



Screening Study

SPP-LTSR-2013-012

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SPP Engineering, SPP Transmission Service Studies



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Executive Summary

American Electric Power has requested a Screening Study to determine the impacts on SPP facilities due to the Long Term Service Requests for 599 MW. The service type requested for this screening study is Long Term Service Request (LTSR). OASIS# 78485385, 78485570, and 78485364 was studied as one request from 1/1/2016 to 12/1/2026.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the LTSR request while maintaining system reliability. The LTSR request was studied using two system scenarios. The service was modeled by the transfers from OKGE to AEPW. The two scenarios were studied to capture system limitations caused or impacted by the requested service. An analysis was conducted on the planning horizon from 1/1/2016 to 12/1/2026.

The service was modeled from OKGE to AEPW. Facilities on the SPP system were identified for the requested service due to the SPP Study Methodology criteria. Tables 1 and 2 summarize the results of the screening study analysis for the transfers for the scenarios listed in the table. Table 1 lists SPP thermal transfer limitations identified. Table 2 lists SPP voltage transfer limitations identified. Table 3 lists the network upgrades required to mitigate the limitations impacted by this request.

Introduction

American Electric Power has requested a screening study to determine the impacts on SPP facilities for the Long Term Service Requests for 599 MW.

The purpose of the LTSR Option Screening Study is to provide the Eligible Customer with an approximation of the transmission remediation costs of each potential LTSR and a reasonable cost differential between alternatives for the purpose of an Eligible Customer's ranking of its potential LTSRs. The results of the Screening Study are not binding and the Eligible Customer retains the rights to enter the Aggregate Transmission Service Study. The Screening Study results will not assess the third party impacts and upgrades required. Service will not be granted based on the Screening Study for potential LTSRs on the Transmission System. To obtain a Service Agreement, Eligible Customers must apply for service and follow the application process set forth in Parts II and III of the Tariff.

This study includes steady-state contingency analysis (PSS/E function ACCC). The steady-state analysis considers the impact of the request on transmission line and transformer loadings for outages of single transmission lines, transformers, and generating units, and selected multiple transmission lines and transformers on the SPP and first-tier third party systems.

The LTSR request was studied using two system scenarios. The service was modeled by a transfer from SPS to SPS. The two scenarios were studied to capture the system limitations caused or impacted by the requested service. Scenario 0 includes projected usage of transmission service included in the SPP 2012 Series Cases. Scenario 5 includes transmission service not already included in the SPP 2012 Series Cases.

Study Methodology

Description

The facility study analysis was conducted to determine the steady-state impact of the requested service on the SPP system. The steady-state analysis was performed to ensure current SPP Criteria and NERC Reliability Standards requirements are fulfilled. SPP conforms to NERC Reliability Standards, which provide strict requirements related to voltage violations and thermal overloads during normal conditions and during a contingency. NERC Standards require all facilities to be within normal operating ratings for normal system conditions and within emergency ratings after a contingency.

Normal operating ratings and emergency operating ratings monitored are Rate A and B in the SPP Model Development Working Group (MDWG) models, respectively. The upper bound and lower bound of the normal voltage range monitored is 105% and 95%. The upper bound and lower bound of the emergency voltage range monitored is 105% and 90%. Transmission Owner voltage monitoring criteria is used if more restrictive. The SPS Tuco 230 kV bus voltage is monitored at 92.5% due to pre-determined system stability limitations. The WERE Wolf Creek 345 kV bus voltage is monitored at 103.5% and 98.5% due to transmission operating procedure.

The contingency set includes all SPP control area branches and ties 69 kV and above; first tier non-SPP control area branches and ties 115 kV and above; any defined contingencies for these control areas; and generation unit outages for the control areas with SPP reserve share program redispatch. The monitor elements include all SPP control area branches, ties, and buses 69 kV. and above,. Voltage monitoring was performed for SPP control area buses 69 kV and above.

A 3 % transfer distribution factor (TDF) cutoff was applied to all SPP control area facilities. For voltage monitoring, a 0.02 per unit change in voltage must occur due to the transfer or modeling upgrades to be considered a valid limit to the transfer.

Model Development

SPP used four seasonal models to study the OKGE to AEPW 599 MW request for the requested service period. The following SPP Transmission Expansion Plan 2012 Build 1 Cases were used to study the impact of the requested service on the transmission system:

2014/15 Winter Peak (14WP)
2018 Summer Peak (18SP)
2018/19 Winter Peak (18WP)
2023 Summer Peak (23SP)
2023/24 Winter Peak (23WP)

The Summer Peak models apply to June through September, and the Winter Peak models apply to December through March.

The chosen base case models were modified to reflect the current modeling information. From the six seasonal models, two system scenarios were developed. Scenario 0 includes projected usage of transmission included in the SPP 2012 Series Cases. Scenario 5 includes transmission not already included in the SPP 2012 Series Cases.

Transmission Request Modeling

Network Integration Transmission Service requests are modeled as Generation to Load transfers in addition to Generation to Generation because the requested Network Integration Transmission Service is a request to serve network load with the new designated network resource, and the impacts on the Transmission System are determined accordingly. Generation to Generation transfers are accomplished by developing a post-transfer case for comparison by dispatching the request source and redispatching the request sink.

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. Transfer distribution factor cutoffs and voltage threshold (0.02 change) were applied to determine the impacted facilities. The PSS/E options chosen to conduct the analysis can be found in Appendix A.

Study Results

Study Analysis Results

Tables 1 and 2 contain the initial steady-state analysis results of the LTSR. The tables are attached to the end of this report, if applicable. The tables identify the scenario and season in which the event occurred, the transfer amount studied, the facility control area location, applicable ratings of the thermal transfer limitations and voltage transfer limitations, and the loading percentage and voltage per unit (pu).

Table 1 lists the SPP thermal transfer limitations caused or impacted by the 599 MW requested transfers for applicable scenarios. Solutions are identified for the limitations in this table.

Table 2 lists the SPP voltage transfer limitations caused or impacted by the 599 MW requested transfers for applicable scenarios. Solutions are identified for the violations in this table.

Table 3 lists the network upgrades required to mitigate the limitations caused or impacted by this request. Engineering and construction costs are provided for assigned upgrades in this table.

Conclusion

The results of the screening study show that limiting constraints exist within the SPP regional transmission system for the requested transfer of 599 MW. The next steps are to WITHDRAW the request on OASIS and, if desired, enter a new OASIS request into the aggregate study queue.

The results contained in this study are for informational purposes only. Service will not be granted based on the Screening Study results. To obtain a Service Agreement, Eligible Customers must apply for service and follow the application processes set forth in Parts II and III of the Tariff and enter the Aggregate Study process. The results of the Aggregate Study may vary from the results of this screening study.

As a final step in this process, it is requested that the customer WITHDRAW the LTSR screening study request on OASIS.

Appendix A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASE SETTINGS:

- Solutions: Fixed slope decoupled Newton-Raphson solution (FDNS)
- Tap adjustment: Stepping
- Area Interchange Control: Tie lines and loads
- Var limits: Apply immediately
- Solution Options:
 - Phase shift adjustment
 - Flat start
 - Lock DC taps
 - Lock switched shunts

ACCC CASE SETTINGS:

- Solutions: AC contingency checking (ACCC)
- MW mismatch tolerance: 0.5
- System intact rating: Rate A
- Contingency case rating: Rate B
- Percent of rating: 100
- Output code: Summary
- Min flow change in overload report: 3mw
- Excl'd cases w/ no overloads from report: YES
- Exclude interfaces from report: NO
- Perform voltage limit check: YES
- Elements in available capacity table: 60000
- Cutoff threshold for available capacity table: 99999.0
- Min. contng. Case Vltg chng for report: 0.02
- Sorted output: None
- Newton Solution:
- Tap adjustment: Stepping
- Area interchange control: Tie lines and loads (Disabled for generator outages)
- Var limits: Apply immediately
- Solution options:
 - Phase shift adjustment
 - Flat start
 - Lock DC taps
 - Lock switched shunts

Scenario	Season	From Area	To Area	Monitored Branch Over 100% Rate B	Transfer Case % Loading	TDF (%)	Outaged Branch Causing Overload	Upgrade Name	Solution
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	114.8	15.15%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	113.8	15.99%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.8	14.69%	SPP-WERE-91	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18SP	AEPW	AEPW	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	113.5	4.36%	COFFEYVILLE FARMLAND - DELAWARE 138KV CKT 1	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	Rebuild 3.8 miles with 1533.3 ACSR/TW
5	18SP	AEPW	AEPW	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	113.4	4.36%	DELAWARE (DELAWARE) 345/138/13.8KV TRANSFORMER CKT 1	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	Rebuild 3.8 miles with 1533.3 ACSR/TW
5	18SP	AEPW	AEPW	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	107.5	4.17%	4REMINGTON 138.00 - FAIRFAX 138KV CKT 1	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	Rebuild 3.8 miles with 1533.3 ACSR/TW
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.4	14.21%	WRTOD400	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.0	14.20%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	106.4	13.91%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.1	16.26%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.2	15.41%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	118.2	13.86%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	114.8	15.15%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	113.8	15.99%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.8	14.69%	SPP-WERE-91	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.4	14.21%	WRTOD400	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.0	14.20%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.9	14.69%	SPP-WERE-90	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.9	14.69%	SPP-WERE-90	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	111.7	10.93%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	111.7	10.93%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	100.4	10.79%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.1	16.26%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	100.4	10.79%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	118.2	13.86%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	106.4	13.91%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	103.3	3.08%	BBDMTP4 - MOUNTAIN RIVER 138KV CKT 1	ENOWILT - LONE OAK 138KV CKT 1	Rebuild 0.32 miles of 3/0 CWC with 1272 ACSR. Replace jumpers @ Lone Oak
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.2	15.41%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Clearwater 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	101.3	3.08%	CRAIG JUNCTION - MOUNTAIN RIVER 138KV CKT 1	ENOWILT - LONE OAK 138KV CKT 1	Rebuild 0.32 miles of 3/0 CWC with 1272 ACSR. Replace jumpers @ Lone Oak
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	114.8	15.15%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	23SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	128.8	7.16%	CHAMBER SPRINGS - TONTITOWN 345KV CKT 1	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Rebuild and reconductor 11.1-mile 161 kV line from Chamber Springs to Farmington REC with 2-959.6 ACSR/TW. Upgrade wavetraps, CT ratios, and relay settings at Chamber Springs.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	113.8	15.99%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.8	14.69%	SPP-WERE-91	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	23SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	128.7	7.16%	TONTITOWN () 345/161/13.8KV TRANSFORMER CKT 1	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Rebuild and reconductor 11.1-mile 161 kV line from Chamber Springs to Farmington REC with 2-959.6 ACSR/TW. Upgrade wavetraps, CT ratios, and relay settings at Chamber Springs.
5	23SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	121.0	3.30%	DYESS - SOUTH SPRINGDALE 161KV CKT 1	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Rebuild and reconductor 11.1-mile 161 kV line from Chamber Springs to Farmington REC with 2-959.6 ACSR/TW. Upgrade wavetraps, CT ratios, and relay settings at Chamber Springs.
5	23SP	AEPW	AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	108.5	3.98%	BASE CASE	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Rebuild and reconductor 11.1-mile 161 kV line from Chamber Springs to Farmington REC with 2-959.6 ACSR/TW. Upgrade wavetraps, CT ratios, and relay settings at Chamber Springs.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.4	14.21%	WRTOD400	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.0	14.20%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	18SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	131.8	5.09%	BENTON - WICHITA 345KV CKT 1	CHISHOLM - MAIZEE 138KV CKT 1 #1	Upgrade disconnect switches, wavetraps, breaker, jumpers
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.9	14.69%	SPP-WERE-90	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	111.7	10.93%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	23SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	128.7	3.92%	BENTON - WICHITA 345KV CKT 1	CHISHOLM - MAIZEE 138KV CKT 1 #1	Upgrade disconnect switches, wavetraps, breaker, jumpers
5	14WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	110.5	14.68%	ARCADIA - SEMINOLE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	14WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	105.5	12.95%	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	14WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	101.3	13.36%	CLEVELAND - SOONER 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	100.4	10.79%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.1	16.26%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	18WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	116.0	13.71%	ARCADIA - SEMINOLE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	18WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	113.2	12.54%	GRACEMONT - MINOQ 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	118.2	13.86%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	18WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	104.7	13.95%	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	106.4	13.91%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.2	15.41%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola - Gill 138KV Ckt1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	23SP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	104.1	16.00%	ARCADIA - SEMINOLE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23SP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	100.9	14.26%	GEN515042 1-SEMINOLE 3G	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	114.8	15.15%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	131.0	18.63%	ARCADIA - SEMINOLE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	118.9	19.40%	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	118.6	17.16%	CLEVELAND - SOONER 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	112.3	16.32%	SPP-AEPW-32	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	111.0	16.17%	OG3TERM14	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	110.8	16.12%	OG3TERM12	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	110.1	16.16%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	109.8	16.13%	LACYGNE - NEOSHO 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	109.7	16.16%	HOYT - STRANGER CREEK 345KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	109.1	16.11%	QUANEX TAP - QUANEXSS 161.00 161KV CKT 1	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	23WP	OKGE	OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	108.1	16.11%	BASE CASE	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	113.8	15.99%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18WP	OKGE	OKGE	CIMARRON - NORTHWEST 345KV CKT 1	101.1	28.66%	CIMARRON - WOODRING 345KV CKT 1	CIMARRON - NORTHWEST 345KV CKT 1	Rebuild 12.050 miles of line
5	18WP	OKGE	OKGE	CIMARRON - SARA 138KV CKT 1	105.2	4.02%	CIMARRON - DRAPER LAKE 345KV CKT 1	CIMARRON - SARA 138KV CKT 1	Rebuild 9.56 miles of line
5	23SP	OKGE	OKGE	CIMARRON (CIMARRON1) 345/138/13.8KV TRANSFORMER CKT 1	101.0	5.93%	CIMARRON (CIMARRON2) 345/138/13.8KV TRANSFORMER CKT 1	CIMARRON (CIMARRON2) 345/138/13.8KV TRANSFORMER CKT 1	Install new 345/138 kV transformer at Cimarron substation
5	14WP	KCPD	KCPD	EASTOWN7 345.00 - IATAN 345KV CKT 1	101.1	3.99%	87th STREET - STRANGER CREEK 345KV CKT 1	IATAN - NASHUA 345KV CKT 1	Tap Nashua 345KV bus in Hawthorn - St. Joseph 345 kV line. Build new 345 kV line from Iatan to Nashua. Add Nashua 345/161 kV
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.8	14.69%	SPP-WERE-91	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation

5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.4	14.21%	WRT0D400	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18SP	OKGE	OKGE	EL RENO - ROMAN NOSE 138KV CKT 1	107.0	5.00%	BASE CASE	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.0	14.20%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.9	14.69%	SPP-WERE-90	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18SP	OKGE	OKGE	EL RENO - ROMAN NOSE 138KV CKT 1	103.0	6.39%	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	EL RENO - ROMAN NOSE 138KV CKT 1	102.1	5.12%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	EL RENO - ROMAN NOSE 138KV CKT 1	101.0	5.43%	DEWEY - TALOGA 138KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	112.9	3.54%	ELK CITY - FALCON ROAD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	111.7	10.93%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	100.4	10.79%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	147.6	4.74%	ELK CITY - FALCON ROAD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	140.6	4.04%	BASE CASE	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	129.8	4.74%	MOREWOOD SW - MORWOOD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	129.8	4.74%	BRANTLEY - MORWOOD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	120.3	4.13%	SPP-SWPS-04	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	117.5	4.47%	SPP-SWPS-02A	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	116.5	4.32%	SPP-SWPS-03	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	114.9	4.04%	MOREWOOD SW (MOREWOOD) 138/69/13.8KV TRANSFORMER CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18WP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	126.9	5.43%	ELK CITY - FALCON ROAD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18WP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	106.4	5.43%	MOREWOOD SW - MORWOOD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18WP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	106.4	5.43%	BRANTLEY - MORWOOD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	18WP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	103.7	4.64%	BASE CASE	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	171.8	4.90%	ELK CITY - FALCON ROAD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	123.7	4.19%	BASE CASE	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	112.8	4.90%	MOREWOOD SW - MORWOOD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	112.7	4.90%	BRANTLEY - MORWOOD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	105.8	4.27%	SPP-SWPS-04	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23SP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	101.5	4.19%	MOREWOOD SW (MOREWOOD) 138/69/13.8KV TRANSFORMER CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	23WP	WFEC	AEPW	ELK CITY - RED HILLS WIND 138KV CKT 1	144.0	4.16%	ELK CITY - FALCON ROAD 138KV CKT 1	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	102.1	16.26%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18SP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	118.2	13.96%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23SP	WERE	WERE	EMPORIA ENERGY CENTER - SWISSVALE 345KV CKT 1	101.9	5.10%	WRT0D400	latan - Jeffrey Energy Center 345 KV KACP	Build 14.2 miles of new 345 kV
5	23SP	WERE	WERE	EMPORIA ENERGY CENTER - SWISSVALE 345KV CKT 1	101.0	5.08%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	latan - Jeffrey Energy Center 345 KV KACP	Build 14.2 miles of new 345 kV
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	106.4	13.91%	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	18SP	WERE	WERE	EVANS ENERGY CENTER NORTH - MAIZEW 4 138.00 138KV CKT 1	136.1	5.09%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	14WP	WERE	WERE	BENTON - WICHITA 345KV CKT 1	101.2	15.41%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	101.4	3.50%	GENS24286 1-CLR 3 0.6900	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	23SP	WERE	WERE	EVANS ENERGY CENTER NORTH - MAIZEW 4 138.00 138KV CKT 1	133.6	3.92%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23SP	GRDA	AEPW	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1	106.2	14.84%	ZJASPER 345.00 - BLACKBERRY 345KV CKT 1	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1 AEPW	Replace Terminal Equipment
5	23SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.1	4.14%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	23SP	GRDA	AEPW	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1	101.5	14.91%	ZJASPER 345.00 - MORGAN 345KV CKT 1	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1 AEPW	Replace Terminal Equipment
5	23SP	GRDA	AEPW	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1	101.0	13.70%	GENS02984 1-FLINT CREEK	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1 AEPW	Replace Terminal Equipment
5	23WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	116.4	3.21%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	104.6	16.73%	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	103.2	14.90%	GENS20998 1-MORIND3	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	103.0	15.17%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.5	3.04%	SPP-SWPS-K31	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	14WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	110.3	4.13%	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18WP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	115.6	17.18%	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	114.4	15.68%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	23WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	115.3	3.24%	SPP-SWPS-K31	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18WP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	113.2	15.29%	GENS20997 1-MORIND2	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	103.5	16.44%	SPP-SWPS-04	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	WFEC	FPL SWITCH - MOORELAND 138KV CKT 1	101.0	16.06%	SPP-SWPS-32	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	148.3	16.73%	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	144.2	15.17%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.8	3.01%	INTERCHANGE 230KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	141.1	14.90%	GENS20998 1-MORIND3	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	129.0	14.90%	BASE CASE	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	122.7	15.02%	SPP-SWPS-04	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	117.4	14.93%	SPP-SWPS-K31	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	116.8	14.91%	WRT0D400	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	119.7	14.91%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	116.2	14.93%	LACYGNE - NEOSHO 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	114.9	14.91%	HOYT - STRANGER CREEK 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.5	4.33%	BASE CASE	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	138.3	17.18%	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	135.3	15.65%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	131.5	18.05%	IODINE - WOODWARD EHV 138KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	119.0	15.29%	BASE CASE	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	118.4	15.44%	SPP-SWPS-04	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	114.1	18.05%	SPP-SWPS-32	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	113.4	15.33%	SPP-SWPS-K31	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	113.3	15.33%	LACYGNE - NEOSHO 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	112.2	4.25%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.8	4.28%	SPP-SWPS-K31	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	23WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	102.2	14.48%	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	23WP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	101.7	14.02%	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	Mathewson - Tatonga 345 KV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.7	3.85%	HITCHLAND INTERCHANGE (H TP90148301) 230/115/13.2KV TRANSFORMER CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	OKGE	WFEC	FRANKLIN SW - MIDWEST					

5	18SP	WFEC	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.6	4.93%	CEDARDALE - OKEENE 138KV CKT 1	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	Reset CT
5	18SP	WFEC	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	102.7	4.58%	SPP-AEPW-32	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	Reset CT
5	23WP	SWPA	SWPA	COORE - MUSKOGEE TAP 161KV CKT 1	114.1	3.13%	FT SMITH - MUSKOGEE 345KV CKT 1	Muskogee - VBI 345 kv with 345/161 kv bus tie near VBI	Build 70.95 mile 345 kv line plus two new 345/161 kv bus ties near VBI sub and 10 miles of 161 kv line
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.5	4.33%	SPP-SWPS-K39	Elk City 345/230 kv	Expand Elk City substation (or build new station). Install a 345/230 kv 675 MVA transformer at Elk City.
5	18SP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	100.2	6.45%	PITTSBURG - SEMINOLE 345KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	18WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	106.7	6.97%	PITTSBURG - SEMINOLE 345KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	18WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	102.0	5.24%	BASE CASE	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	116.7	4.65%	HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1	Elk City 345/230 kv	Expand Elk City substation (or build new station). Install a 345/230 kv 675 MVA transformer at Elk City.
5	18WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	100.7	6.17%	CIMARRON - DRAPER LAKE 345KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	121.3	5.16%	SPP-SWPS-K31	Elk City 345/230 kv	Expand Elk City substation (or build new station). Install a 345/230 kv 675 MVA transformer at Elk City.
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.1	4.31%	SPP-SWPS-V29	Elk City 345/230 kv	Expand Elk City substation (or build new station). Install a 345/230 kv 675 MVA transformer at Elk City.
5	23SP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	106.4	5.42%	BASE CASE	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	101.4	3.50%	GEN524286 1-CLR 3 0.6900	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23SP	OKGE	AEPW	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.1	4.14%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23SP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	103.6	6.68%	CIMARRON - DRAPER LAKE 345KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23SP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	102.0	5.42%	GEN511851 1-COMANCHE #1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	116.4	3.21%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23SP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	101.7	5.42%	GEN560738 1-G13 016 2 18.000	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	14WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.5	3.04%	SPP-SWPS-K31	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	14WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	110.3	4.13%	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	112.3	8.48%	BASE CASE	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	115.3	3.24%	SPP-SWPS-K31	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	14WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.8	3.01%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	110.6	9.90%	CIMARRON - DRAPER LAKE 345KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	107.7	8.48%	GEN562308 1-G12-037 18.000	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	107.2	8.66%	ELGIN JUNCTION - SOUTHWESTERN STATION 138KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	105.2	8.14%	SPP-SWPS-02	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	104.2	8.57%	SPP-SWPS-04	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.5	4.33%	BASE CASE	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	104.1	8.61%	OGESTERM41	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	103.2	8.64%	DOLET HILLS - SOUTHWEST SHREVEPORT 345KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	23WP	OKGE	AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	101.6	8.48%	LAWTON WESTSIDE NORTH - LAWTON WESTSIDE NORTH TAP 138KV CKT 1	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1	Accelerate Replace Terminal Equipment
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	141.6	4.80%	AXTELL - PAULINE 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	129.8	4.30%	MOORE - PAULINE 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	113.2	3.54%	HOYT - STRANGER CREEK 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	112.9	3.67%	SPP-AEPW-32	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	111.5	3.46%	LACYGNE - STILWELL 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	111.3	3.49%	LN-1090	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	18SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	112.2	4.25%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	110.3	3.44%	NORTH PLATTE 115/34.5KV TRANSFORMER CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	110.0	3.44%	LACYGNE - WEST GARDNER 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	14WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	109.1	3.44%	BASE CASE	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	18SP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	104.9	3.49%	AXTELL - PAULINE 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	18WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	113.5	3.85%	AXTELL - PAULINE 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	18SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.8	4.28%	SPP-SWPS-K31	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	18WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	107.6	3.17%	CHERRYCK3 345.00 - GERALD GENTLEMAN STATION 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	18WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	106.9	3.17%	CHERRYCK3 345.00 - HOLT.CO3 345.00 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	23WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	111.6	3.64%	AXTELL - PAULINE 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	23WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	108.6	3.12%	CHERRYCK3 345.00 - GERALD GENTLEMAN STATION 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	23WP	NPPD	NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 1	108.0	3.12%	CHERRYCK3 345.00 - HOLT.CO3 345.00 345KV CKT 1	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit
5	18WP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	117.1	18.27%	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	18WP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	109.4	16.74%	7JASPER - 345.00 - BLACKBERRY 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	18WP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	108.1	15.72%	7JASPER - 345.00 - MORGAN 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	122.6	18.55%	7JASPER - 345.00 - BLACKBERRY 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	119.0	16.31%	GEN509394 1-FLINT CREEK	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	118.3	16.51%	7JASPER - 345.00 - MORGAN 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	103.3	15.30%	SPP-AEPW-32	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	103.2	16.20%	SPP-GRDA-03	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	102.8	16.34%	WRT0D400	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	102.7	16.34%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	101.8	16.34%	HOYT - STRANGER CREEK 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	18SP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.7	3.85%	HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	101.2	15.32%	LACYGNE - WEST GARDNER 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	100.9	15.31%	15TH & FULTON TAP - TULSA SOUTHEAST 138KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23SP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	100.3	15.31%	BASE CASE	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	23WP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	109.3	4.58%	7JASPER - 345.00 - BLACKBERRY 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.4	4.33%	TEXAS COUNTY INTERCHANGE - T1 County REC-Whiting Sub 115KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23WP	GRDA	GRDA	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1	106.6	4.45%	7JASPER - 345.00 - MORGAN 345KV CKT 1	GRDA1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	123.3	5.12%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	18WP	SPS	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.2	4.36%	LACYGNE - NEOSHO 345KV CKT 1	Elk City to Gracemont 345KV AEPW	Build new 46.5 mile 345 kv line from Elk City to Gracemont (AEP portion).
5	23WP	GRDA	OKGE	HIGHWAY 89 - TAHLEQUAH 161KV CKT 1	122.5	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	Muskogee - VBI 345 kv with 345/161 kv bus tie near VBI	Build 70.95 mile 345 kv line plus two new 345/161 kv bus ties near VBI sub and 10 miles of 161 kv line
5	23WP	OKGE	OKGE	HIGHWAY 89 - VBI 161KV CKT 1	130.8	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	Muskogee - VBI 345 kv with 345/161 kv bus tie near VBI	Build 70.95 mile 345 kv line plus two new 345/161 kv bus ties near VBI sub and 10 miles of 161 kv line
5	14WP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	116.7	4.55%	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV CKT 1	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345KV line as a single circuit with new conductor, poles, and shield wire and substation work
5	14WP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	116.2	5.51%	SWISSVALE - WEST GARDNER 345KV CKT 1	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345KV line as a single circuit with new conductor, poles, and shield wire and substation work
5	14WP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	116.1	3.81%	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345KV line as a single circuit with new conductor, poles, and shield wire and substation work
5	14WP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	105.6	4.33%	LACYGNE - STILWELL 345KV CKT 1	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345KV line as a single circuit with new conductor, poles, and shield wire and substation work
5	14WP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	103.9	3.87%	SJHALKNAJASC	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345KV line as a single circuit with new conductor, poles, and shield wire and substation work
5	14WP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	103.0	4.29%	AUBURN ROAD (AUBURN) 230/115/13.8KV TRANSFORMER CKT 1	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345KV line as a single circuit with new conductor, poles, and shield wire and substation work
5	14WP	WERE	WERE	HOYT - JEFFRE					

Line	Year	Category	Facility Name	Capacity (MW)	Efficiency (%)	Notes	Location	Notes
5	14WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	110.3	4.13%	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18SP	OKGE	KINZE - MCELROY 138KV CKT 1	107.1	4.47%	CLEVELAND - SOONER 345KV CKT 1	KINZE - MCELROY 138KV CKT 1	Rebuild 1.97 miles
5	23SP	OKGE	KINZE - MCELROY 138KV CKT 1	107.1	4.68%	CLEVELAND - SOONER 345KV CKT 1	KINZE - MCELROY 138KV CKT 1	Rebuild 1.97 miles
5	23WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	115.3	3.24%	SPP-SWPS-K31	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	AEPW	LYDIA - VALLIANT 345KV CKT 1	117.8	25.43%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	23SP	AEPW	LYDIA - VALLIANT 345KV CKT 1	101.6	20.80%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	23WP	AEPW	LYDIA - VALLIANT 345KV CKT 1	112.6	43.48%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	18SP	WERE	MAIZE - MAIZEE 4 138.00 138KV CKT 1	105.3	5.09%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138KV transformer at Viola substation
5	23SP	WERE	MAIZE - MAIZEE 4 138.00 138KV CKT 1	102.8	3.92%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138KV transformer at Viola substation
5	18SP	WERE	MAIZE - MAIZEW 4 138.00 138KV CKT 1	108.8	5.09%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138KV transformer at Viola substation
5	23SP	WERE	MAIZE - MAIZEW 4 138.00 138KV CKT 1	106.8	3.92%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138KV transformer at Viola substation
5	23SP	OKGE	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	104.2	52.17%	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	Rebuild 59.63 miles of line
5	23WP	OKGE	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	105.9	51.18%	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	Rebuild 59.63 miles of line
5	23SP	WFEC	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	100.9	4.90%	ELK CITY - FALCON ROAD 138KV CKT 1	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to MOREWOOD TO 1113
5	14WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.8	3.01%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.5	4.33%	BASE CASE	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18SP	SUNC	MULLERGREEN - SPEARVILLE 230KV CKT 1	103.1	3.09%	POST ROCK - SPEARVILLE 345KV CKT 1	MULLERGREEN - SPEARVILLE 230KV CKT 1	Rebuild 65 miles
5	18SP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	112.2	4.25%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18SP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.8	4.28%	SPP-SWPS-K31	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	WERE	EMDNE NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	110.1	4.00%	BLACKBERRY - NEOSHO 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	18WP	WERE	EMDNE NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	105.8	3.32%	7JASPER 345.00 - BLACKBERRY 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	23SP	WERE	EMDNE NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	102.3	3.59%	7JASPER 345.00 - BLACKBERRY 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	23SP	WERE	EMDNE NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	102.1	4.30%	BLACKBERRY - NEOSHO 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	18SP	AEPW	NORTH NEW BOSTON - NW TEXARKANA-BANN T 138KV CKT 1	106.0	3.43%	PATTERSON - SOUTH FOREMAN REC 138KV CKT 1	NORTH NEW BOSTON - NW TEXARKANA-BANN T 138KV CKT 1	Rebuild 14.19 miles to 1533.6 ACSR/TW 54/19
5	23SP	AEPW	NORTH NEW BOSTON - NW TEXARKANA-BANN T 138KV CKT 1	115.3	3.22%	PATTERSON - SOUTH FOREMAN REC 138KV CKT 1	NORTH NEW BOSTON - NW TEXARKANA-BANN T 138KV CKT 1	Rebuild 14.19 miles to 1533.6 ACSR/TW 54/19
5	14WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	107.3	56.27%	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.7	3.85%	HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	14WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	106.9	55.91%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	104.9	55.75%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.3	56.94%	SPP-AEPW-32	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	108.2	55.02%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.4	4.33%	TEXAS COUNTY INTERCHANGE - Tri County REC-Whiting Sub 115KV CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	106.5	54.88%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	105.6	55.02%	HUNTERS7 345.00 - RENFROW7 345.00 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	102.1	56.36%	SPP-AEPW-32	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	102.1	54.89%	SPP-SWPS-04	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.6	54.73%	WRT0D400	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.5	54.73%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.3	54.92%	LACYGNE - NEOSHO 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	100.7	54.73%	HOYT - STRANGER CREEK 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	123.3	5.12%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	108.2	55.47%	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	106.4	54.45%	NORTHWEST - SPRING CREEK 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.2	4.36%	LACYGNE - NEOSHO 345KV CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	106.4	55.35%	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	103.5	56.94%	SPP-AEPW-32	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	102.7	55.27%	SPP-SWPS-04	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.9	55.10%	LACYGNE - NEOSHO 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.2	55.05%	WRT0D400	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	101.1	55.04%	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	OKGE	NORTHWEST - TATONGA7 345.00 345KV CKT 1	100.7	55.05%	HOYT - STRANGER CREEK 345KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.5	4.33%	SPP-SWPS-K39	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	116.7	4.65%	HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	14WP	OKGE	NORTHWEST (NORTHST2) 345/138/13.8KV TRANSFORMER CKT 1	117.8	5.86%	NORTHWEST (NORTHST3) 345/138/13.8KV TRANSFORMER CKT 1	NORTHWEST 345/138/13.8KV TRANSFORMER CKT 3 Accelerated	Install third 345/138 kV Bus Tie in Northwest Sub
5	14WP	OKGE	NORTHWEST (NORTHST2) 345/138/13.8KV TRANSFORMER CKT 1	101.5	7.51%	CIMARRON - NORTHWEST 345KV CKT 1	NORTHWEST 345/138/13.8KV TRANSFORMER CKT 3 Accelerated	Install third 345/138 kV Bus Tie in Northwest Sub
5	14WP	OKGE	NORTHWEST (NORTHST3) 345/138/13.8KV TRANSFORMER CKT 1	108.0	5.68%	NORTHWEST (NORTHST2) 345/138/13.8KV TRANSFORMER CKT 1	NORTHWEST 345/138/13.8KV TRANSFORMER CKT 3 Accelerated	Install third 345/138 kV Bus Tie in Northwest Sub
5	23SP	AEPW	NORTHWEST TEXARKANA - NW TEXARKANA-BANN T 138KV CKT 1	101.8	5.00%	ALUMAX TAP - NORTHWEST TEXARKANA 138KV CKT 1	NORTHWEST TEXARKANA - NW TEXARKANA-BANN T 138KV CKT 1	Rebuild 0.3 miles
5	18SP	AEPW	PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1	107.0	3.86%	4REMINGTON 138.00 - FAIRFAX 138KV CKT 1	PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1	Rebuild 5.98 miles with 1533.3 ACSR/TW
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	121.3	5.16%	SPP-SWPS-K31	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	18WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.1	4.31%	SPP-SWPS-V29	EK City to Gracemont 345KV OKGE	Build new 46.5 mile 345 kV line from EK City to Gracemont (OGE portion)
5	14WP	KCPL	PECULIAR - PLEASANT HILL 345KV CKT 1	101.4	4.52%	KCPL-OPGD006	IATAN - NASHUA 345KV CKT 1	Tap Nashua 345KV bus in Hawthorn - St. Joseph 345 kV line. Build new 345 kV line from Iatan to Nashua, Add Nashua 345/161 kV
5	14WP	KCPL	PECULIAR - PLEASANT HILL 345KV CKT 1	101.2	4.52%	HAWTHORN - ST JOE 345KV CKT 1	IATAN - NASHUA 345KV CKT 1	Tap Nashua 345KV bus in Hawthorn - St. Joseph 345 kV line. Build new 345 kV line from Iatan to Nashua, Add Nashua 345/161 kV
5	18WP	OKGE	PITTSBURG - SEMINOLE 345KV CKT 1	101.5	14.74%	CANADIAN RIVER - MUSKOGEE 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	23SP	OKGE	PITTSBURG - SEMINOLE 345KV CKT 1	107.2	11.30%	CANADIAN RIVER - MUSKOGEE 345KV CKT 1	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa
5	18WP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	111.6	23.90%	HUGO - SUNNYSIDE 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	18WP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	111.4	22.21%	HUGO - VALLIANT 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	23SP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	109.4	17.89%	HUGO - SUNNYSIDE 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	23SP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	108.4	16.65%	HUGO - VALLIANT 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	23SP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	101.6	13.59%	FT SMITH - MUSKOGEE 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	23WP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	105.7	34.87%	HUGO - VALLIANT 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	23WP	AEPW	PITTSBURG - VALLIANT 345KV CKT 1	105.5	38.84%	HUGO - SUNNYSIDE 345KV CKT 1	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg
5	14WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	110.3	4.13%	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	Potter to Tok 345 kV	Build 111 mile 345 kV line from Potter to Tok. Further study analysis will be performed with regard to the SPS North-South Stability Limit to determine whether its rating may be increased based on approved SPP Expansion Plan Network Upgrades scheduled !
5	14WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	107.8	3.01%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Potter to Tok 345 kV	Build 111 mile 345 kV line from Potter to Tok. Further study analysis will be performed with regard to the SPS North-South Stability Limit to determine whether its rating may be increased based on approved SPP Expansion Plan Network Upgrades scheduled !
5	14WP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.5	3.04%	SPP-SWPS-K31	Potter to Tok 345 kV	Build 111 mile 345 kV line from Potter to Tok. Further study analysis will be performed with regard to the SPS North-South Stability Limit to determine whether its rating may be increased based on approved SPP Expansion Plan Network Upgrades scheduled !
5	18SP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	112.2	4.25%	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1	Potter to Tok 345 kV	Build 111 mile 345 kV line from Potter to Tok. Further study analysis will be performed with regard to the SPS North-South Stability Limit to determine whether its rating may be increased based on approved SPP Expansion Plan Network Upgrades scheduled !
5	18SP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	108.8	4.28%	SPP-SWPS-K31	Potter to Tok 345 kV	Build 111 mile 345 kV line from Potter to Tok. Further study analysis will be performed with regard to the SPS North-South Stability Limit to determine whether its rating may be increased based on approved SPP Expansion Plan Network Upgrades scheduled !
5	18SP	SPS	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	106.7				

5	18WP	WERE	EMDE	NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	105.8	3.32%	ZJASPER 345.00 - BLACKBERRY 345KV CKT 1	VBI - Arkansas Nuclear One 345KV EES	Indeterminate
5	23SP	AEPW	AEPW	LYDIA - VALLIANT 345KV CKT 1	101.6	20.80%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	VBI - Arkansas Nuclear One 345KV EES	Indeterminate
5	23SP	WERE	EMDE	NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	102.1	4.30%	BLACKBERRY - NEOSHO 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	18WP	OKGE	AEPW	PITTSBURG - SEMINOLE 345KV CKT 1	101.5	14.74%	CANADIAN RIVER - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23SP	OKGE	AEPW	PITTSBURG - SEMINOLE 345KV CKT 1	107.2	11.30%	CANADIAN RIVER - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	18WP	AEPW	AEPW	LYDIA - VALLIANT 345KV CKT 1	117.8	25.43%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	18WP	WERE	EMDE	NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	110.1	4.00%	BLACKBERRY - NEOSHO 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23WP	AEPW	AEPW	LYDIA - VALLIANT 345KV CKT 1	112.6	43.48%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23SP	WERE	EMDE	NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	102.3	3.59%	ZJASPER 345.00 - BLACKBERRY 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	18WP	WERE	EMDE	NEOSHO - SUB 452 - RIVERTON 161KV CKT 1	105.8	3.32%	ZJASPER 345.00 - BLACKBERRY 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23SP	AEPW	AEPW	LYDIA - VALLIANT 345KV CKT 1	101.6	20.80%	NORTHWEST TEXARKANA - VALLIANT 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	18SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	131.8	5.09%	BENTON - WICHITA 345KV CKT 1	CHISHOLM - MAIZEE 138KV CKT 1 #2	Rebuild 7.25 miles
5	23SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	128.7	3.92%	BENTON - WICHITA 345KV CKT 1	CHISHOLM - MAIZEE 138KV CKT 1 #2	Rebuild 7.25 miles
5	18SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	131.8	5.09%	BENTON - WICHITA 345KV CKT 1	Viola - Clearwater 138KV CKT1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	23SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	128.7	3.92%	BENTON - WICHITA 345KV CKT 1	Viola - Clearwater 138KV CKT1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.
5	18SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	131.8	5.09%	BENTON - WICHITA 345KV CKT 1	Viola - Gill 138KV CKT1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	23SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	128.7	3.92%	BENTON - WICHITA 345KV CKT 1	Viola - Gill 138KV CKT1	Build new 138KV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.
5	18SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	131.8	5.09%	BENTON - WICHITA 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	23SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	128.7	3.92%	BENTON - WICHITA 345KV CKT 1	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV
5	18SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	131.8	5.09%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23SP	WERE	WERE	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	128.7	3.92%	BENTON - WICHITA 345KV CKT 1	Viola 345/138KV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation
5	23WP	SWPA	OKGE	VAN BUREN - VBI 161KV CKT 1	102.9	3.58%	FT SMITH - MUSKOGEE 345KV CKT 1	ADABELL - VBI 161KV CKT 1	Replace existing 800 amp wave trap with 1200 amp in VBI sub
5	23WP	SWPA	SWPA	GORE - MUSKOGEE TAP 161KV CKT 1	114.1	3.13%	FT SMITH - MUSKOGEE 345KV CKT 1	ADABELL - VBI 161KV CKT 1	Replace existing 800 amp wave trap with 1200 amp in VBI sub
5	23WP	OKGE	OKGE	HIGHWAY 59 - VBI 161KV CKT 1	130.8	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	ADABELL - VBI 161KV CKT 1	Replace existing 800 amp wave trap with 1200 amp in VBI sub
5	23WP	GRDA	OKGE	HIGHWAY 59 - TAHLEQUAH 161KV CKT 1	122.5	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	ADABELL - VBI 161KV CKT 1	Replace existing 800 amp wave trap with 1200 amp in VBI sub
5	23WP	SWPA	OKGE	VAN BUREN - VBI 161KV CKT 1	102.9	3.58%	FT SMITH - MUSKOGEE 345KV CKT 1	Arkansas Nuclear One 500/345 Transformer	Build 500/345 kV Transformer at ANO
5	23WP	SWPA	SWPA	GORE - MUSKOGEE TAP 161KV CKT 1	114.1	3.13%	FT SMITH - MUSKOGEE 345KV CKT 1	Arkansas Nuclear One 500/345 Transformer	Build 500/345 kV Transformer at ANO
5	23WP	OKGE	OKGE	HIGHWAY 59 - VBI 161KV CKT 1	130.8	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	Arkansas Nuclear One 500/345 Transformer	Build 500/345 kV Transformer at ANO
5	23WP	GRDA	OKGE	HIGHWAY 59 - TAHLEQUAH 161KV CKT 1	122.5	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	Arkansas Nuclear One 500/345 Transformer	Build 500/345 kV Transformer at ANO
5	23WP	SWPA	OKGE	VAN BUREN - VBI 161KV CKT 1	102.9	3.58%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV EES	Indeterminate
5	23WP	SWPA	SWPA	GORE - MUSKOGEE TAP 161KV CKT 1	114.1	3.13%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV EES	Indeterminate
5	23WP	OKGE	OKGE	HIGHWAY 59 - VBI 161KV CKT 1	130.8	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV EES	Indeterminate
5	23WP	GRDA	OKGE	HIGHWAY 59 - TAHLEQUAH 161KV CKT 1	122.5	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV EES	Indeterminate
5	23WP	SWPA	OKGE	VAN BUREN - VBI 161KV CKT 1	102.9	3.58%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23WP	SWPA	SWPA	GORE - MUSKOGEE TAP 161KV CKT 1	114.1	3.13%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23WP	OKGE	OKGE	HIGHWAY 59 - VBI 161KV CKT 1	130.8	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	23WP	GRDA	OKGE	HIGHWAY 59 - TAHLEQUAH 161KV CKT 1	122.5	3.10%	FT SMITH - MUSKOGEE 345KV CKT 1	VBI - Arkansas Nuclear One 345KV OKGE	Build 73 miles of 345KV line
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	103.3	3.08%	BBDMTP4 - MOUNTAIN RIVER 138KV CKT 1	BETHEL - BROKEN BOW 138KV CKT 1	Rebuild 9.19 miles of 3/0 Copperweld with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	101.3	3.08%	CRAIG JUNCTION - MOUNTAIN RIVER 138KV CKT 1	BETHEL - BROKEN BOW 138KV CKT 1	Rebuild 9.19 miles of 3/0 Copperweld with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	103.3	3.08%	BBDMTP4 - MOUNTAIN RIVER 138KV CKT 1	BETHEL - NASHOBA 138KV CKT 1	Rebuild 22.43 miles of 3/0 Copperweld with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	101.3	3.08%	CRAIG JUNCTION - MOUNTAIN RIVER 138KV CKT 1	BETHEL - NASHOBA 138KV CKT 1	Rebuild 22.43 miles of 3/0 Copperweld with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	103.3	3.08%	BBDMTP4 - MOUNTAIN RIVER 138KV CKT 1	CLAYTON - NASHOBA 138KV CKT 1	Rebuild 11.57 miles of 3/0 CWC with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	101.3	3.08%	CRAIG JUNCTION - MOUNTAIN RIVER 138KV CKT 1	CLAYTON - NASHOBA 138KV CKT 1	Rebuild 11.57 miles of 3/0 CWC with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	103.3	3.08%	BBDMTP4 - MOUNTAIN RIVER 138KV CKT 1	CLAYTON - SARDIS 138KV CKT 1	Rebuild 1.46 miles of 3/0 CWC with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	101.3	3.08%	CRAIG JUNCTION - MOUNTAIN RIVER 138KV CKT 1	CLAYTON - SARDIS 138KV CKT 1	Rebuild 1.46 miles of 3/0 CWC with 1272 ACSR
5	18WP	SWPA	AEPW	BROKEN BOW - CRAIG JUNCTION 138KV CKT 1	103.3	3.08%	BBDMTP4 - MOUNTAIN RIVER 138KV CKT 1	ENOWILT - SARDIS 138KV CKT 1	Rebuild 13.8 miles of 3/0 CWC with 1272 ACSR
5	18WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	114.3	5.12%	KNOBHILL - MOORELAND 138KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	102.7	4.58%	SPP-AEPW-32	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.9	4.93%	CEDARDALE - MOORELAND 138KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	100.7	4.76%	SPP-AEPW-32	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	108.6	5.11%	CEDARDALE - OKENE 138KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	109.0	5.11%	CEDARDALE - MOORELAND 138KV CKT 1	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	114.3	5.12%	KNOBHILL - MOORELAND 138KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	102.7	4.58%	SPP-AEPW-32	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.9	4.93%	CEDARDALE - MOORELAND 138KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	100.7	4.76%	SPP-AEPW-32	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	108.6	5.11%	CEDARDALE - OKENE 138KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	109.0	5.11%	CEDARDALE - MOORELAND 138KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.6	4.93%	CEDARDALE - OKENE 138KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	114.3	5.12%	KNOBHILL - MOORELAND 138KV CKT 1	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	102.7	4.58%	SPP-AEPW-32	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.9	4.93%	CEDARDALE - MOORELAND 138KV CKT 1	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	100.7	4.76%	SPP-AEPW-32	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	108.6	5.11%	CEDARDALE - OKENE 138KV CKT 1	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	109.0	5.11%	CEDARDALE - MOORELAND 138KV CKT 1	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	110.7	5.29%	KNOBHILL - MOORELAND 138KV CKT 1	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.6	4.93%	CEDARDALE - OKENE 138KV CKT 1	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	114.3	5.12%	KNOBHILL - MOORELAND 138KV CKT 1	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	102.7	4.58%	SPP-AEPW-32	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.9	4.93%	CEDARDALE - MOORELAND 138KV CKT 1	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	100.7	4.76%	SPP-AEPW-32	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	108.6	5.11%	CEDARDALE - OKENE 138KV CKT 1	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	109.0	5.11%	CEDARDALE - MOORELAND 138KV CKT 1	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	14WP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	110.7	5.29%	KNOBHILL - MOORELAND 138KV CKT 1	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.
5	18SP	WFEK	OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	111.6	4.93%	CEDARDALE - OKENE 138KV CKT 1	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.

Scenario	Season	Area	Monitored Bus with Violation	Transfer Case Voltage (PU)	Outaged Branch Causing Overload	Upgrade Name	Solution

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost
OKGE	CIMARRON - NORTHWEST 345KV CKT 1	Rebuild 12.050 miles of line	10/1/2015	10/1/2017	\$16,225,858
OKGE	CIMARRON - SARA 138KV CKT 1	Rebuild 9.56 miles of line	10/1/2015	10/1/2017	\$12,872,963
OKGE	CIMARRON 345/138/13.8KV TRANSFORMER CKT 1	Install new 345/138 kV transformer at Cimarron substation	6/1/2019	6/1/2021	\$14,500,000
OKGE	HUNTERS7 345.00 - WOODRING 345KV CKT 1	Rebuild 20.38 miles of line	10/1/2014	10/1/2016	\$27,442,571
OKGE	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	Rebuild 59.63 miles of line	6/1/2019	6/1/2021	\$80,294,433
WFEC	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to MOREWOOD TO 1113	6/1/2019	6/1/2021	\$25,620,000

Construction Pending Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost
AEPW	BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1	Rebuild 3.8 miles with 1533.3 ACSR/TW	10/1/2015	6/1/2017	\$ 4,750,000
AEPW	BETHEL - BROKEN BOW 138KV CKT 1	Rebuild 9.19 miles of 3/0 Copperweld with 1272 ACSR	6/1/2015	6/1/2018	\$ 9,190,000
AEPW	BETHEL - NASHOBA 138KV CKT 1	Rebuild 22.43 miles of 3/0 Copperweld with 1272 ACSR	6/1/2015	6/1/2018	\$ 22,430,000
AEPW	CLAYTON - NASHOBA 138KV CKT 1	Rebuild 11.57 miles of 3/0 CWC with 1272 ACSR	6/1/2015	6/1/2018	\$ 11,570,000
AEPW	CLAYTON - SARDIS 138KV CKT 1	Rebuild 1.46 miles of 3/0 CWC with 1272 ACSR	6/1/2015	6/1/2018	\$ 1,460,000
AEPW	ENOWILT - LONE OAK 138KV CKT 1	Rebuild 0.32 miles of 3/0 CWC with 1272 ACSR. Replace jumpers @ Lone Oak	6/1/2015	6/1/2017	\$ 625,000
AEPW	ENOWILT - SARDIS 138KV CKT 1	Rebuild 13.8 miles of 3/0 CWC with 1272 ACSR	6/1/2015	6/1/2018	\$ 13,800,000
AEPW	FLINT CREEK - SILOAM SPRINGS TAP 345KV CKT 1 AEPW	Replace Terminal Equipment	6/1/2019	6/1/2019	\$ 1,220,000
AEPW	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1 Accelerate	Replace Terminal Equipment	10/1/2015	6/1/2016	\$ 305,000
AEPW	NORTH NEW BOSTON - NW TEXARKANA-BANN T 138KV CKT 1	Rebuild 14.19 miles to 1533.6 ACSR/TW 54/19	6/1/2015	6/1/2017	\$ 17,028,000
AEPW	NORTHWEST TEXARKANA - NW TEXARKANA-BANN T 138KV CKT 1	Rebuild 0.3 miles	6/1/2019	6/1/2019	\$ 360,000
AEPW	PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1	Rebuild 5.98 miles with 1533.3 ACSR/TW	6/1/2015	6/1/2018	\$ 6,000,000
AEPW	PITTSBURG - VALLIANT 345KV CKT 1	Replace wavetraps and associated equipment at Pittsburg	6/1/2019	6/1/2019	\$ 303,750
AEPW	SHIDLER - WEST PAWHUSKA 138KV CKT 1	Rebuild 16.11 miles with 1533.3 ACSR/TW	6/1/2015	6/1/2018	\$ 16,200,000
AMRN	Lacygne - Mariosa 345KV AMRN	Indeterminate	10/1/2014	6/1/2019	
EES	Arkansas Nuclear One 500/345 Transformer	Build 500/345 kV Transformer at ANO	10/1/2014	6/1/2019	\$ 12,000,000
EES	VBI - Arkansas Nuclear One 345KV EES	Indeterminate	10/1/2014	6/1/2019	
GRDA	GRDA 1 - SILOAM SPRINGS TAP 345KV CKT 1 #2	Replace Terminal Equipment	6/1/2019	6/1/2019	\$ 3,300,000
KACP	Iatan - Jeffrey Energy Center 345 kV KACP	Build 14.2 miles of new 345 kV	10/1/2014	6/1/2019	\$ 14,089,880
KACP	Lacygne - Mariosa 345KV KACP	Build approximately 181 miles of 345KV from KCPL Lacygne - AMRN Mariosa	10/1/2014	6/1/2019	\$ 275,120,000
MKEC	MULLERGREEN - SPEARVILLE 230KV CKT 1	Rebuild 65 miles	10/1/2014	6/1/2019	\$ 36,107,610
NPPD	GRAND ISLAND - SWEETWATER 345KV CKT 2	Build 63.4 mile second circuit	10/1/2014	6/1/2019	\$ 96,288,750
OKGE	ADABELL - VBI 161KV CKT 1	Replace existing 800 amp wave trap with 1200 amp in VBI sub	10/1/2014	6/1/2016	\$ 150,000
OKGE	CIMARRON - DRAPER LAKE 345KV CKT 1	Increase capacity of Draper Lake CT and Cimarron wave trap	10/1/2015	6/1/2016	\$ 150,000
OKGE	Cimarron - Mathewson 345 kV Ckt 1 Accelerate	Build new 16 mile 345 kV line from Mathewson to Cimarron.	10/1/2014	6/1/2015	\$ 32,780,617
OKGE	FT SMITH (FT SMITH1) 500/345/13.8KV TRANSFORMER CKT 1	Install 2nd 500/345 kV bus tie in Ft. Smith Sub	10/1/2014	6/1/2019	\$ 14,500,000
OKGE	FT SMITH - MUSKOGEE 345KV CKT 1	Upgrade Ft. Smith 345 kV breakers and switches to 2000 amps	6/1/2019	6/1/2019	\$ 1,800,000
OKGE	KINZE - MCELROY 138KV CKT 1	Rebuild 1.97 miles	6/1/2015	6/1/2018	\$ 1,615,400
OKGE	Mathewson - Tatonga 345 kV Ckt 2 Accelerate	Build new 61 mile Tatonga - Mathewson 345 kV line.	10/1/2014	6/1/2015	\$ 82,139,900
OKGE	Mathewson 345 kV Accelerate	Build new Mathewson 345 kV substation at the intersection of the Woodring-Cimarron and the existing Northwest - Tatonga 345 kV lines.	10/1/2014	6/1/2015	\$ 20,169,602
OKGE	Muskogee - VBI 345 kV with 345/161 kV bus tie near VBI	Build 70.95 mile 345 kV line plus two new 345/161 kV bus ties near VBI sub and 10 miles of 161 kV line	10/1/2014	6/1/2019	\$ 129,000,000
OKGE	NORTHWEST 345/138/13.8KV TRANSFORMER CKT 3 Accelerated	Install third 345/138 kV Bus Tie in Northwest Sub	10/1/2014	6/1/2015	
OKGE	Tatonga - Woodward EHV 345 kV Ckt 2 Accelerate	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.	10/1/2014	6/1/2015	\$ 71,876,622
OKGE	VBI - Arkansas Nuclear One 345kV OKGE	Build 73 miles of 345kV line	10/1/2014	6/1/2019	\$ 119,355,000
SPS	Potter to Tolk 345 kV	Build 111 mile 345 kV line from Potter to Tolk. Further study analysis will be performed with regard to the SPS North-South Stability Limit to determine whether its rating may be increased based on approved SPP Expansion Plan Network Upgrades scheduled t	10/1/2014	12/31/2018	\$ 168,852,765
WERE	CHISHOLM - MAIZE 138KV CKT 1 #1	Upgrade disconnect switches, wavetraps, breaker, jumpers	6/1/2015	6/1/2016	\$ 827,424
WERE	CHISHOLM - MAIZE 138KV CKT 1 #2	Rebuild 7.25 miles	6/1/2015	6/1/2017	\$ 7,141,250
WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	Rebuild the JEC - Hoyt 345kV line as a single circuit with new conductor, poles, and shield wire and substation work	10/1/2014	6/1/2018	\$ 49,623,119
WERE	Iatan - Jeffrey Energy Center 345 kV WERE	Build 56.8 miles of new 345 kV	10/1/2014	6/1/2019	\$ 128,776,067
WERE	Viola - Rose Hill 345 kV	Build new 35 mile line from Viola to Rose Hill 345 kV	10/1/2014	6/1/2019	\$ 68,950,000
WFEC	FRANKLIN SW - MIDWEST TAP 138KV CKT 1 Accelerate	Replace Terminal Equipment	6/1/2015	6/1/2016	\$ 225,000
WFEC	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	Reset CT	10/1/2015	10/1/2015	\$ 40,500
WFEC	SOUTHWESTERN STATION - WASHITA 138KV CKT 2	Add Second 138 kV line	10/1/2015	6/1/2017	\$ 2,260,000

Expansion Plan Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
AEPW	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1	Rebuild and reconductor 11.1-mile 161 kV line from Chamber Springs to Farmington REC with 2-959.6 ACSR/TW. Upgrade wavetraps, CT ratios, and relay settings at Chamber	6/1/2015	6/1/2015
ITCGP	Line - Clark County - Thistle 345 kV dbi Ckt	Build a new 96 mile double circuit 345 kV line with at least 3000 A capacity from the Thistle 345 kV substation to the new Clark County substation. Build a new 345 kV substation at	10/1/2014	1/1/2015
ITCGP	Line - Spearville - Clark County 345 kV dbi Ckt	Build a new 36 mile double circuit 345 kV line with at least 3000 A capacity from the Spearville substation to the new Clark County substation. Build the Clark County 345 kV substation with	10/1/2014	1/1/2015
ITCGP	XFR - Thistle 345/138 kV	Install a 400 MVA 345/138 kV transformer at the new 345 kV Thistle substation.	10/1/2014	1/1/2015
KACP	IATAN - NASHUA 345KV CKT 1	Tap Nashua 345kV bus in Hawthorn - St. Joseph 345 kV line. Build new 345 kV line from Iatan to Nashua. Add Nashua 345/161 kV	10/1/2014	6/1/2015
OKGE	Line - Hitchland - Woodward 345 kV dbi Ckt OKGE	Build a new 92 mile double circuit 345 kV line with at least 3000 A capacity from the Woodward District EHV substation to the SPS interception from the Hitchland substation.	10/1/2014	7/1/2014
OKGE	Line - Thistle - Woodward 345 kV dbi Ckt OKGE	Build a new 79 mile double circuit 345 kV line with at least 3000 A capacity from the Woodward District EHV substation to the Kansas/Oklahoma state border towards the Thistle	10/1/2014	1/1/2015
OKGE	Line - Tuco - Woodward 345 kV line OKGE	Build new 345 kV line from Woodward EHV to Border - Project costs now include Border reactor substation	10/1/2014	6/1/2014
PW	Line - Thistle - Wichita 345 kV dbi Ckt PW	Build a new 78 mile double circuit 345 kV line with at least 3000 A capacity from the Wichita substation to the new Thistle 345 kV substation.	10/1/2014	1/1/2015
PW	Line - Thistle - Woodward 345 kV dbi Ckt PW	Build a new 30 mile double circuit 345 kV line with at least 3000 A capacity from the Thistle substation to the Kansas/Oklahoma state border towards the Woodward District EHV	10/1/2014	1/1/2015
SPS	Line - Hitchland - Woodward 345 kV dbi Ckt SPS	Build 30 mile double circuit 345 kV line with at least 3000 A capacity from the Hitchland substation to the OGE interception point from the Woodward District EHV substation. Upgrade	10/1/2014	7/1/2014
SPS	Line - Tuco - Woodward 345 kV line SPS	Build new 345 kV line from Tuco to OGE Border station near TX/OK Stelene. Install line reactor outside Border station and line reactors at Tuco.	10/1/2014	6/1/2014
WERE	Line - Thistle - Wichita 345 kV dbi Ckt WERE	Upgrade the Wichita substation with the necessary breakers and terminal equipment to accommodate two new 345 kV circuits from the new Thistle 345 kV substation	10/1/2014	1/1/2015

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
AEPW	Elk City 345/230 kV	Expand Elk City substation (or build new station). Install a 345/230 kV 675 MVA transformer at Elk City.	10/1/2014	3/1/2018
AEPW	Elk City to Gracemont 345kV AEPW	Build new 46.5 mile 345 kV line from Elk City to Gracemont (AEP portion).	10/1/2014	3/1/2018
NPPD	Cherry Co - Gentleman 345 kV Ckt1	Build new 345 kV Transmission Line from GGS 345 kV Substation to a new Cherry County 345 kV Substation (76 miles).	10/1/2014	1/1/2018
NPPD	Cherry Co - Holt Co 345 kV Ckt1	Build new 345 kV Transmission Line from new Cherry County 345 kV Substation to new 345 kV Holt County Substation. (Estimated 146 miles).	10/1/2014	1/1/2018
NPPD	Cherry Co 345 kV Terminal Upgrades	Build new Cherry County 345 kV Substation.	10/1/2014	1/1/2018
OKGE	Elk City to Gracemont 345kV OKGE	Build new 46.5 mile 345 kV line from Elk City to Gracemont (OGE portion).	10/1/2014	3/1/2018
WERE	Viola - Clearwater 138kV Ckt1	Build new 138kV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.	10/1/2014	6/1/2018
WERE	Viola - Gill 138kV Ckt1	Build new 138kV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.	10/1/2014	6/1/2018
WERE	Viola 345/138kV Transformer Ckt 1	Install new 345/138 kV transformer at Viola substation	10/1/2014	6/1/2018
WFEC	ELK CITY - RED HILLS WIND 138KV CKT 1	Upgrade Elk City to RHWIND4 TO 1113	10/1/2014	6/1/2016