 40,000 | | | | | | | | | 0 | | \$ | |
| O4SP SPS SPS 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 | 04SP | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 209 | 124.7 | 125.1 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | Dolet Hills Operating Guide | \$ | - |
| O4SP SPS SPS 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 99 102.7 104.4 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 1,170,000 | | | | · | | | | | | | | |
| 04SP SPS 51021 RANDALL6 230 to 51020 RANDALL3 115 CKT 1 258.75 100.9 101.4 50915 NICHOL6 230 to 51041 AMARLS6 230 CKT 1 0 Open Amarillo South 230/115KV Transformer to Relieve Facility \$ 04SP SPS SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 20 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 590,000 04SP SPS 51082 PALODU 3 115 to 51302 HAPPY3 115 CKT 1 99 100.8 102.6 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW AEPW 53170 TONTITIN5 161 to 53139 FLINTCRS 161 CKT 1 312 108.7 108.9 53139 FLINTCRS 161 to 53134 CHAMSPR5 161 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 Repressions \$ - 04SP AEPW 54029 CK.HEN-4 138 to 54028 WELETK4 138 | 04SP | SPS | SPS | 51014 OSAGE3 115 to 51080 CANYNE3 115 CKT 1 | 99 | 113.2 | 114.5 | 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 | 0 | Rebuild 13 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. | \$ | 1,910,000 |
| 04SP SPS 51021 RANDALL6 230 to 51020 RANDALL3 115 CKT 1 258.75 100.9 101.4 50915 NICHOL6 230 to 51041 AMARLS6 230 CKT 1 0 Open Amarillo South 230/115KV Transformer to Relieve Facility \$ 04SP SPS SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 20 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 590,000 04SP SPS 51082 PALODU 3 115 to 51302 HAPPY3 115 CKT 1 99 100.8 102.6 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW AEPW 53170 TONTITIN5 161 to 53139 FLINTCRS 161 CKT 1 312 108.7 108.9 53139 FLINTCRS 161 to 53134 CHAMSPR5 161 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 Repressions \$ - 04SP AEPW 54029 CK.HEN-4 138 to 54028 WELETK4 138 | | | | | | | | | | | | |
| 04SP SPS 51021 RANDALL6 230 to 51020 RANDALL3 115 CKT 1 258.75 100.9 101.4 50915 NICHOL6 230 to 51041 AMARLS6 230 CKT 1 0 Open Amarillo South 230/115KV Transformer to Relieve Facility \$ 04SP SPS SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 20 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 590,000 04SP SPS 51082 PALODU 3 115 to 51302 HAPPY3 115 CKT 1 99 100.8 102.6 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW AEPW 53170 TONTITIN5 161 to 53139 FLINTCRS 161 CKT 1 312 108.7 108.9 53139 FLINTCRS 161 to 53134 CHAMSPR5 161 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 Repressions \$ - 04SP AEPW 54029 CK.HEN-4 138 to 54028 WELETK4 138 | 04SP | SPS | SPS | 51020 RANDALL3 115 to 51082 PALODU 3 115 CKT 1 | 99 | 102.7 | 104.4 | 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 | 0 | Rebuild 9 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. | \$ | 1,170,000 |
| 04SP SPS SPS 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 99 99.5 100.7 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 20 Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$590,000 | | | | | | | | | | | | |
| 04SP SPS 51082 PALODU 3 115 to 51302 HAPPY3 115 CKT 1 99 100.8 102.6 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 04SP AEPW 53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1 312 108.7 108.9 53139 FLINTCR5 161 to 53154 CHAMSPR5 161 CKT 1 0 Replace switch and jumpers \$ 45,000 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 117.5 118.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 117.5 118.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 117.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Weleetka Wavetrap \$ 40,000 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>,</td> <td>Ť</td> <td></td> | | | | | | | | | | , | Ť | |
| 04SP SPS SPS 51082 PALODU 3 115 to 51302 HAPPY3 115 CKT 1 99 100.8 102.6 51041 AMARLS6 230 to 51321 SWISHER6 230 CKT 1 0 Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. \$ 3,130,000 ASP AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ -04SP AEPW AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 115.5 116.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ -04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 115.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter Have 138 to 54057 KELCO 4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Welter Welter 138 to 54057 KELCO 4 138 to 54057 KELCO | 04SP | SPS | SPS | 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1 | 99 | 99.5 | 100.7 | 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 | 20 | Rebuild 4 miles of 115 kV circuit with 397 ACSR on T-0-102 structures. | \$ | 590.000 |
| 04SP AEPW 53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1 312 108.7 108.9 53139 FLINTCR5 161 to 53154 CHAMSPR5 161 CKT 1 0 Replace switch and jumpers \$ 45,000 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYETA 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.5 118.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 106.1 107.1 54017 HENRYETA 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 110.5 110.5 110.5 110.5 54017 HENRYETA 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 110.5 110.5 110.5 110.5 110.5 110.5 110.5 110.5 110.5 | | 1 | | | 1 | | | | T | | Ť | |
| 04SP AEPW 53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1 312 108.7 108.9 53139 FLINTCR5 161 to 53154 CHAMSPR5 161 CKT 1 0 Replace switch and jumpers \$ 45,000 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYETA 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.5 118.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 106.1 107.1 54017 HENRYETA 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 110.5 110.5 110.5 110.5 54017 HENRYETA 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 110.5 110.5 110.5 110.5 110.5 110.5 110.5 110.5 110.5 | 04SP | SPS | SPS | 51082 PALODIL 3 115 to 51302 HAPPY3 115 OKT 1 | aa | 100.8 | 102.6 | 51041 AMARI S6 230 to 51321 SWISHERE 230 CKT 1 | 0 | Rebuild 24 miles of 115 kV circuit with 397 ACSR on T-0-102 structures | \$ | 3 130 000 |
| 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 110.2 111.3 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 117.5 118.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 117.1 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Weleetka Wavetrap \$ 40,000 | | | | | | | | | | | _ | |
| 04SP AEPW 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 105 117.5 118.6 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 106.0 107.1 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Weleetka Wavetrap \$ 40,000 | | | | | | | | | | | | 40,000 |
| 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 106.0 107.1 54017 HENRYET4 138 to 54057 KELCO 4 138 CKT 1 0 See Previous \$ - 04SP AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Weleetka Wavetrap \$ 40,000 | | | | | | | | | | | Ψ | |
| 04SP AEPW AEPW 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 105 113.3 114.4 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 0 Replace Weleetka Wavetrap \$ 40,000 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 04SP GRRD AEPW 54438 CATSAGR5 161 to 53802 CATOOSA4 138 CKT 1 150 105.2 105.8 53802 CATOOSA4 138 to 54438 CATSAGR5 161 CKT 2 0 None - GRDA Mitigation Plan \$ - | | | | | | | | | | | | 40,000 |
| | 04SP | GRRD | AEPW | 54438 CATSAGR5 161 to 53802 CATOOSA4 138 CKT 1 | 150 | 105.2 | 105.8 | 53802 CATOOSA4 138 to 54438 CATSAGR5 161 CKT 2 | 0 | None - GRDA Mitigation Plan | \$ | |

| Oterates | F | Τ. | | | DO 0/ | TC % | | ATC | | |
|--------------------------|---------------------|---------------------|--|-----------|-----------------|----------------|--|----------|---|---------------|
| Study Year | From Area | To Area | Monitored Branch Over 100% Rate B | Rate B | BC % Loading | Loading | Outaged Branch Causing Overload | (MW) | Solution | Cost |
| | GRRD | AEPW | 54438 CATSAGR5 161 to 53802 CATOOSA4 138 CKT 2 | 150 | 105.5 | 106.1 | 53802 CATOOSA4 138 to 54438 CATSAGR5 161 CKT 1 | 0 | None - GRDA Mitigation Plan | \$ - |
| | | | | | | | | T - | | Ť |
| 04SP | OKGE | OKGE | 54941 HSL 4 138 to 54973 RENO 4 138 CKT 1 | 287 | 103.0 | 103.3 | 54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT 1 | 0 | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE expense | \$ - |
| | | | | | | | | | Convert Ft. Smith 161kv to 1-1/2 breaker design and install 2nd 500-161kV | , |
| 04SP | OKGE | OKGE | 55305 FTSMITH8 500 to 55300 FTSMITH5 161 CKT 1 | 480 | 104.0 | 104.2 | 55300 FTSMITH5 161 to 55302 FTSMITH7 345 CKT 1 | 0 | transformer bank | \$ 10,000,000 |
| 04SP | WERE | WERE | 57604 WEAVER 2 69 to 57837 RH JCT 2 69 CKT 1 | 43 | 103.2 | 104.5 | 57039 ELPASO 4 138 to 57042 FARBER 4 138 CKT 1 | 0 | See Previous | \$ - |
| | | | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 112.4 | 112.8 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | Dolet Hills Operating Guide | \$ - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| 04FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 104.7 | 105.3 | 53767 WEKIWA-7 345 to 53769 WEKIWA-4 138 CKT 1 | 0 | peak | \$ - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| 04FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 104.7 | 105.3 | 53767 WEKIWA-7 345 to 53866 T.NO7 345 CKT 1 | 0 | peak | s - |
| | | | | | | | | <u> </u> | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | Ť |
| 04FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 102.4 | 102.9 | 53785 RSSAUTO4 138 to 53794 R.S.S7 345 CKT 1 | 0 | peak | s - |
| | | | | | | | | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| 04FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 102.4 | 102.9 | 53785 RSSAUTO4 138 to 53795 R.S.S4 138 CKT 1 | 0 | peak | s - |
| | | | | | | | | <u> </u> | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | Ť |
| 04FA | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 106.6 | 107.4 | 53819 ONETA7 345 to 53955 N.E.S7 345 CKT 1 | 0 | peak | s - |
| | | | 53824 SHEFFD-4 138 to 53827 S.S4 138 CKT 1 | 143 | 101.3 | 102.2 | 53769 WEKIWA-4 138 to 53835 WED-TAP4 138 CKT 1 | 0 | See Previous | \$ - |
| | | | 53835 WED-TAP4 138 to 53827 S.S4 138 CKT 1 | 143 | 99.9 | 100.6 | 53769 WEKIWA-4 138 to 53824 SHEFFD-4 138 CKT 1 | 6 | See Previous | \$ - |
| 7 | | | 11111 125 1 . 100 OKT 1 | | 55.5 | | 23.23 24477 1 100 to 000E 1 0.1E. 1 D 1 100 0101 1 | Ť | | 1 |
| 04FA | AEPW | AEPW | 53841 21STTAP4 138 to 53823 T.S.E4 138 CKT 1 | 179 | 99.6 | 100.6 | 53819 ONETA7 345 to 53955 N.E.S7 345 CKT 1 | 21 | In house upgrade scheduled for May 2004. New Rate B = 263MVA for Fal | |
| 04170 | /(LI VV | /(L) VV | 00041 2101174 4 100 to 00020 1.0.E. 4 100 OK1 1 | 173 | 33.0 | 100.0 | 33013 CNE IX 7 040 to 33300 N.E.O. 7 040 OKT 1 | | Replaced 1200A switch with a 2000A switch by OKGE. New Rate A = | ¥ |
| 04FA | OKGE | OKGE | 54852 SLVRLAK4 138 to 54854 PANTHER4 138 CKT 1 | 287 | 109.0 | 109.2 | 54873 LONEOAK4 138 to 54879 NORTWST4 138 CKT 1 | 0 | 478MVA, Rate B = 478MVA. | ¢ . |
| 041 A | ONGL | ONGL | 34032 SEVICEAR4 130 to 340341 ANTHERA 130 CRT 1 | 201 | 103.0 | 103.2 | 34873 EGNEGARA 130 to 34879 NORTWS14 130 GRT 1 | U | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE expense | Ψ - |
| 04FA | OKGE | OKGE | 54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1 | 493 | 103.7 | 103.8 | 54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT 2 | 0 | and use the operating directive until 2008 | • |
| 041 A | ONGL | ONGL | 34934 DIVALER 1 343 to 34933 DIVALER 4 130 CRT 1 | 433 | 103.7 | 103.0 | 34933 BICALEIC 4 130 to 34934 BICALEIC 7 343 GICT 2 | U | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE expense | Ψ - |
| 04FA | OKGE | OKGE | 54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2 | 493 | 103.7 | 103.8 | 54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT 1 | 0 | and use the operating directive until 2008 | e |
| | | | 57343 WJCCTYE3 115 to 57342 WJCCTY 3 115 CKT 1 | 141 | 112.0 | 112.5 | 56766 JEC N 7 345 to 56773 SUMMIT 7 345 CKT 1 | 0 | Westar Transmission Operating Directive 402 | \$ - |
| U4FA | WEKE | WEKE | 5/343 WJCC11E3 113 to 5/342 WJCC11 3 113 CK1 1 | 141 | 112.0 | 112.0 | 30700 JEC N 7 343 to 30773 30WWIT 7 343 CKT T | U | | |
| 04FA | WERE | WERE | 57368 EXIDE J3 115 to 57381 SUMMIT 3 115 CKT 1 | 196 | 105.4 | 105.8 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | Relieved or Impact Removed by Selected Upgrades to be Assigned, Modeled in 03WP | |
| U4FA | WEKE | WEKE | 37306 EXIDE 33 113 to 37361 30MMIN 3 113 CKT 1 | 190 | 103.4 | 100.6 | 30072 EMICFIERO 230 (0 30073 30MINIT 0 230 CRT 1 | U | | |
| 0.454 | WEDE | WEDE | 57070 DUN 1000 445 to 57074 ODUN D 10 445 OVT 4 | 400 | 440.5 | 444.0 | 50070 FMORUEDO 000 to 50070 OUNINET O 000 OVT 4 | | Relieved or Impact Removed by Selected Upgrades to be Assigned, | |
| | WERE | WERE | 57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1 | 160 | 110.5 | 111.2 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | Modeled in 03WP | \$ - |
| U4FA | WERE | WERE | 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1 | 68 | 119.2 | 120.0 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | See Previous | \$ - |
| 04FA | WEDE | WEDE | 57074 ODLUL D 10 445 to 57400 WMAODU EDO 445 OVT 0 | 00 | 4040 | 4047 | 50070 FMORUEDO 000 to 50070 OUNINET O 000 OVT 4 | | Upgrade Same as North American Phillips Junction (South) - West | |
| | WERE | | 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 2 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 92 236 | 104.0 | 104.7 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | McPherson 115kV Ckt 1 Dolet Hills Operating Guide | 3 - |
| | | SWPA | | | 102.1 | 102.5 | | | . 5 | \$ - |
| | SWPA | | 52774*EUFAULA4 138 WND 2 EUFAULA1 1 | 105 | 117.9 | 118.7 | 52752 GORE 5 161 to 52790 WELEETK5 161 CKT 1 | 0 | See Previous | \$ - |
| | SWPA | SWPA | 52774*EUFAULA4 138 WND 2 EUFAULA1 1 | 105 | 118.2 | 119.1 | 52790 WELEETK5 161 to 52792 WELEETK4 138 CKT 1 | 0 | See Previous | |
| | SWPA | SWPA | 52774*EUFAULA4 138 WND 2 EUFAULA1 1 | 105 | 106.2 | 107 | 54003 WISTER-2 69 to 54026 REDOAK-2 69 CKT 1 | 0 | See Previous | \$ - |
| | SWPA | SWPA | 52774*EUFAULA4 138 WND 2 EUFAULA1 1 | 105 | 107.6 | 108.5 | 54003 WISTER-2 69 to 55259 HOWEIN 2 69 CKT 1 | 0 | See Previous | \$ - |
| 04WP | SWPA | SWPA | 52774*EUFAULA4 138 WND 2 EUFAULA1 1 | 105 | 107.9 | 109.4 | 54033 PITTSB-7 345 to 55224 MUSKOGE7 345 CKT 1 | 0 | See Previous | \$ - |
| 041475 | A E D. 47 | AEDIA: | E2002 CATOOCA4 420 to F0700 LLAN ET 4 400 C/T 1 | 205 | 101.0 | 100.5 | E2707 MEMINIA 7 245 to E2700 MEMINIA 4 400 CVT | _ | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| 04WP | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 101.9 | 102.5 | 53767 WEKIWA-7 345 to 53769 WEKIWA-4 138 CKT 1 | 0 | peak Person No. 19 - 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2 | a - |
| OANAD | A EDVA | AEDM. | 52002 CATOOS A4 420 to 52702 LLAN 5T4 420 CVT 4 | 225 | 101.0 | 100.5 | E2767 MEVIMA 7 245 to 52000 T NO 7 245 OVT 4 | _ | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| 04WP | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 101.9 | 102.5 | 53767 WEKIWA-7 345 to 53866 T.NO7 345 CKT 1 | 0 | peak Person No. 19 - 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2 | a - |
| 0.414/D | 4 ED.4 | A = D) | 50000 0 ATOOO A 4 400 to 50700 LL AN ET 4 400 CVT 4 | 005 | 400.0 | 104.4 | 50704 DA404 N4 400 to 50040 ONETA A 100 CUT 1 | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| 04WP | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 100.6 | 101.1 | 53781 BA101-N4 138 to 53818 ONETA4 138 CKT 1 | 0 | peak | ٥ - |
| 0.414/D | 4 ED.4 | A = D) | 50000 0 ATOOO A 4 400 to 50700 LL AN ET 4 400 CVT 4 | 005 | 404.6 | 404.0 | 50040 ONETA 7.045 to 50055 N.E.O. 7.015 COT. | | Incorrect rating in the non-summer cases. New Rate B = 265MVA for off | |
| | AEPW | AEPW | 53802 CATOOSA4 138 to 53783 LLAN ET4 138 CKT 1 | 235 | 101.2 | 101.9 | 53819 ONETA7 345 to 53955 N.E.S7 345 CKT 1 | 0 | peak See Breviews | 3 - |
| | AEPW | | 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 | 105 | 101.9 | 102.9 | 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 | 0 | See Previous | \$ - |
| | GRRD | AEPW | 54438 CATSAGR5 161 to 53802 CATOOSA4 138 CKT 1 | 150 | 108.0 | 108.7 | 53802 CATOOSA4 138 to 54438 CATSAGR5 161 CKT 2 | 0 | None - GRDA Mitigation Plan | \$ - |
| 04WP | GRRD | AEPW | 54438 CATSAGR5 161 to 53802 CATOOSA4 138 CKT 2 | 150 | 108.4 | 109.0 | 53802 CATOOSA4 138 to 54438 CATSAGR5 161 CKT 1 | 0 | None - GRDA Mitigation Plan | \$ - |
| 0.414/D | OKOE | 01/0- | EAGES OLIVELAND IN EAGEA DANTHED 1 100 OUT 1 | 007 | 407.5 | 407.0 | EAGTO LONGONIZA AGO IN EAGTO NIGOTINOT : 100 CITE : | | Replaced 1200A switch with a 2000A switch by OKGE. New Rate A = | |
| | OKGE | OKGE | 54852 SLVRLAK4 138 to 54854 PANTHER4 138 CKT 1 | 287 | 107.5 | 107.8 | 54873 LONEOAK4 138 to 54879 NORTWST4 138 CKT 1 | 0 | 478MVA, Rate B = 478MVA. | \$ - |
| 04WP | WERE | WERE | 57343 WJCCTYE3 115 to 57342 WJCCTY 3 115 CKT 1 | 141 | 100.9 | 101.4 | 56766 JEC N 7 345 to 56773 SUMMIT 7 345 CKT 1 | 0 | Westar Transmission Operating Directive 402 | \$ - |
| 1 | | l | | | l | | | | Relieved or Impact Removed by Selected Upgrades to be Assigned, | |
| 0.01:- | | WERE | 57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1 | 160 | 105.2 | 105.9 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | Modeled in 03WP | \$ - |
| | WERE | | | | | 114.4 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | See Previous | \$ - |
| 04WP | WERE | WERE | 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1 | 68 | 113.6 | | | | | |
| 04WP 1 | WERE CELE | WERE AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 209 | 126.2 | 126.6 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | Dolet Hills Operating Guide | \$ - |
| 04WP 1 09SP 09SP | WERE CELE SPS | WERE AEPW SPS | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 51014 OSAGE3 115 to 51080 CANYNE3 115 CKT 1 | 209 99 | 126.2 106.1 | 126.6 107.3 | 50045 DOLHILLT 345 to 53454 SW SHV 7 345 CKT 1 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT 1 | 0 | Dolet Hills Operating Guide See Previous | \$ - |
| 04WP 1 09SP 09SP 09SP | WERE CELE | WERE AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 209 | 126.2 | 126.6 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | Dolet Hills Operating Guide | \$ - |

| Study | From | То | | | BC % | TC % | | ATC | | |
|-------|-------|------|--|--------|---------|---------|---|------|---|---------------|
| Year | Area | Area | Monitored Branch Over 100% Rate B | Rate B | Loading | Loading | Outaged Branch Causing Overload | (MW) | Solution | Cost |
| 09SP | AEPW | | 53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1 | 312 | 101.3 | 101.4 | 53135 EROGERS5 161 to 53191 AVOCA5 161 CKT 1 | 0 | See Previous | \$ - |
| 09SP | AEPW | | 53170 TONTITN5 161 to 53139 FLINTCR5 161 CKT 1 | 312 | 125.5 | 125.6 | 53139 FLINTCR5 161 to 53154 CHAMSPR5 161 CKT 1 | 0 | See Previous | \$ - |
| 09SP | | AEPW | 54023 OKMULGE4 138 to 54049 EC.HEN-4 138 CKT 1 | 105 | 104.7 | 105.9 | 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 | 0 | See Previous | \$ - |
| 09SP | AEPW | | 54049 EC.HEN-4 138 to 54028 WELETK4 138 CKT 1 | 105 | 100.0 | 101.1 | 54023 OKMULGE4 138 to 54057 KELCO 4 138 CKT 1 | 0 | See Previous | \$ - |
| 09SP | GRRD | AEPW | 54438 CATSAGR5 161 to 53802 CATOOSA4 138 CKT 2 | 150 | 99.5 | 100.1 | 53802 CATOOSA4 138 to 54438 CATSAGR5 161 CKT 1 | 45 | None - GRDA Mitigation Plan | \$ - |
| 09SP | OKGE | OKGE | 54840 JONESTP4 138 to 54941 HSL 4 138 CKT 1 | 287 | 103.1 | 103.4 | 54941 HSL 4 138 to 54973 RENO 4 138 CKT 1 | 0 | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE expense | \$ - |
| 09SP | OKGE | OKGE | 54973 RENO 4 138 to 54941 HSL 4 138 CKT 1 | 287 | 107.4 | 107.7 | 54941 HSL 4 138 to 54966 MIDWAY 4 138 CKT 1 | 0 | Replace switches & ct's at Horseshoe Lake in 2004 at OKGE expense | \$ - |
| 09SP | OKGE | OKGE | 55006 MORRISN4 138 to 55011 STILWTR4 138 CKT 1 | 191 | 104.3 | 104.7 | 54880 NORTWST7 345 to 54881 SPRNGCK7 345 CKT 1 | 0 | Incorrect rating Rate A = 259MVA Rate B = 287MVA | \$ - |
| 09SP | OKGE | OKGE | 55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT 1 | 493 | 107.3 | 107.4 | 55300 FTSMITH5 161 to 55305 FTSMITH8 500 CKT 1 | 0 | Upgrade Same as Ft. Smith 500/161kV Transformer 04SP | \$ - |
| 09SP | OKGE | OKGE | 55305 FTSMITH8 500 to 55300 FTSMITH5 161 CKT 1 | 480 | 116.4 | 116.6 | 55300 FTSMITH5 161 to 55302 FTSMITH7 345 CKT 1 | 0 | See Previous | \$ - |
| 09SP | OKGE | OKGE | 55305 FTSMITH8 500 to 55300 FTSMITH5 161 CKT 1 | 480 | 102.2 | 103.0 | 55302 FTSMITH7 345 to 55305 FTSMITH8 500 CKT 1 | 0 | See Previous | \$ - |
| 09SP | WFEC | OKGE | 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1 | 215 | 100.4 | 100.6 | 54933 DRAPER 4 138 to 54949 SOONRTP4 138 CKT 1 | 0 | See Previous | \$ - |
| 09SP | WFEC | OKGE | 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1 | 215 | 113.6 | 113.9 | 54946 MIDWEST4 138 to 54953 HOLLYWD4 138 CKT 1 | 0 | 1200A CT's installed by WFEC New Rate B = 287MVA | \$ - |
| 09SP | WFEC | OKGE | 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1 | 215 | 111.7 | 112.3 | 55869 CROMWEL4 138 to 56084 WETUMKA4 138 CKT 1 | 0 | See Previous | \$ - |
| 09SP | WFEC | OKGE | 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1 | 215 | 108.9 | 109.5 | 55869 CROMWEL4 138 to 56094 WEWOKA 4 138 CKT 1 | 0 | See Previous | \$ - |
| 09SP | WFEC | OKGE | 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1 | 215 | 111.5 | 112.1 | 56026 PHAROAH4 138 to 56084 WETUMKA4 138 CKT 1 | 0 | See Previous | \$ - |
| 09SP | WERE | WERE | 57796 GILL W 2 69 to 57830 PECK 2 69 CKT 1 | 37 | 103.2 | 104.7 | 57039 ELPASO 4 138 to 57042 FARBER 4 138 CKT 1 | 0 | Limits Rollover Rights beginning 06/01/2008 | \$ - |
| 09SP | KACP | KACP | 58010 WINJT S5 161 to 58000 BLUEVLY5 161 CKT 1 | 224 | 101.2 | 101.8 | 57996 MIDTOWN5 161 to 57997 LEEDS 5 161 CKT 1 | 0 | Limits Rollover Rights beginning 06/01/2009 | \$ - |
| 09SP | KACP | KACP | 58048 COLLEGE5 161 to 57978 CRAIG 5 161 CKT 1 | 335 | 100.6 | 100.8 | 57966 WGARDNR5 161 to 58044 MOONLT 5 161 CKT 1 | 0 | Limits Rollover Rights beginning 06/01/2009 | \$ - |
| 09SP | KACP | KACP | 58048 COLLEGE5 161 to 57978 CRAIG 5 161 CKT 1 | 335 | 106.3 | 106.6 | 58033 BRKRIDG5 161 to 58047 OVERLPK5 161 CKT 1 | 0 | Limits Rollover Rights beginning 06/01/2008 | \$ - |
| 09WP | CELE | AEPW | 50090 IPAPER 4 138 to 53461 WALLAKE4 138 CKT 1 | 236 | 120.7 | 121.1 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | Dolet Hills Operating Guide | \$ - |
| 09WP | AEPW | AEPW | 53461 WALLAKE4 138 to 53446 S SHV 4 138 CKT 1 | 210 | 102.6 | 103.0 | 50045 DOLHILL7 345 to 53454 SW SHV 7 345 CKT 1 | 0 | See Previous | \$ - |
| 09WP | OKGE | OKGE | 54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 1 | 493 | 105.0 | 105.1 | 54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT 2 | 0 | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE expense and use the operating directive until 2008 | s - |
| USVVI | ONGL | ONGL | 34934 BIKAI ER 7 343 to 34933 BIKAI ER 4 130 CRT 1 | 433 | 100.0 | 100.1 | 34933 BIKAI EK 4 130 to 34934 BIKAI EK 7 343 CKT 2 | - 0 | Add third 345 - 138 kV transformer at Draper in 2008 at OKGE expense | Ψ |
| 09WP | OKGE | | 54934 DRAPER 7 345 to 54933 DRAPER 4 138 CKT 2 | 493 | 105.0 | 105.1 | 54933 DRAPER 4 138 to 54934 DRAPER 7 345 CKT 1 | 0 | and use the operating directive until 2008 | \$ - |
| 09WP | WERE | WERE | 57342 WJCCTY 3 115 to 57344 WJCCTYW3 115 CKT 1 | 141 | 100.2 | 100.6 | 56766 JEC N 7 345 to 56773 SUMMIT 7 345 CKT 1 | 0 | Westar Transmission Operating Directive 402 | \$ - |
| 09WP | WERE | WEDE | 57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1 | 160 | 113.2 | 114.0 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | Relieved or Impact Removed by Selected Upgrades to be Assigned, Modeled in 03WP | • |
| 09WP | WERE | | 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1 | 68 | 122.1 | 123.0 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | See Previous | \$ - |
| USVVP | VVERE | WENE | 3/3/4 3/ 1/1/EF33 113 to 3/430 WIWICFFIER3 113 CKT 1 | 00 | 122.1 | 123.0 | 30072 LINIOFFIERO 230 (0 30073 30)WIWII 1 6 230 CKT T | U | Upgrade Same as North American Phillips Junction (South) - West | Ψ - |
| 09WP | WERE | WERE | 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 2 | 92 | 106.6 | 107.3 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | Opgrade Same as North American Phillips Junction (South) - West McPherson 115kV Ckt 1 | \$ - |
| 09WP | WERE | WERE | 57381 SUMMIT 3 115 to 57368 EXIDE J3 115 CKT 1 | 196 | 103.2 | 103.6 | 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 | 0 | Relieved or Impact Removed by Selected Upgrades to be Assigned, Modeled in 03WP | \$ - |
| | | | | | | | | | | \$ 28,275,000 |
| | | | | | | | | - | | , ., |