

2013 SPP Transmission Expansion Plan Report

January 29, 2013

Engineering

Revision History

Date	Author	Change Description
1/7/2013	Staff	Version Draft
1/15/2013	Staff	Endorsed by MOPC
1/22/2013	Staff	Changes to reflect modifications in the 2013 ITPNT Study Updated Figure 1 to correct data discrepancy and reflect 2013 ITPNT revisions.
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Executive Summary

The 2013 SPP Transmission Expansion Plan (STEP) is a comprehensive listing of all transmission projects in SPP for the twenty-year planning horizon. Projects in the 2013 STEP include: 1) upgrades required to satisfy requests for transmission service; 2) upgrades required to satisfy requests for generation interconnection; 3) approved projects from the 20-Year Assessment, 10-Year Assessment, and Near Term Assessment (ITP Upgrades); 4) upgrades within approved Balanced Portfolios; 5) approved high priority upgrades; and 6) endorsed Sponsored Upgrades.

The 2013 STEP consists of 439 upgrades with a total cost of \$6.7 billion. Figure 1 illustrates the cost distribution of the 2013 STEP based on project type. More detail on the total portfolio is listed in Appendix A.

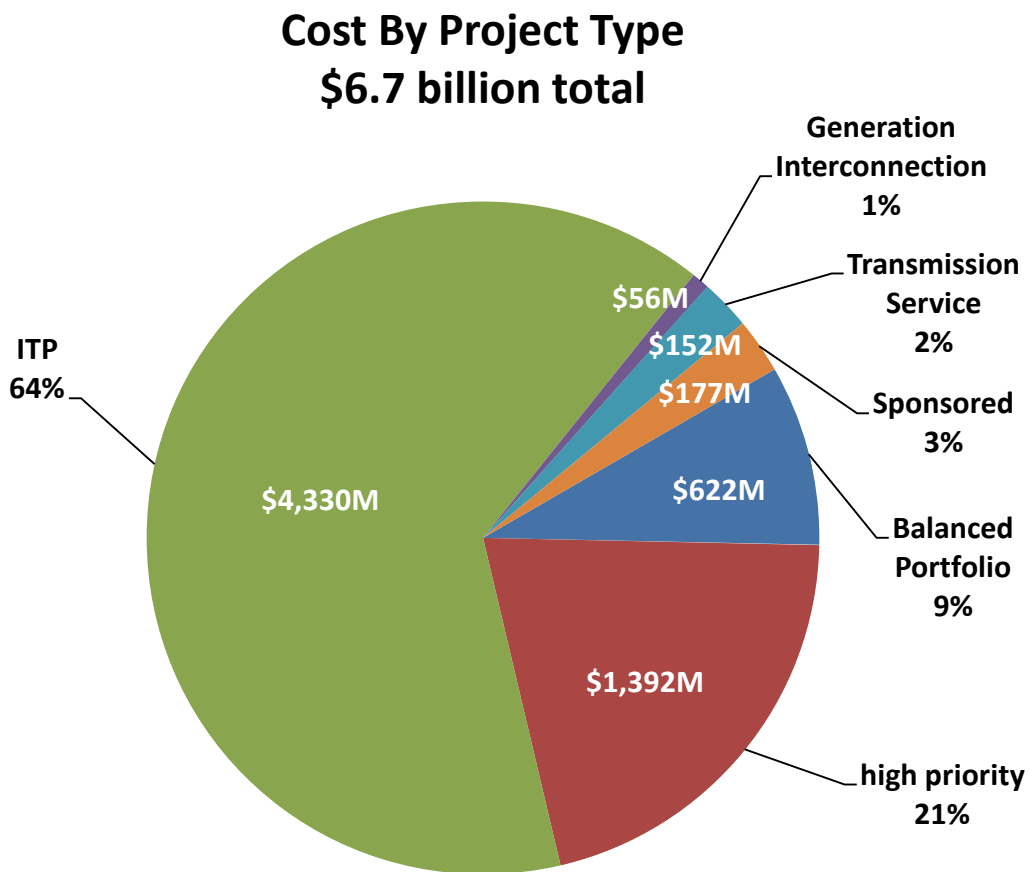


Figure 1: 2013 STEP Cost by Upgrade Type

(APPENDIX A includes a breakdown of projects in the 20-year horizon)

After the Board approves transmission expansion projects, or once appropriate agreements are filed with FERC, SPP issues Notifications to Construct (NTC) letters to appropriate Transmission Owners. In 2012, SPP issued 26 NTC letters with estimated construction costs of \$1.52 billion.

SPP actively monitors the progress of approved projects by soliciting feedback from project owners. Eighty-two upgrades were completed as of November 30, 2012. The breakdown includes:

- **44 ITP - \$306.4 million**
- **19 Transmission Service - \$270.6 million**
- **4 Generation Interconnection - \$34.3 million**
- **5 Balanced Portfolio - \$208.2**
- **10 Sponsored - \$26.1 million**

Major 345 kV Projects completed in 2012
ITC Great Plains and Nebraska Public Power District <ul style="list-style-type: none"> • 125 miles of 345 kV transmission line from Post Rock (Knoll) in west Kansas to Axtell in southern Nebraska
ITC Great Plains <ul style="list-style-type: none"> • 19 miles of 345 kV transmission line from Hugo Power Station to Valliant in southeast Oklahoma • 90 miles of 345 kV transmission line from Spearville to Post Rock (Knoll) in west Kansas
Oklahoma Gas and Electric <ul style="list-style-type: none"> • 120 miles of 345 kV transmission line from Hugo to Sunnyside in southern Oklahoma
American Electric Power <ul style="list-style-type: none"> • 33 miles of 345 kV transmission line from Turk in southwest Arkansas to Northwest Texarkana in northeast Texas

Major 345 kV projects with NTCs in the 2013 STEP
American Electric Power <ul style="list-style-type: none"> • 76 miles of 345 kV transmission line from Northwest Texarkana to Valliant in southeast Oklahoma • 18 miles of 345 kV transmission line from Flint Creek to Shipe Road in northwest Arkansas • 55 miles of 345 kV transmission line from Shipe Road to Osage Creek (passing near East Rogers) in northwest Arkansas
American Electric Power and Oklahoma Gas & Electric Company <ul style="list-style-type: none"> • 93 miles of 345 kV transmission line from Elk City to Gracemont in western Oklahoma
Kansas City Power & Light <ul style="list-style-type: none"> • 30 miles of 345 kV transmission line from Iatan to Nashua in northwest Missouri
KCP&L Greater Missouri Operation Company and Omaha Public Power District <ul style="list-style-type: none"> • 181 miles of 345 kV transmission line from Sibley to Maryville to Nebraska City in northwest Missouri and southeast Nebraska
ITC Great Plains <ul style="list-style-type: none"> • 114 miles 345 kV double circuit transmission line from Spearville to Clark Co to Thistle in southwest Kansas
ITC Great Plains and Westar Energy <ul style="list-style-type: none"> • 58 miles of 345 kV transmission line from Elm Creek to Summit in north central Kansas
Nebraska Public Power District <ul style="list-style-type: none"> • 222 miles of 345 kV transmission line from Gentleman to Cherry County to Holt County in northwestern Nebraska • 40 miles of 345 kV transmission line from Neligh to Hoskins in north central Nebraska
Prairie Wind Transmission <ul style="list-style-type: none"> • 78 miles double circuit 345 kV transmission line from Thistle to Wichita in south Kansas
Oklahoma Gas and Electric Company and Prairie Wind Transmission <ul style="list-style-type: none"> • 110 miles of double circuit 345 kV transmission line from Thistle to Woodward District EHV in northwest Oklahoma and southwest Kansas
Oklahoma Gas and Electric <ul style="list-style-type: none"> • 36 miles of 345 kV transmission line from Sooner to Cleveland in central Oklahoma • 100 miles of 345 kV transmission line from Seminole to Muskogee in central Oklahoma • 5 miles of 345 kV transmission line from Arcadia to Redbud in central Oklahoma

- 126 miles of 345 kV transmission line from Woodward District EHV to Tatonga to Mathweson to Cimarron in northwestern Oklahoma

Oklahoma Gas and Electric and Southwestern Public Service Company

- 250 miles of 345 kV transmission line from Woodward District EHV in west Oklahoma to Oklahoma/Texas Stateline to Tuco in west Texas
- 122 miles of double circuit 345 kV transmission line from Hitchland to Woodward EHV in northwest Oklahoma

Southwestern Public Service Company

- 15 miles of 345 kV transmission line from Tuco to New Deal in west Texas
- 167 miles of 345 kV transmission line from Tuco to Amoco to Hobbs in west Texas

Section 1: Transmission Services

1.1: Transmission Service 2012 Overview

Staff conducts studies to determine if the SPP transmission system can accommodate activity over and above that which is currently in use. Whenever new transmission transactions or modifications to existing transmission transactions are made SPP performs feasibility and system impact studies.

Upgrade Type	2013 STEP (\$Million)	2012 STEP (\$ Million)	2010 STEP (\$ Million)
(TSR) transmission service*	\$152	\$433	\$550

*Regional reliability upgrades associated with transmission service are included in the ITP subtotal in this report

During 2012, SPP’s Tariff Studies staff posted Aggregate Facility Studies to meet 60-day study completion deadlines and posted Facilities Studies to meet FERC Order 890 metric requirements. Order 890 requires Transmission Providers to file notice with FERC if more than 20% of the System Impact and Facilities studies in any two consecutive calendar quarters are not completed in the 60-day study window. In 2012 SPP was not required to file with FERC, as there were no two consecutive quarters in which more than 20% of the studies were late. This was due in large part to the timely submission of documentation by Transmission Owners. SPP posted 21 Aggregate Studies in 2012, as compared to 12 in 2011.



Transmission Service Projects Completed in 2012

NTC ID	Project ID	Project Owner	Project Name	Current Cost Estimate
20016	288	AEP	Line - Valliant Substation - Install 345 kV terminal equipment	\$3,480,000
	30142	AEP	Turk - NW Texarkana 345 kV	\$44,200,000
	30152	AEP	Line - Linwood - Powell Street 138 kV	\$456,000
	30156	AEP	Line - SE Texarkana - Texarkana Plant 69 kV	\$128,000
	30157	AEP	Line - South Texarkana REC - Texarkana Plant 69 kV	\$8,193,000
20017	30161	OGE	Multi - Hugo - Sunnyside 345 kV (OGE)	\$157,000,000
20018	313	ITCGP	Line - Valliant - Hugo 345 kV	\$22,230,000
	314	ITCGP	XFR - Hugo 345/138 kV	\$6,328,605
	30165	ITCGP	Line - Hugo - Sunnyside 345 kV	\$6,620,096
20068	908	WR	Line - Macarthur - Oatville 69 kV Ckt 1	\$50,200
20059	30225	WR	Device - Allen 69 kV Capacitor	\$954,830
20091	30224	WR	Multi - Green - Coffey County No. 3 - Burlington Junction - Wolf Creek 69 kV	\$1,693,501
20108	30289	WR	Line - East Manhattan - NW Manhattan 230 kV Ckt 1	\$700,000
20110	670	OGE	XFR - 3rd Arcadia 345/138 kV	\$10,900,000
20139	316	MIDW	Line - Hays Plant - South Hayes 115 kV Ckt 1	\$35,000
200161	349	AEP	Multi - McNab REC - Turk 115 kV	\$7,310,000

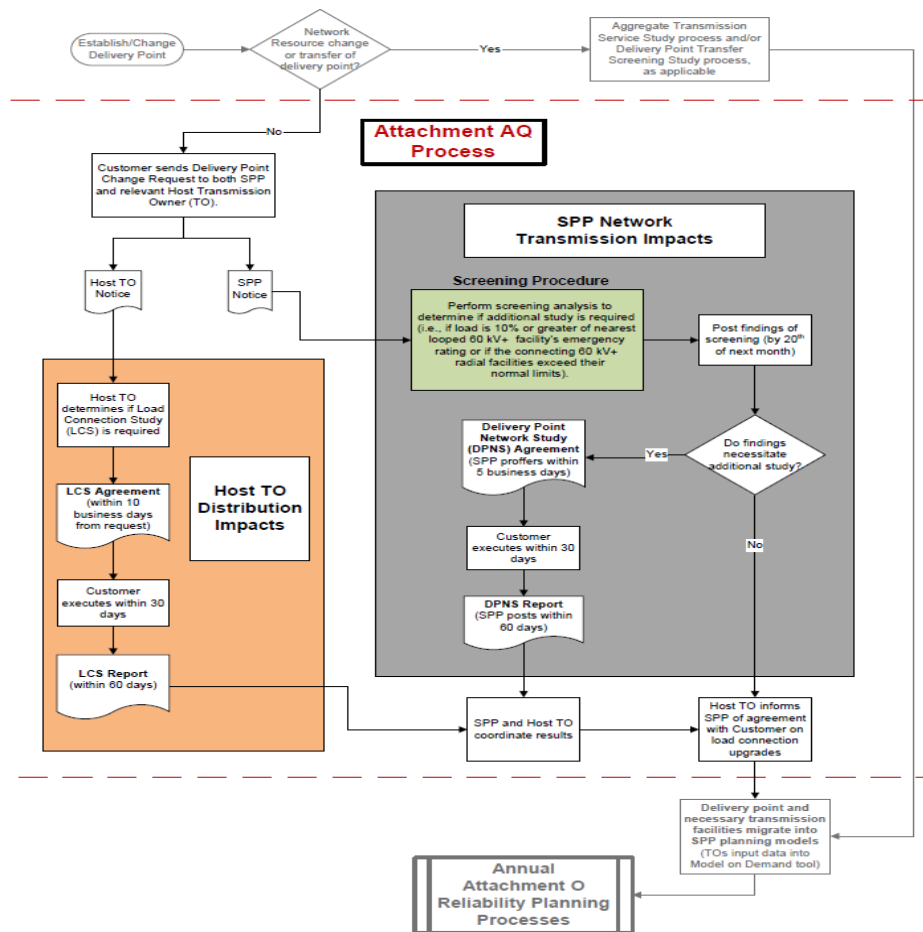
1.2: Tariff Attachments AQ and AR

During 2010, SPP Tariff attachments AQ and AR were approved by FERC. Attachment AQ became effective in May 2010. Attachment AQ defines a process through which delivery point additions, modifications, or abandonments can be studied without having to go through the Aggregate Study process. Delivery points submitted through the process are examined in an initial assessment to determine if a project is likely to have a significant effect on the transmission system. If necessary, a full study is then performed on the requested delivery points to determine any necessary upgrades. There were two NTCs issued in 2012 as a result of the AQ process. These were the first NTCs issued as a result of the AQ process.

The number of requests increased significantly in 2012. The increase in required studies was driven primarily by oil and gas drilling in Oklahoma and Kansas. This is summarized in the following table.

Study Year	Delivery Point Requests	Full Studies Required	Load Increase
2011	84	9	550 MW
2012	156	51	1.2 GW

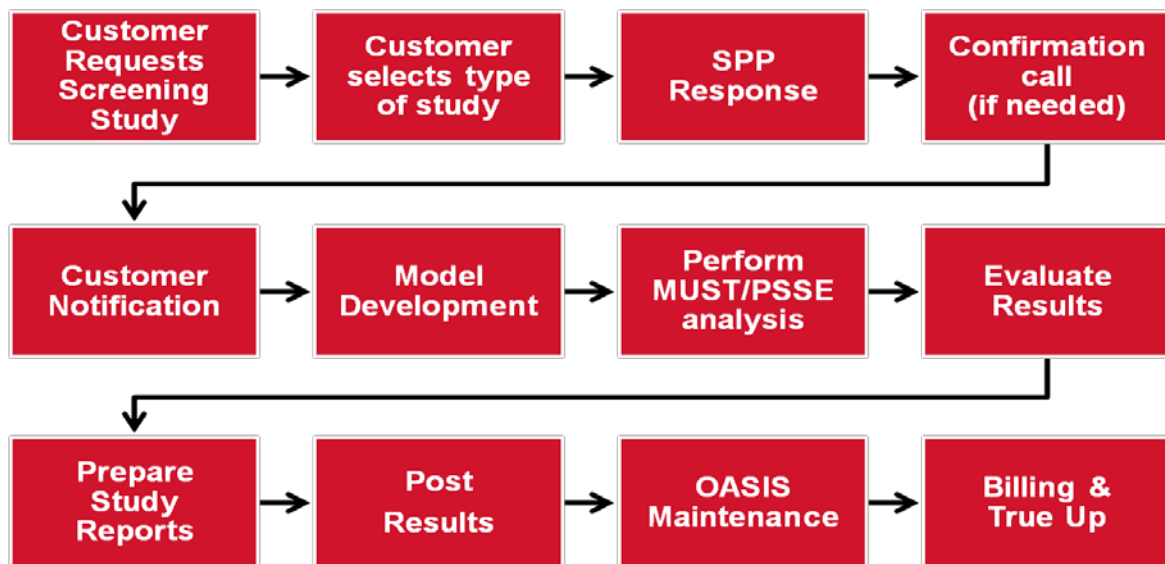
Flow chart diagram for AQ Studies



Attachment AR

SPP Tariff attachment AR became effective in February 2010. Attachment AR defines a screening process used to evaluate potential Long-Term Service Request (LTSR) options or proposed Delivery Point Transfers (DPT). The LTSR option provides customers with a tool to determine which LTSR to pursue in the Aggregate Study process. The DPT option enables customers to implement a DPT via issuance of a service agreement more expediently pending the results of the screening. Both of these screening tools allow for a more streamlined aggregate study process by reducing the number of requests in the studies. During 2012, three DPT requests were made, two of which were granted service. Three LTSR studies were requested and posted.

Flow Chart for AR process



Section 2: Generation Interconnection

2.1: Generation Interconnection 2012 Overview

A Generation Interconnection (GI) study is conducted whenever new generation is requested to connect to the SPP Transmission System. GI studies are conducted by transmission providers in collaboration with affected transmission owners to determine the required modifications to the transmission system, including cost and scheduled completion date required to provide the service.



As of October 30, 2012, SPP received 50 GI requests, similar to the 64 received through the same period in 2011. As of that date, there were 81 active queue requests for 12,720MW under study.

Upgrade Type	2013 STEP (\$Million)	2012 STEP (\$ Million)	2010 STEP (\$ Million)
(GI) Generation Interconnection	\$56	\$69	\$103

The approval of Priority Projects has facilitated the study process for Generation Interconnection. About 6,500MW of additional generation interconnection agreements were approved based on the existence of Priority Projects and Balanced Portfolio.

GI Projects Completed in 2012

NTC ID	Project ID	Project Owner	Upgrade Name	Current Cost Estimate
NA	231	AEP	Line - Turk - SE Texarkana - 138 kV	\$25,590,000
NA	30360	WFEC	Line - Washita - Gracemont 138 kv ckt 2	\$4,740,546
NA	30382	WFEC	SUB - SLICK HILLS 138KV	\$1,500,000
NA	30383	MIDW	MULTI - RICE - CIRCLE 230KV CONVERSION	\$2,473,404

Section 3: Integrated Transmission Planning

3.1: What is Integrated Transmission Planning?

The Integrated Transmission Plan (ITP) is a three-year study process which assesses the SPP region's transmission needs in the long and near-term with the intention of creating a cost-effective, flexible, and robust transmission network that will improve access to the region's diverse generating resources. The ITP process promotes transmission investment that will meet reliability, economic, and public policy needs¹.



The first phase of the ITP process was completed with the Board of Directors' acceptance of the ITP20 Report on January 25, 2011. The next phases of the ITP process were developed concurrently (ITP10 and ITPNT) in 2011 with the Board of Directors' acceptance on January 31, 2012.

Upgrade Type	2013 STEP (\$Million)	2012 STEP (\$ Million)	2010 STEP (\$ Million)
ITP – Base Plan	\$2,819	\$2,494	\$1,222
ITP - Other	\$1,511	\$1,592	\$245*
ITP SUBTOTAL	\$4,330	\$4,086	\$1,467

*The 2010 STEP totals did not include the 2010 ITP20 projects

3.2: 2010 ITP20

The 20-Year Integrated Transmission Plan (ITP20) is SPP's long-term planning process which incorporates value metrics that allow transmission to become an enabling solution to regional and national issues and extend the study horizon from ten years to twenty years.

The first ITP20² study focused on the year 2030 (20 years from 2010). The ITP20 study focused on the continued design of the SPP region's EHV system and development of a backbone system that provides flexibility and value to SPP's members. No NTCs were issued as part of this process.

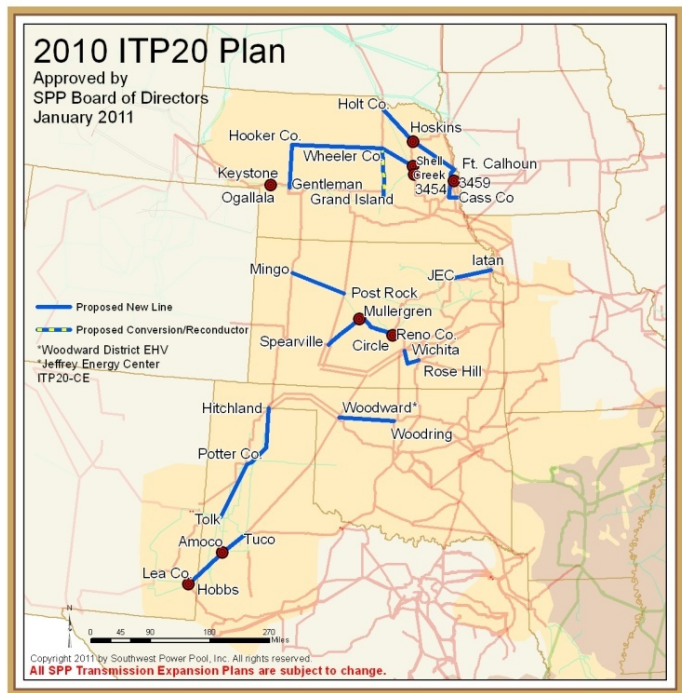


Figure 2:2010 ITP20 Plan

¹ The Highway/Byway cost allocation approving order is *Sw. Power Pool, Inc.*, 131 FERC ¶ 61,252 (2010). The approving order for ITP is *Sw. Power Pool, Inc.*, 132 FERC ¶ 61,042 (2010).

² For more information on the 2010 ITP20 Study, see the [full report](#) (SPP.org > Engineering > Transmission Planning).

3.3: 2012 ITP10

The second phase of the ITP study process included the ITP 10-Year (ITP10) Assessment performed under the requirements of OATT Attachment O, Section III. The approved portfolio included projects ranging from comprehensive regional solutions to local reliability upgrades to address the expected reliability, economic, and policy needs of the studied 10-year horizon.

The approved 2012 ITP10³ portfolio shown in the figure 3 was estimated at \$1.5 billion engineering and construction cost and includes projects needed to meet potential reliability, economic, and policy requirements. No projects from the 2012 ITP10 are complete.

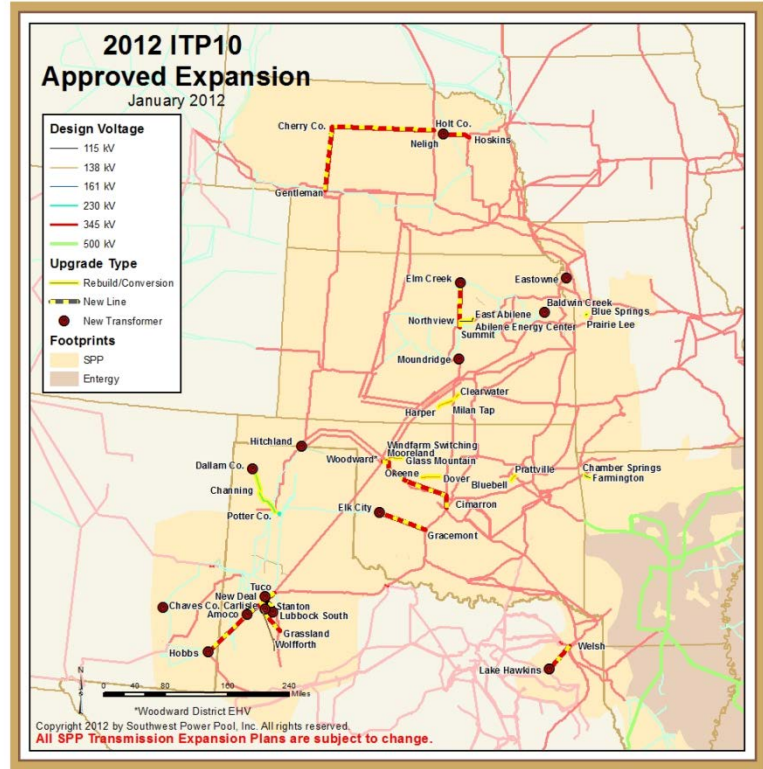


Figure 3:2010 ITP10 Plan

2010 ITP10 Portfolio

NTC ID	Project ID	Project Owner	Upgrade Name	Need Date	Current Cost Estimate
200182	30367	WR	Multi - Elm Creek - Summit 345 kV	3/1/2018	\$62,110,152
200183	30361	AEP	Multi - Elk City - Gracemont 345 kV	3/1/2018	\$99,575,392
200184	1140	SPS	Multi - Tuco - Stanton 345 kV	6/1/2018	\$37,490,796
200184	30355	SPS	Line - Grassland - Wolfforth 230 kV	3/1/2018	\$50,068,309
200184	30376	SPS	Multi - Tuco - Amoco - Hobbs 345 kV	1/1/2020	\$181,415,883
200185	30361	OGE	Multi - Elk City - Gracemont 345 kV	3/1/2018	\$75,486,000
200185	30364	OGE	Multi - Woodward EHV - Tatonga - Matthewson - Cimarron 345 kV	3/1/2021	\$206,966,741
200186	30374	NPPD	Multi - Hoskins - Neligh 345 kV	3/1/2019	\$96,702,400
200186	30375	NPPD	Multi - Gentleman - Cherry - Holt 345 kV	1/1/2018	\$289,280,000
200187	30367	ITCGP	Multi - Elm Creek - Summit 345 kV	3/1/2018	\$42,697,637

³ For more information on the 2012 ITP10, [see the full report](#) (SPP.org > Engineering > Transmission Planning).

3.4: 2013 ITP Near-Term (ITPNT)

The 2013 ITPNT analyzed the SPP region's immediate transmission needs. The ITPNT assessed: (a) regional upgrades required to maintain reliability in accordance with the NERC Reliability Standards and SPP Criteria in the near term horizon, (b) zonal upgrades required to maintain reliability in accordance with more stringent individual Transmission Owner planning criteria in the near term horizon, and (c) coordinated projects with neighboring Transmission Providers.

ITPNT projects are reviewed by SPP's Transmission Working Group (TWG), Markets and Operations Policy Committee (MOPC) and approved by the Board of Directors. Following Board of Directors' approval, staff will issue Notification to Construct (NTC) letters for projects needed within the four-year financial commitment timeframe.

SPP developed models for the 2013 ITPNT analysis based on the SPP Model Development Working Group (MDWG) models, for which transmission owners and balancing authorities provided generation dispatch and load information. The study scope – approved by the TWG on May 9, 2012 – contains:

- The years and seasons to be modeled, including 2013, 2014, and 2018
- Treatment of upgrades in the models
- Scenario cases to be evaluated
- Description of the contingency analysis and monitored facilities
- Any new special conditions that are modeled or evaluated for the study including developing the 2018 summer peak model for CBA dispatch

SPP performed reliability analyses identifying potential bulk power system problems. These findings were presented to Transmission Owners and stakeholders to solicit transmission solutions. Also considered were transmission options from other SPP studies, such as the Aggregate Study and Generation Interconnection processes. From the resulting list of potential solutions, staff identified the best regional solutions for potential reliability violations. Staff presented these solutions for member and stakeholder review at SPP's August 2012 planning summit. Through this process, SPP developed a draft list of 69 kV and above solutions necessary to ensure the reliability in the SPP region in the near-term.

The 2013 ITPNT draft project plan includes 83 new upgrades, 9 modified upgrades, and 22 withdrawn upgrades. The new upgrades include 140 miles of new line: 15 miles of 230 kV, 4 miles of 161 kV, and 50 miles of 138 kV, 71 miles of 115 kV. The project plan also includes 194 miles of reconductor/re-build projects: 15 miles of 161 kV, 42 miles of 138 kV, 86 miles of 115 kV, and 53 miles of 69 kV. Additionally, there are 16 new transformer upgrades.

The total cost of the 2013 ITPNT Project Plan is estimated to be \$747.2 million for upgrades that will receive an, NTC, NTC-C, or NTC Modify. Of that total, \$657.9 million comes from new projects identified in the 2013 ITPNT Assessment. Upgrades recommended for an NTC Modify account for \$93.1 million of the total project plan cost. \$80.9 million of transmission upgrades are recommended for withdrawal.

ITPNT Projects Completed in 2012 (note: this table reflects the portion of the project completed in 2012)

NTC ID	Project ID	Facility Owner	Project Name	Current Cost Estimate
20000	113	AEP	Multi - Wallace Lake - Port Robson - RedPoint 138 kV	\$28,962,000

20030	135	WFEC	Multi - Lindsay - Lindsay SW and Bradley-Rush Springs	\$3,577,500
20031	156	SPS	Multi - Hitchland - Texas Co. 230 kV and 115 kV	\$36,926,444
20007	166	SEPC	Line - Holcomb - Plymell 115 kV	\$3,986,076
20030	239	WFEC	Line - WFEC Snyder - AEP Snyder	\$839,770
20086	267	WR	Line - Halstead - Mud Creek Jct. - 69 kV	\$3,775,803
20001	301	GRDA	XFR - Sallisaw 161/69 kV Auto #2	\$3,000,000
20006	321	WR	Line - Oaklawn - Oliver 69 kV	\$2,686,996
20014	367	SEPC	Line - Plymell - Pioneer Tap 115 kV	\$5,534,364
20000	387	AEP	Line - Riverside - Okmulgee 138 kV	\$125,000
20122	391	AEP	Line - Lone Star South - Pittsburg 138kV Ckt 1	\$300,000
20027	392	AEP	Line - Howell - Kilgore 69 kV	\$3,986,000
20003	400	WFEC	Line - Pharoah - Weleetka 138 kV	\$225,000
20003	401	WFEC	Line - WFEC Russell - AEP Altus Jct Tap 138 kV	\$50,000
20055	523	OGE	Line - Rose Hill - Sooner 345 kV (OGE)	\$44,700,000
20059	529	WR	Line - Rose Hill - Sooner 345 kV Ckt 1 (WR)	\$84,379,298
20031	554	SPS	Multi: Dallam - Channing - Tascosa -Potter	\$9,130,978
20118	554	SPS	Multi: Dallam - Channing - Tascosa -Potter	\$18,262,290
20118	554	SPS	Multi: Dallam - Channing - Tascosa -Potter	\$3,410,040
20033	618	WR	Multi - NW Manhattan	\$27,144,000
20075	638	EDE	Line - Sub 170 Nichols - Sub 80 Sedalia 69 kV	\$4,500,000
20085	672	WFEC	Line - El Reno - El Reno SW 69 kV	\$1,950,000
20080	749	NPPD	Line - Maloney - North Platte 115 kV	\$1,749,395
20073	767	AEP	Multi - Canadian River - McAlester City - Dustin 138 kV	\$4,096,000
20080	818	NPPD	Line - Loup City - North Loup 115 kV	\$1,828,267
20130	1002	SPS	Line - OXY Permian Sub - Sanger SW Station 115 kV Ckt 1 Reconductor	\$295,313
20128	1095	OGE	Line - OGE Alva - WFEC Alva 69 kV Ckt 1	\$392,000
19985	30041	WFEC	Device - Comanche	\$350,000
20003	30079	WFEC	Device - Carter Cap 69 kV	\$324,000
20001	30086	GRDA	Device - Jay Cap 69 kV	\$800,000
20078	30176	MIDW	Device - Kinsley Capacitor 115 kV	\$907,563

20085	30178	WFEC	Device - Electra 69 kV Capacitor	\$240,000
20080	30206	NPPD	Device - Gordon 115 kV	\$673,574
20083	30234	SEPC	Device - Johnson Corner 115 kV Capacitor	\$740,000
20083	30235	SEPC	Device - Johnson Corner 115 kV 2nd Capacitor	\$370,000
20080	30236	NPPD	Device - Kearney 115 kV	\$786,495
20128	30305	OGE	Device - Little River Lake 69 kV	\$352,350
200175	30336	WR	Device - Northwest Manhattan 115 kV Capacitor	\$957,660
200172	30358	MIDW	Multi - Ellsworth - Bushton - Rice 115 kV	\$4,102,384

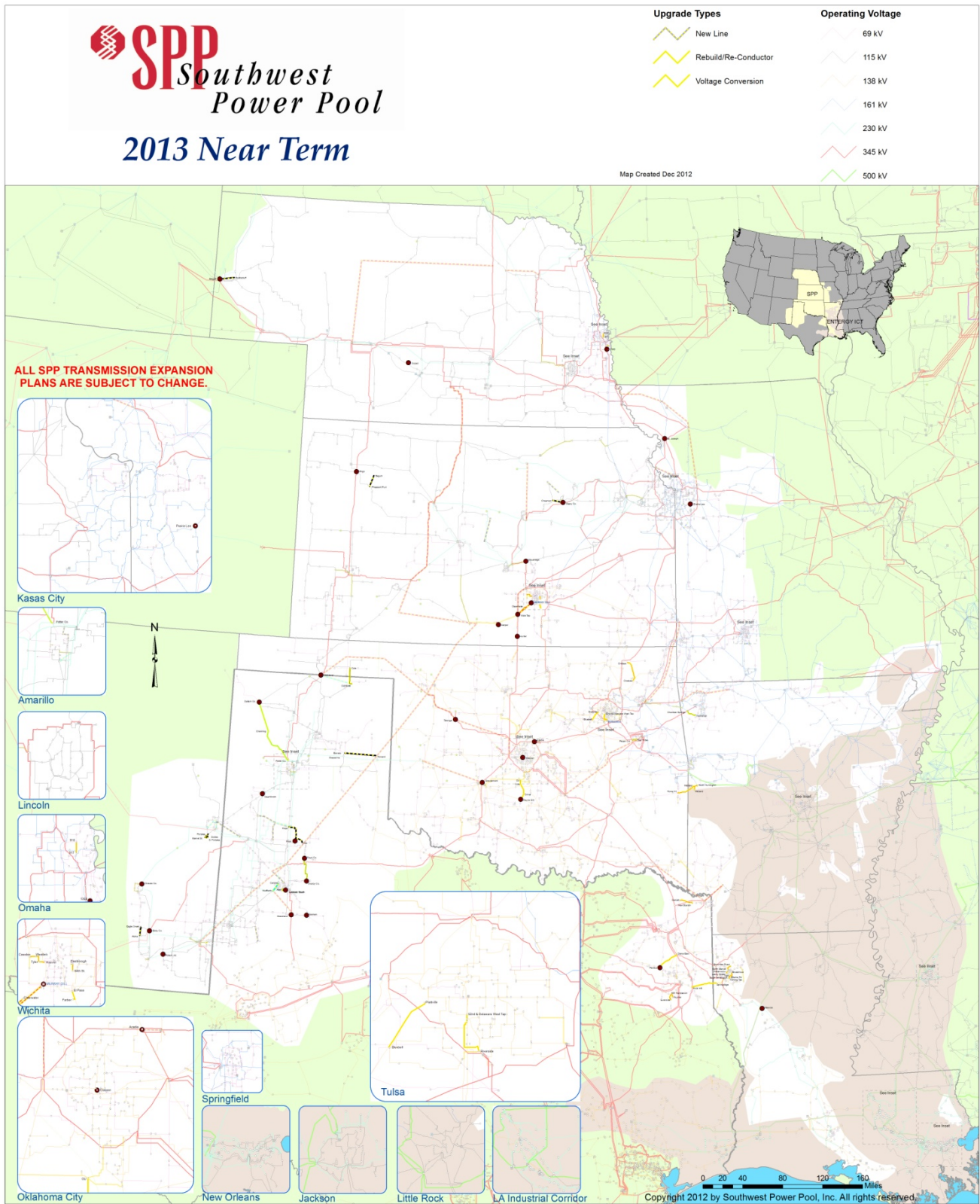


Figure 4:2013 ITPNT Plan

Section 4: Balanced Portfolio

The SPP Board of Directors approved the Balanced Portfolio⁴ projects in April 2009, and directed staff to finalize the Balanced Portfolio Report in accordance with the SPP Tariff and then issue Notification To Construct letters. The Notifications To Construct were issued in June 2009.

The Balanced Portfolio was an initiative to develop a group of economic transmission upgrades that benefit the entire SPP region, and to allocate those project costs regionally. The benefits of this group of 345 kV transmission upgrades have been demonstrated by model analysis to outweigh the costs, and the regional cost sharing creates balance across the SPP region.

Upgrade Type	2013 STEP (\$Million)	2012 STEP (\$ Million)	2010 STEP (\$ Million)
Balanced Portfolio	\$622	\$870	\$821

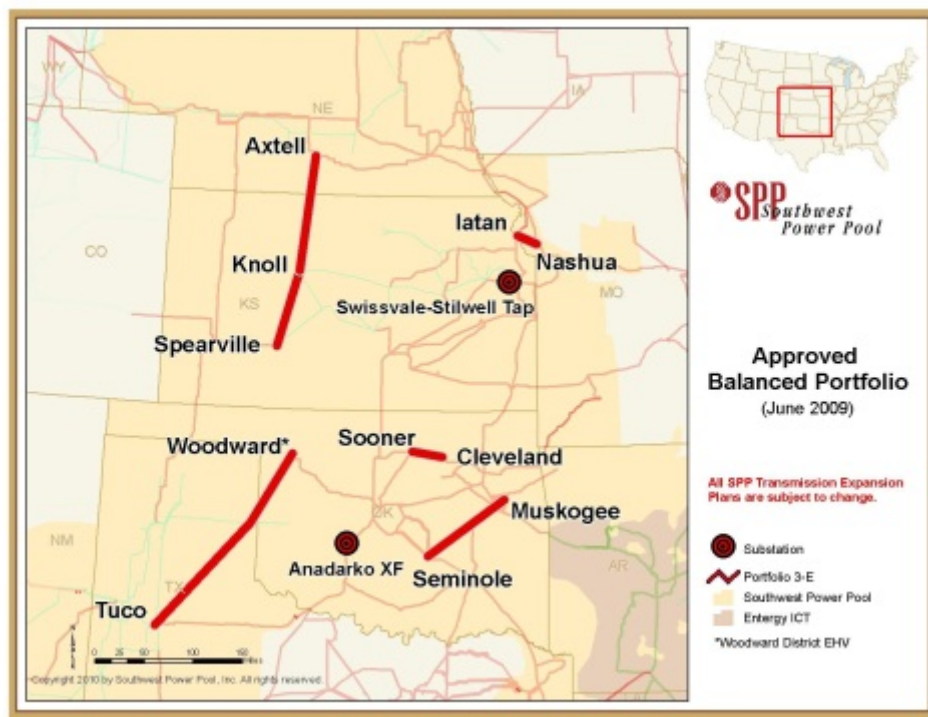


Figure 5: Balanced Portfolio Plan

Balanced Portfolio Projects Completed in 2012

NTC ID	Project ID	Facility Owner	Project Name	Current Cost Estimate
20044	705	WFEC	Tap Anadarko - Washita 138 kV line into Gracemont 345 kV	\$966,210
20046	707	ITCGP	Multi - Axtell - Post Rock - Spearville 345 kV	\$148,000,000
20047	708	ITCGP	Line - Axtell - Kansas Border 345 kV (NPPD)	\$59,194,981

⁴ For more information on the Balanced Portfolio, see the [full report](#) (SPP.org > Engineering > Transmission Planning > Balanced Portfolio).

Section 5: High Priority Studies

In 2010 the SPP Board of Directors and Members Committee approved for construction a group of "priority" high voltage electric transmission projects⁵ estimated to bring benefits of at least \$3.7 billion to the SPP region over 40 years. The projects will improve the regional electric grid by reducing congestion on the power lines, better integrating SPP's east and west regions, improving SPP members' ability to deliver power to customers, and facilitating the addition of new renewable and non-renewable generation to the electric grid.

Upgrade Type	2013 STEP (\$Million)	2012 STEP (\$ Million)	2010 STEP (\$ Million)
Priority Projects	\$1,392	\$1,444	\$1,418

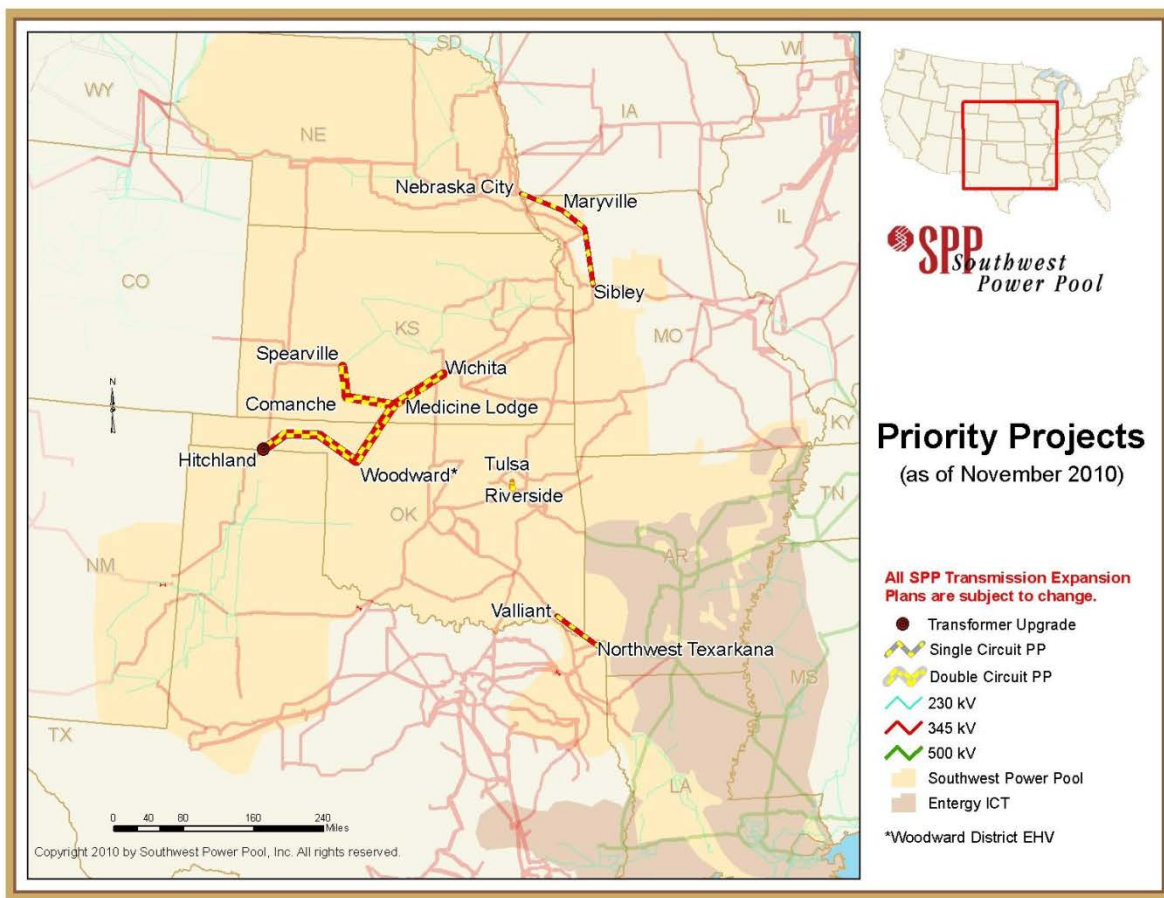


Figure 6: High Priority Studies Plan

⁵ For information on Priority Projects, see the [full report](#) (SPP.org > Engineering > Transmission Planning > Local Area Planning and High Priority Studies).

Completed High Priority Projects to Date

NTC ID	Project ID	Facility Owner	Project Name	Current Cost Estimate
20096	937	AEP	Tulsa Power Station 138 kV reactor	\$960,895

Section 6: Sponsored Upgrades

Sponsored upgrades are Network Upgrades requested by a Transmission Customer or other entity which do not meet the definition of any other category of Network Upgrades. Any entity may request that a Sponsored Upgrade be built. SPP will evaluate the impact of any Sponsored Upgrade on Transmission System reliability and identify any necessary mitigation of these impacts.

The Project Sponser must be willing to assume the cost of the Sponsored Upgrade, study costs, and any cost associated with necessary mitigation. The proposed Sponsored Upgrade will be submitted to the proper stakeholder working group for their review as a part of the transmission planning process.

Projects Completed in 2012

NTC ID	Project ID	Project Owner	Project Name	Current Cost Estimate
NA	279	KCPL	Line - Craig - Lenexa 161 kV	\$112,449
NA	897	OGE	Multi - 36 & Meridian - WRAirport - Pennsylvania 138 kV Ckt 1	\$510,000
NA	1041	SPS	Multi - Randall County Interchange - Palo Duro Sub 115 kV Ckt 1 Reconductor	\$13,776,330
NA	30199	NPPD	Device - Oneill 69 kV	\$364,500
NA	30344	LES	Line - 57 & Garland - 84 & Leighton 115 kV Ckt 1	\$2,372,000
NA	30387	WR	Multi - Creswell - BellePlain 138 kV	\$7,467,188
NA	30409	GMO	Device - Alabama 161 kV Cap	\$1,500,000

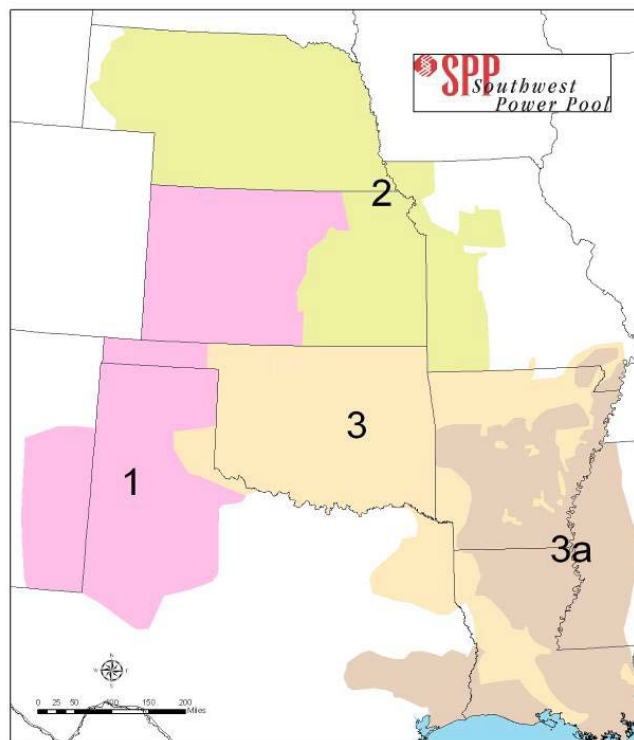
Section 7: Sub-Regional Planning

Based on FERC Order 890 and Section III.2.b of Attachment O of the OATT, sub-regional areas were defined and local area planning meetings were held during 2012. To reduce travel requirements on members, all SPP sub-regional meetings were conducted in conjunction with the SPP planning summits. In addition, SPP staff attended local meetings held by members.

The purpose of local area planning meetings is to identify unresolved local issues and transmission solutions at a more granular level than can be accomplished at general regional planning meetings. Local area planning meetings provide stakeholders with local needs the opportunity to give advice and recommendations to the Transmission Provider and Transmission Owners. Local area planning meetings are open, coordinated, and transparent, providing a forum to review local area planning criteria as specified in Section II of the OATT, Attachment O. Feedback offered at each sub-regional meeting is taken into consideration by SPP staff when developing the regional reliability plan.

7.1: Stakeholders Process and Forums

Notices for the sub-regional planning meetings are posted on SPP.org and distributed to email distribution lists. Sub-regional planning meetings are open to all entities. Any regulatory agency having utility rates or services jurisdiction over an SPP member is invited and encouraged to fully participate.



The map above represents the SPP region broken into three local areas. Local Area 3 has two components (3 and 3a) – the SPP RTO and SPP Independent Coordinator of Transmission (Entergy) footprints.

7.2: 2012 Sub-regional Meetings

On August 22, 2012, SPP held a sub-regional planning meeting in Little Rock, AR. Meetings for all sub-regions were held concurrently in breakout sessions during the SPP spring planning summit. Subject matter experts from SPP staff were present at all of the meetings to receive suggestions, answer questions, and discuss any concerns that stakeholders had about the transmission needs in their respective region. The next round of sub-regional planning meetings were held on December 4, 2012. These meetings took place in Little Rock as well.

On September 10, 2012, SPP representatives attended a local planning meeting hosted by Southwestern Public Service Company (SPS) in Amarillo, TX. SPS representatives provided several presentations which included updates on their construction plans.

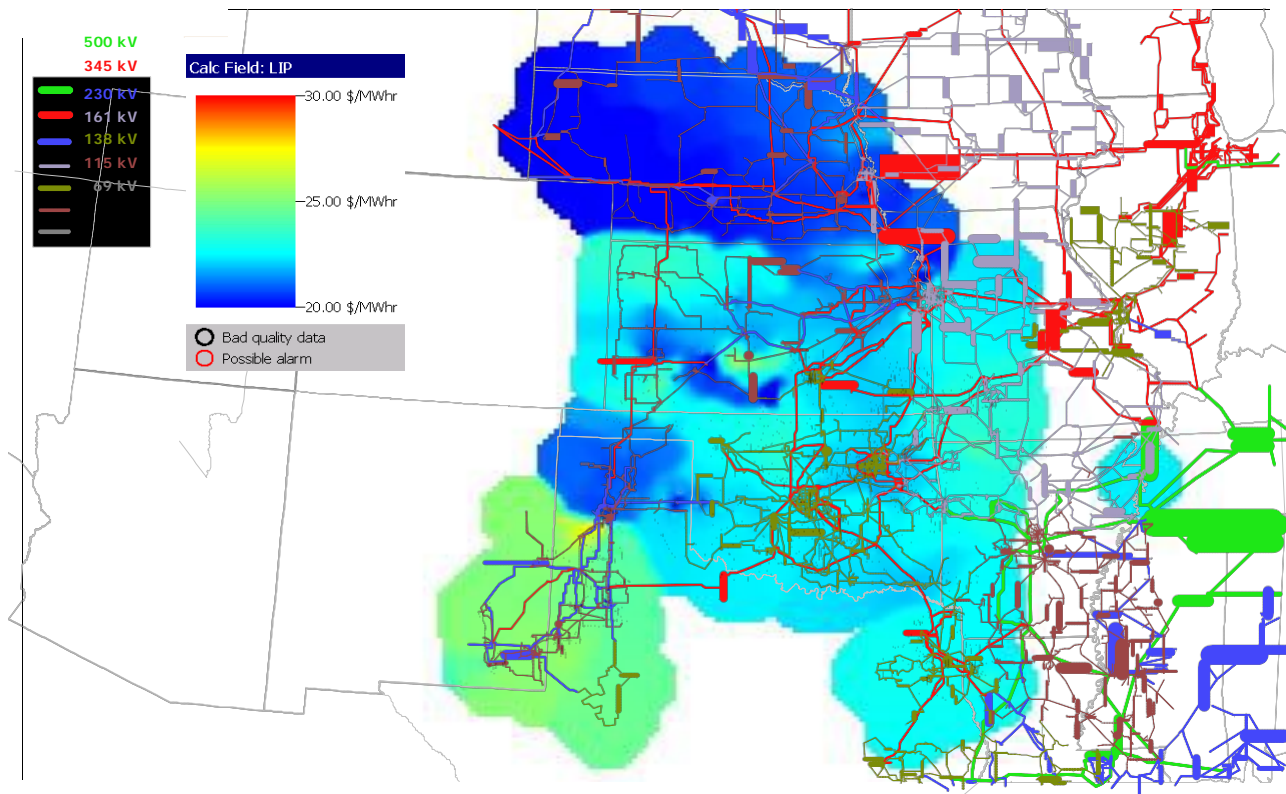
SPP staff participated in additional meetings and provided updates on current SPP planning activities and also fielded questions from meeting attendees. On March 28, 2012 SPP staff attended a Spring joint planning summit with representatives from East Texas Electric Cooperative, Northeast Texas Electric Cooperative, Tex-La Electric Cooperative of Texas and AEP. SPP staff attended a meeting with the same participants on October 3, 2012.

Section 8: Transmission Congestion and Top Flowgates

8.1: SPP 2012 Transmission Congestion

SPP staff identifies congested areas by monitoring flowgates and analyzing their causes and effects. The graphic below is a typical Energy Imbalance Services market price contour map for the SPP footprint. The map is from the November 2012 Monthly State of the Market Report and shows the average Locational Imbalance Prices (LIPs) from December 2011 to November 2012. The regions with the brighter shades (red, orange, and yellow) have higher LIPs. The areas with transmission congestion, on this annual basis, occur at the points between different shades of colors. Note that market prices vary over time and that the graphic shows the average price at the nodes.

12 Month EIS Price Contour Map



8.2: SPP Top 10 Flowgates

SPP monitors more than 260 flowgates. From these, the 10 SPP flowgates with the highest “shadow price” over the previous twelve months are shown in SPP’s Monthly State of the Market Reports posted on www.spp.org>Market and Operations>Market Reports. A shadow price is the amount of value, measured in dollars, of relieving a constraint by a small amount. The value of relieving a constraint is generally that lower-priced power can be used, so the value is reflected in the difference in Locational Imbalance Prices on either side of the constraint.

The table below shows the annual top 10 flowgates from the November 2012 Monthly State of the Market Report. This table includes a list of projects that are expected to provide some positive mitigation to the flowgates. This list of projects is sorted by the estimated in-service date. As described by the upgrade type, the upgrades were planned to provide one or more benefits, such as reliability or regional economic enhancements, but not necessarily to directly solve all congestion on the particular flowgate listed. SPP has directed project owners to begin construction on the projects shown in this table via NTCs. For more information about these projects, please refer to the Project Tracking & NTCs page on www.spp.org.

Region	Flowgate Name	Flowgate Location (kV)	Average Hourly Shadow Price (\$/MWh)	Total % Intervals (Breached or Binding)	Projects Expected to Provide Some Positive Mitigation (Estimated In Service Date – Upgrade Type)
Texas Panhandle	OSGCANBUSDEA	Osage Switch - Canyon East (115) ftlo Bushland - Deaf Smith (230) [SPS]	\$ 10.81	15.0%	<ol style="list-style-type: none"> 1. Tuco Int. – Woodward 345 kV line (May 2014 - Balanced Portfolio) 2. Castro County Int. – Newhart 115 kV line (April 2015 - Regional Reliability) 3. Tuco Int. – Amoco – Hobbs 345 lines (January 2020 – ITP10)
	SPSNORTH_STH	5 element PTDF flowgate north to south through west Texas	\$ 2.94	16.8%	<ol style="list-style-type: none"> 1. Tuco Int. – Woodward 345 kV line (May 2014 – Balanced Portfolio)
	GRAXFRSWEELK	Grapevine Xfmr (230/115) [SPS] ftlo Sweetwater – Elk City (230) [CSWS]	\$ 2.70	1.2%	<ol style="list-style-type: none"> 1. Bowers – Howard 115 kV line (June 2016 – ITPNT) 2. Altus Jct Tap – Russell 138 kV

Kansas City Area – Omaha Corridor	PENMUNSTRCRA	Pentagon – Mund (115) [WR] ftlo Stranger Creek – Craig (345) [WR-KCPL]	\$ 6.76	5.5%	<ol style="list-style-type: none"> 1. Tap existing Swissvale – Stilwell 345 kV line at West Gardner (Dec 2012 - Balanced Portfolio) 2. Terminal upgrade for Pentagon – Mund 115 kV line (TBD – ITPNT) 3. Iatan – Nashua 345 kV line (June 2015 - Balanced Portfolio)
	CIRKNGIATSTJ	Circleville - King Hill [WR] (115) ftlo Iatan - St. Joe (345) [KCPL]	\$ 4.24	1.0%	<ol style="list-style-type: none"> 1. Iatan – Nashua 345 kV line (June 2015 - Balanced Portfolio)
	LAKALASTJHAW	Lake Road – Alabama [GMOC] (161) ftlo St. Joe – Hawthorn [GMOC] (345)	\$ 2.64	1.0%	<ol style="list-style-type: none"> 1. Axtell – Post Rock – Spearville 345 kV line, two Spearville – Comanche – Flat Ridge – Woodward 345 kV lines, and two Flat Ridge – Wichita 345 kV lines (Dec 2014 - Balanced Portfolio/Priority Projects) 2. Iatan – Nashua 345 kV line (June 2015 - Balanced Portfolio) 3. Nebraska City – Maryville – Sibley 345 kV line (June 2017 - Priority Projects) 4. Eastowne Transformer (345/161) and decommission of Lake Road – Alabama 161 kV line (Jan 2013 – not NTC but is sponsored)
	IASCLKNASJHA*	Iatan – Stranger Creek (345) [KCPL/WR] ftlo Lake Road – Alabama (161) [KCPL/GMOC]; St. Joe – Hawthorn (345) [GMOC/KCPL]	\$ 2.47	10.8%	<ol style="list-style-type: none"> 1. Axtell – Post Rock – Spearville 345 kV line, two Spearville – Comanche – Flat Ridge – Woodward 345 kV lines, and two Flat Ridge – Wichita 345 kV lines (Dec 2014 - Balanced Portfolio/Priority Projects) 2. Iatan – Nashua 345 kV line (June 2015 - Balanced Portfolio) 3. Nebraska City – Maryville – Sibley 345 kV line (June 2017 - Priority Projects)
	SUBTEKFTCRAU*	Sub 1226 - Tekamah (161) ftlo Fort Calhoun - Raun (345) [OPPD/MEC]	\$ 2.46	0.5%	<ol style="list-style-type: none"> 1. Nebraska City – Maryville – Sibley 345 kV line (June 2017 - Priority Projects)

Transmission Congestion and Top Flowgates

Southwest Power Pool, Inc.

Western Kansas	MINXFRMINSET	Mingo Xfmr (345/115) ftlo Mingo - Setab (345) [SECI]	\$ 3.16	4.6%	1. Axtell-Post Rock-Spearville 345 kV (June 2013 – Balanced Portfolio 2. Hitchland – Woodward 345 kV (July 2014 – High Priority)
South Central Kansas	MEDXFRREDMIN	Medicine Lodge Xfmr (138/115) ftlo Red Willow – Mingo (345) [SECI – NPPD]	\$ 2.40	2.3%	1. Axtell – Post Rock – Spearville 345 kV lines (June 2013 - Balanced Portfolio)

Section 9: Interregional Coordination

As SPP pursues its strategy of building a robust transmission system, coordination between SPP and systems neighboring our footprint will become increasingly critical. In 2010, MOPC formed the Seams Steering Committee (SSC) to provide direction regarding development and implementation of SPP's seams agreements. The SSC has continued to focus on further development of seams coordination, particularly improved modeling of neighboring transmission systems, coordinated development of interregional solutions, and sharing costs of projects that comprise interregional solutions.

To achieve a robust transmission grid, transmission expansion at or near SPP's seams will be necessary. Interregional funding will be necessary to achieve these objectives. SPP staff needs to be fully engaged in these efforts.

9.1: Entergy/SPP Regional Planning Process

In accordance with FERC Order 890, SPP OATT Attachment O, and Entergy OATT Attachment K, the Entergy SPP RTO Regional Planning Process (ESRPP) was created to identify system enhancements that may relieve regional congestion between Entergy and Southwest Power Pool. The process shares system plans to ensure that they are simultaneously feasible and otherwise use consistent assumptions and data.

For the 2012 ESRPP Cycle, three studies were scoped as DC powerflow studies (Step 1 studies). Two studies were scoped for AC analysis (Step 2 studies) and more-detailed facility cost estimates and transmission designs. For the three Step 1 studies, power transfers from SPP South to Entergy Louisiana, Entergy to OG&E, and AEP to Entergy Louisiana were performed. All three high level studies showed required upgrades to reach the desired transfer capability. The transfer from Entergy to OG&E had the least cost (\$59.35 M) to obtain the desired transfer amount. The SPP South to Entergy Louisiana and AEP to Entergy Louisiana both transfer required significant upgrades (\$82.2 M) to reach the desired transfer capability. The cost per MW of the 1,021 MW transfer capability increase from SPP South to Entergy Louisiana was shown to be \$80,488 per MW. The Entergy to OG&E study allowed an increased transfer of 790 MW, at \$75,127 per MW. The AEP to Entergy Louisiana study allowed an increased transfer of 1,254 MW, at \$65,533 per MW. In all, the three high level transfer studies required major transmission improvements to transfer the desired amounts of power across the seam.

The detailed analysis (STEP 2) for the 2012 ESRPP Cycle involved transfer of power between the Entergy and EMDE as well as between Nebraska and Entergy. The cost to construct and design the projects to allow the Entergy to EMDE transfer was \$181.5M. For the Nebraska to Entergy transfer, the additional projects needed to increase the transfer capability between the areas are estimated to cost \$818.8M.

Details of the 2012 ESRPP can be found on Oasis.⁶

9.2: AECI Interaction

SPP and AECI performed a joint transmission study as required under the SPP-AECI JOA. This study consisted of a five and ten year reliability assessment of the region along the SPP-AECI seam. The assumptions for this study were similar to those used in the 2013 ITPNT. The study was guided by SPP

⁶ <https://www.oasis.oati.com/woa/docs/EES/EESdocs/EntergySPPRTORegionalPlanningProcess.htm>

and AECI stakeholders through the SPP-AECI IPSAC which met via conference calls several times throughout the study.

SPP performed the five-year assessment and AECI performed the ten-year assessment. The results were reviewed by both regions. The results of the assessments identified potential issues on each party's system; however, there were not any issues identified that could be addressed by a transmission solution that would provide value to both SPP and MISO.

Since no potential opportunities for coordination on a joint project were identified in the reliability assessments, AECI and SPP worked with the respective stakeholders to determine if there were additional opportunities that were not evident in the reliability assessments. Several items were proposed by both SPP and AECI stakeholders. These issues were reviewed and narrowed down to the items that both parties were interested in pursuing. AECI plans to provide SPP with potential solutions for these issues by the end of 2012. SPP will then evaluate these solutions in 2013.

9.3: MISO Joint Future Coordination

Through a desire to better model each other's systems, SPP and MISO decided to coordinate in the development of a joint future model. This joint future model will use the same assumptions and required approval of the assumptions by both the SPP Economic Studies Working Group (ESWG) and the MISO Planning Advisory Committee (PAC). The assumptions in the joint future are similar to each region's business as usual future. The joint future in the SPP planning process is the 2013 ITP20 Future 5. MISO is using the joint future as a sensitivity in the MISO Transmission Expansion Plan (MTEP).

The development of the joint future has been challenging and has taken a considerable amount of time to develop. This has delayed the development of the joint future model compared to the models for the ITP20 futures 1 through 4. There are significant challenges associated with merging two different models. This effort has provided an opportunity to identify hurdles and challenges that will be experienced under the new interregional planning process that is being developed in response to FERC Order 1000.

SPP will use the joint future as a part of the 2013 ITP20. The joint future, future 5, has a weight of 10% in the 2013 ITP20.

9.4: WAPA Interaction

In the 2012 ITP10 SPP identified a transmission solution that would interconnect with a WAPA owned facility. The ITP10 project is the Cherry County – Holt County 345 kV line. This proposed line would interconnect with the WAPA owned Fort Thompson – Grand Island 345 kV line at a new substation at Holt County. SPP has worked with Nebraska Public Power District and WAPA on meeting the WAPA requirements to interconnect and determine what the impacts will be to the WAPA system.

In 2012 SPP and WAPA executed a new JOA. This JOA provides for enhanced interregional coordination between the two regions, including a requirement to perform a joint transmission study over two years.

9.5: Eastern Interconnection Planning Collaborative

The Eastern Interconnection Planning Collaborative (EIPC) represents the entire Eastern Interconnection and was initiated by a coalition of NERC-registered regional Planning Authorities. The EIPC was founded to be a broad-based, transparent collaborative process among all interested stakeholders:

- State and federal policy makers

- Consumer and environmental interests
- Transmission Planning Authorities
- Market participants within the Eastern Interconnection

The EIPC builds on the regional expansion plans developed each year by regional stakeholders in collaboration with their respective NERC Planning Authorities. This approach provides coordinated interregional analysis for the entire Eastern Interconnection guided by the consensus input of an open and transparent stakeholder process.

The EIPC represents a first of its kind effort to involve Eastern Interconnection Planning Authorities in modeling the impact on the grid of various policy options determined to be of interest by state, provincial, and federal policy makers and other stakeholders. This work will build on, rather than replace, current local and regional transmission planning processes developed by the Planning Authorities and associated regional stakeholder groups within the Eastern Interconnection. Those processes will be informed by EIPC efforts, including the interconnection-wide review of existing regional plans and development of transmission options associated with the various policy options.

The EIPC throughout 2012 established a processes for aggregating the entire Eastern Interconnection's modeling and regional transmission plans. The EIPC also established processes for performing interregional analyses to identify potential opportunities for efficiencies between regions in serving the needs of electrical customers. This interconnection-wide analysis served as the reference case for modeling alternative grid expansions based on scenarios guided by stakeholder input and consensus recommendations of a multi-constituency stakeholder steering committee.

Stakeholders participating in the EIPC efforts identified three scenarios and developed a transmission solution portfolio for each of the scenarios.

- Scenario 1: Nationally implemented Federal Carbon Constraint with Increased Energy Efficiency and Demand Response. Two 2030 models will be built for this scenario, peak and off-peak.
- Scenario 2: Regionally Implemented National Renewable Portfolio Standard (30%). Two models will be built for this scenario, peak and off-peak.
- Scenario 3: Business as Usual. One peak model.

The build-out for the scenario 3 would require \$1.1 to \$1.2 billion of transmission costs in SPP. The build-out for the scenario 2 would require \$13.9 - \$24 billion. The scenario 1 would require \$19.5 – \$34.4 billion.

SPP Engineering Involvement

The SPP Engineering department has been actively involved in multiple aspects of the EIPC effort. Having participated in the construction of the steady state load flow models, the Steady State Model Load Flow Working Group (SSMLFWG) submitted their work to the EIPC at the end of 2010. In 2011, SPP participated in quarterly Stakeholder Planning Committee (SPC) meetings and provided input and advice during the macroeconomic resource expansion analysis. This analysis produced more than 80 possible scenarios, from which three were selected in 2011 for transmission build-out in 2012. SPP actively participated in the modeling and solution development efforts.

Section 10: Project Tracking

Business Practice 7060

Applicable to projects issued a NTC on or after January 1, 2012, the MOPC approved Business Practice 7060 on March 27, 2012. The Business Practice commenced a cost estimation process defined by a tiered approach for project cost estimates based upon the level of project definition that is known. It also introduced the Notification to Construct with Conditions (NTC-C) issued to Applicable Projects, projects with an estimated cost \$20 Million or greater and a nominal operating voltage greater than 100 kV. The table below lists the cost estimate stage definitions.

Cost Estimate Stage Definition Overview

Estimate Name*	Stage		End Usage	Precision Bandwidth
	Projects > 100 kV & > \$20 Million	All other BOD Approved Projects		
Conceptual	1	1	Concept screening for ITP20/ITP10	-50% to + 100%
Study	2	2	Study of feasibility and plan development for ITP10/ITPNT	-30% to +30%
	NTC-C Issued	NTC Issued		
NTC-C Project (CPE)	3	N/A	Final baseline (NTC-C)**	-20% to +20%
	New NTC Issued			
NTC Project (NPE)	N/A	3	Final baseline (NTC)**	-20% to +20%
Design & Construction	4	4	Design after NTC issued and build the project	-20% to +20%***

* The Conceptual Estimate will be prepared by SPP. All subsequent estimates will be prepared by the DTO(s).

**BOD approval required to reset the baseline.

***Actual cost is expected to be within +/-20% of final baseline estimate.

The precision bandwidths defined in Business Practice 7060 are used as guidelines for NTC review triggers. For a project that is issued a NTC-C, an automatic review of the project is initiated if the $\pm 20\%$ precision bandwidth of the cost estimate that is received after NTC-C issuance, called the NTC-C Project Estimate (CPE), exceeds the $\pm 30\%$ bandwidth of the cost estimate previously submitted during the study phase of the project, titled the Study Estimate. SPP staff issued NTC-Cs for 9 Applicable Projects during 2012.

Project Cost Working Group

Business Practice 7060 also defined the role of the Project Cost Working Group (PCWG) for reviewing projects that have experienced a cost variance that exceeds $\pm 20\%$ of the established baseline estimate.

The PCWG will initially be responsible for only Applicable Projects. If the PCWG recommends a restudy and/or changes or revocation of a NTC, the recommendation to the MOPC would follow SPP's existing processes for approval to the BOD. The BOD will make the final determination on whether to restudy and/or change or revoke the NTC.

The PCWG is also responsible for maintaining the Standardized Cost Estimate Reporting Template (SCERT) developed to provide consistency of cost estimates and facilitate the Project Tracking process. The SCERT is to be utilized by Transmission Owners for all project cost estimates and applicable monthly/quarterly updates.

NTC Letters Issued in 2012

The NTC, previously called a Letter of Authorization, informs transmission project owners of their responsibility for constructing BOD approved network upgrades. NTCs were requested by project owners to assist them in the regulatory and cost recovery process. In 2012, 26 NTCs were issued with current estimated engineering and construction costs of \$1.53 billion. Of this \$1.53 billion, \$1.45 billion was identified for regional reliability, \$12 million for transmission service, \$3 million for zonal reliability, and \$5 million for generation interconnection. Two of the 26 NTCs were issued for a Balanced Portfolio project with an estimated cost of \$54 million, but these were modified NTCs to reflect the new ownership of the project between Kansas City Power & Light and KCP&L Greater Missouri Operations.

Projects Completed in 2012

As of the fourth quarter of 2012, 85 upgrades had been completed. Of the upgrades completed in 2012, 43 were identified for regional reliability, 11 for zonal- sponsored/zonal reliability needs, 19 for transmission service, four (4) for generation interconnection agreements, three (3) for regional reliability-non OATT, and five (5) for Balanced Portfolio.

The total estimated engineering and construction cost for upgrades completed in 2012 was \$858.5 million, with \$305.5 million for regional reliability, \$270.6 million for transmission service, \$27.1 million for zonal-sponsored/reliability upgrades, \$34.3 million for generation interconnection agreements, \$12.9 million for regional reliability-non OATT, and \$208.2 for Balanced Portfolio.

NTCs Issued in 2012

NTC ID	Project ID	Facility Owner	Project Name	Current Cost Estimate
200167	502	AEP	Line - Northwest Henderson - Poynter 69 kV	\$7,815,833
	503	AEP	Line - Diana - Perdue 138 kV	\$1,004,187
	882	AEP	Line - Carthage - Rock Hill 69 kV Ckt 1 rebuild	\$11,830,128
	1012	AEP	Line - Diana - Perdue 138 kV Reconductor	\$18,805,489
	30346	AEP	Sub - Cornville 138 kV	\$21,664,838
	30354	AEP	Device - Coweta 69 kV Capacitor	\$1,428,440
	200183	30361	AEP	Multi - Elk City - Gracemont 345 kV
200189	703	GMO	Multi - Iatan - Nashua 345 kV	\$48,438,919
200168	549	GRDA	Maid - Pryor Foundry South 69 kV Ckt 1	\$1,374,534
	550	GRDA	Maid - Redden 69 kV Ckt 1	\$1,419,469
200187	30367	ITCGP	Multi - Elm Creek - Summit 345 kV	\$42,697,637
200169	1135	KCPL	Loma Vista East - Winchester Junction North 161 kV Ckt 1	\$190,860
200188	703	KCPL	Iatan - Nashua 345 kV Ckt 1 (KCPL)	\$12,130,261
200171	30352	LES	Folsom & Pleasant Hill - Sheldon 115 kV Rebuild Ckt 2	\$6,382,777
200172	30358	MIDW	Multi - Ellsworth - Bushton - Rice 115 kV	\$4,102,384
200173	30347	MKEC	Haggard - Ingalls 115 kV Ckt 1	\$23,377,556
	30358	MKEC	Multi - Ellsworth - Bushton - Rice 115 kV	\$21,735,118
200170	816	NPPD	Albion - Genoa 115 kV Ckt 1	\$1,240,000

	30237	NPPD	Holdrege 115 kV	\$1,193,000
	30286	NPPD	Multi - Stegall 345/230 kV Transformer Ckt 2	\$5,239,000
200186	30374	NPPD	Multi - Hoskins - Neligh 345 kV	\$96,702,400
	30375	NPPD	Multi - Gentleman - Cherry - Holt 345 kV	\$289,280,000
200174	30092	OGE	Device - Kolache 69 kV Capacitor	\$523,888
	30302	OGE	Paoli 138/69 kV Transformer Ckt 1 (OGE)	\$2,090,660
	30357	OGE	Lula 69 kV	\$377,797
200185	30361	OGE	Multi - Elk City - Gracemont 345 kV	\$75,486,000
	30364	OGE	Multi - Woodward EHV - Tatonga - Matthewson - Cimarron 345 kV	\$206,966,741
200194	30481	OGE	Line - El Reno - Service PL El Reno 69 kV CKT 1	\$10,000
	30485	OGE	XFR - Northwest 345/138 kV transformer CKT 3 accelerated	\$2,260,299
200198	858	OGE	Multi - Cushing Area 138 kV	\$15,000,000
200199	30486	OGE	Multi - Renfrow 345/138 kV substation and Renfrow - Grant 138 kV line	\$28,563,915
200166	151	SPS	XFR - Tuco 115/69 kV Transformer Ckt 3	\$2,633,003
	461	SPS	Line - Curry - Bailey 115kV	\$35,099,588
	805	SPS	Multi - Bowers - Howard 115 kV Ckt 1	\$25,557,920
	836	SPS	Sub - Convert Muleshoe East 69 kV to 115 kV	\$2,917,236
	839	SPS	Multi - Kress Interchange - Kiser - Cox 115 kV	\$26,205,991
	884	SPS	XFR - Eddy County 230/115 kV Transformer Ckt 2	\$4,863,725
	1003	SPS	XFR - Grassland 230/115 kV Transformer Ckt 1	\$3,914,401
	1033	SPS	Line - Randall - South Georgia 115 kV reconductor	\$3,816,651
	1034	SPS	Line - Hereford - Northeast Hereford 115 kV Ckt 1	\$4,139,406
	1141	SPS	XFR - Spearman 115/69/13.2 Ckt 1 Upgrade	\$2,351,378
	30087	SPS	Device - Bushland Interchange 230 kV Capacitor	\$1,714,505
	30332	SPS	Device - Drinkard 115 kV Capacitor	\$2,225,089
	30351	SPS	Device - Crosby 115 kV Capacitor	\$985,519
	30353	SPS	Sub - Move lines from Lea Co 230/115 kV sub to Hobbs Interchange 230/115 kV	\$10,608,509
	30356	SPS	Multi - Cedar Lake Interchange 115 kV	\$13,224,520
200184	1149	SPS	Multi - Tuco - Stanton 345 kV	\$37,490,796
	30355	SPS	Line - Grassland - Wolfforth 230 kV	\$50,068,309
	30376	SPS	Multi - Tuco - Amoco - Hobbs 345 kV	\$181,415,883
200193	1000	SPS	Line - Jones Station Bus#2 - Lubbock South Interchange 230 kV CKT 2 terminal upgrade	\$345,942
	30422	SPS	XFR - Deaf Smith County Interchange 230/115 kV transformer CKT 1	\$4,273,633
200175	624	WR	Line - Fort Junction - West Junction City 115 kV	\$6,969,136
	30335	WR	Device - Wheatland 115 kV Capacitor	\$957,660
	30336	WR	Device - Northwest Manhattan 115 kV Capacitor	\$957,660
	30339	WR	Mund - Pentagon 115 kV	\$278,300
	30348	WR	Line - Cowskin - Centennial 138 kV rebuild	\$3,676,071
	30350	WR	Device - Elk River 69 kV Capacitor	\$1,007,160
200176	30383	WR	MULTI - RICE - CIRCLE 230KV CONVERSION	\$5,095,881
200179	30349	WR	XFR - Auburn Road 230/115 kV Transformer Ckt 1	\$29,507,894
200181	30369	WR	XFR - Moundridge 138/115 kV	\$18,063,183
200182	30367	WR	Multi - Elm Creek - Summit 345 kV	\$62,110,152
200197	30406	WR	Line - Greenleaf - Knob Hill 115 kV CKT 1 WR	\$456,403
	30431	WR	Line - El Paso - Farber 138kV CKT 1	\$5,561,163

Section 11: Appendix A

Appendix A includes a comprehensive listing of transmission projects identified by the SPP RTO. Not all projects in Appendix A have been approved by the Board, but all Board-approved projects are included in the list. Appendix A also includes Tariff study projects, economic projects, zonal projects, and associated interregional projects.

Projects in Appendix A are categorized in the column labeled “Project Type” by the following designations:

Balanced Portfolio – Projects identified through the Balanced Portfolio process

Generation Interconnect – Projects associated with a FERC-filed Generation Interconnection Agreement

Interregional – Projects developed with neighboring Transmission Providers

High priority – Projects identified in the high priority process

ITP – Projects needed to meet regional reliability, economic, or policy needs in the ITP study processes

ITP – non-OATT – Projects to maintain reliability for SPP members not participating under the SPP OATT

Transmission service – Projects associated with a FERC-filed Service Agreement

Zonal Reliability – Projects identified to meet more stringent local Transmission Owner criteria

Zonal – sponsored – Projects sponsored by facility owner with no Project Sponsor Agreement

The complete Network Upgrade list includes two dates.

1. In-service: Date Transmission Owner has identified as the date the upgrade is planned to be in-service.
2. SPP Need Date: Date upgrade was identified as needed based on the latest ITP assessments or aggregate study.

The cost estimates highlighted in yellow were estimated by SPP.

Facility owner abbreviations used in Appendix A:

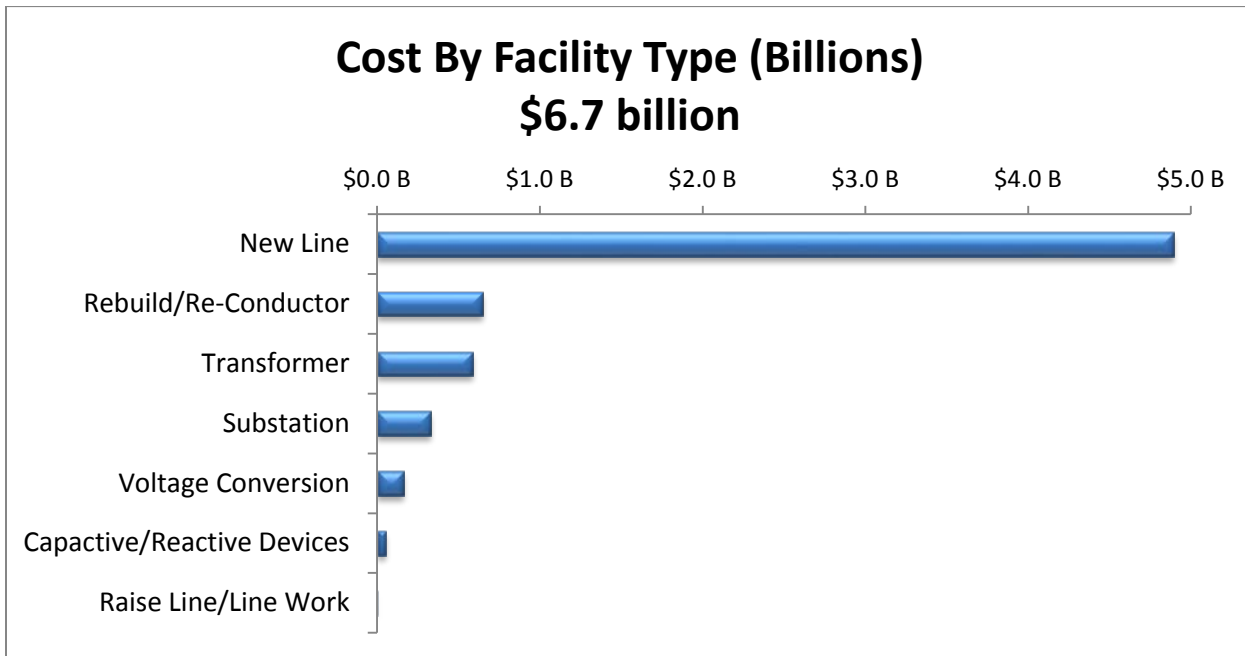
Abbreviation and Identification	
AECC	Arkansas Electric Cooperatives
AECI	Associated Electric Cooperative, Incorporated
AEP	American Electric Power
CUS	City Utilities, Springfield Missouri
DETEC	Deep East Texas Electric Cooperative
EDE	Empire District Electric Company
GMO	KCP&L Greater Missouri Operations Company
GRDA	Grand River Dam Authority
GRIS	Grand Island Electric Department (GRIS)
INDN	City Power & Light, Independence, Missouri
ITCGP	ITC Great Plains
KCPL	Kansas City Power and Light Company
LEA	Lea County Cooperative
LES	Lincoln Electric System
MIDW	Midwest Energy, Incorporated
MKEC	Mid-Kansas Electric Company
NPPD	Nebraska Public Power District
OGE	Oklahoma Gas and Electric Company
OMPA	Oklahoma Municipal Power Authority
OPPD	Omaha Public Power District
PW	Prairie Wind Transmission
RCEC	Rayburn Electric Cooperative
SEPC	Sunflower Electric Power Corporation
SPS	Southwestern Public Service Company
SWPA	Southwestern Power Administration
WFEC	Western Farmers Electric Cooperative
WR	Westar Energy

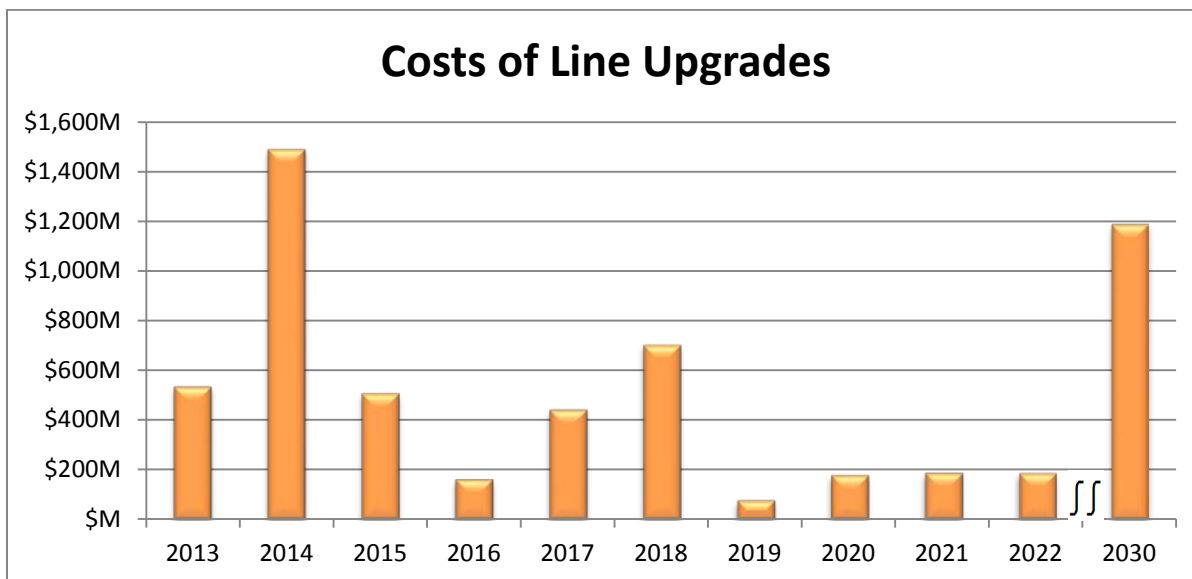
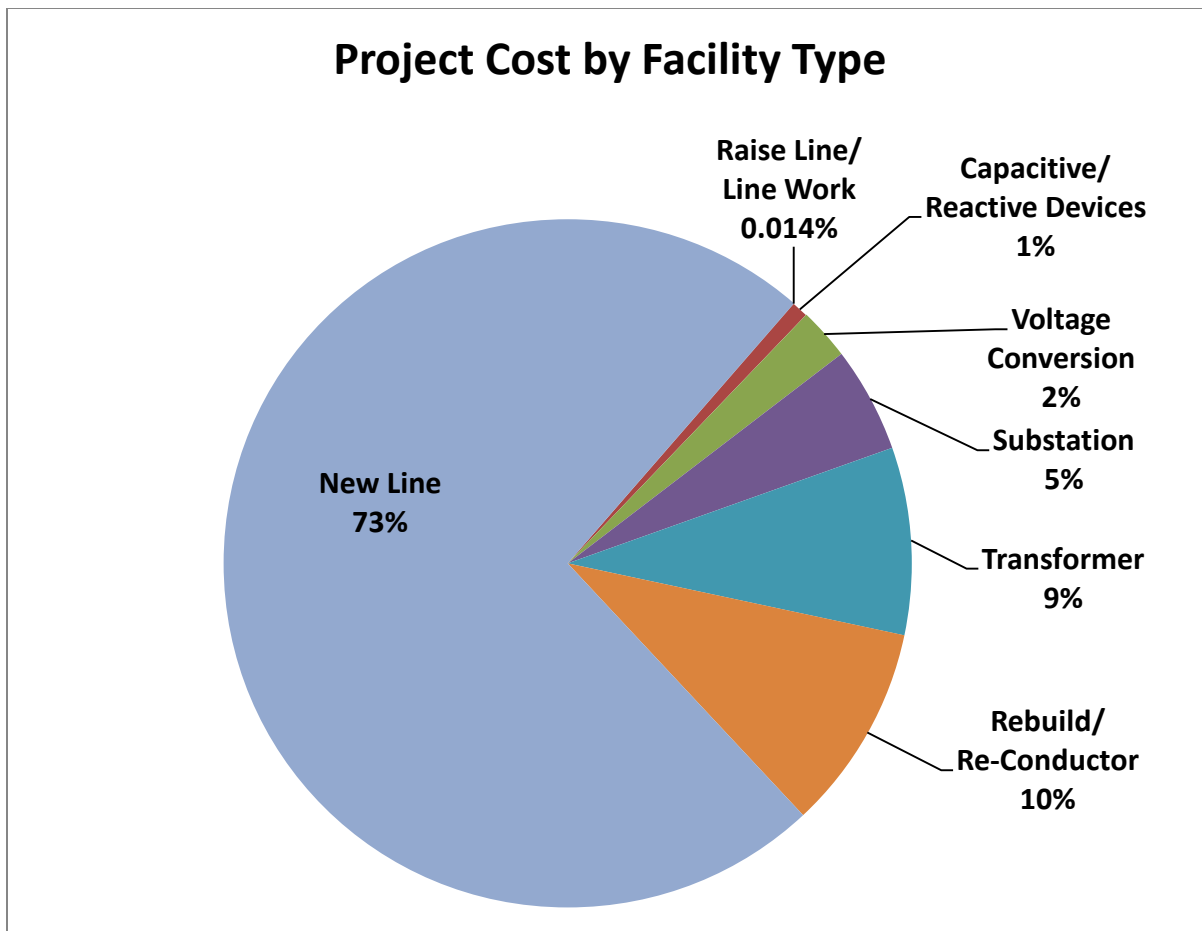
Appendix A Summaries

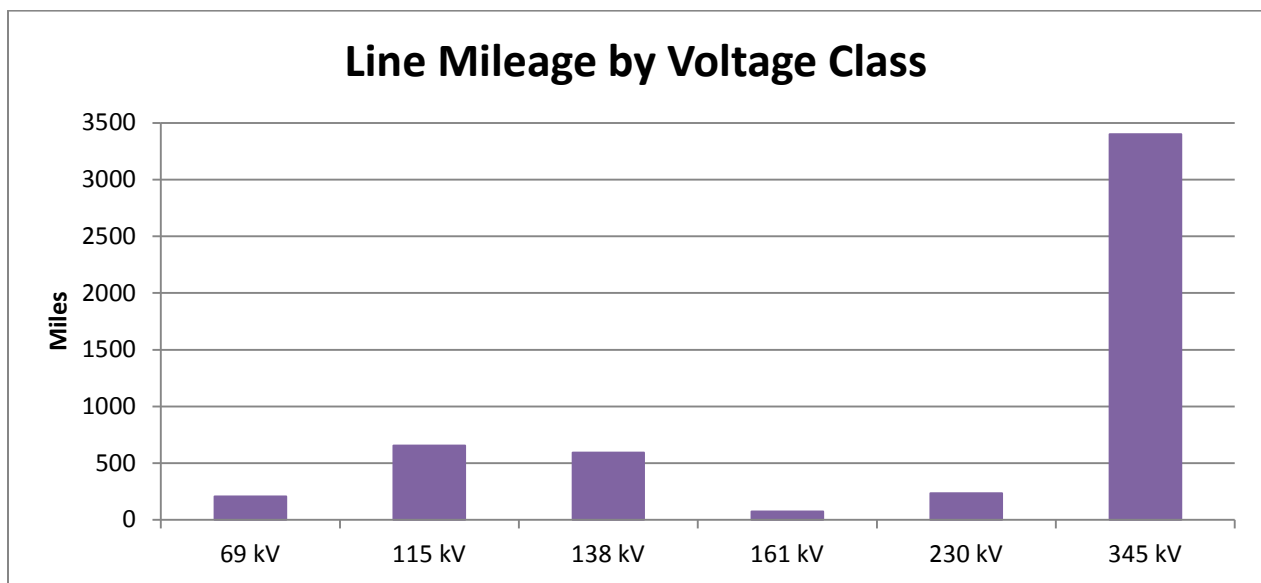
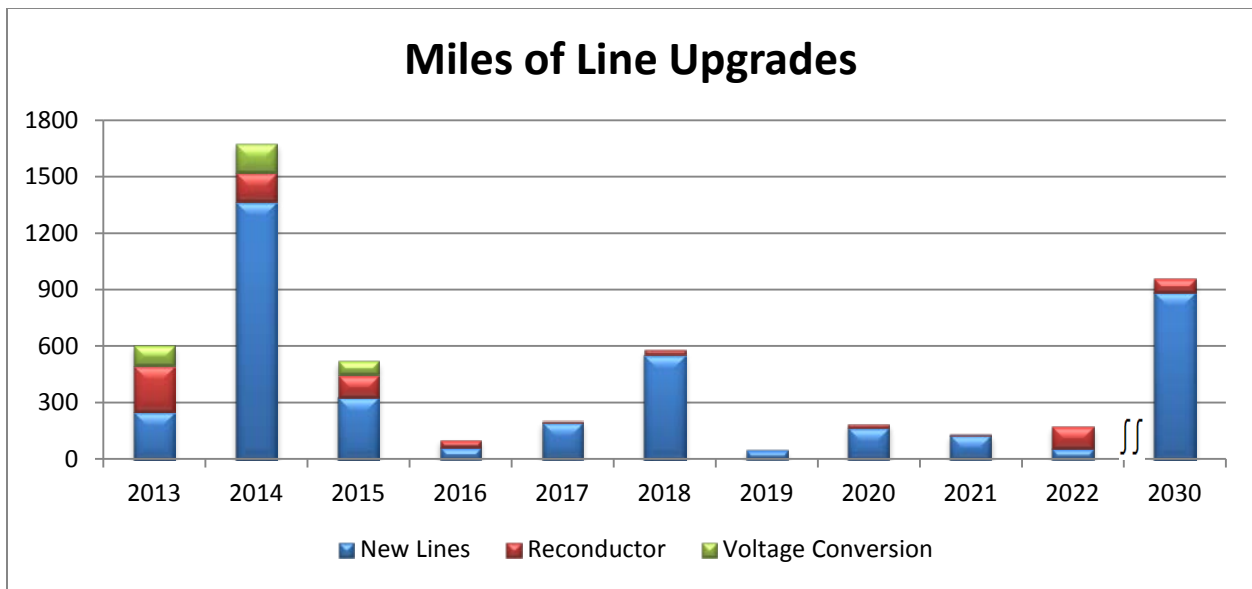
2013 STEP (Nearest 10 Million)	Upgrade Type
\$1,390	2010 Priority Projects
\$620	2009 Balanced Portfolio
\$210	Transmission Service Request and Generation Interconnection Service Agreements
\$2,820	ITP - Base Plan
\$1,510	ITP - Other
\$180	Sponsored Upgrades
\$6.7B	SPP Subtotal
\$100	non-OATT upgrades*
\$6.8B	Appendix A - TOTAL

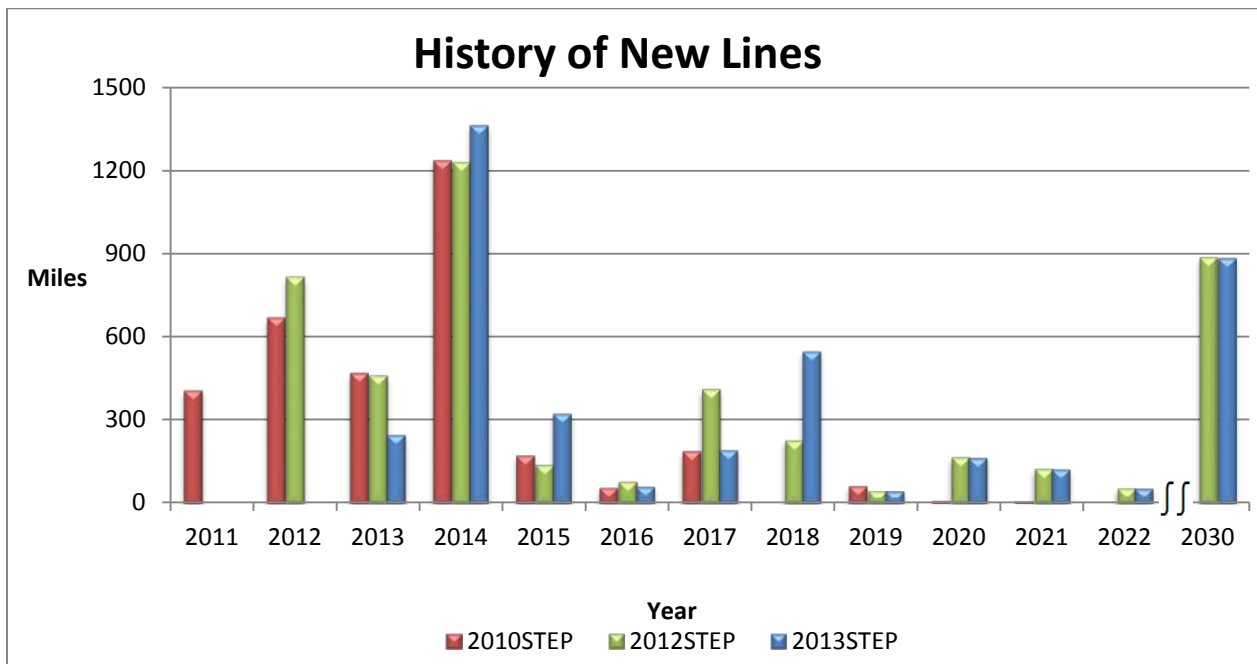
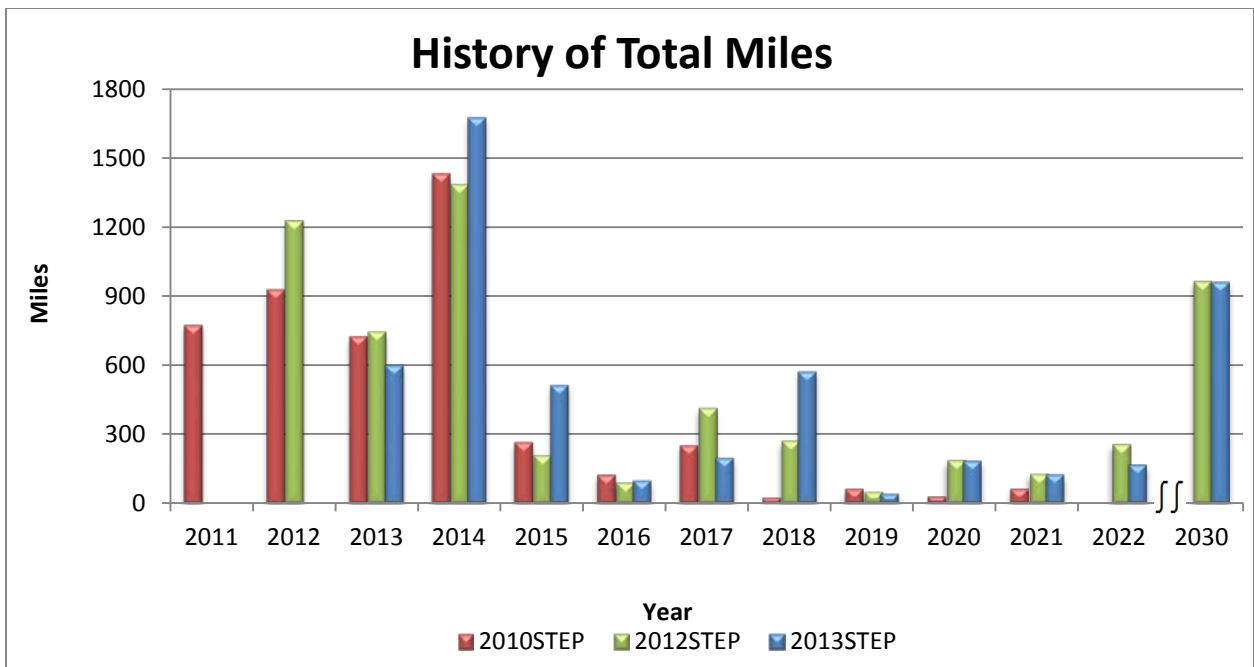
* Includes Southwestern Power Administration projects

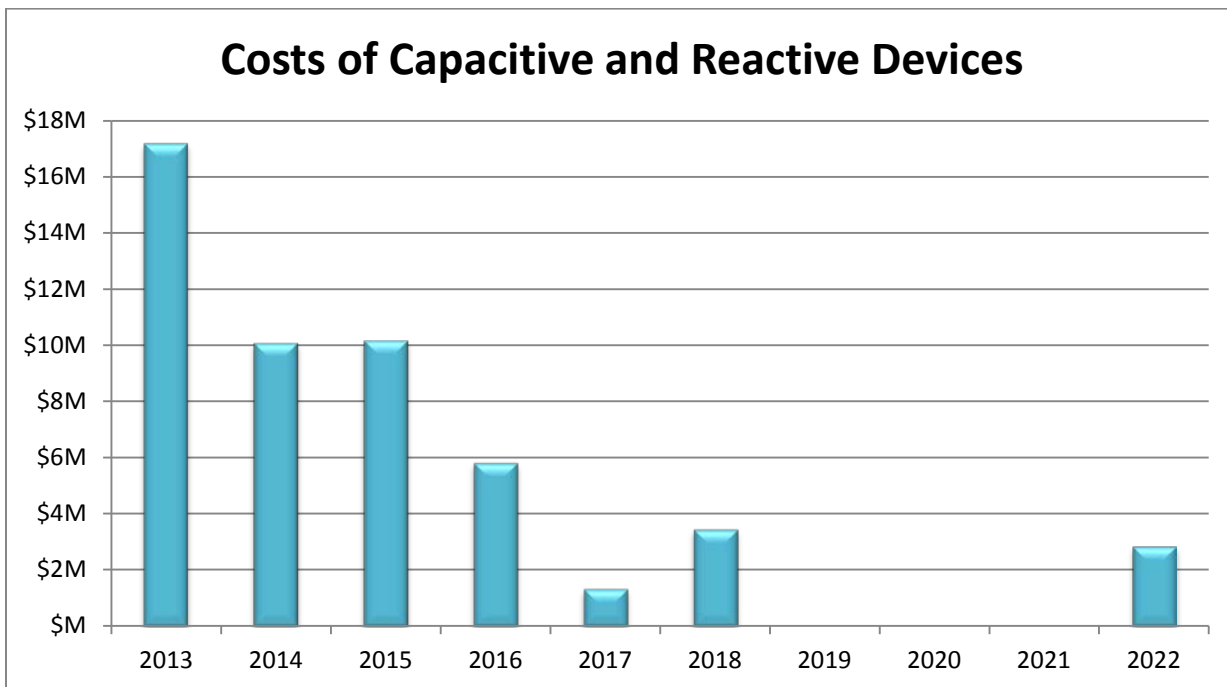
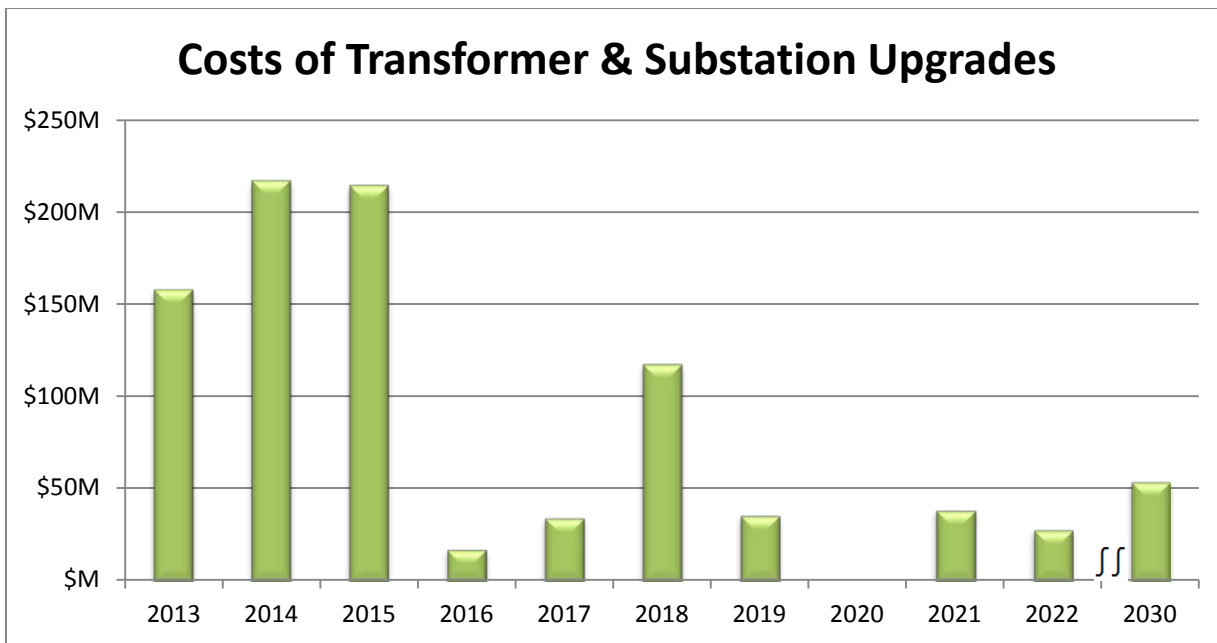
Has filed Service Agreement or is Board-approved











Appendix A - Complete List of Network Upgrades

NTC ID	PID	UID	Facility Owner	2013 Project Type	Cost Estimate	Estimated Cost Source	Project Description/Comments	TO Projected In-Service	SPP Determined Need Date	Project Lead Time (Mo)	From Bus Number	From Bus Name	To Bus Number	To Bus Name	Circuit	Voltages (kV)	Miles of Recond uctor	Miles of New Line	Miles of Voltage Conversi on	Ratings
2013																				
	283	10367	AECI	inter-regional	\$86,017,699	AECI	The proposed line connects to the Morgan - Neosho 345kV line near the Kansas border -- This is the proposed Blackberry sub. From Blackberry the 108 mile 345kV line connects to Chouteau 345 kV bus which connects via a 5 mile 345kV circuit to GRDA 1 bus (GRDA 2 gen). At the Chouteau 345kV bus a 345/161 transformer connects to Chouteau 161kV sub.	04/01/13			300739	Blackberry	300740	Sportsmans Acres	1	345		108		1369/1369
20027	443	10575	AEP	ITP	\$2,000,000	AEP	Tap the South Springdale-East Fayetteville 161 kV line and build 1.5 miles of 161 kV to new Osbourne station.	06/01/13	06/01/13	24	506984	Osborne Tap	506985	Osborne	1	161		1.5		428/636
20073	767	11011	AEP	ITP	\$24,965,000	AEP	Convert 17 mile Canadian River - McAlester City line from 69 kV to 138 kV.	06/01/13	06/01/10	36	510946	Canadian River 138	510908	McALESTER City SOUTH	1	138			17	321/443
20073	767	11012	AEP	ITP	\$9,513,000	AEP	Tap Pittsburg - Muskogee 345 kV about 33 miles north of the Pittsburg station and step down to 138 kV with a 450 MVA autotransformer.	06/01/13	06/01/10	36	515422	Canadian river 345kv	510946	Canadian River 138	1	345/138				450/495
20073	767	11184	AEP	ITP	\$4,096,000	AEP	Rebuild McAlester City Tap, double circuiting existing line, eliminate the 'T' at McAlester City North Tap.	06/01/13	06/01/10	36	510908	McALESTER City SOUTH	510909	McALESTER CITY NORTH TAP	1	138	5.73			96/105
20064	770	11015	AEP	ITP	\$2,500,000	AEP	Rebuild 2.45 miles of 795 ACSR with 1590 ACSR and reset relays.	06/01/13	06/01/13	12	504124	ASHDOWN WEST	510890	CRAIG JUNCTION	1	138	2.45			265/287
20112	1023	11347	AEP	transmission service	\$7,200,000	AEP	Rebuild 7.11 miles of 397.5 ACSR with 1272 ACSR	06/01/13	06/01/12		507759	SOUTHWEST SHREVEPORT 138KV	507757	SPRINGRIDGE PAN-HARR REC	1	138	7.11			287/287
20112	1024	11348	AEP	transmission service	\$2,800,000	AEP	Rebuild 2.49 miles with 1590 ACSR. Replace wavetrap and jumpers at Whitney. Replace metering CT at Eastex.	06/01/13	06/01/12		508575	WHITNEY 138KV	508582	TEXAS EASTMAN	1	138	2.49			320/380
20122	1081	11421	AEP	ITP	\$2,100,000	AEP	Rebuild 1.68-mile Hooks - Lone Star Ordinance Tap 69 kV line. Replace switch 6006 at Lone Star Ordinance.	06/01/13	06/01/13	18	508057	HOOKS	508063	LONESTAR ORDINANCE TAP	1	69	1.68			143/143
20122	30148	50156	AEP	ITP	\$6,600,000	AEP	Rebuild Bann - Lone Star Ordinance 69 kV with 1272 ACSR (5.4 miles). Replace jumpers, upgrade CT ratios and adjust relay settings at Bann. Replace 69 kV switch at Lone Star Ordinance Tap with a minimum 800 amp emergency rating.	06/01/13	06/01/13	21	508053	BANN 69KV	508063	LONESTAR ORDINANCE TAP	1	69	5.4			90/121
20135	30316	50375	AEP	transmission service	\$5,500,000	AEP	Replace auto with new 450 MVA.	06/01/13	06/01/13	20	508832	DIANA 345KV	508831	DIANA 138KV	3	345/138				450/495
20135	30319	50365	AEP	ITP	\$900,000	AEP	Reset CT, Replace Breaker and Switch	06/01/13	06/01/13		508562	PIRKEY 138KV	508575	WHITNEY 138KV	1	138				
20034	646	10847	GMO	ITP	\$2,000,000	GMO	Replace Clinton 161/69 kV transformer #1 with new 100/125 MVA to match transformer #2.	11/01/13	06/01/13	12	541303	Clinton 69 KV	541242	Clinton 161 KV	1	161/69				100/125
20087	715	10952	GMO	ITP	\$800,000	KCPL	Reconductor GMO portion of Glenare - Liberty 69 kV for 70/79 MVA rating.	06/01/13	06/01/13	24	543081	GLENARE 69 KV	541262	Liberty 69 KV	1	69	0.19			70/79
	30366	50424	GMO	zonal - sponsored	\$12,809,443	KCPL	Install new 345/161 kV transformer at new Eastowne sub, tapping the latan - St. Joe 345 kV and connecting to the existing 161 kV in the area, switching out Lake Rd. - Alabama 161 kV.	04/15/13	01/01/20	12	541400	Eastowne 345 kV	541401	Eastowne 161 kV	1	345/161				400/440
	30408	50501	GMO	zonal - sponsored	\$1,100,000	GMO	New Clinton Plant 16.8 Mvar capacitor bank at 69kV	06/01/13		12						69				16.8 Mvar
20021	299	10385	GRDA	ITP	\$4,372,000	GRDA	Reconductor line to 1590 ACSR, A = 347, B = 403. \$255K/mile @ 8.8 mi.	08/01/13	06/01/12	24	512714	KANSAS TAP 161	512642	WEST SILOAM SPRINGS 161	1	161	8.8			347/403
20021	299	10386	GRDA	ITP	\$1,831,000	GRDA	Reconductor line to 1590 ACSR, A = 347, B = 403. \$255K/mile @ 4.2 mi.	08/01/13	06/01/12	24	512642	WEST SILOAM SPRINGS 161	512643	SILOAM CITY 161	1	161	4.2			347/403
	302	10389	GRDA	zonal - sponsored	\$3,210,200	GRDA	Tap the GRDA 1-Flint Creek 345 kV line and build a 345/161 transformer at Tonnece. Then build a 161 kV line down to Siloam Springs.	01/01/13		24	512751	TONNECE161	512643	SILOAM CITY 161	1	161		7		347/347
	302	10390	GRDA	zonal - sponsored	\$8,019,000	GRDA	Tap the GRDA 1-Flint Creek 345 kV line and build a 345/161 transformer. Then build a 161 kV line down to Siloam Springs.	01/01/13		24	512750	TONNECE345	512751	TONNECE161	1	345/161				250/280
200168	549	10698	GRDA	ITP	\$1,374,534	GRDA	Reconductor 1.3-mile Maid - Pryor Foundry South 69 kV line and replace 600A switches with 1200A switches.	06/01/13	06/01/12	12	512626	MAID69	512681	PRYOR FOUNDRY SOUTH 69	1	69	1.3			130/143
200168	550	10699	GRDA	ITP	\$1,419,469	GRDA	Reconductor 1.4-mile Maid-Redden 69 kV line and replace 600A switches with 1200A switches.	06/01/13	06/01/12	12	512626	MAID69	512698	REDDEN 69	1	69	1.4			130/143
20028	30071	50077	GRDA	ITP	\$374,000	GRDA	Add 7.2 Mvar capacitor at Sallisaw 69 kV.	06/01/13	06/01/11	12	512652	SALLISAW 69				69				7.2 Mvar
	30379	50459	GRDA	Generation Interconnect	\$2,500,000	GRDA	New GRDA 138 kV switching station at Pawnee. New 138 kV three breaker ring bus substation containing 3 138 kV circuit breakers, associated disconnect switches, structures, relaying, grounding, fencing, and all associated and miscellaneous equipment. Required in mitigation of SPP Affected Facilities from new AECI GI project located near Burbank, OK. SPP STUDY ID - ASGI-2010-006	12/31/13			700001					138				
20042	702	10934	KCPL	Balanced Portfolio	\$1,922,840	KCPL	West Gardner 345kV bus cut-in to Swissvale-Stillwell 345 kV line	03/31/13			542965	WEST GARDNER 345 KV				345				
	1039	11376	KCPL	zonal - sponsored	\$2,963,000	KCPL	Rebuild 4.2 mile Olathe - Switzer 161kV line.	06/01/13		18	543036	OLATHE 161 KV	543045	SWITZER 161 KV	1	161	4.2			558/558
	30493	50604	KCPL	zonal - sponsored	\$500,000	KCPL	Reconductor 2.07-mile 161 kV line from Overland Park - Brookridge using 1192 ACSS. Upgrade terminal equipment to 2000 amps.	12/31/13			543047	OVERLAND PARK 161 KV	543033	BROOKRIDGE 161 KV	1	161	2.07			
	30342	50388	LES	zonal - sponsored	\$17,318,000	LES	Add 3.25-mile 115 kV line from 17th & Holdrege to 30th & A.	09/13/13			650219	17th & Holdrege	650252	30th & A	1	115		3.25		240/255

Appendix A - Complete List of Network Upgrades

NTC ID	PID	UID	Facility Owner	2013 Project Type	Cost Estimate	Estimated Cost Source	Project Description/Comments	TO Projected In-Service	SPP Determined Need Date	Project Lead Time (Mo)	From Bus Number	From Bus Name	To Bus Number	To Bus Name	Circuit	Voltages (kV)	Miles of Recond uctor	Miles of New Line	Miles of Voltage Conversi on	Ratings
	30343	50389	LES	zonal - sponsored	\$9,980,000	LES	Add 2 mile 115 kV line from 30th & A to 56th & Everett.	09/13/13			650252	30th & A	650256	56th & Everett	1	115		2		240/255
200171	30352	50403	LES	ITP	\$6,382,777	LES	Rebuild 12 miles of 115 kV Ckt 2 between Sheldon and Folsom/Pleasant Hill.	05/15/13	01/01/12	24	650242	SW7th & Pleasant Hill	640278	Sheldon	2	115	12			240/240
	30384	50466	MIDW	Generation Interconnect	\$6,390,000	MIDW	Rebuild and extend 115 kV transmission line from existing Rice Co. substation to new Rice Co. substation, including engineering, surveying, and modification of existing easements as required.	04/01/13			530623	RICE COUNTY 115 KV	530620	LYONS 115 KV	1	115	11.08	1		
	30494	50606	MIDW	ITP	\$4,734,006	MIDW	Rebuild 3.25 miles of 115 kV from Hays Plant to South Hays.		06/01/13	24	530562	HAYS PLANT 115 KV	530553	SOUTH HAYS 115 KV	1	115	3.25			164/199
20067	903	11200	MKEC	transmission service	\$6,063,189	MKEC	Rebuild 14.4 miles	01/31/13	06/01/11	36	539656	Clifton 115 KV	539665	Greenleaf 115 KV	1	115	14.4			217/261
20067	904	11201	MKEC	transmission service	\$4,004,423	MKEC	Rebuild 8.05 mile line	12/31/13	01/01/10	36	539638	Flat Ridge Tap	539674	Medicine Lodge 138 KV	1	138	8.05			261/314
20067	905	11202	MKEC	transmission service	\$11,048,967	MKEC	Rebuild 24.15 mile line	06/15/13	01/01/10	36	539638	Flat Ridge Tap	539668	Harper 138 KV	1	138	24.15			261/314
20107	1020	11342	MKEC	transmission service	\$5,354,646	MKEC	Rebuild MKEC ownership of 20.9 mile Greenleaf- Knob Hill 115 kV line.	01/31/13	06/01/12	24	539665	Greenleaf 115 KV	533332	KNOB HILL 115 KV	1	115	20.9			239/239
20007	30098	50104	MKEC	ITP	\$1,500,000	MKEC	Install 20 Mvar capacitor bank at Plainville 115 kV.	03/01/13	06/01/12	12	539686	Plainville 115 KV				115				20 Mvar
	30210	10993	MKEC	ITP	\$385,244	MKEC	Replace wave trap at Harper substation.	12/31/13	04/01/13	12	539668	Harper 138 KV	539675	Milan Tap 138 KV		138				110/110
20067	30211	10994	MKEC	transmission service	\$8,627,726	MKEC	Upgrade transformer	02/01/13	01/01/10		539674	Medicine Lodge 138 KV	539673	Medicine Lodge 115 KV	1	138/115				200/250
	30447	50543	MKEC	ITP	\$10,485,402	SEPC	Rebuild the Haggard - Gray County Tap - West Dodge 115 kV line		04/01/13						1	115	21			202.2/248.8
20080	817	11079	NPPD	ITP	\$1,977,010	NPPD	Uprate conductor and substation equipment to 100 Degree rating.	06/01/13	06/01/13	24	640054	Albion	640347	Spalding	1	115				174/174
20117	1094	11438	NPPD	ITP	\$3,500,000	NPPD	Increase clearances to 100 Deg C and upgrade terminal equipment (PCB, DISC, WVTRP, CT, BUS) to effect higher rating.	06/01/13	12/01/10	24	640103	Canaday	640256	Lexington	1	115				137/137
20081	235	10300	OGE	ITP	\$2,100,000	OGE	Reconductor 2.2 miles of Fort Smith - Colony 161 kV line to 1590 kcmil ACSR and change terminal equipment at Ft. Smith and Colony substations to 2000A.	06/01/13	06/01/13	24	515300	FT SMITH 161	515345	COLONY 161	1	161	2.2			472/542
20029	642	10843	OGE	ITP	\$10,000	OGE	Remove wavetrap at VBI.	06/01/13	06/01/13	9	515335	KILGORE 69	515336	VBI 69	1	69				72/72
	669	10875	OGE	ITP	\$2,591,900	OGE	Reconductor 4.07 miles of 161 kV. Increase CT ratios at Pecan Creek to 2000A. Replace 2 wave traps, 1-161kV breaker, 3 switches at Five Tribes plus increase CTR.	12/01/13	06/01/13	18	515234	PECAN CREEK 161	515228	5 TRIBES 161	1	161	4.07			441/542
20041	699	10929	OGE	Balanced Portfolio	\$46,000,000	OGE	Build new 345 kV line from Sooner to Cleveland. Install terminal equipment at Sooner.	01/31/13		32	514803	Sooner 345 kV	512694	Cleveland 345 kV	1	345		36		1195/1195
20041	700	10930	OGE	Balanced Portfolio	\$176,100,000	OGE	Build new 345 kV line from Seminole to Muskogee	12/31/13		40	515045	SEMINOLE 345	515224	MUSKOGEE 345	1	345		100		1200/1200
200198	858	11133	OGE	ITP	\$15,000,000	OGE	Build new Greenwood substation and tap existing Cushing - Bristow 138 kV line into this substation.		03/01/13		515033	CUSHING 138	515035	BRISTOW 138	1	138				120/120
200198	858	11134	OGE	ITP		OGE	Tap existing Oak Grove - Hwy 99 Tap 69 kV circuit into new Greenwood substation.		03/01/13		515021	OAKGROVE 69	515019	HIGHWAY 99 TAP 69	1	69				52/66
200198	858	50594	OGE	ITP		OGE	Install 138/69 kV transformer at new Greenwood substation.		03/01/13						1	138/69				60/60
200198	858	11129	OGE	ITP		OGE	Convert 14-mile Mehan - Cushing 69 kV line to 138 kV.		06/01/14	36	515513	Mehan 138 kV	515033	CUSHING 138	1	138				14
200198	858	11130	OGE	ITP		OGE	Convert 6-mile Stillwater - Spring Valley 69 kV line to 138 kV.		06/01/14		515011	STILLWATER 138	515512	Spring Valley 138kV	1	138				5.98
200198	858	11131	OGE	ITP		OGE	Convert 3-mile Spring Valley - Mehan 69 kV line to 138 kV.		06/01/14		515512	Spring Valley 138kV	515513	Mehan 138 kV	1	138				3
200198	858	11132	OGE	ITP		OGE	Convert 8.7-mile Spring Valley - Knipe 69 kV line to 138 kV.		06/01/14		515512	Spring Valley 138kV	515514	Knipe 138 kV	1	138				8.69
20081	892	11182	OGE	ITP	\$7,100,000	OGE	Install Canadian River 345 kV terminal equipment at new Canadian River substation tapping the Pittsburg - Muskogee line.	02/15/13	06/01/10	30	515422	Canadian river 345kv				345				1095/1095
	928	11228	OGE	zonal - sponsored	\$6,700,000	SPP	Trans Canadian Pipeline pump 32	03/01/13			515033	CUSHING 138	515401	Pump Station 32	1	138		7.47		268/308
	1017	11339	OGE	ITP	\$161,204	OGE	Replace 800 amp CT and wave trap at Classen substation.	06/01/13	06/01/13	12	514922	CLASSEN 138	514921	SW STAP 138	1	138				268/287
200174	30092	50098	OGE	ITP	\$523,888	OGE	Add Mvar support at Kolache 69 kV substation to have a total of 9 Mvar at this location.	07/15/13	06/01/12	12	515079	KOLACHE 69				69				6 Mvar
200174	30302	50346	OGE	ITP	\$2,090,660	OGE	Increase size of Paoli 138/69 kV bus and upgrade necessary terminal equipment.	05/10/13	06/01/12	12	515100	PAOLI 138	515099	PAOLI 69	1	138/69				62/67
200174	30357	50408	OGE	ITP	\$377,797	OGE	Install 9 Mvar capacitor at Lula 69 kV.	06/01/13	06/01/12	12	515191	LULA 69				69				9 Mvar
	30381	50461	OGE	Generation Interconnect	\$399,000	AEP/OGE	Add 3 138 kV circuit breakers to Shidler substation and convert to a 4 breaker ring. Provide a new terminal for line to Fairfax. This new line will be part of a reconfiguration of the existing Fairfax Tap. The Fairfax Tap will be dissolved and the line will be extended and terminated into the Shidler substation. Also included in the cost is the replacement of a relay panel on line to OGE OSAGE and 138 kV meter transformers at Shidler. Required in mitigation of SPP Affected Facilities from new AECI GI project located near Burbank, OK. SPP STUDY ID - ASGI-2010-006	02/14/13			510403	SHIDLER				138				
	30433	50529	OGE	ITP	\$1,010,523	OGE	Upgrade 345 kV 2000 amp breakers and associated switches to 3000 amp at Arcadia Sub. This will give Arcadia - Redbud 345 kV Ckt1 and Ckt2 a summer emergency rating of 1426 and a Summer Normal rating of 1248.	06/01/13	06/01/13	12	514908	ARCADIA 345	514909	REDBUD 345	1	345				1248/1426

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	909	11205	WFEC	ITP	\$1,705,000	WFEC	Rebuild and convert the 4 miles of 69 kV between OU Switchyard and Cole Substation to 138kV (R)and install terminal equipment in OU Switchyard.	10/31/13	06/01/13	12	521104	OU SWITCH 4	520861	COLE	1	138			4	144/179
	909	11425	WFEC	ITP	\$1,400,000	WFEC	Convert 10.2 mile Cole-Criner 69 kV to 138 kV. Cole substation conversion.	11/27/13	06/01/13	12	520861	COLE	520868	CRINER	1	138			10.2	144/179
	909	50579	WFEC	ITP	\$3,000,000	WFEC	Convert Criner to the new Payne Switching Station from 69 kV to 138 kV. Install necessary terminal equipment.	11/27/13	06/01/13	24	520868	CRINER	520888	Payne Switching Station 138 kV	1	138			10.72	144/178
	909	50580	WFEC	ITP	\$250,000	WFEC	Tap the Paoli-Cornville Tap 138 kV and install switching station at Payne. The new switching station will terminate the Payne-Criner-Cole-Oklahoma University 138 kV line.	11/27/13	06/01/13	24	520888	Payne Switching Station 138 kV				138				286/286
20132	1084	11424	WFEC	ITP	\$6,243,750	SPP	Rebuild 18.5-mile Alva - Freedom 69 kV line from 3/0 to 556.5	06/01/13	06/01/11	24	520806	ALVA	520915	FREEDOM	1	69	18.5			72/89
20132	1085	11429	WFEC	ITP	\$50,000	WFEC	Upgrade relaying at OU Switchyard and Lindsay Switchyard; close the normally open Criner - Lindsay 69 kV line	06/01/13	06/01/11	6	520868	CRINER	520977	LINDSAY	1	69				72/89
20136	30320	50366	WFEC	transmission service	\$4,800,000	WFEC	UPGRADE CANTON TO TALOGA TO 336.4	06/01/13	06/01/11		521064	TALOGA	520843	CANTON	1	69	9.7			106/132
20136	30321	50367	WFEC	transmission service	\$1,000,000	WFEC	Replace Taloga 138/69 kV auto transformer with 112 MVA.	06/01/13	06/01/11		521065	TALOGA	521064	TALOGA	1	138/69				112/112
20006	172	10221	WR	ITP	\$5,423,701	WR	Convert TEC-Midland from 161 kV to 115 kV	06/01/13	06/01/12	6	533180	TECUMSEH ENERGY CENTER 115 KV	533252	MIDLAND JUNCTION 115 KV	1	115			19.33	117/117
20059	182	10231	WR	ITP	\$6,066,000	WR	Rebuild approximately 7.5 miles Chase - White Junction 69 kV line. Replace existing 2/0 copper conductor to achieve a minimum 600 amp emergency rating.	06/01/13	06/01/10	12	533588	CHASE 69 KV	533605	WHITE JUNCTION 69 KV	1	69	7.3			72/72
20140	374	10487	WR	transmission service	\$1,500,000	WR	Replace jumpers and bus, and reset CTs and relaying on Creswell to Oak 69 kV line. Rebuild substations.	12/31/13	06/01/11	6	533543	CRESWELL 69 KV	533547	OAK 69 KV	1	69				107/107
19964	375	10488	WR	transmission service	\$10,387,399	WR	Install 3rd Rose Hill 345/138 kV TRANSFORMER.	06/01/13	06/01/11	24	532794	ROSE HILL 345 KV	533062	ROSE HILL 138 KV	3	345/138				400/440
20033	412	10538	WR	ITP	\$4,104,097	WR	Rebuild 2.65 miles Eastborough - 64th 69 kV line.		06/01/13	18	533792	EASTBOROUGH 69 KV	533842	SIXTY-FOURTH (64TH) 69 KV	1	69	2.65			131/143
20086	467	10603	WR	ITP	\$118,341	WR	Replace wavetraps on Gill - Interstate 138 kV line for a new rating of 232/256 MVA.	12/01/13	06/01/13	18	533044	GILL ENERGY CENTER EAST 138 KV	533051	INTERSTATE 138 KV	1	138				232/232
20063	563	10713	WR	ITP	\$154,336	WR	Replace 69 kV disconnect switches at Aquarius with a minimum 600 amp emergency rating	06/01/13	06/01/13	12	533765	LITCHFIELD 69 KV	533756	AQUARIUS 69 KV	1	69				80/80
	563	10714	WR	zonal - sponsored	\$150,000	SPP	Replace 69 kV disconnect switches at Aquarius.	06/01/13			533764	HUDSON JUNCTION 69 KV	533756	AQUARIUS 69 KV	1	69				80/80
200175	624	10812	WR	ITP	\$6,969,136	WR	Rebuild 1.83-mile Fort Junction - West Junction City 115 kV line that follows the path of the Jeffery Energy Center - Summit 345 kV line. Remove old double circuit and West Junction City Junction (East) - West Junction City 115 kV line.	06/01/13	06/01/15	24	533328	FORT JUNCTION SWITCHING STATION 115 KV	533342	WEST JUNCTION CITY 115 KV	1	115	1.83			240/240
20091	30224	50234	WR	transmission service	\$3,458,116	WR	Rebuild approximately 4 miles of line with 954 kcmil ACSR to achieve a minimum 1200 amp emergency rating.	06/01/13	01/01/13	24	533626	BURLINGTON JUNCTION 69 KV	533653	WOLF CREEK 69 KV	1	69	4.1			134/147
20091	30224	50236	WR	transmission service	\$6,024,876	WR	Rebuild approximately 9 miles of line with 954 kcmil ACSR to achieve a minimum 1200 amp emergency rating.	12/15/13	04/01/14	24	533636	GREEN 69 KV	533630	COFFEY COUNTY NO. 3 WESTPHALIA 69 KV	1	69	9.22			134/147
20059	30227	50231	WR	transmission service	\$1,026,734	WR	Add 15 Mvar Cap bank at Athens	12/01/13	06/01/13	12	533623	ATHENS SWITCHING STATION 69 KV				69				15 Mvar
20068	30271	50284	WR	transmission service	\$1,215,000	WR	Dearing 138 kV 20 MVAR Capacitor Addition	06/01/13	06/01/12	18	533002	DEARING 138 KV				138				20 Mvar
20140	30324	50370	WR	Zonal Reliability	\$873,461	WR	Install 14.4 MVAR capacitor at Chapman Junction 115 kV	10/01/13	10/01/12		533362	CHAPMAN 115 KV				115				14.4 Mvar
200175	30348	50397	WR	ITP	\$3,676,071	WR	Rebuild 3.4-mile Cowskin to Centennial 138 kV line.	06/01/13	06/01/12	12	533038	COWSKIN 138 KV	533034	CENTENNIAL 138 KV	1	138	3.4			287/287
200197	30431	50526	WR	ITP	\$5,561,163	WR	Tear down and rebuild 3.1-mile El Paso-Farber 138 kV line.	06/01/13	06/01/13	18	533039	EL PASO 138 KV	533042	FARBER 138 KV	1	138	3.1			245/245
	30487	50593	WR	Zonal Reliability	\$724,896	WR	Install 9.6 Mvar capacitor bank on Potwin 69 kV bus		06/01/13		533601	POTWIN 69 KV				69				9.6 Mvar
2014																				
20000	450	10582	AEP	ITP	\$11,962,000	AEP	Install 9 miles of 161 kV from new Shipe Road Substation to East Centerton Substation.	06/01/14	06/01/14	60	506980	Shipe Road 161	506929	EAST CENTERTON 161KV	1	161		9		520/729
20000	450	10584	AEP	ITP	\$13,104,000	AEP	Install 345/161 kV transformer at Shipe Road.	06/01/14	06/01/14	48	506979	Shipe Road 345	506980	Shipe Road 161	1	345/161				675/743
20000	450	10585	AEP	ITP	\$34,085,000	AEP	Install 18 miles of new 345 kV, 2-954 ACSR line.	06/01/14	06/01/14	60	506935	FLINT CREEK 345KV	506979	Shipe Road 345	1	345		18		1011/1176
200167	502	10647	AEP	ITP	\$7,815,833	AEP	Reconductor 3.25-mile Northwest Henderson - Poynter 69 kV line with 1272 ACSR.	06/01/14	06/01/13	24	509075	NORTHWEST HENDERSON 69KV	509081	POYNTER	1	69	3.25			140/143
200167	503	10648	AEP	ITP	\$1,004,187	AEP	Replace two breakers, jumpers, and wave traps at Perdue substation. Replace wave traps at Diana substation.	06/01/14	06/01/13	15	508351	PERDUE 138KV	508831	DIANA 138KV	1	138				261/303
20027	649	10853	AEP	ITP	\$2,150,000	AEP	Reconductor 2.15 mile section of 115 kV line with 795 ACSR.	06/01/14	06/01/14	24	510399	LONE STAR	510423	LOCUST GROVE	1	115	2.15			120/120
200167	882	11171	AEP	ITP	\$11,830,128	AEP	Rebuild or reconductor 11.4-mile Rock Hill - Carthage line from 336 ACSR to 1272 ACSR and remove switches in middle of line. Upgrade breaker, switches, CT ratios, and relay settings at Carthage substation. Upgrade jumpers, switches, CT ratios, and relay settings at Rock Hill substation.	06/01/14	06/01/14	24	509082	ROCK HILL 69	509056	CARTHAGE	1	69	11.4			123/143
200167	1012	11331	AEP	ITP	\$18,805,489	AEP	Rebuild 21.85-mile Diana to Perdue 138 kV line. Replace switches, jumpers, and upgrade CT ratios at Diana and Perdue substations. Upgrade relay settings at Diana substation.	06/01/14	06/01/13	30	508351	PERDUE 138KV	508831	DIANA 138KV	1	138	22			455/478
	30346	50392	AEP	zonal - sponsored	\$9,585,000	SPP	Rebuild and convert the 17.04 mile Cornville to Alex Bradley 69 kV line to 138 kV.	12/31/14		12	511450	CORNVILLE 69KV	511516	ALEX BRADLEY	1	138			17.04	320/444

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	30346	50393	AEP	zonal - sponsored	\$4,770,000	SPP	Rebuild and convert the 8.48 mile Alex Bradley to Texas Pump 69 kV line to 138 kV.	12/31/14		12	511516	ALEX BRADLEY	511515	TEXAS PUMP	1	138			8.48	320/444
	30346	50394	AEP	zonal - sponsored	\$911,250	SPP	Rebuild and convert the 1.62 mile Texas Pump to Phillips 69 kV line to 138 kV.	12/31/14		12	511515	TEXAS PUMP	511514	PHILLIPS	1	138			1.62	320/444
	30346	50395	AEP	zonal - sponsored	\$3,155,625	SPP	Rebuild and convert the 5.61 mile Phillips to Lindsay Water Flood 69 kV line to 138 kV.	12/31/14		12	511514	PHILLIPS	511513	LINDSAY WATER	1	138			5.61	320/444
200167	30346	50438	AEP	ITP	\$21,664,838	AEP	Upgrade the Cornville 138 kV bus to breaker-and-a-half configuration in preparation for the 138 kV line conversion to Lindsay Water substation.	12/31/14	06/01/12	12	511449	CORNVILLE 138KV				138				
200167	30354	50405	AEP	ITP	\$1,428,440	AEP	Install 6 Mvar capacitor at Coweta 69 kV.	06/01/14	06/01/14	12	509719	COWETA				69				6 Mvar
	287	10373	DETEC	zonal - sponsored	\$8,864,000	SPP	Build 12 miles of 138 kV from Etoile - Chireno	06/01/14			97813	Etoile 138 kV			1	138		12		215/225
	648	10849	DETEC	zonal - sponsored	\$11,454,960	SPP	Convert Martinsville - Shady Grove from 69 kV to 138 kV.	06/01/14							1	138			12.31	215/225
	648	10850	DETEC	zonal - sponsored		SPP	Convert Shady Grove - Central Heights from 69 kV to 138 kV	06/01/14							1	138			6.77	215/225
	648	10851	DETEC	zonal - sponsored		SPP	Convert Central Heights - Fitze from 69 kV to 138 kV	06/01/14							1	138			12.61	215/225
	648	10852	DETEC	zonal - sponsored		SPP	Convert Fitze - Timpson from 69 kV to 138 kV.	06/01/14							1	138			12.65	215/225
	30419	50512	GMO	ITP	\$440,733	GMO	Install 6% series reactor on the Midway - St. Joseph 161 kV line. Reactor will be installed at the St. Joseph bus.	06/01/14	06/01/13		541253	ST Joe 161 KV	541369	MIDWAY 161 KV	1	161				
	30380	50460	GRDA	Generation Interconnect	\$11,900,000	GRDA	Build new Fairfax (AECI) - Pawnee 138 kV line and rebuild existing 69 kV line from Fairfax - Pawnee, approximately 19.5 miles with double circuit towers for double circuit 138 kV line. One side will be operated at 69 kV. Required in mitigation of SPP Affected Facilities from new New GI project near Burbank, OK. SPP study ID - ASGI-2010-006	06/30/14			300139	Fairfax	700001		1	138		19.5		
200162	945	11252	ITCGP	high priority	\$46,764,321	ITCGP	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 Comanche County 345 kV substation with a ring bus and necessary terminal equipment.	12/31/14			531469	SPEARVILLE	539800	Clark Co 345 kV	1	345		27.5		1792/1792
200162	945	11253	ITCGP	high priority	\$46,764,321	ITCGP	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 a ring bus and necessary terminal equipment.	12/31/14			531469	SPEARVILLE	539800	Clark Co 345 kV	2	345		27.5		1792/1792
200162	945	11254	ITCGP	high priority	\$94,410,174	ITCGP	Build a new 86 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 Thistle near Flat Ridge with the necessary breakers and terminal equipment for connecting the Spearville-Thistle-Wichita double circuit transmission lines and for connecting to the Woodward District EHV 345 kV double circuit transmission lines.	12/31/14			539800	Clark Co 345 kV	539801	Flat Ridge 345 kV	1	345		86		1792/1792
200162	945	11255	ITCGP	high priority	\$94,410,174	ITCGP	Build a new 86 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 Thistle near Flat Ridge with the necessary breakers and terminal equipment for connecting the Spearville-Thistle-Wichita double circuit transmission lines and for connecting to the Woodward District EHV 345 kV double circuit transmission lines.	12/31/14			539800	Clark Co 345 kV	539801	Flat Ridge 345 kV	2	345		86		1792/1792
200162	945	11260	ITCGP	high priority	\$6,585,986	ITCGP	Install a 400 MVA 345/138 kV transformer at the new 345 kV Thistle substation.	12/31/14			539801	Flat Ridge 345 kV	539674	Medicine Lodge 138 KV	1	345/138				400/400
200162	945	50384	ITCGP	high priority	\$5,776,280	ITCGP	Build 1 mile 138 kV line from new Thistle substation to Flat Ridge substation.	12/31/14								138		1		
	30385	50468	KCPL	zonal - sponsored	\$1,518,750	SPP	Rebuild 3 mile Overland Park - Merriam 161 kV line.	12/31/14			543032	MERRIAM 161 KV	543047	OVERLAND PARK 161 KV	1	161	3			229/334
	30426	50519	MIDW	ITP	\$10,794,325	MIDW	Build new 10 mile 115 kV line from Pheasant Run - Seguin and install new terminal equipment at Pheasant Run and Seguin	06/01/14	06/01/14	36	530559	PHEASANT RUN 115 KV	530683		1	115		19.3		164/199
20079	653	10858	MKEC	ITP	\$15,582,071	MKEC	Rebuild 21.9 mile St. John - Pratt 115 kV line with 795 ACSR conductor.	03/01/14	06/01/13	24	539696	St John 115 KV	539687	Pratt 115 KV	1	115	21.9			165/198
20067	906	11203	MKEC	transmission service	\$11,277,390	MKEC	Rebuild 26 mile line	06/15/14	01/01/10		539673	Medicine Lodge 115 KV	539687	Pratt 115 KV	1	115	26			165/198
20119	1096	11440	MKEC	ITP	\$100,000	MKEC	Replace CTs and relays at Pratt substation and St John substation	03/01/14	06/01/11	36	539687	Pratt 115 KV	539696	St John 115 KV	1	115				165/198
	30416	50509	MKEC	Generation Interconnect	\$15,389,639	MKEC	Build approximately 20 miles of 115 kV to serve as second circuit between North Ft Dodge and Spearville. Reroute Ft. Dodge - Greensburg 115 kV to North Ft. Dodge Substation. Build second circuit between Ft. Dodge and North Ft Dodge (these stations are very close to each other).	11/08/14		36						115		20		
	30417	50510	MKEC	Generation Interconnect	\$19,612,658	MKEC	Add 345/115 kV transformer at Spearville. Needed as Network Upgrade for GEN-2008-079 but cost shared with GEN-2006-006 & GEN-2009-062.	11/08/14		36	531469	SPEARVILLE	539694	Spearville 115 KV	1	345/115				

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200170	816	11078	NPPD	ITP	\$1,240,000	NPPD	Uprate conductor and substation equipment to 100 degrees Celsius.	06/01/14	06/01/14	24	640054	Albion	640181	Genoa	1	115				137/137
	30207	50214	NPPD	ITP	\$677,370	NPPD	18 Mvar 115 kV CAP BANK AT COZAD	06/01/14	06/01/14	24	640144	Cozad				115				18 Mvar
200170	30237	50249	NPPD	ITP	\$1,193,000	NPPD	Install a 18 Mvar capacitor bank at Holdrege substation 115 kV.	06/01/14	06/01/14	24	640224	Holdrege				115				18 Mvar
20117	30285	50319	NPPD	ITP	\$5,645,881	NPPD	Replace 187MVA Ogallala transformer with 336MVA Ogallala transformer	06/01/14	06/01/10	36	659132	OGALLALLA	640302	Ogallala	1	230/115				336/336
20029	615	10792	OGE	ITP	\$8,100,000	OGE	Convert 13.64 miles of 69 kV to 138 kV from Crescent to Cottonwood Creek and install terminal equipment at Cottonwood Creek, completing loop from Crescent to Twin Lakes (WFEC).	06/01/14	06/01/10	18	515377	Crescent 138kv	514827	COTTONWOOD CREEK 138	1	138			13.64	84/104
20041	701	10932	OGE	Balanced Portfolio	\$147,000,000	OGE	Build new 345 kV line from Woodward EHV to Border	05/19/14		40	515458	Border	515375	Woodward EHV 345kv	1	345		125		1475/1623
20041	701	10933	OGE	Balanced Portfolio		OGE	Install 2nd 345/138 kV transformer at Woodward EHV	05/19/14		24	515376	Woodward EHV 138kv	515375	Woodward EHV 345kv	2	345/138				448/493
20043	701	10937	OGE	Balanced Portfolio		OGE	Build midpoint reactor station at interception point of Woodward to Tuco line.	05/19/14			515458	Border				345				560/560
20100	941	11244	OGE	high priority	\$172,000,000	OGE	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. Upgrade the Woodward District EHV substation with the necessary breakers and terminal equipment.	06/30/14		40	523097	Hitchland Interchange 345 kV	515375	Woodward EHV 345kv	1	345		92		1792/1792
20100	941	11245	OGE	high priority		OGE	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. Upgrade the Woodward District EHV substation with the necessary breakers and terminal equipment.	06/30/14		40	523097	Hitchland Interchange 345 kV	515375	Woodward EHV 345kv	2	345		92		1792/1792
20121	942	11246	OGE	high priority	\$145,040,000	OGE	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 Medicine Lodge substation. Upgrade the Woodward District EHV substation with the necessary breakers and terminal equipment.	12/31/14		40	539801	Flat Ridge 345 kV	515375	Woodward EHV 345kv	1	345		79		1792/1792
20121	942	11247	OGE	high priority		OGE	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 Medicine Lodge substation. Upgrade the Woodward District EHV substation with the necessary breakers and terminal equipment.	12/31/14		40	539801	Flat Ridge 345 kV	515375	Woodward EHV 345kv	2	345		79		1792/1792
200199	30486	50587	OGE	ITP	\$11,659,600	OGE	Build substation at Renfrow and tap Woodring-Wichita 345 kV line.	11/01/14	03/01/13							345		0.06		
200199	30486	50588	OGE	ITP	\$4,998,388	OGE	Build Grant County substation on the 69 kV line between the Koch and Medford substations.	11/01/14	03/01/13							138				
200199	30486	50589	OGE	ITP	\$1,173,170	OGE	Install a 138/69 kV transformer at Grant County substation.	11/01/14	03/01/13						1	138/69				100/100
200199	30486	50590	OGE	ITP	\$7,081,847	OGE	Build 138 kV line from Renfrow to Grant County substation.	11/01/14	03/01/13							138		11		
200199	30486	50592	OGE	ITP	\$571,210	OGE	Convert Koch 69 kV substation to 138 kV.	11/01/14	03/01/13							138				
200163	943	11248	PW	high priority	\$25,250,000	PW	Build a new 30.4 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 substation.	12/31/14			539801	Flat Ridge 345 kV	515375	Woodward EHV 345kv	1	345		30.4		1792/1792
200163	943	11249	PW	high priority	\$25,250,000	PW	Build a new 30.4 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 substation.	12/31/14			539801	Flat Ridge 345 kV	515375	Woodward EHV 345kv	2	345		30.4		1792/1792
200163	946	11258	PW	high priority	\$65,000,000	PW	Build a new 78 mile double circuit 345 kV line with at least 3000 A capacity from the Wichita substation to ITC Great Plains' Thistle 345 kV substation.	12/31/14			539801	Flat Ridge 345 kV	532796	WICHITA 345 KV	1	345		77.5		1792/1792
200163	946	11259	PW	high priority	\$65,000,000	PW	Build a new 78 mile double circuit 345 kV line with at least 3000 A capacity from the Wichita substation to ITC Great Plains' Thistle 345 kV substation.	12/31/14			539801	Flat Ridge 345 kV	532796	WICHITA 345 KV	2	345		77.5		1792/1792
200166	151	10195	SPS	ITP	\$2,633,003	SPS	Add third Tuco 115/69 kV autotransformer.	06/01/14	06/01/12	24	525826	TUCO Interchange 69 kV	525828	TUCO Interchange 115 kV	1	115/69				75/84
20043	704	10936	SPS	Balanced Portfolio	\$170,247,072	SPS	Build new 345 kV line from Tuco to OGE's Border station near TX/OK Stateline. Install line reactor outside Border station and line reactors at Tuco.	05/19/14			525832	TUCO Interchange 345 kV	515458	Border	1	345		202		1792/1972
20130	764	11007	SPS	ITP	\$2,400,000	SPS	Upgrade Happy County 115/69 kV Transformer #1 to 84/96 MVA	06/01/14	06/01/12	28	525154	Happy Interchange 115 kV	525153	Happy Interchange 69 kV	1	115/69				84/96
20130	764	11009	SPS	ITP	\$2,400,000	SPS	Upgrade Happy County 115/69 kV Transformer #2 to 84/96 MVA	06/01/14	06/01/12	28	525154	Happy Interchange 115 kV	525153	Happy Interchange 69 kV	2	115/69				84/96
20084	795	11052	SPS	ITP	\$19,349,122	SPS	Add 230/115 kV transformer 250/250 MVA CKT 1	12/30/14	06/01/11	24	524770	Pleasant Hill 230 kV	524768	Pleasant Hill 115 kV	1	230/115				250/250
20084	795	11053	SPS	ITP	\$14,805,472	SPS	Build new 16 mile Pleasant Hill - Oasis 230 kV line.	12/30/14	06/01/11	24	524770	Pleasant Hill 230 kV	524875	Oasis Interchange 230 kV	1	230		16		492/541
20084	795	11054	SPS	ITP	\$20,612,670	SPS	Build new 26 mile Pleasant Hill - Roosevelt County 230 kV line.	12/30/14	06/01/11	30	524770	Pleasant Hill 230 kV	524909	Roosevelt County Interchange NORTH 23	1	230		26		492/541
200190	805	50453	SPS	ITP	\$22,577,591	SPS	Build new 38-mile 115 kV line from Bowers Interchange - Howard. At Bowers, install 115 kV breaker positions to serve the new transmission line, converting to a three-breaker ring configuration.	05/31/14	06/01/13	36	523748	Bowers Interchange 115 kV	523797	Howard 115 kV	1	115		33		180/199

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	30252	50290	WR	zonal - sponsored	\$3,072,000	SPP	Add second 76.8 Mvar bank at Benton.	06/01/14		24	532986	BENTON 138 KV				138				76.8 Mvar
20140	30326	50372	WR	Zonal Reliability	\$7,472,511	WR	Build 6.7-mile Clay Center Switching Station to TC Riley 115 kV line with Single 1192.5 kcmil ACSR (Bunting).	06/01/14	10/01/12		533320	Clay Center Switching Station 115 kV	533319	Riley	1	115		6.7		233/245
20140	30328	50374	WR	Zonal Reliability	\$963,441	WR	Install a 2000 Amp bus system, GOAB switches, metering and communication systems.	06/01/14	10/01/12		533319	Riley				115				
200179	30349	50398	WR	ITP	\$29,507,894	WR	Upgrade Auburn Road 230/115 kV transformer to 440 MVA.	06/01/14	06/01/14	24	533151	AUBURN ROAD 115 KV	532851	AUBURN ROAD 230 KV	1	230/115		0.4		400/440
200175	30350	50399	WR	Zonal Reliability	\$1,007,160	WR	Install second 6 Mvar capacitor at Elk River 69 kV.	12/01/14	06/01/12	12	533691	ELK RIVER 69 KV				69				6 Mvar
200181	30369	10425	WR	ITP	\$18,063,183	WR	Install second 138/115 kV transformer at Moundridge.	12/01/14	06/01/13	24	533013	MOUNDRIDGE 138 KV	533429	MOUNDRIDGE 115 KV	2	138/115				110/125
2015																				
	451	10583	AEP	ITP	\$12,705,537	AEP	Rebuild and reconductor 11.1 mile Chamber Springs-Farmington REC 161 kV line with 2-959.6 ACSR/TW. Upgrade wave traps, CT ratios, & relay settings at Chamber Springs.	06/01/15	06/01/13	36	506944	CHAMBER SPRINGS 161KV	504020	FARMINGTON AECC	1	161	11.1			294/360
	478	10615	AEP	ITP	\$1,221,505	AEP	Rebuild 2.3-mile Forbing - South Shreveport 69 kV line from 666 ACSR to 1233.6 ACSR/TW.	06/01/15	06/01/13	18	507728	FORBING TAP	507754	SOUTH SHREVEPORT 69KV	1	69	2.3			90/121
	504	10649	AEP	ITP	\$12,424,849	AEP	Rebuild Brownlee-North Market 0.6 miles of 2-203 ACSR and 4.1 miles of 666 ACSR with 1233.6 ACSR/TW.	06/01/15	06/01/13	24	507718	BROWNLEE	507745	NORTH MARKET	1	69	4.7			136/143
	681	10898	AEP	ITP	\$4,923,124	AEP	Rebuild 2 miles of 266 ACSR with 1233.6 ACSR/TW and replace Fern Street Switches	06/01/15	06/01/13	24	507716	BROADMOOR	507724	FERN STREET	1	69	1			68/94
	879	11158	AEP	ITP	\$10,241,314	AEP	Rebuild 9.0 mile Prattville-Bluebell 138 kV line from 795 ACSR to 1926.9 ACSR/TW. New summer ratings 287/287 limited by breaker, switches, CTs, wave trap.	06/01/15	06/01/14	24	515242	BLUEBELL 138	509758	PRATTVILLE	1	138	9			272/287
20096	936	11236	AEP	high priority	\$127,995,000	AEP	Build a new 76 mile 345 kV line from Valliant to NW Texarkana with at least 3000 A capacity. Upgrade the Valliant and NW Texarkana substations with the necessary breakers and terminal equipment.	05/01/15		51	510911	VALLIANT 345KV	508072	NORTHWEST TEXARKANA 345KV	1	345		76.25		1330/1940
20104	947	11261	AEP	transmission service	\$5,060,000	AEP	Rebuild 4.33 of 795 ACSR with 1590 ACSR.	06/01/15	06/01/15	20	509806	ONETA 138KV	509786	BROKEN ARROW NORTH - SOUTH TAP	1	138	4.33			284/316
	30432	50527	AEP	ITP	\$24,992,196	AEP	Rebuild 5.4 miles of 556 ACSR with 2-795 ACSR. Upgrade relay settings at Riverside Station.	06/01/15	06/01/14	18	509814	52ND & DELAWARE WEST TAP	509783	RIVERSIDE STATION 138KV	1	138	5.4			280/331
	30471	50567	AEP	ITP	\$16,548,317	AEP	Rebuild Dekalb - New Boston 69 kV Ckt 1 13.2 miles of 4/0 ACSR with 1233.6 ACSR/TW. Upgrade CT ratios & relay settings at New Boston.	06/01/15	06/01/13	24	508067	NEW BOSTON	508289	DEKALB	1	69	13.2			52/69
	30472	50568	AEP	ITP	\$7,519,658	AEP	Rebuild Hardy Street-Waterworks 69 kV Ckt 1 1.6 miles of 666 ACSR with 1233.6 ACSR/TW.	06/01/15	06/01/13	18	507734	HARDY STREET	507766	WATERWORKS	1	69	1.65			90/121
	30473	50569	AEP	ITP	\$1,829,026	AEP	Rebuild Midland REC-North Huntington 69 kV Ckt 1 4.0 miles with 1233.6 ACSR/TW. Upgrade CT ratios, relay settings, and jumpers at North Huntington	06/01/15	06/01/13	24	507196	MIDLAND REC	507188	NORTH HUNTINGTON 69KV	1	69	4			143/143
	30474	50570	AEP	ITP	\$5,653,353	AEP	Rebuild Midland-Midland REC 69 kV Ckt 1 1.3 miles of 4/0 ACSR with 1233.6 ACSR/TW. Upgrade CT ratios, relay settings, switches, and station conductors at Midland.	06/01/15	06/01/13	18	507187	MIDLAND	507196	MIDLAND REC	1	69	1.3			150/217
	30475	50571	AEP	ITP	\$9,145,130	AEP	Rebuild 7.0 miles of 4/0 ACSR from state line to Midland with 1233.6 ACSR/TW. Upgrade CT ratios, relay settings, switches, and station conductors at Midland.	06/01/15	06/01/13	24	515259	HOWE INT 69	507187	MIDLAND	1	69	7			150/217
	30495	50607	AEP	ITP	\$30,369,537	AEP	Build Messick 500-230 kV station. Connect to Mt Olive-Hartburg 500 kV and Carrol, Clarence, & Western Kraft 230 kV lines. Install 500/230 kV 675 MVA transformer.	12/31/15	06/01/13	30	999113	Messick 500 kV	999114	Messick 230 kV	1	500/230				675/675
	30495	50615	AEP	ITP	\$21,508,234	AEP	Install terminal equipment on 500 kV side of new Messick substation. Connect to Mt. Olive - Hartburg 500 kV line.	12/31/15	06/01/13	30	999113	Messick 500 kV					500			675/675
	636	10834	DETEC	zonal - sponsored	\$8,894,000	SPP	Install new 138 kV line from Chireno to Martinsville	06/01/15							1	138		10.69		215/225
	334	10431	GMO	zonal - sponsored	\$7,096,402	GMO	Radial Line From Greenwood to a new distribution sub at Lone Jack	06/01/15		24	541316	Lone Jack	541218	Greenwood Energy Center 161 KV	1	161		3.35		223/245
200189	703	50499	GMO	Balanced Portfolio	\$48,438,919	GMO	Build 31 miles of new 345 kV line from Iatan to Nashua.	06/01/15			542982	IATAN 345 KV	542980	PAOLA 345KV	1	345		31		2546/2546
	30476	50572	GRDA	Zonal Reliability	\$334,400	GRDA	Increase line clearance Chelsea-Childers 69 kV Ckt 1		06/01/15	12	512725	CHELSEA 69	512723	CHILDERS 69	1	69				50/56
200188	703	10935	KCPL	Balanced Portfolio	\$12,130,261	KCPL	Add 345 kV line terminal at Iatan. Add ring bus at Iatan to accommodate line terminals.	06/01/15			542982	IATAN 345 KV	542980	PAOLA 345KV	1	345				2546/2546
20042	703	10945	KCPL	Balanced Portfolio	\$4,230,820	KCPL	Install new 345/161 kV transformer at Nashua	06/01/15			542980	PAOLA 345KV	543028	NASHUA 161 KV	1	345/161				400/440
	30345	50391	LES	zonal - sponsored	\$7,675,000	LES	Build 5.5 mile 115 kV line from SW 7th & Bennet to 40th & Rokeby	05/31/15			650244	SW7 & BENNET7	650250	40th & Rokeby	1	115		5.5		362/406
	30358	50549	MIDW	ITP	\$1,459,629	MIDW	Install terminal equipment at new Bushton 115 kV substation to accommodate the new 115 kV line from Ellsworth.	06/01/15	06/01/12	29	530681	Bushton 115 kV				115				156/199
200173	30358	50409	MKEC	ITP	\$13,151,512	MKEC	Build 21-mile new 115 kV line from Ellsworth to the Midwest Energy's Bushton substation.	06/01/15	06/01/12	24	530623	RICE COUNTY 115 KV	539662	Ellsworth 115 KV	1	115		21		165/199
200173	30358	50410	MKEC	ITP	\$5,914,221	MKEC	Install 3-breaker ring bus at Ellsworth Tap 115 kV.	06/01/15	06/01/12	12	539642	Ellsworth Tap				115				239/239
200173	30358	50449	MKEC	ITP	\$2,669,385	MKEC	Expand Ellsworth Substation to include two new 115 kV breakers for the new 115 kV line to Rice.	06/01/15	06/01/12	24	539662	Ellsworth 115 KV				115				

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	30496	50608	NPPD	ITP	\$6,048,000	NPPD	Build new substation with new Stegall substn with a 345/115 kV 400 MVA Stegal transformer		06/01/15	48	659135	STEGALL	640460	Stegall 115 kV	1	345/115				400/440
	30496	50609	NPPD	ITP	\$19,624,000	NPPD	Install new 22-mile 115 kV line from Stegal-Scottsbluff and install necessary terminal equipment.		06/01/15	48	640460	Stegall 115 kV	640338	Scottsbluff	1	115		22		400/440
	30496	50616	NPPD	ITP	\$6,732,000	NPPD	Install any required terminal equipment at 345 kV bus at Stegall substation.		06/01/15	48	659135	STEGALL				345				400/440
	30441	50536	OGE	ITP	\$3,500,452	OGE	Install a 50 MVAR reactor at Gracemont 345 kV bus	04/01/15	04/01/15	12	515800	Gracemont 345kv				345				50 Mvar
200194	30485	50585	OGE	transmission service	\$2,260,299	OGE	Install third 345/138 kV bus tie in Northwest Sub (UID 11496).	06/01/15	06/01/12	36	514880	NORTHWEST 345	514879	NORTHWEST 138	3	345/138				493/493
	30478	50574	OPPD	ITP	\$260,590	OPPD	Rebuild 915 tap in Ckt 623-Sub 915 T2 Primary 69 kV Ckt	06/01/15	06/01/15	12	647016	915 Tap in Ckt 623	647915	Sub 915 T2 Primary	1	69	0.71			65/65
	30427	50520	SEPC	ITP	\$12,116,815	SEPC	Install second 345/115 kV transformer at Mingo.	06/01/15	06/01/13	36	531451	MINGO	531429	MINGO	2	345/115				280/280
200166	461	10597	SPS	ITP	\$35,099,588	SPS	Build 40 miles of 115 kV transmission line between Bailey County and Curry County.	06/01/15	06/01/12	30	524822	Curry County Interchange 115 kV	525028	Bailey County Interchange 115 kV	1	115		41.5		273/300
20084	791	11040	SPS	ITP	\$11,980,445	SPS	Tap the Potter Interchange - Plant X Station 230 kV line for new Newhart Substation and install 230/115 kV, 150/173 MVA transformer.	04/30/15	06/01/10	24	525461	Newhart Interchange 230 kV	525460	Newhart Interchange 115 kV	1	230/115				250/250
20084	791	11041	SPS	ITP	\$13,464,382	SPS	New 19 mile Swisher County Interchange - Newhart 230 kV line.	04/30/15	06/01/10	36	525461	Newhart Interchange 230 kV	525213	Swisher County Interchange 230 kV	1	230		19		492/541
20084	791	11042	SPS	ITP	\$15,086,485	SPS	New 18 mile Kress - Newhart 115 kV line.	04/30/15	06/01/10	36	525192	Kress Interchange 115 kV	525460	Newhart Interchange 115 kV	1	115		18		157/173
20084	791	11043	SPS	ITP	\$15,632,544	SPS	New 24 mile Castro County Interchange - Newhart 115 kV line.	04/30/15	06/01/10	36	524746	Castro County Interchange 115 kV	525460	Newhart Interchange 115 kV	1	115		24		157/173
20084	791	11044	SPS	ITP	\$2,010,780	SPS	Build new 4 mile Hart Industrial Substation - Newhart Substation 115 kV line.	04/30/15	06/01/10	15	525124	Hart Industrial 115 kV	525460	Newhart Interchange 115 kV	1	115		4		157/173
20084	791	11045	SPS	ITP	\$13,266,452	SPS	New 15 mile Lampton Interchange - Hart Industrial Substation 115 kV line.	04/30/15	06/01/10	36	525414	Lamton Interchange 115 kV	525124	Hart Industrial 115 kV	1	115		15		157/173
	802	11064	SPS	ITP	\$4,265,720	SPS	UPGRADE EDDY CO transformer 230-115 kV 250 MVA CKT 1	07/01/15	06/01/16	24	527800	Eddy County Interchange 230 kV	527798	Eddy County Interchange 115 kV	1	230/115				250/250
200166	836	11104	SPS	ITP	\$2,917,236	SPS	Tap Bailey County Interchange - Plant X 115 kV line and convert Muleshoe East substation to 115 kV operation.	11/28/15	06/01/12	20	524030	Muleshoe E 115 kV				115		0.3	1.5	139/160
20130	1001	11315	SPS	ITP	\$2,349,200	SPS	Construct approximately 2 miles of new 115 kV line from Randall Co. with 795 ACSR. Tie new line into V70 around (not to) Osage Substation. Add new 115 kV terminal at Randall Co. Interchange. (Re-build Randall 115 kV bus to breaker and one-half design.) Re-Conductor V70 with 795 ACSR. Remove line termination at Osage Substation. Upgrade terminal equipment and reset relays at South Georgia Interchange. Remove V04 termination from Osage and remove circuit back to Manhattan Tap (remove 3-terminal condition). Remove circuits V67 & V05 terminations from Osage and tie together around Osage Substation. Leave only V43 & T75 terminated at the Osage Substation.	06/01/15	06/01/16	24	524364	Randall County Interchange 115 kV	524322	South Georgia Interchange 115 kV	1	115		2		160/160
200166	1003	11317	SPS	ITP	\$3,914,401	SPS	Upgrade Grassland 230/115 kV transformer Ckt 1 to a 250 MVA.	06/01/15	06/01/13	24	526677	Grassland Interchange 230 kV	526676	Grassland Interchange 115 kV	1	230/115				250/250
	1031	11355	SPS	ITP	\$2,357,062	SPS	Upgrades Crosby County 116/69 kV transformer No. 1 to 84 MVA	06/01/15	06/01/13	24	525926	Crosby County Interchange 115 kV	525925	Crosby County Interchange 69 kV	1	115/69				84/84
	1031	11356	SPS	ITP	\$2,381,597	SPS	Upgrades Crosby County 116/69 kV transformer No. 2 to 84/96 MVA	06/01/15	06/01/13	24	525926	Crosby County Interchange 115 kV	525925	Crosby County Interchange 69 kV	2	115/69				84/84
200166	1033	11358	SPS	ITP	\$3,618,651	SPS	Reconductor 4.1 miles of 6.1-mile 115 kV line from Randall County to South Georgia.	07/31/15	06/01/17	18	524364	Randall County Interchange 115 kV	524322	South Georgia Interchange 115 kV	1	115	4.1			246/270
20130	1036	11372	SPS	ITP	\$596,071	SPS	Convert 1.04 miles of Z33 to 115 kV service by tapping the 115 kV line from Sunset Substation to Coulter Interchange at I-40 & Soncy Street. At Soncy Sub split the converted Z33 line off the 69 kV bus and terminate to a new 115/13.2 kV transformer to serve the Soncy distribution load. Install new 115/13.2 kV distribution transformer. Leave 69 kV underground cable to Lawrence Park to be fed by Y72 out of Coulter Interchange.	06/01/15	06/01/15	18	524252	Soncy Tap 115 kV	524254	New Soncy 115 kV	1	115			1.04	157/173
	1147	11512	SPS	ITP	\$2,115,794	SPS	Convert 26 miles Channing - Potter 115 kV to 230 kV, upgrade terminal equipment at Potter.	12/31/15	06/01/13	48	523869	Channing 230 kV	523959	Potter County Interchange 230 kV	1	230			26	492/541
	1147	11514	SPS	ITP	\$12,509,767	SPS	Convert 35 miles Channing - Dallam 115 kV to 230 kV. Tapping Channing Dallam 230/115 kV into new XIT sub.	12/31/15	06/01/13	48	523869	Channing 230 kV	523229	Dallam 230 kV	1	230			35	492/541
	1147	11515	SPS	ITP	\$4,293,268	SPS	Install 230/115/13.2 kV Transformer at Dallam County Jr. (XIT) Sub.	12/31/15	06/01/13	48	523229	Dallam 230 kV	523228	Dallam County Interchange 115 kV	1	230/115				168/168
	30331	50378	SPS	ITP	\$697,688	SPS	Install 14.4 MVAR capacitor at Eagle Creek 115 kV.		06/01/15	12	527711	Eagle Creek 115 kV				115				14.4 Mvar
200166	30332	50379	SPS	ITP	\$2,225,089	SPS	Install 14.4 Mvar capacitor at Drinkard 115 kV.	06/01/15	06/01/15	12	528589	Drinkard Sub 115 kV				115		0.4		14.4 Mvar
200166	30356	50406	SPS	ITP	\$5,524,876	SPS	Install new 115/69 kV transformer at new Cedar Lake Interchange.	06/30/15	06/01/12	24	527212	Cedar Lake 115 kV	527211	Adair Tap 69 kV	1	115/69		17.79		84/84
200166	30356	50407	SPS	ITP	\$7,699,644	SPS	Build 12 miles of new 115 kV line from Sulphur Interchange to Cedar Lake Interchange.	06/30/15	06/01/12	24	527262	Sulphur Interchange 115 kV	527212	Cedar Lake 115 kV	1	115		12.5		157/173
200190	30413	50506	SPS	ITP	\$4,249,540	SPS	Replace 230/115 kV transformer at Grapevine substation with 250 MVA transformer.	12/01/15	06/01/14	36	523771	Grapevine Interchange 230 kV	523770	Grapevine Interchange 115 kV	1	230/115				250/250
200193	30422	50515	SPS	ITP	\$4,273,633	SPS	Upgrade Deaf Smith County Interchange 230/115 kV Ckt 1 transformer to 250 MVA.	03/01/15	06/01/12	24	524623	Deaf Smith County Interchange 230 kV	524622	Deaf Smith County Interchange 115 kV	1	230/115				250/250

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	30423	50516	SPS	ITP	\$4,273,633	SPS	Upgrade Deaf Smith Interchange 230/115 kV transformer ckt 2 to 250 MVA	03/01/15	06/01/13	24	524623	Deaf Smith County Interchange 230 kV	524622	Deaf Smith County Interchange 115 kV	2	230/115				250/259
	30429	50522	SPS	ITP	\$19,997,019	SPS	Rebuild 28-mile Crosby-Floyd 115 kV Ckt 1.	11/01/15	06/01/13	24	525926	Crosby County Interchange 115 kV	525780	Floyd County Interchange 115 kV	1	115	25.8			249/273
	30430	50523	SPS	ITP	\$2,356,579	SPS	Install two 14.4 Mvar capacitors.	03/01/15	06/01/13	12	525780	Floyd County Interchange 115 kV				115				28.8 Mvar
	30444	50539	SPS	ITP	\$1,401,906	SPS	Install a 2 stage 28.8 115 kV capacitor bank each stage 14.4 Mvar	12/31/15	06/01/18	12	526361	Cochran Interchange 115 kV				115				28.8 MVAR
	30113	50119	SWPA	ITP - non OATT	\$0	SWPA	Install 30 Mvar capacitor at Glencoe 161 kV substation.		06/01/15		504080	Glencoe				161				30 Mvar
20003	311	10403	WFEC	ITP	\$1,577,000	SPP	Convert 8 mile OU - West Norman from 69 kV to 138 kV.	12/31/15	06/01/10	12	521095	WEST NORMAN	521104	OU SWITCH 4	1	138			8.3	183/228
20003	399	10519	WFEC	ITP	\$1,347,000	SPP	Upgrade line from 1/0 to 336.4, 4.85 miles	06/01/15	06/01/12	12	520979	LINDSAY SW	521087	WALLVILLE	1	69	4.85			53/65
20132	846	11116	WFEC	ITP	\$1,125,000	SPP	Rebuild 2-mile Blanchard - OU Switchyard 69 kV line as 138 kV.	12/01/15	06/01/12	12	520828	BLANCHARD	521104	OU SWITCH 4	1	138			2	212/264
20114	1027	11351	WFEC	transmission service	\$150,000	WFEC	Replace CTs	06/01/15	06/01/15		521129	BLUE CANYON WIND 5	521024	PARADISE	1	138				163/163
20033	319	10413	WR	ITP	\$4,151,903	WR	Rebuild Cowskin - Westlink 69 kV.		06/01/15		533788	COWSKIN 69 KV	533854	WESTLINK 69 KV	1	69	2.11			131/143
20033	319	10414	WR	ITP	\$5,834,124	WR	Rebuild Westlink-Tyler 69 kV.		06/01/15		533854	WESTLINK 69 KV	533847	TYLER 69 KV	1	69	2.65			131/143
20033	319	10415	WR	ITP	\$4,614,819	WR	Rebuild Tyler-Hoover 69 kV. Install terminal equipment at Tyler substation.		06/01/15		533847	TYLER 69 KV	533806	HOOVER SOUTH 69 KV	1	69	1.96			131/143
	30437	50532	WR	ITP	\$20,387,444	WR	Install new Geary County 345/115 kV substation south of Junction City where JEC-Summit and McDowell Creek-Junction City #2 ckt separate. Install 345/115 kV 440 MVA transformer and 115 kV terminal equipment.		06/01/15	24	532767	Geary County	533336	Geary County	1	345/115				400/440
	30437	50605	WR	ITP	\$15,376,365	WR	Install 345 kV ring bus at the new Geary County substation		06/01/15	24	532767	Geary County				345				1793/1793
	30437	50534	WR	ITP	\$27,938,225	WR	Build new Geary County - Chapman 115 kV line.		06/01/15	36	533336	Geary County	533362	CHAPMAN 115 KV	1	115	10.42	4.67		218/262
	30483	50581	WR	ITP	\$7,122,480	WR	Install a third 138/69 kV transformer at Gill		06/01/15	18	533046	GILL ENERGY CENTER SOUTH 138 KV	533795	GILL ENERGY CENTER EAST 69 KV	1	138/69				150/165
2016																				
20122	479	10616	AEP	ITP	\$14,500,000	AEP	Rebuild 12.63 miles of the Georgia Pacific - Keatchie 138 kV line from 795 ACSR to 1272 ACSR	06/01/16	06/01/16	24	509064	GEORGIA-PACIFIC	509050	KEATCHIE REC	1	138	12.63			287/287
20000	511	10656	AEP	ITP	\$11,000,000	AEP	Install new 345/161 kV transformer at Kings River (Previous name Osage Creek)	06/01/16	06/01/16	60	506987	Kings River 161 kV	506988	Kings River 161 kV	1	345/161				400/440
20000	511	10659	AEP	ITP	\$24,500,000	AEP	Install 9 miles of 345 kV line from Shipe Road to East Rogers	06/01/16	06/01/16	60	506979	Shipe Road 345	506982	East Rogers 345	1	345		9		1366/1915
20000	511	10660	AEP	ITP	\$65,500,000	AEP	Install 32 miles of 345 kV line from East Rogers to Kings River (previous Osage Creek)	06/01/16	06/01/16	60	506982	East Rogers 345	506987	Kings River 161 kV	1	345		32		1366/1915
	511	50524	AEP	ITP	\$6,095,000	SPP	Build 0.5 miles of 161 kV from Kings River to the Grandview-Osage Creek 161 kV tapping this line creating a new circuit from Kings River-Grandview 161 kV ckt 1. Install 161 kV terminal equipment for the new circuit the new Kings River substation		06/01/16	24	338099	Grandview 161 kV	506988	Kings River 161 kV	1	161		0.5		363/363
	511	50525	AEP	ITP	\$6,095,000	SPP	Build 0.5 miles of 161 kV from Kings River to the Grandview-Osage Creek 161 kV tapping this line creating a new circuit from Kings River-Osage Creek 161 kV ckt 1. Install 161 kV terminal equipment for the new circuit from the Kings River substation		06/01/16	24	338682	Osage Creek (AECC)	506988	Kings River 161 kV	1	161		0.5		363/363
	511	50602	AEP	ITP			Build 1 mile of 161 kV from Kings River to the Berryville-Osage Creek 161 kV tapping this line creating a new circuit from Kings River-Osage Creek 161 kV ckt 1. Install 161 kV terminal equipment for the new circuit from the Kings River substation		06/01/16	18	506988	Kings River 161 kV	338682	Osage Creek (AECC)	2	161		1		223/223
	511	50603	AEP	ITP			Build 1 mile of 161 kV from Kings River to the Berryville-Osage Creek 161 kV tapping this line creating a new circuit from Kings River-Berryville 161 kV ckt 1. Install 161 kV terminal equipment for the new circuit from the Kings River substation		06/01/16	18	506988	Kings River 161 kV	338100	Berryville	1	161		1		223/223
20122	30296	50334	AEP	ITP	\$1,166,400	AEP	Install a new 28.8 MVAR capacitor bank at Winnsboro 138 kV substation.	06/01/16	06/01/16	18	508317	Winnsboro 138 kV				138				28.8 Mvar
20122	30298	50336	AEP	ITP	\$1,166,400	AEP	Install 28.8 MVAR capacitor bank at Logansport 138 kV substation.	06/01/16	06/01/16	18	509071	LOGANSPORT 138KV				138				28.8 Mvar
	30436	50531	AEP	ITP	\$1,000,000	AEP	Replace 138 kV breaker at Perdue.	06/01/16	06/01/16	12	508560	NEW GLADEWATER	508351	PERDUE 138KV		138				272/272
	30449	50545	AEP	ITP	\$25,060,655	AEP	Rebuild and upgrade conductor 27.6-mile Rock Hill-Springridge Pan-Harr REC 138 kV with 1926.9 ACSR/TW.	06/01/16	06/01/14	24	509083	ROCK HILL 138	507757	SPRINGRIDGE PAN-HARR REC	1	138	27.6			272/376
	414	10540	KCPL	zonal - sponsored	\$3,756,500	KCPL	New Cedar Niles-Clare 161 kV Line & Clare substation	12/31/16		24	543054	CEDAR NILES 161 KV	543131	CLARE 161 KV	1	161		4.84		293/335
	418	10544	KCPL	zonal - sponsored	\$1,632,300	KCPL	New Waldron sub cut-in	06/01/16		18	543030	WALDRON5 161 KV			1	161				293/293
	30442	50537	OGE	ITP	\$3,500,452	OGE	Install a 30 Mvar reactor at Hunter 345 kV for the Hunter - Wichita 345 kV line	04/01/16	04/01/16	24	515477				1	345				30 Mvar
200190	805	11067	SPS	ITP	\$2,980,329	SPS	Install second 115/69 kV transformer at Bowers.	06/01/16	06/01/13	24	523748	Bowers Interchange 115 kV	523747	Bowers Interchange 69 kV	2	115/69				84/96
	30451	50546	SPS	ITP	\$19,639,618	SPS	Build a new 115 kV line from Atoka-Eagle Creek and install terminal equipment	12/31/16	06/01/15	36	527786	Atoka Interchange 115 kV	527711	Eagle Creek 115 kV	1	115		13.5		249/249
20108	30290	50328	WR	transmission service	\$700,000	WR	Replace disconnect switches, wavetrap and CT	06/01/16	06/01/19		533012	HALSTEAD SOUTH BUS 138 KV	533065	SEDGWICK COUNTY NO. 12 COLWICH 13	1	138				160/160
2017																				
	30130	50136	CUS	zonal - sponsored	\$875,000	CUS	Install 30 MVAR capacitor at Twin Oaks Substation	06/01/17	06/01/18	24	549933	Twin Oaks 69				69				30 Mvar

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20097	938	11238	GMO	high priority	\$231,600,000	GMO	Build a new 105 mile 345 kV line with at least 3000 A capacity from Sibley to a new Maryville substation. Upgrade the Sibley substation with the necessary breakers and terminal equipment.	06/01/17		72	541201	Sibley 345 KV	541197	Maryville 345 kV	1	345		105		2496/2496	
20097	938	11239	GMO	high priority	\$152,640,000	GMO	Build a new 345 kV substation at Maryville with a ring bus and necessary terminal equipment. Build a new 65 mile 345 kV line with at least 3000 A capacity from the new Maryville substation to the Missouri/Nebraska state border towards OPPD's Nebraska City substation.	06/01/17		72	645458	Sub 3458 (Neb Cty)	541197	Maryville 345 kV	1	345		65		2496/2496	
20137	1134	11496	OGE	transmission service	\$15,000,000	OGE	Install third 345/138 kV transformer in Northwest Sub	06/01/17	06/01/17	40	514880	NORTHWEST 345	514879	NORTHWEST 138	3	345/138				493/493	
20017	30160	50168	OGE	transmission service	\$14,000,000	OGE	Convert Ft. Smith 161KV to 1-1/2 breaker design and install 3rd 500-161KV transformer bank.	06/01/17	06/01/17	36	515305	FT SMITH 500	515300	FT SMITH 161	5	500/161				493/493	
20017	30164	50172	OGE	transmission service	\$100,000	OGE	Upgrade CT	06/01/17	06/01/17	9	515336	VBI 69	504032	VBI NORTH	1	161				72/72	
200194	30481	50577	OGE	transmission service	\$10,000	OGE	Replace 400 amp CT in El Reno sub with 800 amp.	06/01/17	06/01/17	14	514818	EL RENO 69	514817	SERVICE PL EL RENO 69		69				72/72	
20098	939	11240	OPPD	high priority	\$19,796,666	OPPD	Build a new 11.2 mile 345 kV line with at least 3000 A capacity from the Nebraska City substation to the Missouri/Nebraska state border towards KCPL's Maryville substation. Upgrade the Nebraska City substation with the necessary breakers and terminal equipment.	06/01/17			645458	Sub 3458 (Neb Cty)	541197	Maryville 345 kV	1	345		11.2		2496/2496	
	772	11017	SPS	ITP	\$32,790,576	SPS	Build new 230 kV line from Carlisle to Wolfforth So. and install terminal equipment	06/01/17	06/01/17	36	526525	Wolfforth Interchange 230 kV	526161	Carlisle Interchange 230 kV	1	230		15		478/478	
20130	1004	11318	SPS	ITP	\$4,762,800	SPS	Upgrade existing Swisher 230/115 kV transformer to 252 MVA	06/30/17	06/01/16	24	525213	Swisher County Interchange 230 kV	525212	Swisher County Interchange 115 kV	1	230/115				252/252	
	1139	11501	SPS	ITP	\$10,946,449	SPS	Rebuild 6 miles of 115 kV line from Lubbock South Interchange to Allen	06/01/17	06/01/14	24	526268	Lubbock South Interchange 115 kV	526213	Allen Sub 115 kV	1	115	6.1			273/300	
	30330	50377	SPS	ITP	\$466,889	SPS	Install second stage 14.4 Mvar capacitor at Etter Rural 115 kV substation.		06/01/17	12	523256	Etter Rural Sub 115 kV				115				14.4 Mvar	
	500	10645	SWPA	ITP - non OATT	\$2,250,000	SPP	Replace Springfield transformer #3 with 125 MVA transomer.	06/01/17	06/01/17	24	505492	Springfield	505494	Springfield	3	161/69				70/70	
200197	30406	50498	WR	transmission service	\$456,403	WR	Upgrading the existing Knob Hill strain bus of the north lattice bay and upgrading all the equipment of the line terminal. Also the existing electro-mechanical relay breaker panel of this terminal will not handle the ranges needed for the new line ampacity. So a new microprocessor based relay breaker control panel will need to be installed for this project.	06/01/17	06/01/17		539665	Greenleaf 115 KV	533332	KNOB HILL 115 KV		115				239/239	
2018																					
	30434	50528	AECC	ITP - non OATT	\$350,000	AECC	Rebuild Fitzhugh-Ozark 161 Ckt 1 river crossing 0.76 miles.		04/01/18	24	503902	FITZHUGH 161	505516	Ozark	1	161	0.63			184/184	
	501	10646	AEP	ITP	\$11,980,465	AEP	Rebuild Evenside-Northwest Henderson 69kV Ckt. 6.4 miles of 397 ACSR with 1233.6 ACSR/TW. Replace breaker at Evenside.	06/01/18	06/01/18	24	509061	EVENSIDE	509075	NORTHWEST HENDERSON 69KV	1	69	6.4				71/96
	512	10657	AEP	ITP	\$8,174,689	AEP	Rebuild 2.0 miles Ellerbe Road 69 kV Ckt 1 to Forbing Road with 1233.6 ACSR/TW.	06/01/18	06/01/18	24	507723	ELLERBE ROAD	507728	FORBING TAP	1	69	2				90/121
200183	30361	50413	AEP	ITP	\$81,514,845	AEP	Build new 345 kV line from Elk City to Gracemont. The total mileage of this Elk City to Gracemont 345 kV line is 93 miles. American Electric Power and Oklahoma Gas and Electric Co. shall decide who shall build how much of these Network Upgrades and shall provide such information, along with specific cost estimates for each Designated Transmission Owner's portion of the Network Upgrades, to SPP in its response to this NTC-C.		03/01/18	60	511553	Elk City 345 kV	515800	Gracemont 345kv	1	345		46.5			1792/1792
200183	30361	50414	AEP	ITP	\$18,060,547	AEP	Expand Elk City substation (or build new station). Install a 345/230 kV 675 MVA transformer at Elk City.		03/01/18	60	511553	Elk City 345 kV	511490	ELK CITY 230KV	1	345/230				675/675	
	814	11076	CUS	zonal - sponsored	\$1,750,000	CUS	Rebuild James River to South Highway 65 69 kV	06/01/18		24	549904	James River 69	549908	South Highway 65 69	1	69	3.8				153/159
	815	11077	CUS	zonal - sponsored	\$956,000	CUS	Rebuild South Highway 65 to Sunset 69 kV	06/01/18		24	549907	Sunset 69	549908	South Highway 65 69	1	69	1.9				153/159
20036	30067	50073	EDE	ITP	\$1,500,000	EDE	Install 12 Mvar capacitor bank at Quapaw substation 377 69 kV.	06/01/18	06/01/18	18	547590	SUB 377 - QUAPAW (EAGLE PICHER)				69				12 Mvar	
	716	10953	GMO	ITP	\$20,537	GMO	upgrade Prairie Lee wave trap to at least 1200 amps		06/01/18	12	541211	Blue Spring South 161 KV	541206	Prairie Lee 161 KV	1	161				229/259	
	30365	50422	GMO	ITP	\$2,983,952	KCPL	Reconductor 3.21 miles from Blue Springs to Prairie Lee 161 kV to 795 ACSS. Upgrade substation equipment to 2000 Amps.		06/01/18	24	541211	Blue Spring South 161 KV	541206	Prairie Lee 161 KV	1	161	3.21				558/558
	30365	50423	GMO	ITP	\$2,399,248	KCPL	Reconductor 2.5 mile from Blue Springs South - Blue Springs East 161 kV to 795 ACSS. Upgrade substation equipment to 2000 Amps.		06/01/18	24	541205	Blue Springs East 161 KV	541211	Blue Spring South 161 KV	1	161	2.5				558/558
	30438	50533	GRDA	ITP	\$161,100	GRDA	Replace 161kV,1200A switch with a 2000A Switch at Kerr Substation bus.		06/01/18	12	512637	412SUB 161	512635	KERR 161	1	161					356/432
	30440	50535	GRDA	ITP	\$161,100	GRDA	Replace 161kV, 1200A switch with a 2000A switch at Kansas Tap Substation.		06/01/18	12	512637	412SUB 161	512714	KANSAS TAP 161	1	161					356/432
	30477	50573	GRDA	Zonal Reliability	\$150,700	GRDA	Increase line clearance Okay-Unarco 69 kV Ckt 1		06/01/18	12	512646	OKAY 69	512828	UNARCO69	1	69					87/108
200187	30367	50425	ITCGP	ITP	\$28,580,803	ITCGP	Build ITCGP's portion of new 345 kV line from Elm Creek to Summit.	03/01/18	03/01/18	60	750011	Elm Creek 345 kV	532773	SUMMIT 345 KV	1	345		28			1792/1792
200187	30367	50426	ITCGP	ITP	\$5,403,707	ITCGP	Install new 345/230 kV transformer at Elm Creek.	03/01/18	03/01/18	60	750011	Elm Creek 345 kV	539639	Elm Creek Substation	1	345/230					448/448

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200187	30367	50427	ITCGP	ITP	\$8,015,964	ITCGP	Bus work on 345 kV side at Elm Creek substation.	03/01/18	03/01/18	60	750011	Elm Creek 345 kV			1	345				
200187	30367	50428	ITCGP	ITP	\$697,163	ITCGP	Bus work on 230 kV side at Elm Creek substation.	03/01/18	03/01/18	60	539639	Elm Creek Substation				230				
20107	30299	50337	MKEC	transmission service	\$150,000	MKEC	Replace CTs and relays at Jewell substation and Smith Center substation	06/01/18	06/01/18		539669	Jewell 3 115	539693	Smith Center 115 KV	1	115				80/88
	717	10954	NPPD	zonal - sponsored	\$5,625,000	NPPD	Tap CENCITY7 - Silver Creek 115 kV at Clarks. Build new 115 kV line from Clarks - Central City North. Radial 115 kV line for TransCanada Keystone XL project.	06/01/18		48	640436	Clarks	640434	Central City North	1	115		8.8		80/80
	738	10975	NPPD	zonal - sponsored	\$19,687,500	NPPD	Build new line from Petersburg to new ERICSON7. Radial 115 kV line for TransCanada Keystone XL project.	06/01/18		48	640318	Petersburg	640437	Ericson	1	115		35		174/174
200186	30375	50442	NPPD	ITP	\$92,660,000	NPPD	Build new 76-mile 345 kV line from Gerald Gentleman Station substation to new Cherry County substation. This upgrade is contingent upon approval from Western Area Power Administration to tap the Grand Island - Fort Thompson 345 kV line.	01/01/18	01/01/18	72	640500	Cherry County 345 kV	640183	Gerald Gentleman Station	1	345		76		1792/1792
200186	30375	50443	NPPD	ITP	\$1,380,000	NPPD	Construct 345 kV terminal at Gerald Gentleman Station 345 kV substation to accommodate new 345 kV line from Gerald Gentleman Station to new Cherry County 345 kV substation. This upgrade is contingent upon approval from Western Area Power Administration to tap the Grand Island - Fort Thompson 345 kV line.	01/01/18	01/01/18	72	640183	Gerald Gentleman Station				345				
200186	30375	50444	NPPD	ITP	\$6,000,000	NPPD	Build new Cherry County 345 kV substation and install necessary terminal equipment. This upgrade is contingent upon approval from Western Area Power Administration to tap the Grand Island - Fort Thompson 345 kV line.	01/01/18	01/01/18	72	640500	Cherry County 345 kV				345				
200186	30375	50445	NPPD	ITP	\$172,360,000	NPPD	Build new 146-mile 345 kV line from new Cherry County substation to new Holt County substation. This upgrade is contingent upon approval from Western Area Power Administration to tap the Grand Island - Fort Thompson 345 kV line.	01/01/18	01/01/18	72	640500	Cherry County 345 kV	640503	Holt County 345 kV	1	345		146		1792/1792
200186	30375	50446	NPPD	ITP	\$16,880,000	NPPD	Construct new Holt County 345 kV substation tap on the Grand Island - Fort Thompson 345 kV line owned by Western Area Power Administration. Install necessary terminal equipment at new substation. This upgrade is contingent upon approval from Western Area Power Administration to tap the Grand Island - Fort Thompson 345 kV line.	01/01/18	01/01/18	72	640503	Holt County 345 kV				345				
200185	30361	50419	OGE	ITP	\$75,486,000	OGE	Build OGE's portion of new 345 kV line from Elk City to Gracemont.	03/01/18	03/01/18	60	511553	Elk City 345 kV	515800	Gracemont 345kv	1	345		46.5		1792/1792
	865	11142	OPPD	ITP	\$475,340	OPPD	Increase line clearances to allow the use of a higher conductor rating and replacing some terminal equipment	06/01/18	06/01/18	18	647917	Sub 917	647918	Sub 918	1	69				89/89
200184	1140	11502	SPS	ITP	\$37,490,796	SPS	Install 345/115 kV transformer between Tuco and new 115 kV substation (New Deal).		06/01/18	36	525836	New-Sub-EH1 345kV	525837	New-Sub-EH1 115kV	1	345/115				458/474
200184	1140	11503	SPS	ITP		SPS	Build new 15-mile 345 kV line between Tuco and high side of new transformer between Tuco and Stanton.		06/01/18	36	525832	TUCO Interchange 345 kV	525836	New-Sub-EH1 345kV	1	345		15		1792/1792
200184	1140	11504	SPS	ITP		SPS	Build new 17-mile 115 kV line between Stanton and low side of new transformer between Tuco and Stanton.		06/01/18	36	525837	New-Sub-EH1 115kV	526076	Stanton Sub 115 kV	1	115		17		174/192
	1144	11508	SPS	ITP	\$4,220,694	SPS	Build a second 230/115/13.2 kV transformer at Hitchland.		06/01/18	24	523095	Hitchland Interchange 230 kV	523093	Hitchland Interchange 115 kV	2	230/115				250/250
	1146	11509	SPS	ITP	\$3,644,914	SPS	Upgrade the Carlisle 230/115/13.2 transformer - 250 MVA.		06/01/18	24	526161	Carlisle Interchange 230 kV	526160	Carlisle Interchange 115 kV	1	230/115				250/250
200184	30355	50404	SPS	ITP	\$50,068,309	SPS	Build new 230 kV line from Wolfforth to Grassland, and install terminal equipment at Grassland and Wolfforth substations.	03/01/18	03/01/18	54	526525	Wolfforth Interchange 230 kV	526677	Grassland Interchange 230 kV	1	230		44		478/478
	30377	50454	SPS	ITP	\$1,581,080	SPS	Reconductor 1.5 miles line from Indiana to Stanton.		06/01/18	24	526146	Indiana Sub 115 kV	526076	Stanton Sub 115 kV	1	115	1.5			240/240
	30377	50455	SPS	ITP	\$1,604,810	SPS	Reconductor 4 miles from Indiana to SP-Erskine.		06/01/18	24	526146	Indiana Sub 115 kV	526109	South Plains REC-Erskine 115 kV	1	115	4			240/240
	30469	50563	SPS	ITP	\$5,784,673	SPS	Build 2.2 miles of 115 kV from Zodiac 115 kV to South Portales 115 kV and install necessary terminal equipment	12/01/18	06/01/18		524935	Zodiac Sub 115 kV	524949	S Portales 115 kV	1	115		2.2		159/175
	30469	50564	SPS	ITP	\$4,589,546	SPS	Build 1.9 miles of 115 kV from S Portales to Market St 115 kV and install necessary terminal equipment	12/01/18	06/01/18	24	524949	S Portales 115 kV	524950	Market ST 115 kV	1	115		1.9		159/175
	30469	50565	SPS	ITP	\$14,576,999	SPS	Build 7 miles of 115 kV from Market St to Portales substation and install necessary terminal equipment.	12/01/18	06/01/18	24	524950	Market ST 115 kV	524924	Portales Interchange 115 kV	1	115		7		159/175
	679	10896	SWPA	ITP - non OATT	\$2,250,000	SWPA	Replace Poplar Bluff 2nd transformer with larger transformer, 70/70 MVA unit.		06/01/18	24	505436	Poplar Bluff	505438	Poplar Bluff	2	161/69				70/70
200182	30367	50429	WR	ITP	\$62,110,152	WR	Build Westar's portion of new 345 kV line from Elm Creek to Summit.		03/01/18	60	750011	Elm Creek 345 kV	532773	SUMMIT 345 KV	1	345		30		1792/1792
	30435	50530	WR	ITP	\$1,966,717	WR	Install two 25 Mvar reactors on the tertiaries of each of the 345-115 kV Transformers at Reno County Substation. 4 x 25Mvar total.		04/01/18	18						14.4				100 Mvar
	30484	50582	WR	ITP	\$15,402,744	WR	Install new 345/138 kV transformer at Viola substation		06/01/18	36	532798	Viola 7	533075	Viola 138kV	1	345/138				448/492
	30484	50612	WR	ITP			Install 345 kV breakers at Viola substation		06/01/18	36	532798	Viola 7			1	345				448/492
	30484	50583	WR	ITP	\$40,525,225	WR	Build new 138 kV line between new Viola substation 345/138 kV transformer and existing Clearwater 138 kV substation.		06/01/18	36	533075	Viola 138kV	533036	CLEARWATER 138KV	1	138		21.8		534/586

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	30484	50584	WR	ITP	\$22,234,744	WR	Build new 138 kV line between new Viola substation 345/138 kV transformer and existing Gill 138 kV substation.		06/01/18	36	533075	Viola 138kV	533045	GILL ENERGY CENTER WEST 138 KV	1	138		27.9		534/586
2019																				
200186	30374	50440	NPPD	ITP	\$61,205,000	NPPD	Build a new 50-mile 345 kV line from Hoskins to Neligh.	03/01/19	03/01/19	60	640226	Hoskins	750013	Neligh 345 kV	1	345		40		1792/1792
200186	30374	50441	NPPD	ITP	\$35,497,400	NPPD	Construct new substation at Neligh. Install a new 345/115 kV transformer at Neligh.	03/01/19	03/01/19	60	750013	Neligh 345 kV	640293	Neligh	1	345/115				458/474
20110	910	11207	OGE	transmission service	\$225,000	OGE	Replace wavetrap	06/01/19	06/01/19	12	514839	BRYANT 138	514835	MEMORIAL 138	1	138				478/478
20110	1021	11343	OGE	transmission service	\$18,000,000	OGE	Add 3rd 345kV line from Arcadia to Redbud	06/01/19	06/01/19	36	514908	ARCADIA 345	514909	REDBUD 345	3	345		5		1248/1426
2020																				
	30210	50439	MKEC	ITP	\$385,244	MKEC	Reconductor 22.1 mile Harper to Milan Tap 138 kV line.		03/01/20	12	539668	Harper 138 KV	539675	Milan Tap 138 KV	1	138	22.11			261/314
200184	30376	50447	SPS	ITP	\$181,415,883	SPS	Build new 67-mile 345 kV line from Tuco to Amoco.		01/01/20	72	525832	TUCO Interchange 345 kV	750014	Amoco 345 kV	1	345		67		1792/1792
200184	30376	50451	SPS	ITP		SPS	Install new 345/230 kV transformer at Amoco.		01/01/20	72	750014	Amoco 345 kV	526460	Amoco Switching Station 230 kV (Amoco	1	345/230				448/448
200184	30376	50452	SPS	ITP		SPS	Install new 345/230 kV transformer at Hobbs.		01/01/20	72	750015	Hobbs 345 kV	527894	Hobbs Interchange 230 kV	1	345/230				448/448
200184	30376	50457	SPS	ITP		SPS	Build new 100 mile Amoco - Hobbs 345 kV line. Expand the Hobbs substation.		01/01/20	72	750014	Amoco 345 kV	750015	Hobbs 345 kV	1	345		100		1792/1792
2021																				
200185	30364	50420	OGE	ITP	\$71,876,622	OGE	Build new 49-mile Woodward EHV - Tatonga 345 kV Ckt 2 line.	03/01/21	03/01/21	72	515375	Woodward EHV 345kV	515407	Tatonga 345kV	2	345		49		1792/1792
200185	30364	50421	OGE	ITP	\$82,139,900	OGE	Build new 61-mile Tatonga - Matthewson 345 kV line.	03/01/21	03/01/21	72	515407	Tatonga 345kV	4	Mathewson 345 kV	1	345		61		1792/1792
200185	30364	50456	OGE	ITP	\$32,780,617	OGE	Build new 16-mile 345 kV line from Matthewson to Cimarron.	03/01/21	03/01/21	72	4	Mathewson 345 kV	514901	CIMARRON 345	1	345		16		1792/1792
200185	30364	50458	OGE	ITP	\$20,169,602	OGE	Build new Matthewson 345 kV substation at the intersection of the Woodring - Cimarron and the existing Northwest - Tatonga 345 kV lines.	03/01/21	03/01/21	72	4	Mathewson 345 kV				345				1792/1792
	1145	11524	SPS	ITP	\$4,714,312	SPS	Reconductor 3.98 miles of Carlisle - Murphy 115 kV.		06/01/21	24	526160	Carlisle Interchange 115 kV	526192	Murphy Sub 115 kV	1	115	3.98			273/300
	756	10998	WR	ITP	\$18,343,600	WR	Tap Lawrence Hill-Swissvale 230 kV line near Baldwin Creek substation and install Baldwin Creek 230/115 kV transformer		06/01/21	24	532858	BALDWIN CREEK	533232	BALDWIN CREEK 115 KV	1	230/115				280/308
2022																				
	30362	50416	AEP	ITP	\$100,504,688	AEP	Build 55 mile new 345 kV line from Welsh to Lake Hawkins (or Perdue).		03/01/22	60	700346	Lake Hawkins 345 kV	508359	WELSH	1	345		55		1792/1792
	30362	50417	AEP	ITP	\$16,666,456	AEP	Expand Lake Hawkins (or Perdue) substation (or build new station). Install a 345/138 kV transformer at Lake Hawkins (or Perdue).		03/01/22	60	700346	Lake Hawkins 345 kV	508358	LAKE HAWKINS	1	345/138				675/675
	711	10948	LES	zonal - sponsored	\$11,250,000	SPP	Add NW68th Holdrege 345/115kV Transformer #2. Driven by NERC Category C (TPL-003) - prior outage of one 345/115kV transformer, followed by an outage of a second 345/115kV transformer.		05/31/22		650214	NW68th & Holdrege	650114	NW68th & Holdrege	1	345/115				336/403
	30208	10991	MKEC	ITP	\$2,501,569	MKEC	Rebuild MKEC portion of the 5.6 mile Clearwater-Milan Tap 115 kV with bundled 1192.5 kcmil ACSR conductor (Bunting)		03/01/22	24	533036	CLEARWATER 138KV	539675	Milan Tap 138 KV	1	138	5.6			261/314
	757	11000	OGE	ITP	\$6,509,948	OGE	Reconductor 12.08 mile FPL Switch - Woodward District 138 kV line to 1590 ASCR.		03/01/22	24	514785	WOODWARD 138	515785	FPL SWITCH 138	1	138	12.08			404/485
	30363	50418	OGE	ITP	\$15,990,000	SPP	Reconductor 26 mile Glass Mountain - Mooreland line to 795 AS33		03/01/22	36	520999	MOORELAND	514788	GLASS MOUNTAIN 138	1	138	26			268/287
	30329	50376	SPS	ITP	\$944,754	SPS	Install 28.8 Mvar capacitor at Lamb County 69 kV.		06/01/22	12	526036	Lamb County REC-Opdyke Sub 115 kV				69				28.8 Mvar
	30372	50437	WFEC	ITP	\$16,666,500	SPP	Reconductor Okeene - Dover Switching Station 138 kV to 795 ACSS.		03/01/22	36	520882	DOVER SW	521016	OKEENE	1	138	27.1			286/286
	30209	10992	WR	ITP	\$7,951,703	WR	Rebuild Westar portion of the Clearwater-Milan tap 115 kV with bundled 1192.5 kcmil ACSR conductor (Bunting)		03/01/22	24	533036	CLEARWATER 138KV	539675	Milan Tap 138 KV	1	138	6.1			261/314
	30368	50430	WR	ITP	\$11,501,055	WR	Tear down/rebuild 12.3 mile Abilene East - Chapman 115 kV line as single circuit with bundled 1192 ACSR conductor.		06/01/22	36	533365	EAST ABILENE 115 KV	533362	CHAPMAN 115 KV	1	115	12.3			240/240
	30368	50431	WR	ITP	\$3,806,178	WR	Tear down/rebuild Abilene East - Abilene Energy Center 115 kV as single circuit with bundled 1192 ACSR conductor.		06/01/22	24	533365	EAST ABILENE 115 KV	533361	ABILENE ENERGY CENTER 115 KV	1	115	3.33			240/240
	30368	50432	WR	ITP	\$19,949,242	WR	Tear down/rebuild Abilene Energy Center - Northview 115 kV as single circuit with bundled 1192 ACSR conductor.		06/01/22	36	533361	ABILENE ENERGY CENTER 115 KV	533371	NORTHVIEW 115 KV	1	115	21.75			240/240
	30368	50433	WR	ITP	\$5,131,249	WR	Tear down/rebuild North Street - Northview 115 kV as single circuit with bundled 1192 ACSR conductor.		06/01/22	24	533370	NORTH STREET 115 KV	533371	NORTHVIEW 115 KV	1	115	3.2			240/240
	30370	50435	WR	Zonal Reliability	\$957,660	WR	Install additional 1 stage of 15 MVAR capacitor bank at Northwest Manhattan for a total of 30 Mvar.		06/01/22	12	533347	NORTHWEST MANHATTAN				115				15 Mvar
	30371	50436	WR	Zonal Reliability	\$957,660	WR	Install second bank of 10.9 Mvar at South Seneca 115kV substation.		06/01/22	12	533337	SOUTH SENECA 115 KV				115				10.9 Mvar
2030																				
	30391	50473	ITCGP	ITP	\$6,000,000	SPP	Install second 345/230 kV 448 MVA Post Rock Transformer		01/01/30			Post Rock 345 KV		Post Rock 230 KV	2	345/230				448/448
	30391	50474	ITCGP/SEPC	ITP	\$121,500,000	SPP	Build new new 108 mies Mingo - Post Rock and associated terminal equipment		01/01/30			Mingo 345 kV		POST ROCK 345 KV	1	345		108		1792/1792
	30392	50475	KCP/LWR	ITP	\$79,875,000	SPP	Build new 71 miles of 345 kV line Iatan - Jeffrey Energy Center and associated terminal equipment		01/01/30			Iatan 345 KV		Jeffrey Energy Center 345 kV	1	345		71		1792/1792
	30393	50476	MIDW/SEPC	ITP	\$85,840,000	SPP	Build 79 miles of 345 kV Spearville - Mullergren and associated terminal equipment		01/01/30		531469	Spearville 345 kV		Mullergren 345 kV	1	345		79		1792/1792

Appendix A - Complete List of Network Upgrades

NTC ID	PID	UID	Facility Owner	2013 Project Type	Cost Estimate	Estimated Cost Source	Project Description/Comments	TO Projected In-Service	SPP Determined Need Date	Project Lead Time (Mo)	From Bus Number	From Bus Name	To Bus Number	To Bus Name	Circuit	Voltages (kV)	Miles of Recond uctor	Miles of New Line	Miles of Voltage Conversi on	Ratings
	30393	50477	MIDW/WR	ITP	\$85,840,000	SPP	Build 79 miles of 345 kV Mullergren - Circle and associated terminal equipment		01/01/30			Mullergren 345 kV		Circle 345 kV	1	345		79		1792/1792
	30393	50478	WR	ITP	\$6,519,500	SPP	Build six miles of 345 kV Circle - Reno and associated terminal equipment		01/01/30			Circle 345 kV		Reno 345 kV	1	345		6		1792/1792
	30393	50481	MIDW	ITP	\$6,000,000	SPP	Install new 345/230 kV 448 MVA Mullergren Transformer		01/01/30			Mullergren 345 kV		Mullergren 230 kV	1	345/230				448/448
	30394	50479	NPPD	ITP	\$5,625,000	SPP	Build 5 miles of 345 kV Keystone – Ogallala and associated equipment.		01/01/30			Keystone 345 IV		Ogallala 345 kV	1	345		5		1792/1792
	30394	50480	NPPD	ITP	\$6,000,000	SPP	Install new 345/230 kV 448 MVA Ogallala Transformer		01/01/30			Ogallala 345 kV		Ogallala 230 kV	1	345/230				448/448
	30395	50483	NPPD/WAPA	ITP	\$64,125,000	SPP	Grand Island - Holt Co. rebuild 76 miles of 345 kV		01/01/30			Grand Island 345 kV		Holt Co. 345 kV	1	345	76			1792/1792
	30397	50486	NPPD	ITP	\$30,656,000	NPPD	Build new 16 miles 345 kV Holt - Neligh and associated terminal equipment		01/01/30			Holt 345 kV		Neligh 345 kV	1	345		16		1792/1792
	30396	50484	NPPD	ITP	\$69,750,000	SPP	Build new 69 miles 345 kV Holt Co. - Shell Creek and associated terminal equipment		01/01/30			Holt Co. 345 kV		Shell Creek 345 kV	1	345		69		1792/1792
	30396	50485	NPPD	ITP	\$6,000,000	SPP	Install 2nd 345/230 kV MVA Shell Creek Transformer		01/01/30			Shell Creek 345 kV		Shell Creek 230 kV	2	345/230				336/420
	30398	50487	NPPD	ITP	\$6,000,000	SPP	Install new 345/115 kV 420 MVA Columbus East Transformer		01/01/30			Columbus East 345 kV		Columbus East 115 kV	2	345/115				336/420
	30399	50488	NPPD	ITP	\$6,000,000	SPP	Install 2nd 345/230 kV 420 MVA Hoskins Transformer		01/01/30			Hoskins 345 kV		Hoskins 230 kV	2	345/230				336/420
	30399	50489	NPPD	ITP	\$6,000,000	SPP	Install 2nd 345/115 420 MVA kV Hoskins Transformer		01/01/30			Hoskins 345 kV		Hoskins 115 kV	2	345/115				336/420
	30399	50490	NPPD/OPPD	ITP	\$193,380,000	NPPD/OPPD	Build 120 miles 345 kV new Hoskins - Ft. Calhoun and associated terminal equipment		01/01/30			Hoskins 345 kV		Ft. Calhoun 345 kV	1	345		120		1792/1792
	30400	50491	OPPD	ITP	\$46,875,000	SPP	Build new 23 miles 345 kV Ft Calhoun - S3454 and associated terminal equipment		01/01/30			Ft Calhoun 345 kV		S3454 345 kV	1	345		23		1792/1792
	30401	50492	OPPD	ITP	\$36,750,000	SPP	Build new 23 miles 345 kV Cass Co. - S.W. Omaha (aka S3454) and associated terminal equipment		01/01/30			Cass Co 345 kV		S.W. Omaha (Sub 3454) 345 kV	1	345		23		1792/1792
	30402	50493	OPPD	ITP	\$6,000,000	SPP	Install 2nd 345/161 kV 560 MVA S3459-S1209 transformer		01/01/30			S3459 345 kV		S1209 161 kV	2	345/161				560/560
	30403	50494	SPS	ITP	\$133,875,000	SPP	Build 119 new miles 345 kV Hitchland - Potter Co. and associated terminal equipment		01/01/30		523097	Hitchland 345 kV	523961	Potter Co 345 kV	1	345		119		1792/1792
	30404	50495	SPS	ITP	\$121,500,000	SPP	Build new 90 miles 345 kV Tolk - Potter Co. and associated terminal equipment		01/01/30			Tolk 345 kV		Potter Co. 345 kV	1	345		90		1792/1792
	30393	50482	WR	ITP	\$6,000,000	SPP	Install new 345/230 kV 448 MVA Circle Transformer		01/01/30			Circle 345 kV		Circle 230 kV	1	345/230				448/448
	30405	50496	WR	ITP	\$54,000,000	SPP	Build 40 miles of 345 kV Wichita-Viola and associated terminal equipment		01/01/30			Wichita 345 kV		Viola 345 kV	1	345		40		1792/1792
	30405	50497	WR	ITP	\$54,000,000	SPP	Build 40 miles of 345 kV Viola-Rose Hill and associated terminal equipment		01/01/30			Viola 345 kV		Rose Hill 345 kV	1	345		40		1792/1792