



# **2021 SPP TRANSMISSION EXPANSION PLAN REPORT**

By SPP Engineering

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# REVISION HISTORY

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DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
1/12/2021	SPP Staff	Approved by MOPC	
1/26/2021	SPP Staff	Approved by Board	

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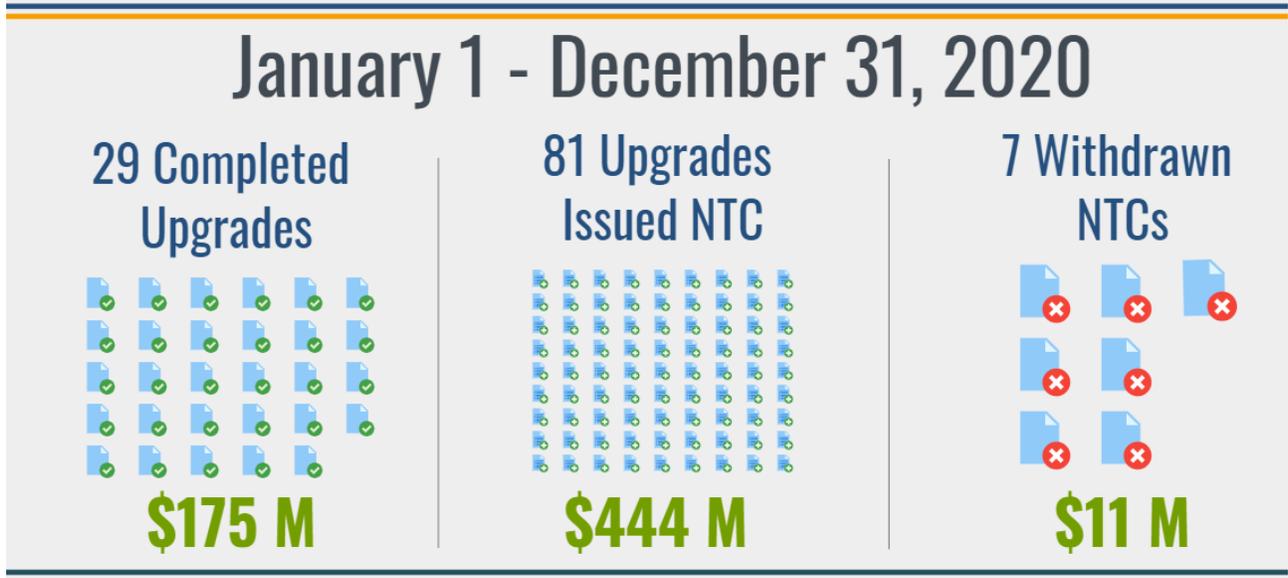
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# EXECUTIVE SUMMARY



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 7060.<sup>1</sup> Projects in the 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 (ITP) Assessment
4. Upgrades within approved Balanced Portfolios (BP)<sup>2</sup>
5. Approved High Priority Upgrades (HP)
6. Endorsed Sponsored Upgrades (SP)
7. Approved Interregional Upgrades (IR)<sup>3</sup>
8. Approved projects from the ITP 20-Year Assessment (ITP20)

<sup>1</sup> [SPP OATT Business Practices](#)

<sup>2</sup> There are currently no Balanced Portfolio Upgrades included in the STEP.

<sup>3</sup> There are currently no Interregional Upgrades included in the STEP.

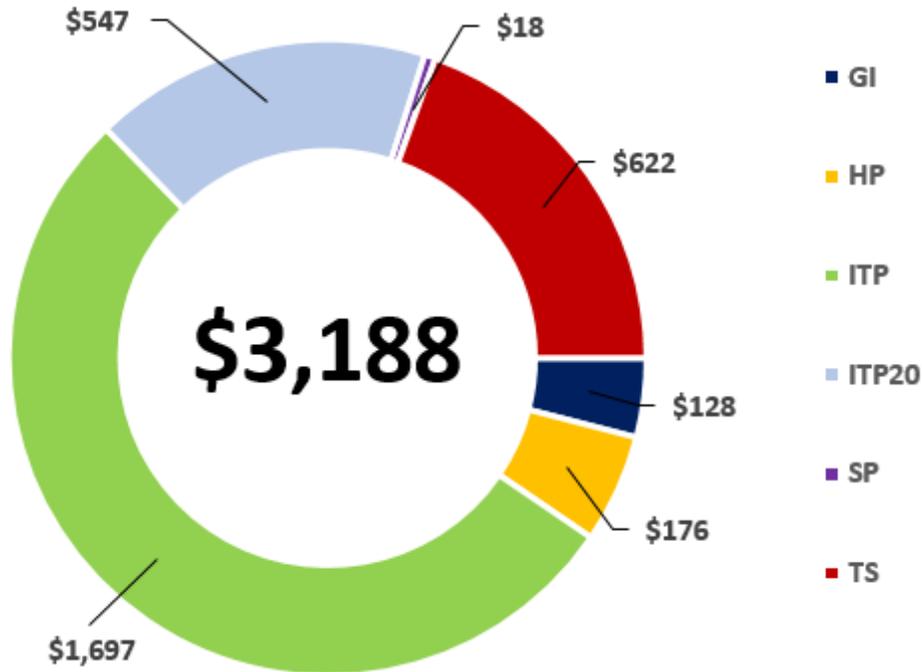


Figure 1: STEP Upgrades by Type (\$ Millions)

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 (tariff) 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 tariff. 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 the SPP 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 workspaces. 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

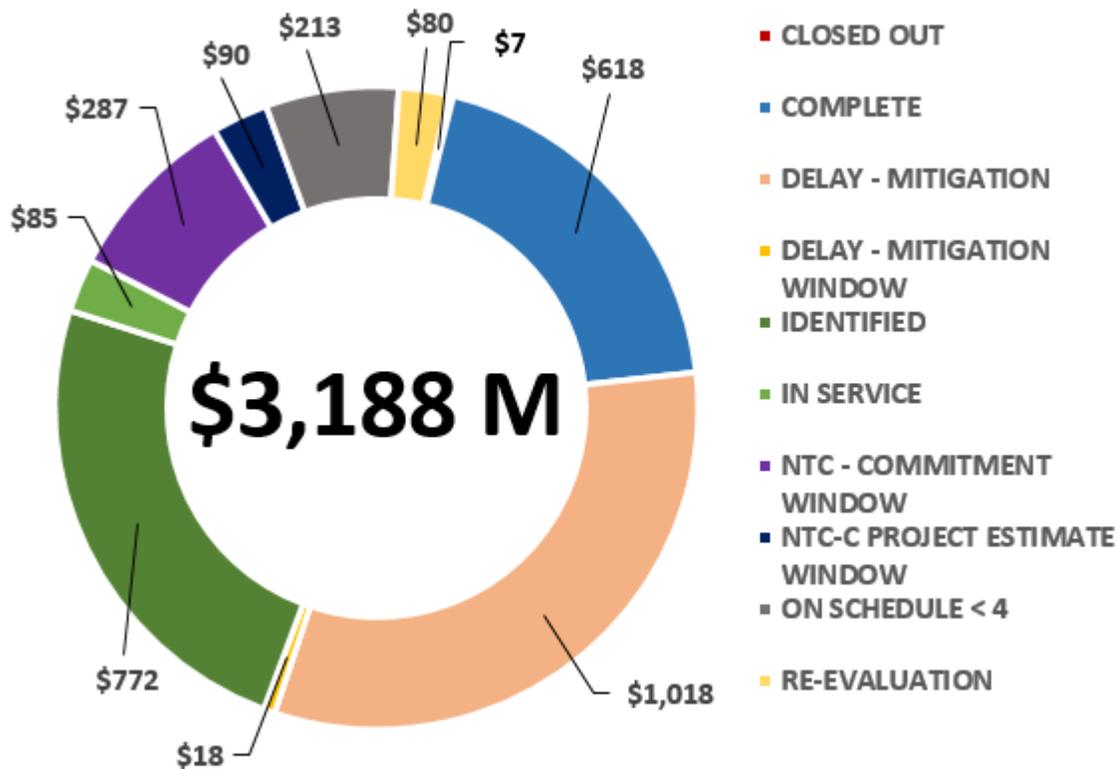


Figure 2: STEP Upgrades by Status (\$ Millions)

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:

- **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
- **Delayed:** Projected In-Service Date beyond Need Date; interim mitigation provided or project may change but time permits the implementation of project
- **Identified:** Upgrade identified and included in Board-approved study results
- **In Service:** Upgrade is operational, but not all construction activities are complete
- **On Schedule < 4:** On Schedule within four-year horizon
- **On Schedule > 4:** On Schedule beyond four-year horizon
- **Re-evaluation:** Project active; pending re-evaluation
- **Suspended:** Project suspended; pending re-evaluation
- **Within the Notification to Construct with Conditions (NTC-C) Project Estimate Window:** Within the NTC-C Project Estimate (CPE) window
- **Within the Notification to Construct (NTC) Commitment Window:** NTC/NTC-C issued, still within the 90-day written commitment to construct window and no commitment received
- **Within the Request for Proposal (RFP) Response Window:** RFP issued for the project

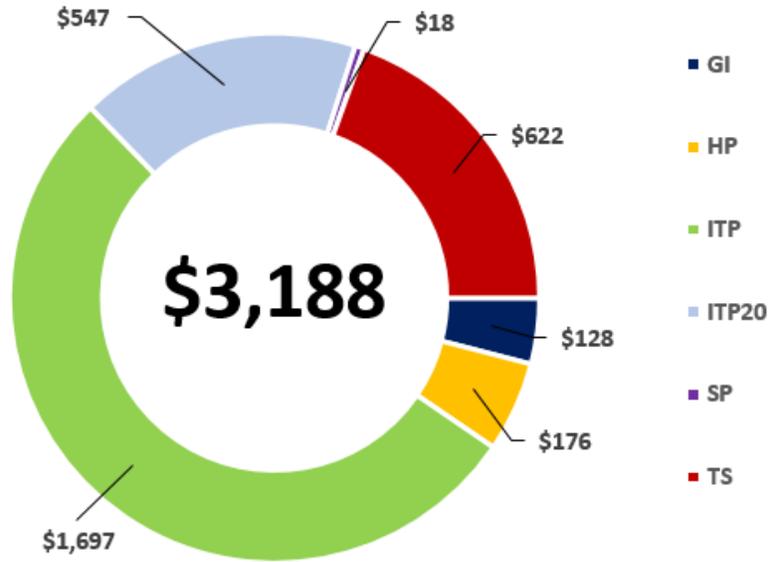


Figure 3: STEP Upgrades by Type (\$ Millions)

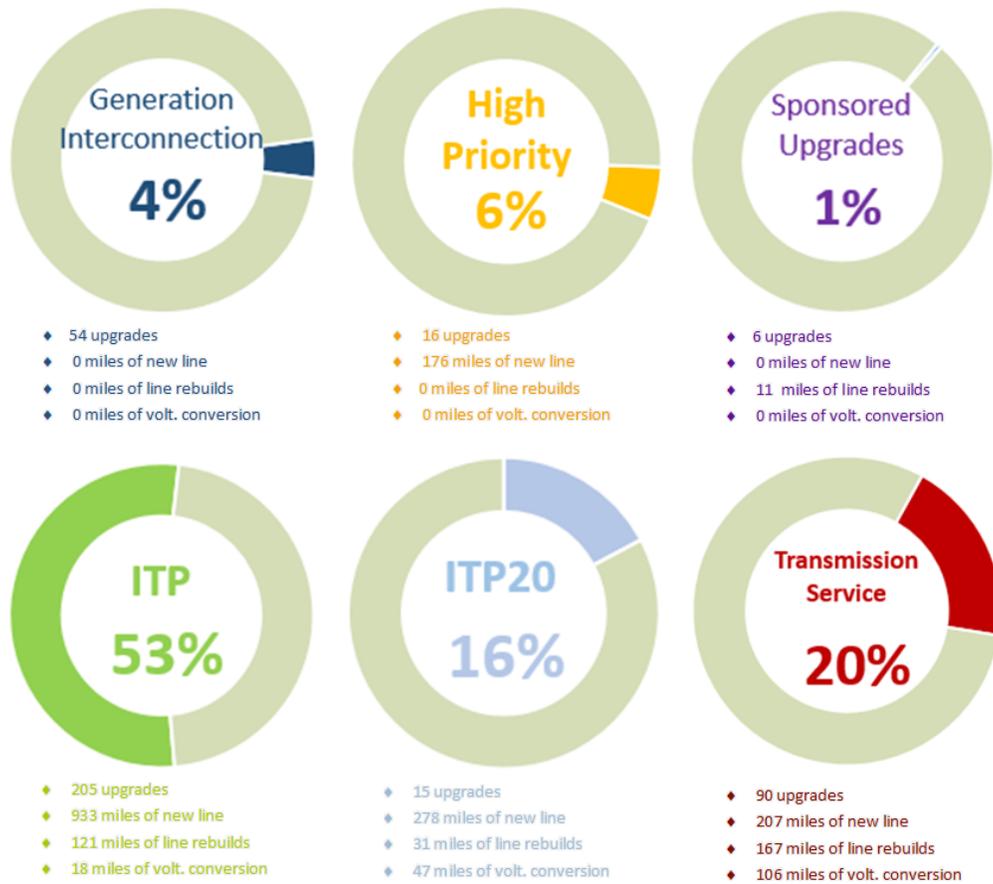


Figure 4: Upgrade Summary by Type<sup>4</sup>

<sup>4</sup> Mileage not available for all upgrade categories.

# PROJECT SUMMARY

In adherence to the tariff and SPP Business Practice 7060 (BP 7060), SPP issues 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, tariff, or RTO.

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

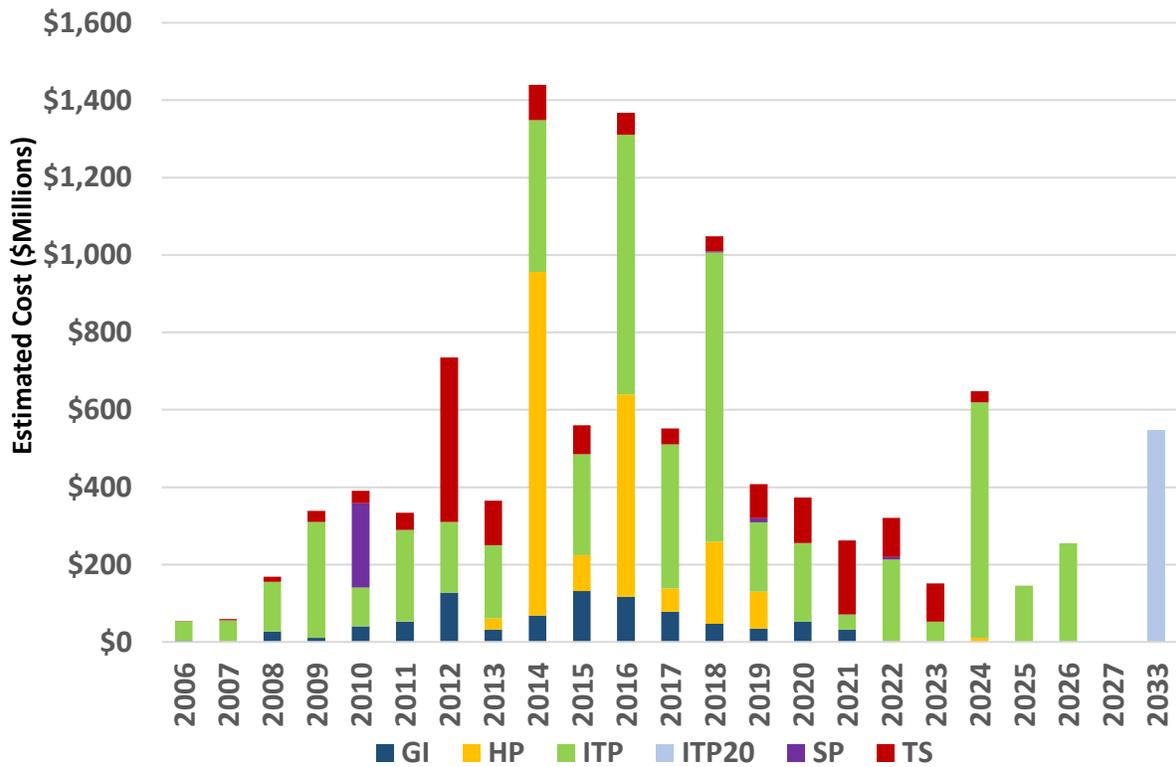


Figure 5: Upgrade Cost by In-Service Year (\$ Millions)

Source Study	Identified	Delayed	On Schedule	Suspended	Complete	Total
2006 STEP	\$0	\$0	\$0	\$0	\$193	\$193
2007 STEP	\$0	\$0	\$0	\$0	\$494	\$494
2008 STEP	\$0	\$0	\$0	\$0	\$413	\$413
2009 STEP	\$0	\$1	\$0	\$0	\$547	\$548
2010 STEP	\$0	\$0	\$0	\$0	\$116	\$116
2012 ITP10 <sup>5</sup>	\$0	\$463	\$0	\$0	\$365	\$828
2012 ITPNT <sup>6</sup>	\$0	\$0	\$0	\$0	\$184	\$184
2013 ITP20	\$547	\$0	\$0	\$0	\$0	\$547
2013 ITPNT	\$0	\$0	\$0	\$0	\$487	\$487
2014 ITPNT	\$0	\$0	\$0	\$0	\$446	\$446
2015 ITP10	\$0	\$0	\$0	\$0	\$47	\$47
2015 ITPNT	\$0	\$0	\$0	\$0	\$196	\$196
2016 ITPNT	\$0	\$199	\$0	\$0	\$256	\$455
2017 ITP10	\$0	\$0	\$0	\$0	\$10	\$11
2017 ITPNT	\$0	\$2	\$0	\$0	\$50	\$52
2018 ITPNT	\$0	\$35	\$1	\$0	\$19	\$54
2019 ITP	\$143	\$76	\$123	\$0	\$4	\$346
2020 ITP	\$81	\$7	\$215	\$0	\$0	\$303
Ag Studies	\$0	\$3	\$85	\$0	\$828	\$917
Balanced Portfolio	\$0	\$0	\$0	\$0	\$823	\$823
DPA Studies	\$0	\$282	\$85	\$0	\$303	\$670
GI Studies	\$0	\$6	\$67	\$0	\$788	\$861
HPILS <sup>7</sup>	\$0	\$11	\$0	\$0	\$583	\$594
IS Integration <sup>8</sup>	\$0	\$38	\$0	\$0	\$272	\$310
Priority Projects	\$0	\$0	\$0	\$0	\$1,318	\$1,318
Sponsored Upgrades	\$0	\$0	\$10	\$0	\$11	\$20
<b>Total:</b>	<b>\$771</b>	<b>\$1,122</b>	<b>\$586</b>	<b>\$0</b>	<b>\$8,752</b>	<b>\$11,232</b>

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

<sup>5</sup> Integrated Transmission Plan 10-Year (ITP10) Assessment

<sup>6</sup> Integrated Transmission Plan Near-Term (ITPNT) Assessment

<sup>7</sup> High Priority Incremental Load Study (HPILS)

<sup>8</sup> Integrated System (IS) Integration

# NTC AND UPGRADE ACTIVITY

In adherence with the tariff 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 tariff or RTO. Figure 6 and Table 2: Completed Upgrades show completed upgrades. Figure 7 and **Error! Reference source not found.** show upgrades issued NTCs. Figure 8 and Table 4 show upgrades where the NTC was withdrawn during the reporting period.

## COMPLETED UPGRADES

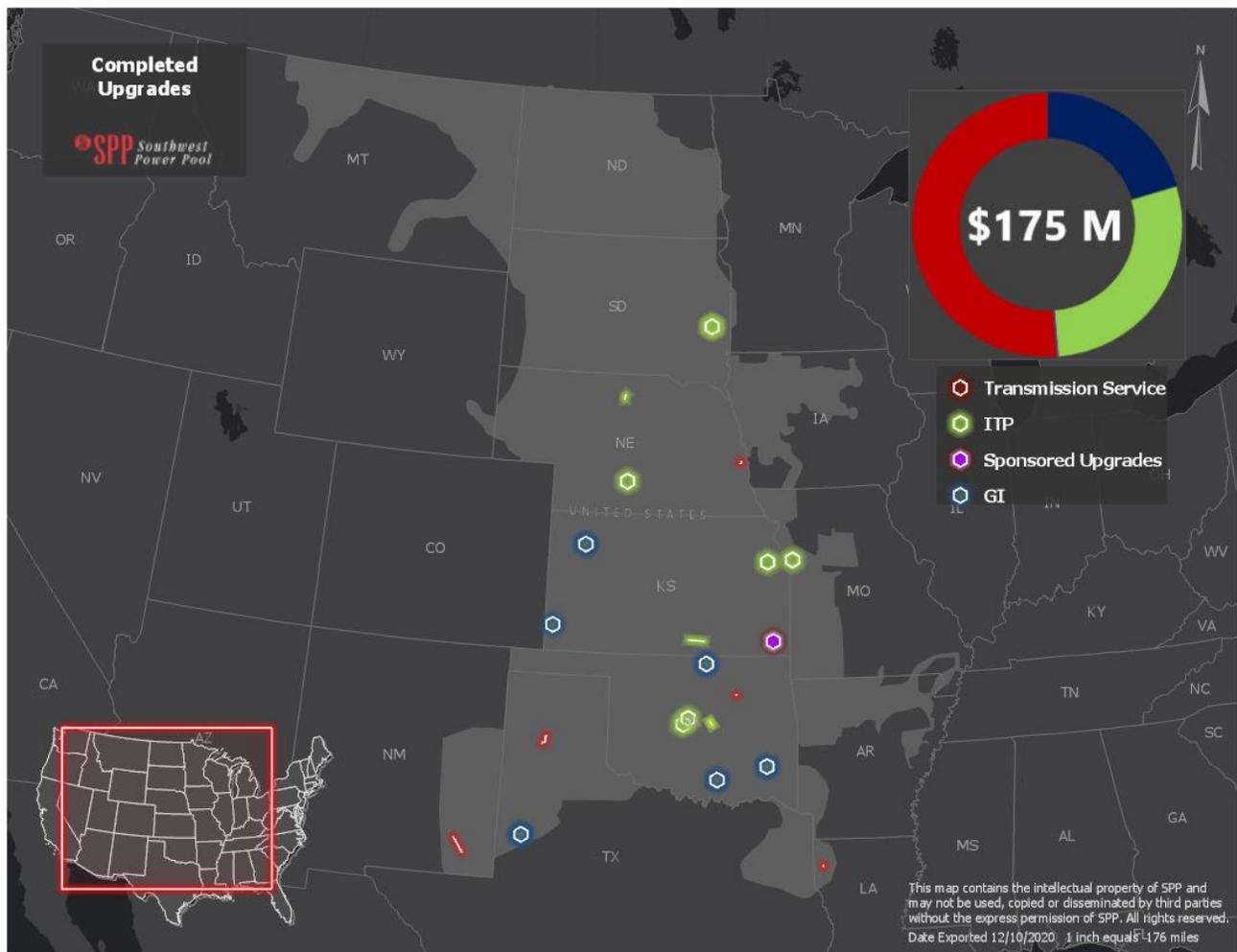


Figure 6: Completed Upgrades

NTC ID	IN-SERVICE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE
	1/20/2020	112300	SEPC	Mingo 115 kV substation GEN-2015-064 (TOIF) <sup>9</sup>	Generator Interconnection	\$911,033
	1/20/2020	112301	SEPC	Mingo 115 kV substation GEN-2015-064 (NU) <sup>10</sup>	Generator Interconnection	\$4,517,777
200483	1/27/2020	72004	OPPD	S1255-S1260 161 kV Ckt 1 new line	DPA-2017-May-746	\$9,435,262
210494	1/29/2020	82124	EREC	Lakeview 69 kV capacitor bank	2018 ITPNT	\$1,481,559
200318	2/1/2020	51276	NPPD	Ainsworth-Ainsworth Wind 115 kV Ckt 1 Rebuild	2015 ITPNT	\$930,395
210494	2/1/2020	82123	EREC	Lakeview 69 kV substation #3	2018 ITPNT	\$2,921,834
210538	2/1/2020	112366	NPPD	Canaday 115 kV breakers	2019 ITP	\$2,555,908
200369	3/20/2020	11506	SPS	Canyon East Sub-Randall County Interchange 115 kV Ckt 1 Rebuild	SPP-2011-AG3-AFS-11	\$6,657,686
	4/7/2020	71939	SEPC	Johnson Corner 115 kV - GEN-2015-021 Addition (TOIF)	Generator Interconnection	\$894,061
200296	5/11/2020	50698	WR	Sumner County-Viola 138 kV Ckt 1	2014 ITPNT	\$34,432,188
210542	5/22/2020	112428	WR	Lawrence Energy Center-Midland 115 kV terminal upgrades	2019 ITP	\$30,939
200298	6/1/2020	51033	AEP	Cedar Grove-South Shreveport 138 kV	SPP-2010-AGP1-AFS-8	\$6,566,218
210540	6/1/2020	112450	OGE	Northwest-Mathewson 345 kV terminal upgrades	2019 ITP	\$0
200382	6/11/2020	51096	AEP	Keystone Dam-Wekiwa 138 kV Ckt 1 Rebuild	SPP-2014-AG1-AFS-6	\$6,445,009
	6/16/2020	102168	OGE	Ranch Road 345 kV substation GEN-2015-034 Addition (TOIF)	Generator Interconnection	\$1,099,958
	6/16/2020	102169	OGE	Ranch Road 345 kV substation GEN-2015-034 Addition (NU)	Generator Interconnection	\$925,042
210540	6/17/2020	112449	OGE	Cimarron-Northwest 345 kV Ckt 1 terminal upgrades	2019 ITP	\$166,504
210551	6/25/2020	122650	WR	Caney River-Neosho 345 kV terminal upgrades	SUS-013	\$511,343
200392	7/31/2020	51444	OGE	Lincoln-Meeker 138 kV Ckt 1 new line (OGE)	2016 ITPNT	\$700,000
200397	7/31/2020	51445	WFEC	Lincoln-Meeker 138 kV Ckt 1 new line (WFEC)	2016 ITPNT	\$6,000,000

<sup>9</sup> Transmission Owner Interconnection Facilities (TOIF)

<sup>10</sup> Non-Shared Network Upgrades (NU)

NTC ID	IN-SERVICE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE
	9/15/2020	71941	WAPA	Sulphur 115 kV - GEN-2014-001 IS Addition (TOIF)	Generator Interconnection	\$227,363
	9/15/2020	71942	WAPA	Sulphur 115 kV - GEN-2014-001IS Addition (SANU)	Generator Interconnection	\$7,109,676
210539	9/24/2020	112370	KCPL	Leeds 161 kV breakers	2019 ITP	\$502,440
	9/30/2020	82137	AEP	Tuskahoma 138 kV substation GEN-2016-028 Interconnection (TOIF)	Generator Interconnection	\$700,000
	9/30/2020	82138	AEP	Tuskahoma 138 kV substation GEN-2016-028 Interconnection (NU)	Generator Interconnection	\$8,700,000
	9/30/2020	102170	OGE	Johnston County 345 kV substation GEN-2015-036 Addition (TOIF)	Generator Interconnection	\$892,334
	9/30/2020	102171	OGE	Johnston County 345 kV substation GEN-2015-036 Addition (NU)	Generator Interconnection	\$1,132,666
210507	11/3/2020	102156	SPS	Eddy County-Kiowa 345 kV Ckt 1 new line	DPA-2017-November-808	\$60,461,535
	11/16/2020	71943	WAPA	Sulphur 115 kV - GEN-2014-001IS Addition (NU)	Generator Interconnection	\$8,529,876
<b>29 Upgrade(s) Completed</b>						<b>\$175,438,605</b>

Table 2: Completed Upgrades<sup>11</sup>

<sup>11</sup> In accordance with Section 3.4 of SPP BP 7060, SPP only issues NTC for GI upgrades to affected Transmission Owners who are not a party to the Generator Interconnection Agreement (GIA).

## UPGRADES ISSUED NTC

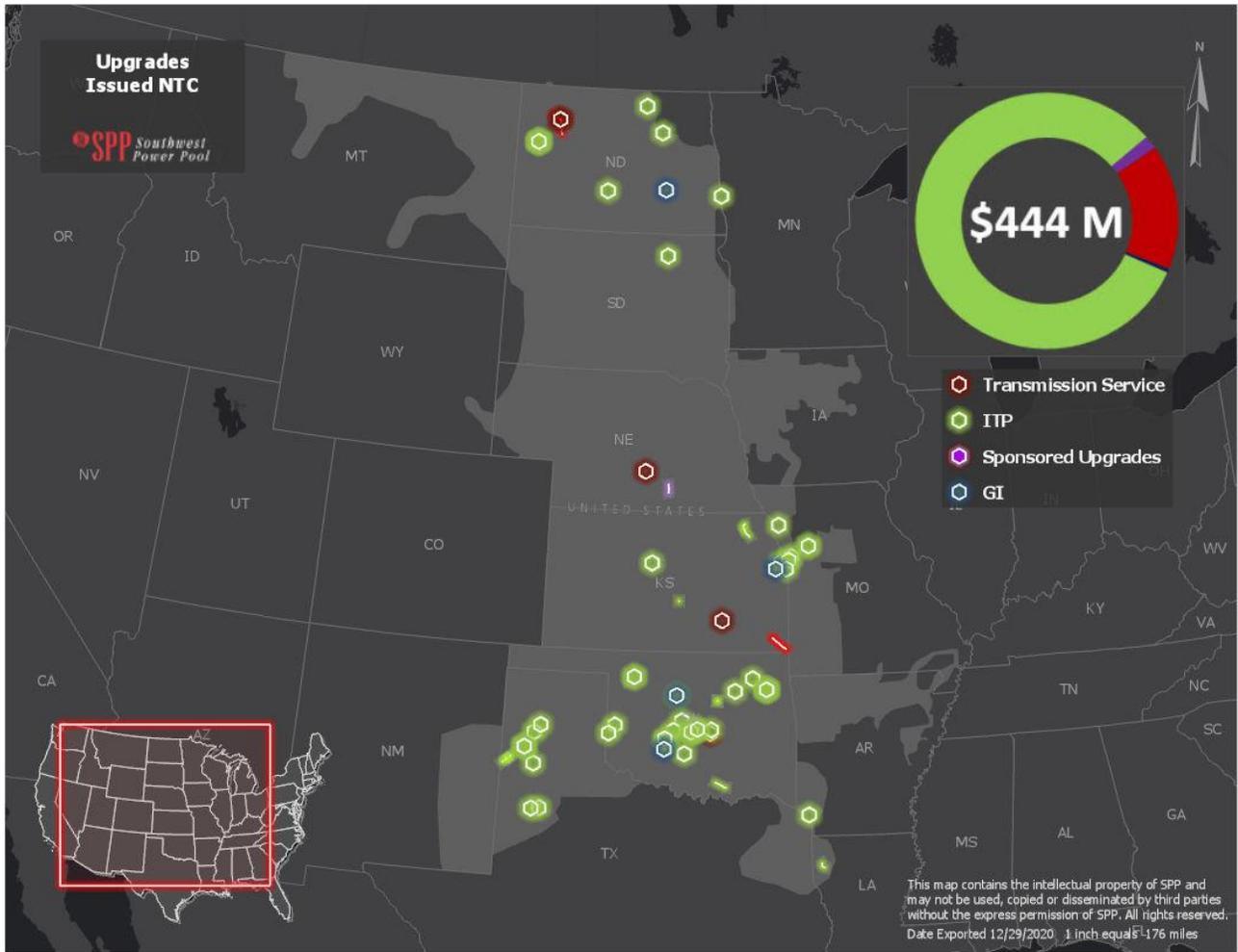


Figure 7: NTCs Issued

NTC ID	NTC ISSUE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF NEW UPGRADES	ESTIMATES FOR PREVIOUSLY APPROVED UPGRADES
210552	9/24/2020	122661	NPPD	Riverdale 230/115 kV transformer CKT 1	DPA-2019-June-1058	\$4,800,000	\$0
210554	3/17/2020	122639	OGE	Forest Hill 69 kV terminal upgrade	DPA-2019-January-974	\$25,000	\$0
210556	3/17/2020	112187	OGE	Dover-Hennessey 138 kV Ckt 1 terminal upgrades (OKGE)	DISIS-2016-002	\$142,965	\$0

NTC ID	NTC ISSUE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF NEW UPGRADES	ESTIMATES FOR PREVIOUSLY APPROVED UPGRADES
210557	4/8/2020	122657	CBPC	Donald Feldman switching station 69 kV	DPNS-2019-March-1011	\$1,227,000	\$0
210558	5/29/2020	122713	AEP	Locust Grove-Kerr 115 kV Ckt 1 Rebuild Line	SPP-2019-AG2-AFS-3	\$3,000,000	\$0
210559	6/10/2020	122571	MWE	Northshore-New Town 115 kV Ckt 1	DPA-2018-August-918	\$0	\$19,235,485
210560	6/10/2020	122570	BEPC	Neset-Northshore 230 kV Ckt 1	DPA-2018-August-918	\$0	\$33,155,575
210560	6/10/2020	122572	BEPC	Northshore 230/115 kV transformer	DPA-2018-August-918	\$0	\$3,176,320
210560	6/10/2020	122575	BEPC	Northshore 230 kV substation	DPA-2018-August-918	\$0	\$20,938,350
210562	6/10/2020	122602	WAPA	Jamestown 230 kV Redundant Bus Tie GEN-2016-004	DISIS-2016-001	\$1,510,000	\$0
210563	7/14/2020	122664	NPPD	Pauline-Hastings 115 kV Ckt 1 and Ckt 2 Reconductor	SUS-014	\$6,000,000	\$0
210564	8/11/2020	122600	OGE	Gracemont-Lawton East Side 345 kV substation GEN-2016-091 (NU) (OKGE)	DISIS-2016-002	\$10,000	\$0
210565	8/28/2020	122622	WR	Swissvale 345 kV substation upgrades	DISIS-2016-002	\$139,825	\$0
210568	11/12/2020	112458	TSMO	Sooner-Wekiwa 345 kV new line	2019 ITP	\$77,606,498	\$0
210569	11/12/2020	112457	WR	Neosho-Riverton 161 kV Rebuild (WR)	SPP-2019-AG1-AFS-2	\$3,972,869	\$0
210570	11/12/2020	112456	EDE	Neosho-Riverton 161 kV Rebuild (EDE)	SPP-2019-AG1-AFS-2	\$43,153,324	\$0
210574	11/17/2020	122725	SPS	Allen-Quaker 115 kV Ckt 1 Rebuild	2020 ITP	\$4,732,267	\$0
210574	11/17/2020	122727	SPS	Allen-Lubbock South 115 kV Ckt 1 Rebuild	2020 ITP	\$6,817,226	\$0
210574	11/17/2020	122869	SPS	Bushland-Deaf Smith 230 kV terminal upgrades	2020 ITP	\$923,938	\$0

NTC ID	NTC ISSUE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF NEW UPGRADES	ESTIMATES FOR PREVIOUSLY APPROVED UPGRADES
210574	11/17/2020	122870	SPS	Newhart-Potter 230 kV terminal upgrades	2020 ITP	\$731,282	\$0
210574	11/17/2020	122871	SPS	Deaf Smith #6-Friona 115 kV Rebuild	2020 ITP	\$12,626,190	\$0
210574	11/17/2020	122872	SPS	Carlisle-Murphy 115 kV Ckt 1 Rebuild	2020 ITP	\$4,746,175	\$0
210574	11/17/2020	122876	SPS	Deaf Smith #6-Hereford 115 kV Ckt 1 Rebuild	2020 ITP	\$6,660,556	\$0
210574	11/17/2020	122883	SPS	Lubbock South-Wolfforth 230 kV Ckt 1 terminal upgrades #2	2020 ITP	\$872,391	\$0
210574	11/17/2020	143167	SPS	Cargill-Friona 115 kV Ckt 1 Rebuild	2020 ITP	\$817,466	\$0
210574	11/17/2020	143168	SPS	Cargill-Deaf Smith #24 115 kV Ckt 1 Rebuild	2020 ITP	\$5,501,901	\$0
210574	11/17/2020	143169	SPS	Parmer-Deaf Smith #24 115 kV Ckt 1 Rebuild	2020 ITP	\$824,574	\$0
210574	11/17/2020	143170	SPS	Parmer-Deaf Smith #20 115 kV Ckt 1 Rebuild	2020 ITP	\$5,402,384	\$0
210575	11/17/2020	122730	AEP	South Shreveport-Wallace Lake 138 kV Ckt 1 Rebuild #2	2020 ITP	\$23,622,577	\$0
210575	11/17/2020	122796	AEP	Chisholm Substation 345 kV terminal upgrades	2020 ITP	\$11,999,273	\$0
210575	11/17/2020	143182	AEP	Chisholm-Woodward Border 345 kV Ckt 1 (AEP)	2020 ITP	\$1,000,000	\$0
210576	11/17/2020	143156	AEP	Grady 138 kV capacitor bank	2020 ITP	\$688,788	\$0
210577	11/17/2020	112500	EREC	Aberdeen Jct-Richmond 115 kV Ckt 1 (EREC)	2020 ITP	\$3,277,500	\$0
210577	11/17/2020	122511	EREC	Richmond 115/69 kV transformer	2020 ITP	\$2,022,000	\$0
210577	11/17/2020	122512	EREC	Richmond 69 kV capacitor bank	2020 ITP	\$222,000	\$0
210577	11/17/2020	132894	EREC	Richmond 69 kV substation	2020 ITP	\$4,812,500	\$0

NTC ID	NTC ISSUE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF NEW UPGRADES	ESTIMATES FOR PREVIOUSLY APPROVED UPGRADES
210578	11/17/2020	122717	GRDA	GRDA1 345 kV terminal upgrades transformer Ckt 1	2020 ITP	\$282,000	\$0
210578	11/17/2020	122718	GRDA	GRDA1 161 kV terminal upgrades transformer Ckt 1	2020 ITP	\$423,000	\$0
210578	11/17/2020	122801	GRDA	GRDA1 345 kV terminal upgrades transformer Ckt 2	2020 ITP	\$282,000	\$0
210578	11/17/2020	122802	GRDA	GRDA1 161 kV terminal upgrades transformer Ckt 2	2020 ITP	\$423,000	\$0
210579	11/23/2020	143157	WAPA	Bismarck 12.47 kV reactors	2020 ITP	\$2,380,700	\$0
210579	11/23/2020	143161	WAPA	Devil's Lake 115 kV reactor	2020 ITP	\$1,190,000	\$0
210580	11/17/2020	122726	WR	Meadowlark-Tower 33 115 kV Ckt 1 Rebuild	2020 ITP	\$1,342,588	\$0
210580	11/17/2020	122812	WR	Circleville-Goff 115 kV Ckt 1 Rebuild	2020 ITP	\$12,114,772	\$0
210580	11/17/2020	122814	WR	Goff-Kelly 115 kV Ckt 1 Rebuild	2020 ITP	\$7,108,395	\$0
210581	11/17/2020	122745	BEPC	Watford City 230/115 kV transformer Ckt 1	2020 ITP	\$3,389,739	\$0
210581	11/17/2020	122746	BEPC	Watford City 230/115 kV transformer Ckt 2	2020 ITP	\$173,041	\$0
210582	11/23/2020	122803	SEPC	Russell 115 kV capacitor bank	2020 ITP	\$2,841,951	\$0
210583	11/17/2020	122804	KCPL	Northeast 161 kV breakers	2020 ITP	\$887,479	\$0
210583	11/17/2020	122805	KCPL	Stilwell 161 kV breaker	2020 ITP	\$566,485	\$0
210583	11/17/2020	122806	KCPL	Leeds 161 kV breaker	2020 ITP	\$566,485	\$0
210583	11/17/2020	122807	KCPL	Shawnee Mission 161 kV breaker	2020 ITP	\$566,485	\$0
210583	11/17/2020	122808	KCPL	Southtown 161 kV breaker	2020 ITP	\$566,485	\$0
210583	11/17/2020	122809	KCPL	Lake Road 161 kV breakers	2020 ITP	\$1,132,970	\$0
210583	11/17/2020	122810	KCPL	Craig 161 kV breakers	2020 ITP	\$1,132,970	\$0

NTC ID	NTC ISSUE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF NEW UPGRADES	ESTIMATES FOR PREVIOUSLY APPROVED UPGRADES
210584	11/17/2020	132893	NWE	Aberdeen Junction 115 kV terminal upgrades	2020 ITP	\$1,060,000	\$0
210584	11/17/2020	143181	NWE	Aberdeen Jct-Richmond 115 kV Ckt 1 (NWE)	2020 ITP	\$3,277,500	\$0
210585	11/17/2020	143159	MRES	Moorehead 230 kV reactor	2020 ITP	\$1,515,440	\$0
210586	11/17/2020	112443	WFEC	Russett-South Brown 138 kV Ckt 1 Rebuild	2020 ITP	\$9,959,291	\$0
210586	11/17/2020	122577	WFEC	Anadarko-Gracemont 138kV Ckt 1 Rebuild	2020 ITP	\$2,850,000	\$2,850,000
210586	11/17/2020	122722	WFEC	Dover Switch-O'Keene 138 kV Ckt 1 terminal upgrades	2020 ITP	\$1,010,000	\$0
210586	11/17/2020	122753	WFEC	Anadarko-Gracemont 138 kV Ckt 2 Rebuild	2020 ITP	\$4,636,432	\$0
210586	11/17/2020	122756	WFEC	Anadarko 138 kV Ckt 2 terminal equipment	2020 ITP	\$0	\$405,535
210586	11/17/2020	122864	WFEC	Anadarko 138 kV breakers #2	2020 ITP	\$0	\$850,000
210586	11/17/2020	122865	WFEC	Mooreland - Aspen 138 kV terminal upgrades	2020 ITP	\$202,500	\$0
210586	11/17/2020	122866	WFEC	Mooreland-Pic 138 kV terminal upgrades	2020 ITP	\$405,000	\$0
210587	11/17/2020	122823	OGE	Border-Woodward Tap 345 kV substation	2020 ITP	\$11,500,000	\$0
210587	11/17/2020	122824	OGE	Chisholm-Woodward Border 345 kV Ckt 1 (OGE)	2020 ITP	\$1,259,660	\$0
210587	11/17/2020	122848	OGE	Minco 345 kV terminal equipment	2020 ITP	\$2,288,668	\$0
210587	11/17/2020	122849	OGE	Pleasant Valley 345 kV substation	2020 ITP	\$25,500,000	\$0
210587	11/17/2020	122850	OGE	Pleasant Valley 345/138 kV transformer Ckt 1	2020 ITP	\$4,225,000	\$0
210587	11/17/2020	122851	OGE	Pleasant Valley 345/138 kV transformer Ckt 2	2020 ITP	\$4,225,000	\$0

NTC ID	NTC ISSUE DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF NEW UPGRADES	ESTIMATES FOR PREVIOUSLY APPROVED UPGRADES
210587	11/17/2020	122858	OGE	Cimarron-Draper 345 kV terminal upgrades #2	2020 ITP	\$2,288,668	\$0
210587	11/17/2020	122863	OGE	Midwest 138 kV Ckt 1 terminal upgrades	2020 ITP	\$65,000	\$0
210587	11/17/2020	143176	OGE	Draper 345 kV terminal equipment	2020 ITP	\$2,288,668	\$0
210589	11/17/2020	122755	OGE	Gracemont 138 kV Ckt 2 terminal equipment	2020 ITP	\$405,535	\$0
210589	11/17/2020	122818	OGE	Cushing-Shell Pipeline Cushing Tap 69 kV Ckt 1 Rebuild	2020 ITP	\$4,281,150	\$0
210589	11/17/2020	122819	OGE	Pipeline-Shell Pipeline Cushing Tap 69 kV Ckt 1 Rebuild	2020 ITP	\$1,081,649	\$0
210590	11/24/2020	143183	KCPL	Greenwood 161 kV terminal upgrades	SPP-2020- AG1-AFS-3	\$800,000	\$0
210590	11/24/2020	143184	KCPL	Pleasant Hill 161 kV and Lake Winnebago 161 kV terminal upgrades	SPP-2020- AG1-AFS-3	\$430,000	\$0
210591	11/23/2020	143162	CPEC	Agate 115 kV reactor	2020 ITP	\$571,200	\$0
<b>81 Upgrade(s) Issued</b>						<b>\$363,385,375</b>	<b>\$80,611,265</b>

Table 3: NTCs Issued

## NTCS WITHDRAWN

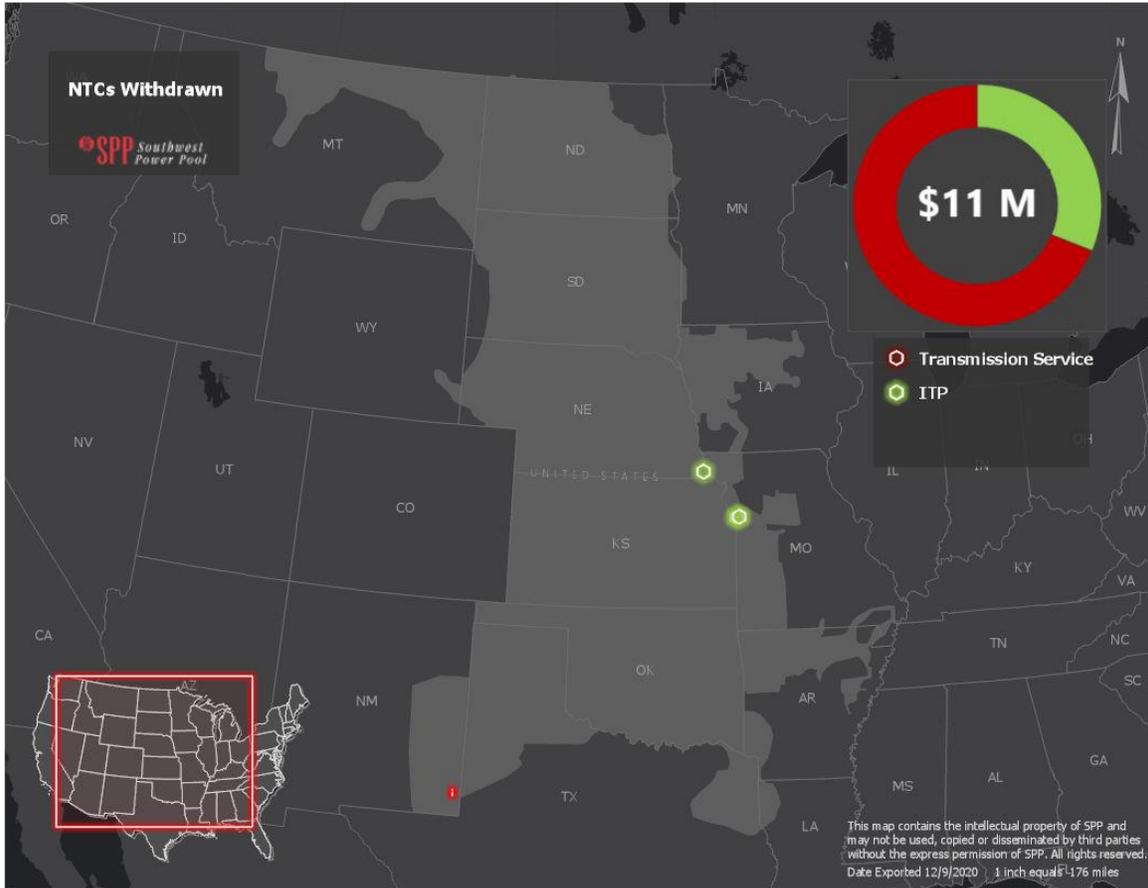


Figure 8: NTCs Withdrawn

NTC ID	NTC WITHDRAWN DATE	UID	OWNER	UPGRADE NAME	SOURCE STUDY	COST ESTIMATE OF WITHDRAWN UPGRADES
210561	8/13/2020	51272	SPS	Cooper Ranch-Oil Center 115 kV Ckt 1 Rebuild	SPP-2014-AG1-AFS-6	\$1,717,312
210561	8/13/2020	51273	SPS	Byrd Tap-Cooper Ranch 115 kV Ckt 1 Rebuild	SPP-2014-AG1-AFS-6	\$2,925,567
210561	8/13/2020	51407	SPS	Lea Road-Oil Center 115 kV Ckt 1 Rebuild	SPP-2014-AG1-AFS-6	\$2,620,670
210571	11/12/2020	51757	KCPL	Crosstown 161 kV terminal upgrades	2018 ITPNT	\$1,120,000
210571	11/12/2020	51758	KCPL	Blue Valley 161 kV terminal upgrades	2018 ITPNT	\$1,400,000
210571	11/12/2020	51759	KCPL	Blue Valley-Crosstown 161 kV Ckt1	2018 ITPNT	\$36,644
210572	11/12/2020	51521	OPPD	S964 69 kV capacitor bank	2016 ITPNT	\$722,660
<b>7 Upgrade(s) Withdrawn</b>						<b>\$10,542,853</b>

Table 4: NTCs Withdrawn

# STUDY OVERVIEWS

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## 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 tariff, performs screening studies through the Delivery Point Transfer (DPT) and Long-Term Service Request (LTSR) processes under Attachment AR of the tariff and Delivery Point Addition (DPA) studies under Attachment AQ of the tariff.

### COMPLETED AGGREGATE STUDIES

2019-AG2-AFS-3	<a href="#">Report Tables</a>	<a href="#">Facility Log</a>
2020-AG1-AFS-3	<a href="#">Report Tables</a>	<a href="#">Facility Log</a>

### COMPLETED ATTACHMENT AR STUDIES

[SPP-DPT-2020-001](#)   [SPP-DPT-2020-002](#)   [SPP-DPT-2020-003](#)   [SPP-DPT-2020-004](#)

### ATTACHMENT AQ REQUESTS

[2019 Delivery Point Addition Studies](#)  
[2020 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.

[Generator 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 tariff rules that govern transmission planning.

At the October 27, 2020 SPP Board meeting, MOPC recommended the SPP Board of Directors approve the 2020 ITP Assessment, as modified by SPP Staff, and to defer action on the Butler-Tioga 138 kV project due to the need for further refinement. The Board approved this motion. SPP Staff continues to work on refining this project proposal.

[2020 ITP Assessment](#)

## **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 2020. The Board reviewed results for studies listed below and SPP issues an NTC upon execution of the Agreement for Sponsored Upgrade. Links for Board materials are provided for study results that have been reviewed.

SUS-014 Pauline-Hastings 115 kV: Approved by SPP Board of Directors on [January 28, 2020](#).

SUS-020 Jayhawk Wind: Approved by SPP Board of Directors on [October 27, 2020](#).

## **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 completed two formal interregional planning studies. SPP collaborated with Midcontinent Independent System Operator (MISO) to perform a Coordinated System Plan (CSP) that will conclude with a 2020 MISO-SPP CSP Final Report. SPP also collaborated with Associated Electric Cooperatives, Inc. (AECI) to perform a Joint and Coordinated System Plan (JCSP) study that will conclude with a 2020 AECI-SPP JCSP Final Report. Both the CSP Final Report and the JCSP Final Report, which will be posted at the link below upon completion, did not recommend any transmission projects for approval.

[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 AECL.

## **20-YEAR ASSESSMENT (ITP20)**

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

# APPENDIX 1

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*(See accompanying list of STEP upgrades)*