



2020 SPP TRANSMISSION EXPANSION PLAN REPORT

January 14, 2020

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
1/14/2020	SPP Staff	Draft	
1/14/2020		Approved by MOPC	
1/28/2020		Approved by SPP Board	

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EXECUTIVE SUMMARY



The 2020 SPP Transmission Expansion Plan (STEP) is a comprehensive listing of all transmission projects in SPP for the 20-year planning horizon. Projects in the current portfolio include all Network Upgrades for which construction activities are ongoing or those for which construction has completed but not all closeout requirements have been fulfilled in accordance with Section 13 in Business Practice 7060¹. Projects in the 2020 STEP portfolio include:

1. Upgrades required to satisfy requests for Transmission Service (TS)
2. Upgrades required to satisfy requests for Generator Interconnection (GI)
3. Approved projects from the Integrated Transmission Planning Assessment (ITP)
4. Upgrades within approved Balanced Portfolios² (BP)
5. Approved High Priority Upgrades (HP)
6. Endorsed Sponsored Upgrades (SP)
7. Approved Interregional Upgrades³ (IR)
8. Approved projects from the 20-Year Assessment (ITP20)

¹[SPP OATT Business Practices](#)

²There are currently no Balanced Portfolio Upgrades included in the STEP

³There are currently no Interregional Upgrades included in the STEP



Figure 1: STEP Upgrades by Type (\$ Millions)

SPP actively monitors and supports the progress of transmission expansion projects, emphasizing the importance of maintaining accountability for areas such as regional grid reliability standards, firm transmission commitments, and SPP Open Access Transmission Tariff (OATT) cost recovery. SPP staff solicits quarterly feedback from the project owners to determine the progress of each approved transmission project. This report charts the progress of all SPP transmission projects approved by the SPP Board of Directors (Board) or through a Federal Energy Regulatory Commission (FERC)-filed service agreement under the OATT for 2019. A summary of the project portfolio is also included.

Stakeholder Action Requested. We invite stakeholders and all interested parties to submit any written comments on the projects included in the STEP via our Request Management System (RMS). SPP solicits feedback on proposed solutions to transmission needs through stakeholder working groups and planning summits as well as through meetings, teleconferences, web conferences, and via email or secure web-based workspace. These meetings provide an open forum where all stakeholders have an opportunity to provide advice and recommendations to SPP to aid in the development of the STEP. In addition to these opportunities, we also invite stakeholders to provide SPP with any transmission needs they deem to be beneficial to the transmission planning process through our website or [RMS](#).

PORTFOLIO SUMMARY

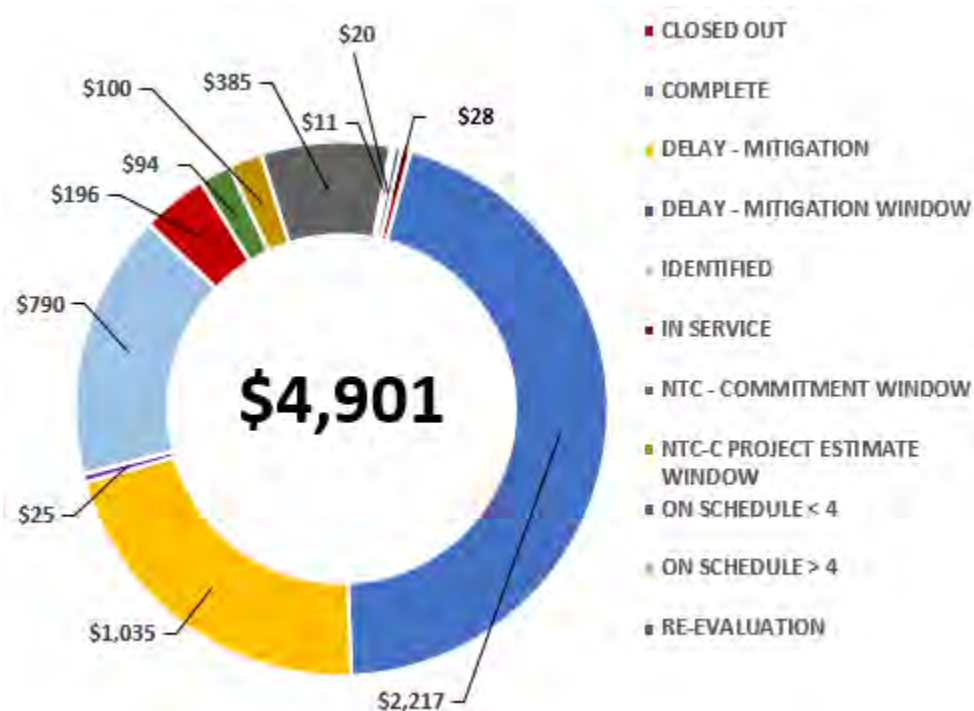


Figure 2: STEP Upgrades by Status (\$ Millions)

SPP assigns a project status to all Network Upgrades based on the projected in-service dates provided by the Designated Transmission Owner (DTO) relative to the Need Date determined for the project. Project status definitions are provided below:

- **Identified:** Upgrade identified and included in Board approved study results
- **Within NTC-C Project Estimate Window:** Within the NTC-C Project Estimate (CPE) window
- **Within NTC Commitment Window:** NTC/NTC-C issued, still within the 90-day written commitment to construct window and no commitment received
- **Within RFP Response Window:** RFP issued for the project
- **On Schedule < 4:** On Schedule within 4-year horizon
- **On Schedule > 4:** On Schedule beyond 4-year horizon
- **Delayed:** Projected In-Service Date beyond Need Date; interim mitigation provided or project may change but time permits the implementation of project
- **In Service:** Upgrade is operational, but not all construction activities are complete
- **Suspended:** Project suspended; pending re-evaluation
- **Re-evaluation:** Project active; pending re-evaluation
- **Complete:** Construction complete and in-service
- **Closed Out:** Construction complete and in-service; all close-out requirements fulfilled. Upgrades are reported as Closed Out for one quarter and then removed from the active portfolio



Figure 3: STEP Upgrades by Type (\$ Millions)

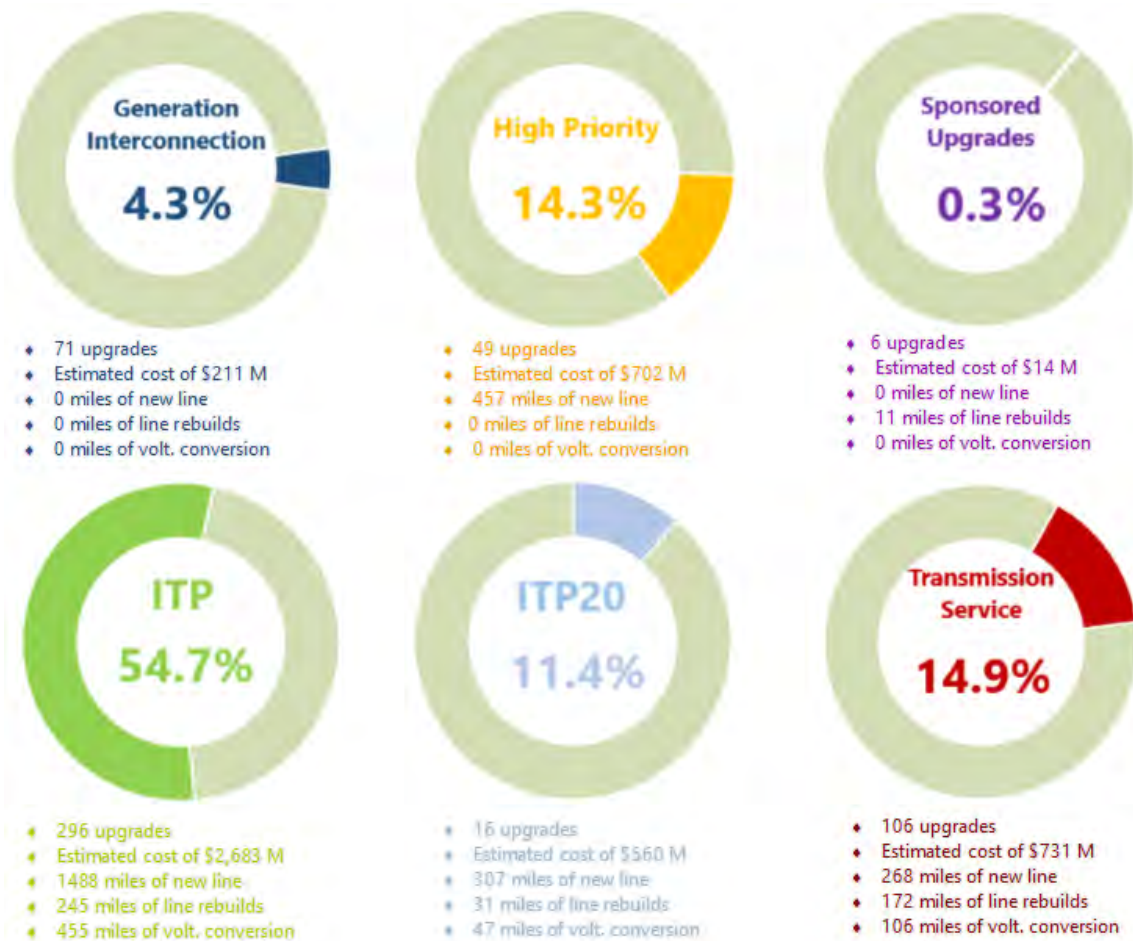


Figure 4: Upgrade Summary by Type⁴

⁴ Mileage not available for all upgrade categories

PROJECT SUMMARY

In adherence to the OATT and SPP Business Practice 7060 (BP 7060), SPP issues Notifications to Construct (NTCs) to DTOs to begin work on Network Upgrades that have been approved or endorsed by the SPP Board to meet the construction needs of the STEP, OATT, or Regional Transmission Organization (RTO).

Figure 5 shows estimated cost by in-service year for all Network Upgrades resulting from studies identified in Attachment O. Table 1 shows all upgrade costs by upgrade status in each study. Note: Figure 5 and Table 1 provide data for all projects issued NTC or NTC-C, included in an active Generator Interconnection Agreement (GIA), included in an approved 20 Year Assessment, or identified in the OATT as a Base Plan upgrade. This chart includes costs for Network Upgrades no longer included in the active Project Tracking Portfolio.

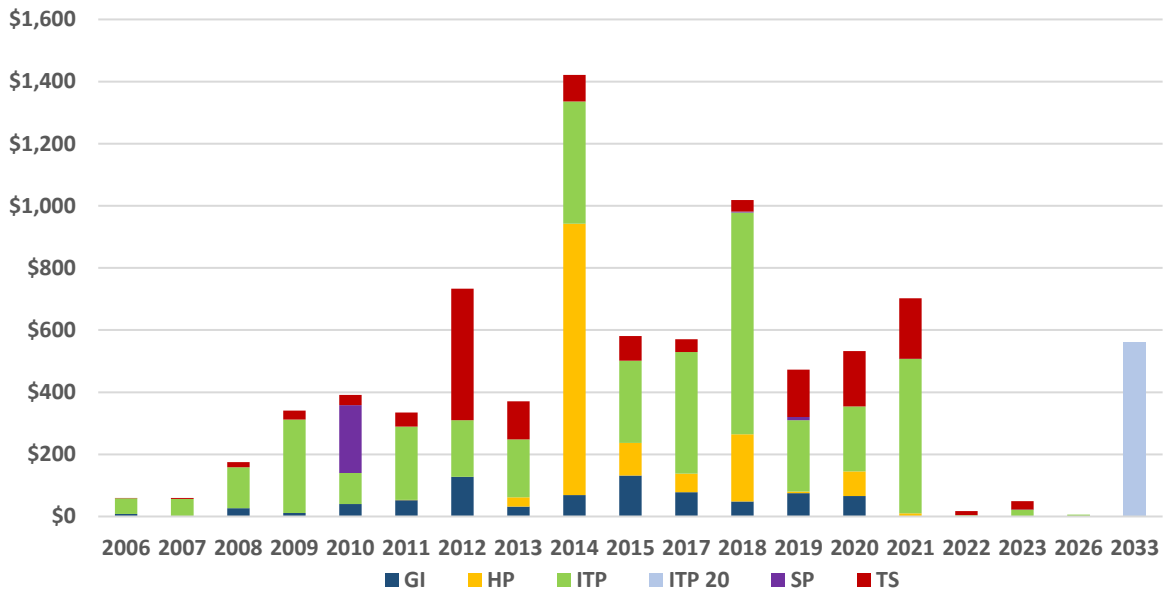


Figure 5: Upgrade Cost by In-Service Year (\$ Millions)

Study	Identified	On Schedule	Delayed	Suspended	Complete	Total
2006 STEP	\$0	\$0	\$0	\$0	\$196	\$196
2007 STEP	\$0	\$0	\$0	\$0	\$495	\$495
2008 STEP	\$0	\$0	\$0	\$0	\$414	\$414
2009 STEP	\$0	\$0	\$1	\$0	\$535	\$536
2010 STEP	\$0	\$0	\$2	\$0	\$111	\$113
2012 ITP10	\$0	\$0	\$409	\$0	\$393	\$802
2012 ITPNT	\$0	\$0	\$0	\$0	\$186	\$186
2013 ITP20	\$560	\$0	\$0	\$0	\$0	\$560
2013 ITPNT	\$0	\$0	\$23	\$0	\$434	\$457
2014 ITPNT	\$0	\$0	\$34	\$0	\$421	\$455
2015 ITP10	\$0	\$0	\$0	\$0	\$44	\$44
2015 ITPNT	\$0	\$5	\$15	\$0	\$169	\$189
2016 ITPNT	\$0	\$3	\$240	\$0	\$183	\$426
2017 ITP10	\$0	\$0	\$1	\$0	\$11	\$12
2017 ITPNT	\$0	\$2	\$36	\$0	\$16	\$54
2018 ITPNT	\$0	\$1	\$63	\$0	\$4	\$68
2019 ITP	\$230	\$84	\$0	\$0	\$0	\$314
Ag Studies	\$0	\$58	\$61	\$0	\$769	\$888
Balanced Portfolio	\$0	\$0	\$0	\$0	\$835	\$835
DPA Studies	\$0	\$220	\$198	\$0	\$231	\$649
GI Studies	\$0	\$147	\$11	\$0	\$752	\$910
HPILS	\$0	\$76	\$20	\$0	\$540	\$636
IS Integration Study	\$0	\$0	\$38	\$0	\$279	\$317
Priority Projects	\$0	\$0	\$0	\$0	\$1,343	\$1,343
Sponsored Upgrades	\$0	\$4	\$0	\$0	\$10	\$14
Total	\$790	\$600	\$1,152	\$0	\$8,371	\$10,913

Table 1: Upgrade Cost by Study & Status (\$ Millions)

2019 NTC AND UPGRADE ACTIVITY

In adherence with the OATT and BP 7060, SPP issues NTCs to DTOs to begin work on Network Upgrades that have been approved or endorsed by the Board to meet the construction needs of the OATT or RTO. Figures and Tables in this section show Upgrades Completed, Upgrades issued NTCs, and Upgrades where the NTC was withdrawn during the reporting period.

COMPLETED UPGRADES

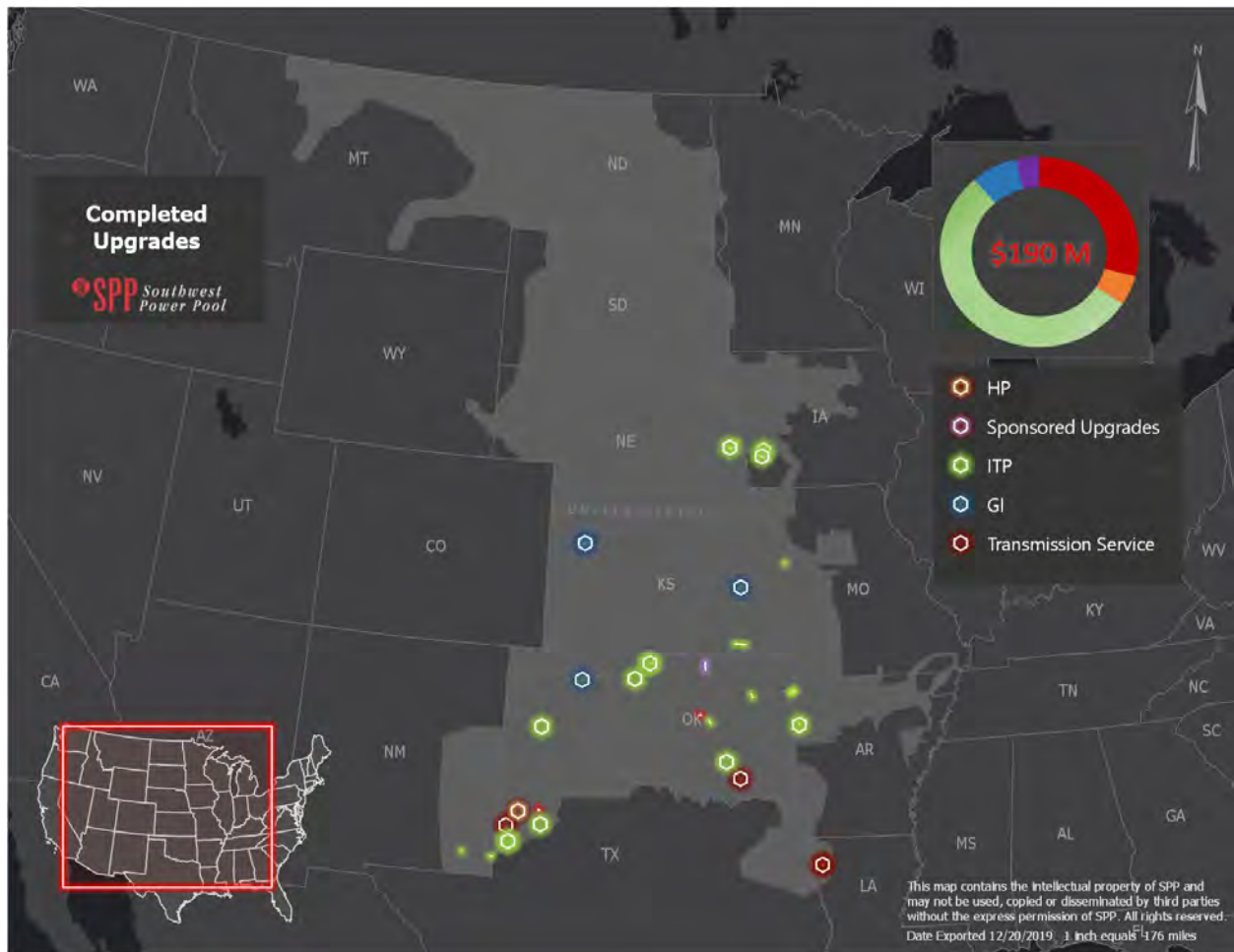


Figure 6: Completed Upgrades

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of Upgrades
20110	8/25/2010	11343	OGE	ARCADIA - REDBUD 345KV CKT 3	SPP-2008-AGP1-AFS-9	\$18,000,000

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of Upgrades
200214	2/20/2013	11501	SPS	Allen Substation - Lubbock South Interchange 115 kV Ckt 1	SPP-2012-AG3-AFS-9	\$183,663
200184	4/9/2012	50451	SPS	Yoakum 345/230 kV Ckt 1 Transformer	HPILS	\$9,516,753
200262	4/9/2014	50637	SPS	Mustang - Shell CO2 115 kV Ckt 1	SPP-2011-AG3-AFS-11	\$19,091,931
200242	2/19/2014	50740	WR	Elk Junction - Sedan 69 kV Ckt 1 Rebuild	2014 ITPNT	\$17,965,350
200259	2/19/2014	50745	OPPD	Fremont 161/69 kV Transformer Ckt 1	2015 ITPNT	\$2,075,199
200259	2/19/2014	50746	OPPD	Fremont - S991 E 69 kV Ckt 1	2015 ITPNT	\$4,254,712
200259	2/19/2014	50747	OPPD	S1226 161kV Ckt 1	2015 ITPNT	\$20,150,325
200395	5/17/2016	50920	SPS	Seminole 230/115 kV #1 Transformer	2016 ITPNT	\$3,231,355
200395	5/17/2016	50921	SPS	Seminole 230/115 kV #2 Transformer	2016 ITPNT	\$2,516,831
200324	2/18/2015	50957	SPS	Intrepid West - Potash Junction 115 kV Ckt 1 Rebuild	2015 ITPNT	\$2,350,850
200339	3/17/2015	51034	AEP	Ellerbe Road - Lucas 69 kV Ckt 1 Rebuild	DPA-2013-MAR-296	\$9,905,114
200339	3/17/2015	51035	AEP	Ellerbe Road - Lucas 69 kV Terminal Upgrades	DPA-2013-MAR-296	\$1,144,751
200262	4/9/2014	51050	SPS	Yoakum County Interchange 230/115 kV Ckt 2 Transformer	SPP-2011-AG3-AFS-11	\$3,135,030
200324	2/18/2015	51250	SPS	National Enrichment Plant - Targa 115 kV Ckt 1	2015 ITPNT	\$1,340,969
200326	2/18/2015	51270	SPS	Lynn County 115 kV Terminal Upgrades	2015 ITPNT	\$291,632
200376	7/12/2016	51333	SEPC	Lane Scott 115 kV Cap Bank	DPA-2015-MARCH-494	\$4,068,523
		51341	OGE	Beaver County Substation - Add 345kV terminal for GEN-2013-030	GI Studies	\$1,315,000
200395	5/17/2016	51436	SPS	Potter Co. - Harrington 230 kV Terminal Upgrades	2016 ITPNT	\$1,189,759
200397	5/17/2016	51445	WFEC	Lincoln - Meeker 138 kV Ckt 1 New Line (WFEC)	2016 ITPNT	\$2,157,636
200391	5/17/2016	51528	OGE	DeGrasse 345 kV Substation	2016 ITPNT	\$13,758,800
200391	5/17/2016	51529	OGE	DeGrasse 345/138 kV Transformer	2016 ITPNT	\$3,281,064
200391	5/17/2016	51530	OGE	DeGrasse - Knob Hill 138 kV New Line	2016 ITPNT	\$7,155,975

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of Upgrades
200391	5/17/2016	51569	OGE	DeGrasse 138 kV Substation (OGE)	2016 ITPNT	\$4,562,495
		51609	OGE	Beaver County Substation - Add 345kV terminal for GEN-2013-030 (TOIF)	GI Studies	\$4,842,217
200431	2/21/2017	51738	AEP	Siloam Springs - Siloam Springs City 161 kV Ckt 1 Rebuild (AEP)	2017 ITP10	\$4,780,000
200432	2/21/2017	51739	GRDA	Siloam Springs - Siloam Springs City 161 kV Ckt 1 Rebuild (GRDA)	2017 ITP10	\$330,549
200434	2/21/2017	51774	OGE	Lula- Tupelo Tap 138 kV Terminal Upgrades	2017 ITP10	\$305,000
200446	5/12/2017	71945	AEP	Broken Arrow North - Lynn Lane East 138 kV Ckt 1 Reconductor	2017 ITPNT	\$5,714,095
200454	5/12/2017	71961	NIPCO	L-10 Southern 69 kV Terminal Upgrades	2017 ITPNT	\$769,995
200454	5/12/2017	71962	NIPCO	J16 69 kV Substation	2017 ITPNT	\$1,507,856
210495	8/17/2018	72047	KCPL	Brookridge - Overland Park 161kV Terminal Upgrades	2018 ITPNT	\$745,000
210491	8/17/2018	72066	AEP	Fig Five - VBI North 69kV Ckt 1	2018 ITPNT	\$3,357,600
210490	8/17/2018	72067	AECC	Fig 5 - VBI North 69 kV Ckt 1 #2	2018 ITPNT	\$32,996
210512	4/3/2019	82139	OGE	Kildare - White Eagle 138 kV Ckt 1 Rebuild	SUS-004	\$7,200,000
		82116	WR	Emporia Energy Center 345 kV Substation GEN-2015-073 Interconnection (TOIF)	GI Studies	\$168,028
		82117	WR	Emporia Energy Center 345 kV Substation GEN-2015-073 Interconnection (NU)	GI Studies	\$5,714,095
		112297	SEPC	Mingo 345kV Substation GEN-2015-065 (TOIF)	GI Studies	\$769,995
		112298	SEPC	Mingo 345kV Substation GEN-2015-065 (NU)	GI Studies	\$1,507,856
39 Upgrades Completed						\$190,388,999

Table 2: Completed Upgrades⁵

⁵ In accordance with Section 3.4 of SPP BP 7060, SPP only issues NTC for GI upgrades in cases where affected Transmission Owners are not a party to the Generation Interconnection Agreement (GIA) for service contingent upon those upgrades.

UPGRADES APPROVED FOR CONSTRUCTION

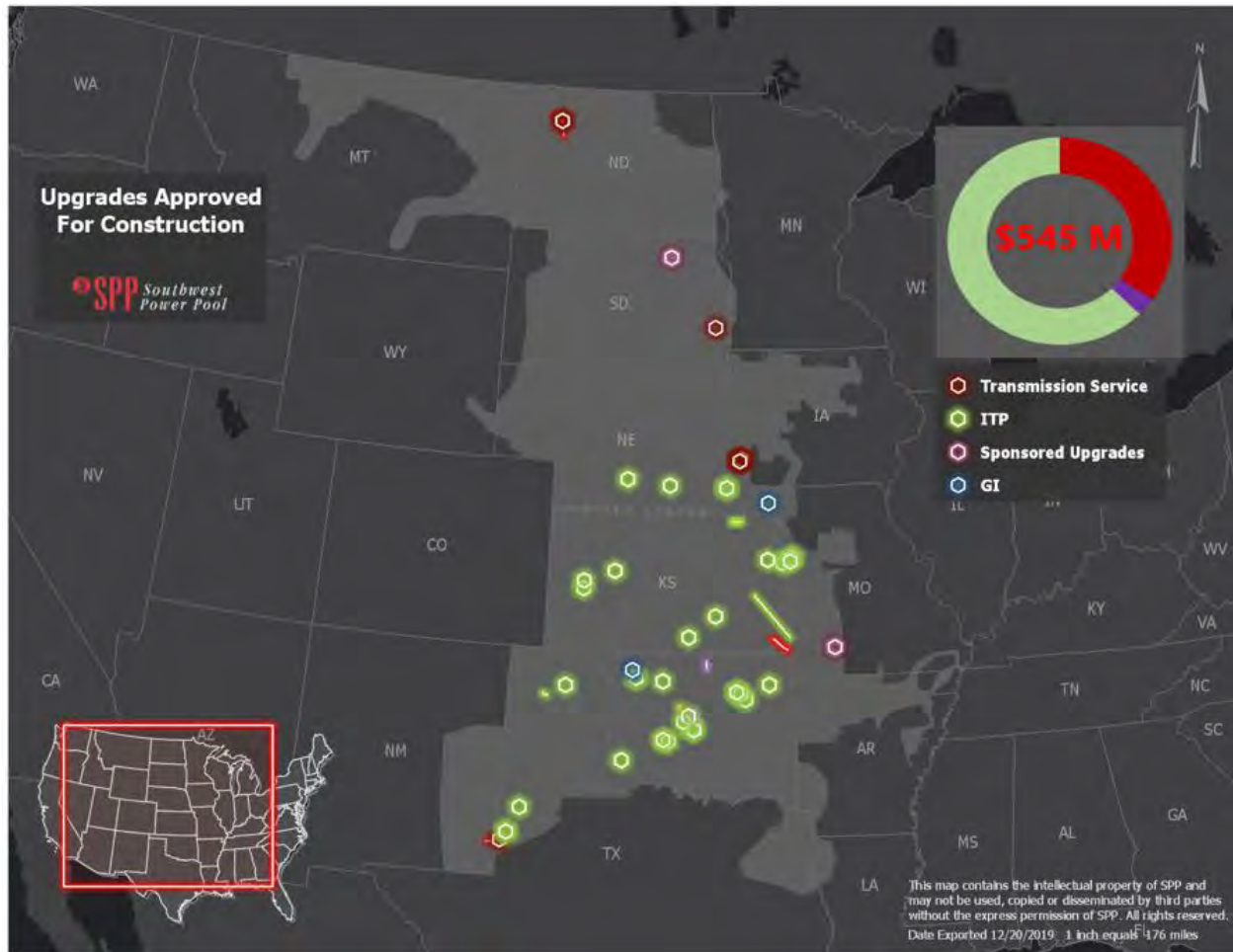


Figure 7: NTCs Issued

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of New Upgrades	Estimated Cost of Previously Approved Upgrades
210511	4/3/2019	112253	OGE	GEN-2016-020 Interconnection Costs	DISIS-2016-001	\$10,000	\$0
210512	4/3/2019	82139	OGE	Kildare - White Eagle 138 kV Ckt 1 Rebuild	SUS-004	\$8,459,247	\$0
210513	4/26/2019	82140	CUS	James River Power Station 161/69 kV Ckt 2 Transformer	SUS-005	\$4,020,198	\$0

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of New Upgrades	Estimated Cost of Previously Approved Upgrades
210515	6/7/2019	112510	SPS	Hobbs Interchange to Millen Rebuild 115 kV Ckt1	DPA-2018-Mar-854	\$3,165,684	\$0
210515	6/7/2019	122510	SPS	Johnson Draw Capacitor Bank	DPA-2018-Mar-854	\$3,749,224	\$0
210522	9/6/2019	122576	NWE	Aberdeen City - Aberdeen Industrial Park 115 kV Ckt 1 New Line	SUS-006	\$2,781,590	\$0
210522	9/6/2019	122599	NWE	Aberdeen A-Tap Breaker 115 kV	SUS-006	\$552,668	\$0
210523	9/20/2019	50582	WR	Viola 345/138 kV Transformer Ckt 1	2013 ITPNT	\$0	\$10,144,608
210527	10/17/2019	122593	EREC	Wentworth 69 kV Substation	DPA-2018-January-821	\$2,073,095	\$0
210527	10/17/2019	122594	EREC	Wentworth 69 kV Capacitor Bank	DPA-2018-January-821	\$600,675	\$0
210531	10/17/2019	122570	BEPC	Neset - Northshore 230 kV Ckt 1	DPA-2018-August-918	\$33,023,153	\$0
210531	10/17/2019	122572	BEPC	Northshore 230/115 kV Transformer	DPA-2018-August-918	\$5,920,939	\$0
210531	10/17/2019	122575	BEPC	Northshore 230 kV Substation	DPA-2018-August-918	\$8,371,948	\$0
210532	10/17/2019	122571	MWE	Northshore - New Town 115 kV Ckt 1	DPA-2018-August-918	\$17,332,093	\$0
210536	10/29/2019	71960	SPS	Etter - Moore 115 kV Rebuild	2017 ITPNT	\$0	\$6,911,107
210525	11/1/2019	112180	OPPD	GEN-2016-115 Interconnection Costs (NU) (OPPD)	DISIS-2016-002	\$7,553	\$0
210534	11/13/2019	102159	OPPD	S3761 345 kV Substation	DPA-2018-February-841	\$4,610,067	\$0
210534	11/13/2019	102160	OPPD	S3761 - S3455 345 kV New Line	DPA-2018-February-841	\$17,036,209	\$0
210534	11/13/2019	102161	OPPD	S1361 161 kV Substation and 345/161 kV Transformer	DPA-2018-February-841	\$9,707,827	\$0
210534	11/13/2019	102162	OPPD	S1260 161/69 kV Transformer (161 kV)	DPA-2018-February-841	\$1,105,064	\$0
210534	11/13/2019	102163	OPPD	S1209 - S1231 Ckt 2 161 kV Reconductor	DPA-2018-February-841	\$3,647,471	\$0

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of New Upgrades	Estimated Cost of Previously Approved Upgrades
210534	11/13/2019	102165	OPPD	S1259 - S1260 161 kV Rebuild	DPA-2018-February-841	\$2,107,486	\$0
210534	11/13/2019	102166	OPPD	S1255 Terminal Upgrades (new breakers)	DPA-2018-February-841	\$654,180	\$0
210534	11/13/2019	112357	OPPD	S1260 161/69 kV Transformer (69 kV)	DPA-2018-February-841	\$1,799,221	\$0
210538	11/18/2019	112366	NPPD	Canaday 115 kV Breakers	2019 ITP	\$2,600,000	\$0
210538	11/18/2019	112367	NPPD	Hastings 115 kV Breakers	2019 ITP	\$550,000	\$0
210538	11/18/2019	112368	NPPD	Moore 13.8 kV Breaker	2019 ITP	\$510,000	\$0
210538	11/18/2019	112403	NPPD	Firth Cap Bank 115kV Ckt 1	2019 ITP	\$570,000	\$0
210538	11/18/2019	112404	NPPD	Firth Substation Expansion	2019 ITP	\$2,800,000	\$0
210539	11/18/2019	112369	KCPL	Craig 161 kV Breaker	2019 ITP	\$254,000	\$0
210539	11/18/2019	112370	KCPL	Leeds 161 kV Breakers	2019 ITP	\$440,000	\$0
210539	11/18/2019	112371	KCPL	Midtown 161 kV Breakers	2019 ITP	\$440,000	\$0
210539	11/18/2019	112372	KCPL	Southtown 161 kV Breakers	2019 ITP	\$880,000	\$0
210540	11/18/2019	112358	OGE	Westmoore 138 kV Breakers	2019 ITP	\$271,289	\$0
210540	11/18/2019	112359	OGE	Santa Fe 138 kV Breakers	2019 ITP	\$406,935	\$0
210540	11/18/2019	112402	OGE	Cleo Corner - Cleo Junction 69kV Ckt 1 Terminal Upgrades	2019 ITP	\$16,602	\$0
210540	11/18/2019	112449	OGE	Cimarron - Northwest 345kV Ckt 1 Terminal Upgrades	2019 ITP	\$166,504	\$0
210540	11/18/2019	112450	OGE	Northwest - Mathewson 345 kV Terminal Upgrades	2019 ITP	\$369,869	\$0
210541	11/18/2019	112364	SPS	Denver City Interchange North 115 kV Breakers	2019 ITP	\$3,316,008	\$0
210541	11/18/2019	112365	SPS	Denver City Interchange South 115 kV Breakers	2019 ITP	\$2,210,672	\$0

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of New Upgrades	Estimated Cost of Previously Approved Upgrades
210541	11/18/2019	112425	SPS	Amoco - Sundown 115kV Terminal Upgrades	2019 ITP	\$358,281	\$0
210541	11/18/2019	112433	SPS	Hansford - Spearman 115 kV Rebuild	2019 ITP	\$828,359	\$0
210542	11/18/2019	112381	WR	Bailey - Seneca 115kV Ckt 1	2019 ITP	\$6,178,207	\$0
210542	11/18/2019	112382	WR	Bailey - Smittyville 115kV Ckt 1	2019 ITP	\$8,839,308	\$0
210542	11/18/2019	112383	WR	Marshallville - Smittyville 115kV Ckt 1	2019 ITP	\$2,618,506	\$0
210542	11/18/2019	112396	WR	Getty East - Skelly 69kV Ckt 1 Terminal Upgrades	2019 ITP	\$114,821	\$0
210542	11/18/2019	112428	WR	Lawrence Energy Center - Midland 115 kV Terminal Upgrades	2019 ITP	\$30,939	\$0
210543	11/18/2019	112451	SEPC	Arnold - Ransom 115kV Terminal Upgrades	2019 ITP	\$462,000	\$0
210543	11/18/2019	112452	SEPC	Pile - Scott City 115kV Terminal Upgrades	2019 ITP	\$1,633,500	\$0
210543	11/18/2019	112453	SEPC	Scott City - Setab 115kV Terminal Upgrades	2019 ITP	\$1,556,500	\$0
210544	11/18/2019	112360	AEP	Riverside Station 138 kV Breakers	2019 ITP	\$16,288,000	\$0
210544	11/18/2019	112361	AEP	Southwestern Station 138 kV Breakers	2019 ITP	\$4,421,345	\$0
210544	11/18/2019	112389	AEP	Tulsa SE - S Hudson 138kV Ckt 1 Rebuild	2019 ITP	\$6,724,237	\$0
210544	11/18/2019	112393	AEP	Tulsa SE - 21 St Tap 138kV Ckt 1	2019 ITP	\$1,307,802	\$0
210544	11/18/2019	112460	AEP	Sand Springs - Sheffield Steel 138kV Terminal Upgrades	2019 ITP	\$733,520	\$0

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of New Upgrades	Estimated Cost of Previously Approved Upgrades
210544	11/18/2019	112488	AEP	Pryor Junction 138/115 kV Transformer	2019 ITP	\$9,155,167	\$0
210544	11/18/2019	112502	AEP	Sooner - Wekiwa 345kV Terminal Upgrades (AEP)	2019 ITP	\$5,383,105	\$0
210545	11/18/2019	112377	WFEC	Anadarko 138 kV Breakers	2019 ITP	\$228,500	\$0
210545	11/18/2019	112378	WFEC	Washita 69 kV Breaker	2019 ITP	\$52,400	\$0
210545	11/18/2019	112379	WFEC	Mooreland 138 kV Breakers #2	2019 ITP	\$822,500	\$0
210545	11/18/2019	112380	WFEC	Mooreland 69 kV Breakers #2	2019 ITP	\$128,300	\$0
210545	11/18/2019	112395	WFEC	Gypsum Cap Bank 69kV	2019 ITP	\$400,000	\$0
210545	11/18/2019	112435	WFEC	East Kingfisher - Kingfisher 138 kV Rebuild	2019 ITP	\$1,000,000	\$0
210545	11/18/2019	122577	WFEC	Anadarko - Gracemont 138kV Ckt 1 Rebuild	2019 ITP	\$2,850,000	\$0
210545	11/18/2019	122597	WFEC	Marietta - Rocky Point 69 kV	2019 ITP	\$5,908,198	\$0
210549	12/13/2019	112456	EDE	Neosho - Riverton 161kV Rebuild (EDE)	SPP-2019-AG1-AFS-2	\$28,410,000	\$0
210550	12/13/2019	112457	WR	Neosho - Riverton 161kV Rebuild (WR)	SPP-2019-AG1-AFS-2	\$4,046,162	\$0
210548	12/13/2019	102159	OPPD	S3761 345 kV Substation	DPA-2018-February-841	\$0	\$4,610,067
210548	12/13/2019	102160	OPPD	S3761 - S3455 345 kV New Line	DPA-2018-February-841	\$0	\$17,036,209
210548	12/13/2019	102161	OPPD	S1361 161 kV Substation and 345/161 kV Transformer	DPA-2018-February-841	\$0	\$9,707,827
210548	12/13/2019	102162	OPPD	S1260 161/69 kV Transformer (161 kV)	DPA-2018-February-841	\$0	\$1,105,064
210548	12/13/2019	102163	OPPD	S1209 - S1231 Ckt 2 161 kV Reconductor	DPA-2018-February-841	\$0	\$3,647,471
210548	12/13/2019	102165	OPPD	S1259 - S1260 161 kV Rebuild	DPA-2018-February-841	\$0	\$2,107,486

NTC ID	NTC Issue Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of New Upgrades	Estimated Cost of Previously Approved Upgrades
210548	12/13/2019	102166	OPPD	S1255 Terminal Upgrades (new breakers)	DPA-2018-February-841	\$0	\$654,180
210548	12/13/2019	112357	OPPD	S1260 161/69 kV Transformer (69 kV)	DPA-2018-February-841	\$0	\$1,799,221
		112509	WR	Wolf Creek - Blackberry 345kV Terminal Equipment	2019 ITP	\$10,056,365	
		122598	TBD	Blackberry - Wolf Creek 345 kV	2019 ITP	\$142,601,178	
		112458	TBD	Sooner - Wekiwa 345 kV New Line	2019 ITP	\$77,606,498	
78 Upgrade(s) Approved for Construction						\$487,281,169	\$57,723,240

Table 3: NTCs Issued

NTCS WITHDRAWN

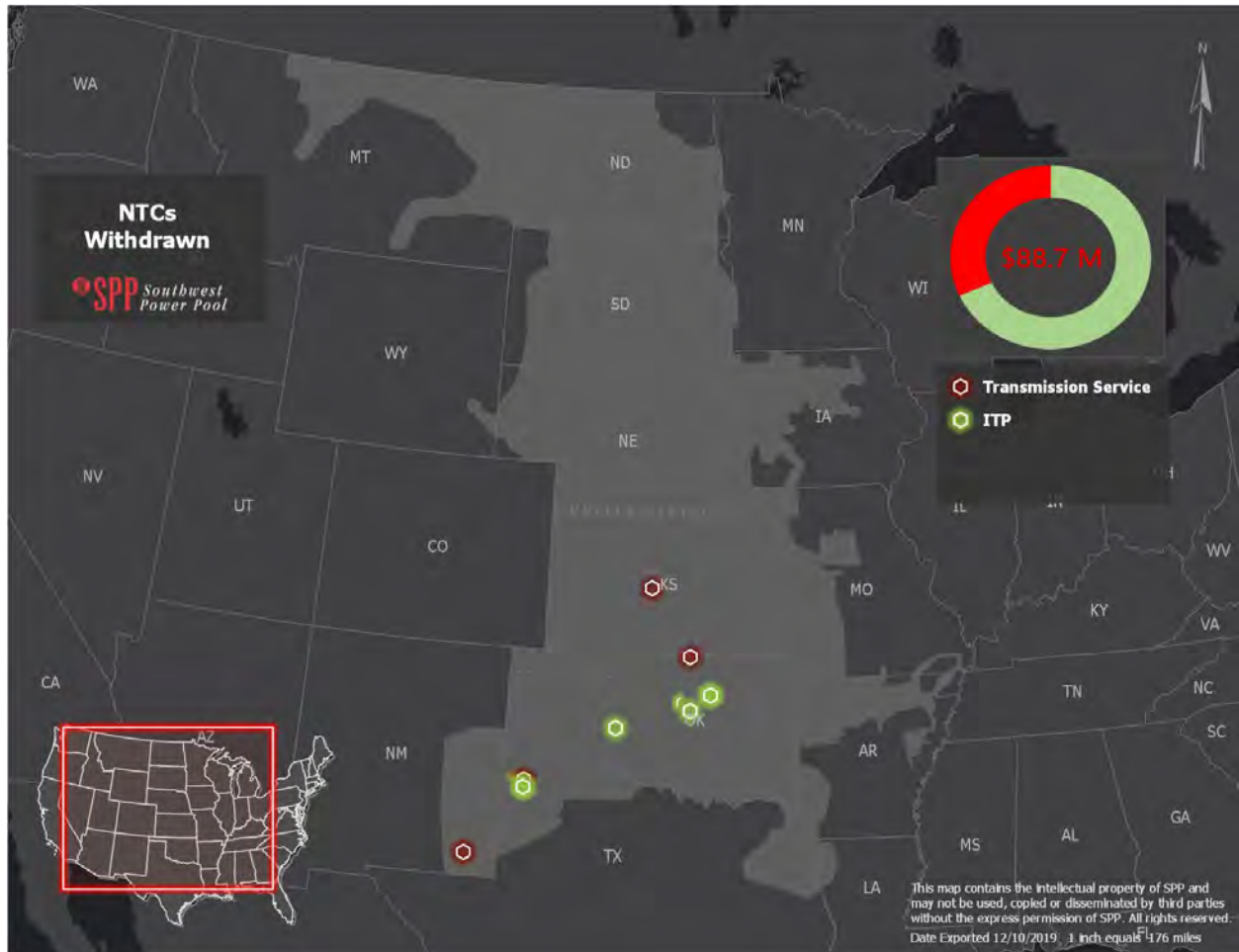


Figure 8: NTCs Withdrawn

NTC ID	NTC Withdrawn Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of Withdrawn Upgrades
210508	5/21/2019	10177	WFEC	CIMARRON - DOVER SW 69KV CKT 1	2007 STEP	\$4,050,000
210508	5/21/2019	50043	WFEC	SWEETWATER 138KV	2007 STEP	\$243,000
210508	5/21/2019	50049	WFEC	TWIN LAKES 138KV	2007 STEP	\$108,000
210509	2/25/2019	50640	SPS	Potash Junction 230/115 kV Transformer Upgrade	SPP-2015-AG1-AFS-6	\$6,655,500

NTC ID	NTC Withdrawn Date	UID	Owner	Upgrade Name	Source Study	Estimated Cost of Withdrawn Upgrades
210510	2/25/2019	50918	SPS	Plant X 230/115 kV Ckt 2 Transformer	SPP-2016-AG1-AFS-3	\$18,785,647
210516	6/10/2019	50626	WFEC	Renfrow-Sandridge Capacitor 138 kV	DPA-2012-MAR-151-154-161-JUL-218-SEP-243	\$185,004
210517	6/21/2019	51578	MIDW	Heizer 115/69 kV Ckt 4 Transformer	SPP-2015-AG2-AFS-3	\$2,663,963
210518	6/21/2019	50725	SPS	Bailey Co. - Bailey Co. Pump 115 kV Ckt 1	2014 ITPNT	\$9,715,422
210518	6/21/2019	50729	SPS	Bailey Co. Pump - Sundan Rural 115 kV Ckt 1	2014 ITPNT	\$8,753,365
210518	6/21/2019	50731	SPS	New Amherst 116/69 kV Ckt 1 Transformer	2014 ITPNT	\$5,695,912
210518	6/21/2019	50732	SPS	New Amherst - Sudan Rural 115 kV Ckt 1	2014 ITPNT	\$5,713,799
210518	6/21/2019	50734	SPS	New Amherst 115 kV Terminal Upgrades Ckt 1	2014 ITPNT	\$3,064,697
210518	6/21/2019	50735	SPS	Lamb Co. - New Amherst 115 kV Ckt 1	2014 ITPNT	\$18,918,945
210518	6/21/2019	50736	SPS	West Littlefield - West Littlefield Tap 115 kV Ckt 1	2014 ITPNT	\$795,547
210526	10/29/2019	51202	OGE	Stillwater 138/69 kV Ckt 1 Transformer	2015 ITPNT	\$2,786,625
210526	10/29/2019	51269	OGE	Stillwater 138 kV Terminal Upgrades	2015 ITPNT	\$611,398
16 Upgrade(s) Withdrawn						\$88,746,824

Table 4: NTCs Withdrawn

STUDY OVERVIEWS

TRANSMISSION SERVICE STUDIES

The Transmission Services department evaluates long-term requests for Network Integration and Point-To-Point transmission service through various processes, including the Aggregate Transmission Service Study (ATSS) process under Attachment Z1 of the OATT, performs screening studies through the Delivery Point Transfer (DPT) and Long-Term Service Request (LTSR) processes under Attachment AR of the SPP OATT and Delivery Point Addition (DPA) studies under Attachment AQ of the OATT.

COMPLETED AGGREGATE STUDIES

2018-AG2-AFS-2 [Report](#) [Study Tables](#) [Facility Log](#)
2019-AG1-AFS-2 [Report](#) [Study Tables](#) [Facility Log](#)

COMPLETED ATTACHMENT AR STUDIES

[SPP-DPT-2018-004](#) [SPP-DPT-2019-001](#) [SPP-DPT-2019-002](#)

ATTACHMENT AQ REQUESTS

[2018 Delivery Point Addition Studies](#)
[2019 Delivery Point Addition Studies](#)

GENERATOR INTERCONNECTION STUDIES

SPP's Generator Interconnection team creates stakeholder value by evaluating impacts of connecting new power sources to the existing transmission system. We facilitate agreements between generation producers and transmission owners while ensuring positive outcomes for the regional power grid.

[Generation Interconnection Studies](#)

TRANSMISSION PLANNING (ITP)

As a FERC-designated RTO, one of SPP's responsibilities is to create regional transmission expansion plans. With its members, regulators and stakeholders, SPP creates planning models and studies that determine what new transmission is needed to meet our region's long-term

and near-term needs and create a cost-effective, flexible and robust transmission network. SPP does not own or build transmission, though its OATT rules that govern transmission planning. [2019 Integrated Transmission Planning Assessment \(2019 ITP\)](#)

BALANCED PORTFOLIO

SPP did not perform a Balanced Portfolio study during the reporting period.

HIGH PRIORITY STUDIES

SPP did not perform a High Priority study during the reporting period.

SPONSORED UPGRADE STUDIES

SPP completed two Sponsored Upgrade studies in 2019. The Board reviews results for studies listed below and SPP issues NTC upon execution of Agreements for Sponsored Upgrade. Links for Board materials are provided for study results that have been reviewed.

SUS-007: Petersburg (*Board approval to be requested 1/28/2020*)

SUS-013: Neosho Ridge Wind [October 2019 Board Materials](#)

INTERREGIONAL STUDIES

In addition to directing interregional activities across all applicable areas of the organization in accordance with SPP's Joint Operating Agreements (JOAs) and other similar coordination arrangements, SPP also coordinates interregional transmission planning activities with neighboring Planning Regions as approved by the FERC for purposes of Order 1000.

During the reporting period SPP collaborated with Midcontinent Independent System Operator (MISO) to perform a Coordinated System Plan (CSP) that will conclude with a 2019 MISO-SPP CSP Final Report. The CSP Final Report, which will be posted at the link below upon completion, did not result in issuance of an NTC.

[Interregional Relations](#)

In addition to work with MISO, SPP also participated in planning coordination with the Southeastern Regional Transmission Planning (SERTP) group and coordinated planning activities with Associated Electric Cooperatives, Inc. (AECI).

20-YEAR ASSESSMENT (ITP20)

SPP did not perform a 20-Year Assessment during the reporting period.

APPENDIX 1

(See accompanying list of STEP Projects)