



## Executive Summary: SPP-2021-AG2-AFS-2

Pursuant to the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Aggregate Transmission Service Study (ATSS) for transmission service requests received during the ATSS Open Season which closed on November 30, 2021.

The principal objective of the AFS is to identify system problems and potential modifications necessary to facilitate these transfers while maintaining or improving system reliability, as well as summarizing the operating limits and determination of the financial characteristics associated with facility upgrades. Facility upgrade costs are allocated on a prorated basis to all requests positively impacting any individual overloaded facility.

## Aggregate Study Manual Version 1.0

[5.docx](#)

**This Aggregate Study iteration analyzes the impact of new  
1,296 MW**

## Models Used in Study

**2022 ITP Series**

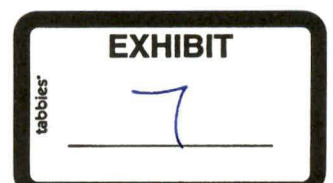
**Winter: 2022, 2023, 2024, 2027, 2032**

**Summer: 2022, 2023, 2024, 2027, 2032**

**Light Load: 2023, 2024, 2027, 2032**

**By: SPP Transmission Services Department**

**Published: July 15, 2022**





**Table 1 - Long-Term Transmission Service Requests Included in Aggregate Facility Study**

Customer	Study Number	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date without interim redispatch (Parameter 5)	Deferred Stop Date without interim redispatch	Start Date with interim redispatch	Stop Date with interim redispatch	<sup>5</sup> One or More Study Parameters Exceeded
AEPM	AG2-2021-001	95551488	OKGE	CSWS	35	6/1/2022	6/1/2027	6/1/2022	6/1/2027	Note 4	Note 4	NO
AEPM	AG2-2021-002	95551504	OKGE	CSWS	200	6/1/2022	6/1/2027	6/1/2022	6/1/2027	Note 4	Note 4	NO
AEPM	AG2-2021-003	95551510	OKGE	CSWS	5	6/1/2022	6/1/2027	6/1/2022	6/1/2027	Note 4	Note 4	NO
AEPM	AG2-2021-004	95551533	OKGE	CSWS	90	6/1/2022	6/1/2027	6/1/2022	6/1/2027	Note 4	Note 4	NO
AEPM	AG2-2021-005	95551550	WFEC	CSWS	40	6/1/2022	6/1/2027	6/1/2022	6/1/2027	Note 4	Note 4	NO
BEPM	AG2-2021-006	95250509	WAUE	WAUE	28	6/1/2022	12/1/2041	6/1/2022	12/1/2041	6/1/2022	12/1/2041	NO
BRPS	AG2-2021-007	95551519	NPPD	NPPD	7	6/1/2022	6/1/2024	6/1/2022	6/1/2024	6/1/2022	6/1/2024	NO
KMEA	AG2-2021-008	95496830	WR	WR	2	6/1/2022	6/1/2032	6/1/2022	6/1/2032	6/1/2022	6/1/2032	NO
KPP	AG2-2021-009	95505123	WR	WR	5	1/1/2023	3/1/2037	1/1/2023	3/1/2037	Note 4	Note 4	NO
KPP	AG2-2021-010	95551602	WR	WR	1	1/1/2023	1/1/2033	1/1/2023	1/1/2033	Note 4	Note 4	NO
NMAD	AG2-2021-011	95475952	AMRN	SPA	9	10/1/2022	10/1/2027	10/1/2022	10/1/2027	Note 4	Note 4	NO
NMAD	AG2-2021-012	95475749	SPA	SPA	5	10/1/2022	10/1/2027	10/1/2022	10/1/2027	Note 4	Note 4	NO
NRPT	AG2-2021-013	95341900	WAUE	SPC	150	7/1/2022	7/1/2042	10/1/2027	10/1/2047	10/1/2027	10/1/2047	NO
NRPT	AG2-2021-014	95341902	WAUE	SPC	250	10/1/2027	10/1/2047	10/1/2027	10/1/2047	Note 4	Note 4	NO
NRPT	AG2-2021-015	95341903	WAUE	SPC	250	10/1/2027	10/1/2047	10/1/2027	10/1/2047	Note 4	Note 4	NO
OMPA	AG2-2021-016	95505814	WFEC	OKGE	120	6/1/2024	6/1/2039	6/1/2024	6/1/2039	Note 4	Note 4	NO
PEC	AG2-2021-017	95551985	WFEC	WFEC	29	6/1/2022	6/1/2027	6/1/2022	6/1/2027	6/1/2022	6/1/2027	NO
WRGS	AG2-2021-018	95459718	SECI	WR	70	6/1/2022	6/1/2027	6/1/2022	6/1/2027	6/1/2022	6/1/2027	NO
					1296							

**Requests with Study Parameters Exceeded**

WRGS	AG2-2021-019	94153377	CSWS	ERCOTE	50	7/1/2022	9/1/2023	12/1/2025	2/1/2027	12/1/2025	2/1/2027	YES
					50							

**Note 1:** Start and Stop Dates with interim redispatch are determined based on customers choosing option to pursue redispatch to start service at Requested Start and Stop Dates or earliest date possible.

**Note 2:** Start dates with and without redispatch are based on the assumed completion dates of previous Aggregate Transmission Service Studies currently being conducted. Actual start dates may differ from the potential start dates upon completion of

**Note 3:** Request is unable to be deferred due to fixed stop dates.

**Note 4:** Transmission customer did not select "remain in the study using interim redispatch" option.

**Note 5:** Request parameters have been exceeded.

Table 2 - Total Revenue Requirements Associated with Long-Term Transmission Service Requests

Customer	Study Number	Reservation	Engineering and Construction Cost of Upgrades Allocated to Customer for Revenue Requirements	<sup>1</sup> Letter of Credit Amount Required (Parameter 4)	<sup>2</sup> Potential Base Plan Engineering and Construction Funding Allowable	Notes	<sup>4, 10, 11</sup> Additional Engineering and Construction Cost for 3rd Party Upgrades (Parameter 2)	<sup>3</sup> Total Revenue Requirements for Assigned Service Upgrades Over Term of Reservation NOT COVERED by Base Plan Funding	<sup>12</sup> Total Revenue Requirements for Assigned Service Upgrades Over Term of Reservation COVERED by Base Plan Funding	<sup>6, 7</sup> Total Gross CPDs for Creditable Upgrades Over Reservation Period NOT COVERED by Base Plan Funding	<sup>13, 7</sup> Total Gross CPDs for Creditable Upgrades Over Reservation Period COVERED by Base Plan Funding	<sup>8, 9</sup> Point-to-Point Base Rate Available to Offset Revenue Requirements Over Reservation Period	<sup>4</sup> Total Cost of Reservation Assignable to Customer Contingent Upon Base Plan Funding	Directly Assigned Upgrade Cost (DAUC) (Parameter 1)
AEPM	AG2-2021-001	95551488	\$521,692	\$0	\$370,890		\$0	\$0	\$0	\$271,150	\$712,569	\$0	\$271,150	\$150,802
AEPM	AG2-2021-002	95551504	\$433,961	\$0	\$342,336		\$0	\$0	\$0	\$539,194	\$1,837,032	\$0	\$539,194	\$91,625
AEPM	AG2-2021-003	95551510	\$74,527	\$0	\$57,993		\$0	\$0	\$0	\$38,724	\$101,808	\$0	\$38,724	\$21,534
AEPM	AG2-2021-004	95551533	\$195,282	\$0	\$154,051		\$0	\$0	\$0	\$242,637	\$826,664	\$0	\$242,637	\$41,231
AEPM	AG2-2021-005	95551550	\$59,961	\$0	\$58,617		\$0	\$0	\$0	\$7,908	\$195,431	\$0	\$7,908	\$1,344
BEPM	AG2-2021-006	95250509	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	Schedule 9 & 11 Charges	\$0
BRPS	AG2-2021-007	95551519	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	Schedule 9 & 11 Charges	\$0
KMEA	AG2-2021-008	95496830	\$28,969	\$0	\$28,969		\$0	\$0	\$0	\$0	\$65,510	\$0	\$0	\$0
KPP	AG2-2021-009	95505123	\$1	\$0	\$1		\$0	\$0	\$0	\$0	\$3	\$0	Schedule 9 & 11 Charges	\$0
KPP	AG2-2021-010	95551602	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$2	\$0	Schedule 9 & 11 Charges	\$0
NMAD	AG2-2021-011	95475952	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	Schedule 9 & 11 Charges	\$0
NMAD	AG2-2021-012	95475749	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	Schedule 9 & 11 Charges	\$0
NRPT	AG2-2021-013	95341900	\$34,285,661	\$0	\$0	9	\$0	\$156,998,158	\$0	\$0	\$0	\$237,660,696	\$237,660,696	\$0
NRPT	AG2-2021-014	95341902	\$57,142,768	\$0	\$0	9	\$0	\$261,663,597	\$0	\$0	\$0	\$396,101,160	\$396,101,160	\$0
NRPT	AG2-2021-015	95341903	\$57,142,768	\$0	\$0	9	\$0	\$261,663,597	\$0	\$0	\$0	\$396,101,160	\$396,101,160	\$0
OMPA	AG2-2021-016	95505814	\$1,939,003	\$0	\$0		\$0	\$0	\$0	\$4,172,103	\$0	\$0	\$4,172,103	\$1,939,003
PEC	AG2-2021-017	95551985	\$293,382	\$0	\$179		\$0	\$0	\$0	\$709,363	\$1,462	\$0	\$709,363	\$293,202
WRGS	AG2-2021-018	95459718	\$1,019,094	\$0	\$38,605		\$0	\$0	\$0	\$1,858,346	\$56,944	\$0	\$1,858,346	\$980,489
<b>Grand Total</b>			<b>\$153,137,068</b>		<b>\$1,046,641</b>		<b>\$951,992</b>	<b>\$680,325,353</b>	<b>\$0</b>	<b>\$7,839,424</b>	<b>\$3,797,427</b>			<b>\$3,519,230</b>
<b>Requests with Study Parameters Exceeded</b>														
WRGS	AG2-2021-019	94153377	\$0	\$0	\$0		\$12,000,000	\$0	\$0	\$0	\$0	\$4,221,175	\$4,221,175	\$0
<b>Grand Total</b>			<b>\$0</b>		<b>\$0</b>		<b>\$12,000,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>			<b>\$0</b>

Table 2 - Revenue Requirements Associated with Long-Term Transmission Service Requests

<p><b>Note 1:</b> Letter of Credit required for financial security for transmission owner for network upgrades is determined by allocated engineering and construction costs less engineering and construction costs for upgrades when network customer is the transmission owner less the E &amp; C allocation of expedited projects. Letter of Credit is required for upgrades assigned to PTP requests. The amount of the letter of credit will be adjusted down on an annual basis to reflect cost recovery based on revenue allocation. This letter of credit is not required for those facilities that are fully base plan funded. The Letter Of Credit Amount listed is based on meeting OATT Attachment J requirements for base plan funding.</p>
<p><b>Note 2:</b> If potential base plan funding is applicable, this value is the lesser of the Engineering and Construction costs of assignable upgrades or the value of base plan funding calculated pursuant to Attachment J, Section III B criteria. Allocation of base plan funding is contingent upon verification of customer agreements meeting Attachment J, Section II B criteria. Not applicable if Point-to-Point base rate exceeds revenue requirements.</p>
<p><b>Note 3:</b> Revenue Requirements (RR) are based upon deferred end dates if applicable. Deferred dates are based upon customer's choice to pursue redispach. Achievable Base Plan Avoided RR in the case of a Base Plan upgrade being displaced or deferred by an earlier in service date for a Requested Upgrade shall be determined per Attachment J, Section VII C methodology. Assumption of a 40 year service life is utilized for Base Plan funded projects. A present worth analysis of RR on a common year basis between the Base Plan and Requested Upgrades was performed to determine avoided Base Plan RR due to the displacement or deferral of the Base Plan upgrade by the Requested Upgrade. The incremental increase in present worth of a Requested Upgrade on a common year basis as a Base Plan upgrade is assigned to the transmission requests impacting the upgrade based on the displacement or deferral. If the displacement analysis results in lower RR due to the shorter amortization period of the requested upgrade when compared to a base plan amortization period, then no direct assignment of the upgrade cost is made due to the displacement to an earlier start date.</p>
<p><b>Note 4:</b> For Point-to-Point requests, total cost is based on the higher of the base rate OR assigned upgrade revenue requirements. For Network requests, the total cost is based on the directly assigned upgrade revenue requirements AND Schedules 1, 1A, 2, 9, 11, &amp; 12 charges. Network cost amounts populated in this column are reduced by offsets (if available) from base plan funding, which is determined using Attachment J, Section II B Criteria. Additionally E &amp; C of 3rd Party upgrades is assignable to Customer. This includes prepayments required for any SWPA upgrades. Revenue requirements for 3rd Party facilities are not calculated. Total cost to customer is based on assumption of Revenue Requirements with confirmation of base plan funding. Customer is responsible for negotiating redispach costs if applicable. Customer is also responsible to pay credits for previously assigned upgrades that are impacted by their request. Credits can be paid from base plan funding if applicable.</p>
<p><b>Note 5:</b> RR with base plan funding may increase or decrease even if no base plan funding is applicable to a particular request if another request that shares the upgrade is now full base plan funded resulting in a different amortization period for the upgrade and thus different RR.</p>
<p><b>Note 6:</b> RR for creditable upgrades.</p>
<p><b>Note 7:</b> CPDs for creditable upgrades may be calculated based on estimated upgrade cost and are subject to change.</p>
<p><b>Note 8:</b> CPDs for creditable upgrade(s) may be required based on completion of GI review.</p>
<p><b>Note 9:</b> Point-To-Point Base Rate used to offset Revenue Requirements are calculated using the following available rate(s): Schedule 7, Schedule 11 Base Plan Zonal, Schedule 11 Base Plan Regional. The ancillary rates (Schedules 1, 1A, 2, and 12) are not included in the Point-to-Point Base Rate. These rate(s) are subject to change.</p>
<p><b>Note 10:</b> Per Attachment Z1 Section III D.2, customer has until the start date of its requested transmission service or one (1) year after completion of the Aggregate Facilities Study, whichever is sooner, to complete negotiations with the third party to resolve the third party issue(s). A 90 day extension may be granted. If the customer has not notified SPP of a successful conclusion to the negotiation with the third party by the deadline, SPP shall deem the transmission service request to be terminated and withdrawn and the customer will be subject to a make-whole payment.</p>
<p><b>Note 11:</b> Request(s) subject to third party upgrade costs. Scope of third party upgrade specifications and projected third party upgrade costs shall be established by the third party in accordance with Section 21 of the SPP Open Access Transmission Tariff. The third party upgrade specifications and projected third party upgrade costs have not yet been established, and is subject to the third party's review and potential revision following the results of this AFS.</p>



**Table 3**      **onal Details for Each Request Including All Facility Upgrades Required and Allocated Costs fo**      **pgrade**

Customer      Study Number  
 AEPM      AG2-2021-002

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	95551504	OKGE	CSWS	200	6/1/2022	6/1/2027	6/1/2022	6/1/2027	\$ 342,336	\$ -	\$ 433,961	\$ 2,376,226
									\$ 342,336	\$ -	\$ 433,961	\$ 2,376,226

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551504	None					\$ -	\$ -	\$ -
						\$ -	\$ -	\$ -
						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment ZZ of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total Revenue Requirements
95551504	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			\$ 133,001	\$ -	\$ 133,001	\$ 647,930
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			\$ 183,250	\$ 91,625	\$ 274,875	\$ 1,617,581
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012			\$ 26,085	\$ -	\$ 26,085	\$ 110,715
						\$ 342,336	\$ 91,625	\$ 433,961	\$ 2,376,226

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
 AEPM AG2-2021-003

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	95551510	OKGE	CSWS	\$	6/1/2022	6/1/2027	6/1/2022	6/1/2027	\$ 52,993	\$ -	\$ 74,527	\$ 140,531
									\$ 52,993	\$ -	\$ 74,527	\$ 140,531

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551510	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment Z2 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total Revenue Requirements
95551510	Cleo Corner 138kV Major County Addition (NU)	10/1/2020	10/1/2020			\$ 37,022	\$ 18,511	\$ 55,533	\$ 75,071
	Cleo Corner - Cleo Plant Tap 138kV Ckt 1	3/11/2021	3/11/2021			\$ 1,552	\$ -	\$ 1,552	\$ 2,098
	Kingfisher Co Tap - Mathewson 345kV CKT 1	3/1/2018	3/1/2018			\$ 5,079	\$ -	\$ 5,079	\$ 6,780
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			\$ 2,698	\$ -	\$ 2,698	\$ 13,146
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			\$ 4,253	\$ 2,126	\$ 6,379	\$ 37,541
	Power System Stabilizers in SPS	11/30/2014	11/30/2014			\$ 39	\$ -	\$ 39	\$ 55
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012			\$ 529	\$ -	\$ 529	\$ 2,246
	Woodward EHV 138kV Phase Shifting Transformer circuit #1	8/2/2017	8/2/2017			\$ 1,820	\$ 896	\$ 2,716	\$ 3,595
Total						\$ 52,993	\$ 21,534	\$ 74,527	\$ 140,531

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3**      **onal Details for Each Request Including All Facility Upgrades Required and Allocated Costs fo**      **pgrade**

Customer      Study Number  
 AEPM      AG2-2021-004

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	95551533	OKGE	CSWS	90	6/1/2022	6/1/2027	6/1/2022	6/1/2027	\$ 154,051	\$ -	\$ 195,282	\$ 1,069,301
									\$ 154,051	\$ -	\$ 195,282	\$ 1,069,301

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551533	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment Z2 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind Cost	Directly Assigned for Wind	Allocated E & C Cost	Total Revenue Requirements
95551533	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			\$ 59,850	\$ -	\$ 59,850	\$ 291,568
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			\$ 82,463	\$ 41,231	\$ 123,694	\$ 727,912
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012			\$ 11,738	\$ -	\$ 11,738	\$ 49,822
Total						\$ 154,051	\$ 41,231	\$ 195,282	\$ 1,069,301

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
 AEPM AG2-2021-005

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	95551550	WFEC	CSWS	40	6/1/2022	6/1/2027	6/1/2022	6/1/2027	\$ 58,617	\$ -	\$ 59,961	\$ 203,339
									\$ 58,617	\$ -	\$ 59,961	\$ 203,339

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551550	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment Z2 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total Revenue Requirements
95551550	Kingfisher Co Tap - Mathewson 345kV CKT 1	3/1/2018	3/1/2018			\$ 25,364	\$ -	\$ 25,364	\$ 33,856
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			\$ 25,554	\$ -	\$ 25,554	\$ 124,489
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			\$ 2,687	\$ 1,344	\$ 4,031	\$ 23,723
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012			\$ 5,012	\$ -	\$ 5,012	\$ 21,272
Total						\$ 58,617	\$ 1,344	\$ 59,961	\$ 203,339

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3**      **onal Details for Each Request Including All Facility Upgrades Required and Allocated Costs fo**      **Ipgrade**

Customer      Study Number  
 BEPM      AG2-2021-006

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
BEPM	95250509	WAUE	WAUE	28	6/1/2022	12/1/2041	6/1/2022	12/1/2041	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95250509	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
BRPS AG2-2021-007

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
BRPS	95551519	NPPD	NPPD	7	6/1/2022	6/1/2024	6/1/2022	6/1/2024	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551519	None					\$ -	\$ -	\$ -
						\$ -	\$ -	\$ -
					Total	\$ -	\$ -	\$ -



**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
KPP AG2-2021-009

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
KPP	95505123	WR	WR	5	1/1/2023	3/1/2037	1/1/2023	3/1/2037	\$ 1	\$ -	\$ 1	\$ 3
									\$ 1	\$ -	\$ 1	\$ 3

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95505123	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment Z2 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total Revenue Requirements
95505123	NEOSHO - NORTHEAST PARSONS 138KV CKT 1	6/1/2011	6/1/2011			\$ 1	\$ 3
Total						\$ 1	\$ 3

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3**      **onal Details for Each Request Including All Facility Upgrades Required and Allocated Costs fo**      **pgrade**

Customer      Study Number  
KPP      AG2-2021-010

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
KPP	95551602	WR	WR	1	1/1/2023	1/1/2033	1/1/2023	1/1/2033	\$ 0	\$ -	\$ 0	\$ 2
									\$ 0	\$ -	\$ 0	\$ 2

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551602	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment Z2 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total Revenue Requirements
95551602	COFFEYVILLE TAP - DEARING 138KV CKT 1 (WR) #2	6/9/2010	6/9/2010			\$ 0	\$ 1
	NEOSHO - NORTHEAST PARSONS 138KV CKT 1	6/1/2011	6/1/2011			\$ 0	\$ 1
Total						\$ 0	\$ 2

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
 NMAD AG2-2021-011

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
NMAD	95475952	AMRN	SPA	9	10/1/2022	10/1/2027	10/1/2022	10/1/2027	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95475952	None					\$ -	\$ -	\$ -
						\$ -	\$ -	\$ -
					Total	\$ -	\$ -	\$ -

**Table 3** Final Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Upgrade

Customer Study Number  
 NMAD AG2-2021-012

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
NMAD	95475749	SPA	SPA	5	10/1/2022	10/1/2027	10/1/2022	10/1/2027	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95475749	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
NRPT AG2-2021-013

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
NRPT	95341900	WAUE	SPC	150	7/1/2022	7/1/2042	10/1/2027	10/1/2047	\$ -	\$ 237,660,696	\$ 34,285,661	\$ 156,998,158
									\$ -	\$ 237,660,696	\$ 34,285,661	\$ 156,998,158

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95341900	Boundary Dam - Tande 230 kV new line (BEPC)	10/1/2027	10/1/2027			\$ 15,807,692	\$ 68,500,000	\$ 72,427,813
	Boundary Dam - Wheelock 230 kV new line (BEPC)	10/1/2027	10/1/2027			\$ 18,346,154	\$ 79,500,000	\$ 84,058,556
	SE Williston 115kV 12 MVAR capacitor bank	10/1/2029	10/1/2029			\$ 131,814	\$ 571,195	\$ 511,789
	<b>Total</b>					\$ 34,285,661	\$ 148,571,195	\$ 156,998,158

**Table 3** Annual Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Upgrade

Customer Study Number  
NRPT AG2-2021-014

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
NRPT	95341902	WAUE	SPC	250	10/1/2027	10/1/2047	10/1/2027	10/1/2047	\$ -	\$ 396,101,160	\$ 57,142,768	\$ 261,663,597
									\$ -	\$ 396,101,160	\$ 57,142,768	\$ 261,663,597

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95341902	Boundary Dam - Tande 230 kV new line (BEPC)	10/1/2027	10/1/2027			\$ 26,346,154	\$ 68,500,000	\$ 120,713,021
	Boundary Dam - Wheelock 230 kV new line (BEPC)	10/1/2027	10/1/2027			\$ 30,576,923	\$ 79,500,000	\$ 140,097,594
	SE Williston 115kV 12 MVAR capacitor bank	10/1/2029	10/1/2029			\$ 219,691	\$ 571,195	\$ 852,982
	<b>Total</b>					\$ 57,142,768	\$ 148,571,195	\$ 261,663,597

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
NRPT AG2-2021-015

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
NRPT	95341903	WAUE	SPC	250	10/1/2027	10/1/2047	10/1/2027	10/1/2047	\$ -	\$ 396,101,160	\$ 57,142,768	\$ 261,663,597
									\$ -	\$ 396,101,160	\$ 57,142,768	\$ 261,663,597

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95341903	Boundary Dam - Tande 230 kV new line (BEPC)	10/1/2027	10/1/2027			\$ 26,346,154	\$ 68,500,000	\$ 120,713,021
	Boundary Dam - Wheelock 230 kV new line (BEPC)	10/1/2027	10/1/2027			\$ 30,576,923	\$ 79,500,000	\$ 140,097,594
	SE Williston 115kV 12 MVAR capacitor bank	10/1/2029	10/1/2029			\$ 219,691	\$ 571,195	\$ 852,982
	<b>Total</b>					\$ 57,142,768	\$ 148,571,195	\$ 261,663,597

**Table 3** Annual Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Upgrade

Customer Study Number  
 OMPA AG2-2021-016

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
OMPA	95505814	WFEC	OKGE	120	6/1/2024	6/1/2039	6/1/2024	6/1/2039	\$ -	\$ -	\$ 1,939,003	\$ 4,172,103
									\$ -	\$ -	\$ 1,939,003	\$ 4,172,103

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95505814	None					\$ -	\$ -	\$ -
<b>Total</b>						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment 22 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total Revenue Requirements
95505814	FAIRFAX - PAWNEE 138KV CKT 1	6/30/2014	6/30/2014			\$ 83,864	\$ 145,343
	Gracemont 138kv line terminal addition	10/12/2012	10/12/2012			\$ 1,767	\$ 3,375
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			\$ 27,261	\$ 227,756
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			\$ 17,143	\$ 172,674
	Osage - Shidler 138kv	1/15/2014	1/15/2014			\$ 7,566	\$ 13,219
	Neosho - Riverton 161kv Line Rebuild (EMDE)	10/1/2023	10/1/2023			\$ 152,882	\$ 423,556
	Neosho - Riverton 161kv Line Rebuild (WERE)	10/1/2023	10/1/2023			\$ 21,785	\$ 53,932
	Pawnee 138 kv	6/30/2014	6/30/2014			\$ 24,426	\$ 42,332
	Shidler 138 kv	2/8/2014	2/8/2014			\$ 90,887	\$ 159,653
	Snyder 138kv (WFEC) - Kiowa County Addition (NU)	8/15/2019	8/15/2019			\$ 1,494,583	\$ 2,870,737
	Valliant 345 kv (AEP)	7/1/2012	7/1/2012			\$ 5,398	\$ 38,369
	WASHITA - GRACEMONT 138 KV CKT 2	10/12/2012	10/12/2012			\$ 11,442	\$ 21,157
<b>Total</b>						\$ 1,939,003	\$ 4,172,103

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.

**Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade**

Customer Study Number  
 PEC AG2-2021-017

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
PEC	95551985	WFEC	WFEC	29	6/1/2022	6/1/2027	6/1/2022	6/1/2027	\$ 179	\$ -	\$ 293,382	\$ 710,825
									\$ 179	\$ -	\$ 293,382	\$ 710,825

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
95551985	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following Network Upgrades in accordance with Attachment Z2 of the SPP OATT.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total Revenue Requirements
95551985	BROWN - EXPLORER TAP 138KV CKT 1	6/1/2006	6/1/2006			\$ 179	\$ -	\$ 179	\$ 1,462
	Gracemont 138kV line terminal addition	10/12/2012	10/12/2012			\$ -	\$ 4,708	\$ 4,708	\$ 7,232
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			\$ -	\$ 9,287	\$ 9,287	\$ 45,244
	HUGO 345/138KV TRANSFORMER CKT 1	7/1/2012	7/1/2012			\$ -	\$ 26,326	\$ 26,326	\$ 127,339
	Lake Creek - Lone Wolf 69KV CKT 1 Current Transformers	8/8/2015	8/8/2015			\$ -	\$ 164,152	\$ 164,152	\$ 222,707
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			\$ -	\$ 39,269	\$ 39,269	\$ 231,090
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012			\$ -	\$ 1,821	\$ 1,821	\$ 7,731
	WASHITA - GRACEMONT 138 KV CKT 2	10/12/2012	10/12/2012			\$ -	\$ 30,415	\$ 30,415	\$ 45,228
	Woodward EHV 138kV Phase Shifting Transformer circuit #1	8/2/2017	8/2/2017			\$ -	\$ 17,223	\$ 17,223	\$ 22,792
Total						\$ 179	\$ 293,202	\$ 293,382	\$ 710,825

\*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.



Table 3 - Additional Details for Each Request Including All Facility Upgrades Required and Allocated Costs for Each Upgrade

Requests with Study Parameters Exceeded

Customer Study Number  
WRGS AG2-2021-019

Customer	Reservation	POB	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
WRGS	94153377	CSWS	ERCOTE	50	7/1/2022	9/1/2023	12/1/2025	2/1/2027	\$ -	\$ 4,221,175	\$ -	\$ -
									\$ -	\$ 4,221,175	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
94153377	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Third Party Limitations

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
94153377	LeBrock 345/18 kV Transformer #4		7/1/2022	12/1/2025		\$ 12,000,000	\$ 12,000,000
Total						\$ 12,000,000	\$ 12,000,000

\*Estimated cost allocation as a percentage of total cost is shown for third-party limitations when costs have not yet been established by the third-party.

**Table 4 - upgrade Requirements and Solutions Needed to Provide Transmission Service for the Aggregate Study**

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost
BEPC	Boundary Dam - Tande 230 kV new line (BEPC)	Build new 60 mile 230 kV line from Tande to Boundary Dam. This upgrade is the BEPC portion of the new line, and does not include the required SPC portion of any new line or SPC terminations.	10/1/2027	10/1/2027	\$68,500,000
BEPC	Boundary Dam - Wheelock 230 kV new line (BEPC)	Build new 70 mile 230 kV line from Wheelock to Boundary Dam. This upgrade is the BEPC portion of the new line, and does not include the required SPC portion of any new line or SPC terminations.	10/1/2027	10/1/2027	\$79,500,000
BEPC	SE Williston 115kV 12 MVAR capacitor bank	Add new 12 MVAR capacitor bank at SE Williston 115 kV	10/1/2029	10/1/2029	\$571,195

**Table 4 - Upgrade Requirements and Solutions Needed to Provide Transmission Service for the Aggregate Study**

Network Upgrades requiring credits per Attachment Z2 of the SPP OATT.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Total Gross CPO Allocation
AEP	Shidler 138 kV	Replace existing 138kV CB at Shidler substation with 4 breaker ring. Provide Terminal for KAMO's 138kV line from Remington Station. Replace ground switch and circuit switcher, Move terminal for OG&E Osage 138kV line. Replace relay panels for OGE Osage and	2/8/2014	2/8/2014	\$ 159,653
AEP	Valliant 345 kV (AEP)	Valliant 345 KV line terminal	7/1/2012	7/1/2012	\$ 245,879
EDE	Neosho - Riverton 161kV Line Rebuild (EMDE)	Rebuild 28.41 miles of 161kV line from Neosho to Riverton and upgrade any necessary terminal equipment	10/1/2023	10/1/2023	\$ 474,045
EDE	SUB 110 - ORONOGO JCT. - SUB 452 - RIVERTON 161KV CKT 1	Reconductor Oronogo 59467 to Riverton 59469 with Bundled 556 ACSR	6/1/2011	6/1/2011	\$ 1,241
GRDA	FAIRFAX - PAWNEE 138KV CKT 1	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.	6/30/2014	6/30/2014	\$ 145,343
GRDA	Pawnee 138 kV	New three breaker ring bus on the Cleveland-Stillwater 138kV line near Pawnee. Station will have terminals to Cleveland, Stillwater, and Fairfax.	6/30/2014	6/30/2014	\$ 42,332
ITCGP	HUGO - VALLIANT 345KV CKT 1	New 19 miles 345 KV	7/1/2012	7/1/2012	\$ 1,442,153
ITCGP	HUGO 345/138KV TRANSFORMER CKT 1	New 345/138 kv Auto	7/1/2012	7/1/2012	\$ 127,339
ITCGP	Ironwood 345 kV Substation Ford Co Addition	Add one (1) 345kV line terminal including two (2) 345kV circuit breakers, four (4) 345kV disconnect switches, and associated structural steel, foundations, and associated miscellaneous equipment. Contribution by Interconnection Customer towards constructi	12/17/2014	12/17/2014	\$ 746,078
KCPL	LACYGNE - WEST GARDNER 345KV CKT 1	KCPL Sponsored Project to Reconductor Line to be In-Service by 6/1/2006	6/1/2006	6/1/2006	\$ 7,355
MIDW	Rice - Lyons 115 kV Ckt 1	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.	4/1/2013	4/1/2013	\$ 198,644

**Table 4 - upgrade Requirements and Solutions Needed to Provide Transmission Service for the Aggregate Study**

MIDW	Wheatland 115 kV #2	Install metering equipment at the Wheatland 115 kV substation.	12/31/2012	12/31/2012	\$ 56,944
MKEC	FLATRDG3 - HARPER 138KV CKT 1	Rebuild 24.15 mile line	12/1/2009	6/1/2013	\$ 145,529
MKEC	North Ft. Dodge - Spearville 115kV Ckt 2	Build approximately 20 mile 115 kV line	5/1/2015	5/1/2015	\$ 80,851
MKEC	Spearville 345/115 kV Transformer CKT 1	Spearville Substation - Add 345/115kV autotransformer and 345kV and 115kV terminal positions for autotransformer.	5/1/2015	5/1/2015	\$ 134,493
OGE	BROWN - EXPLORER TAP 138KV CKT 1	Upgrade terminal equipment.	6/1/2006	6/1/2006	\$ 1,462
OGE	Cleo Corner - Cleo Plant Tap 138kV Ckt 1	Change current transformers tap setting and testing.	3/11/2021	3/11/2021	\$ 16,782
OGE	Cleo Corner 138kV Major County Addition (NU)	Construct four (4) 2000 continuous ampacity breakers, control panel replacement, line relaying, disconnect switches, structures, foundations, conductors, insulators, and all other associated work and materials. Reroute transmission line to the south to open up the north terminal.	10/1/2020	10/1/2020	\$ 600,565
OGE	Kingfisher Co Tap - Mathewson 345kV CKT 1	Replace terminal equipment to achieve conductor limit	3/1/2018	3/1/2018	\$ 88,094
OGE	Gracemont 138kV line terminal addition	138kV line terminal at Gracemont substation, including breaker, line relaying, disconnect switches and associated equipment, dead end structures, revenue metering with CT's and PT's.	10/12/2012	10/12/2012	\$ 10,607
OGE	NORTHWEST - WOODWARD 345KV CKT 1	Build 345 kV line	1/1/2010	1/1/2010	\$ 3,573,779
OGE	Osage - Shidler 138kV	Osage Substation: Replace Shidler 138kV line terminal primary and redundant relaying with SEL uProcessor based relays, install 3-138kV PTs, Install 1-138kV CB, Install metering, Install 2000A line Trap	1/15/2014	1/15/2014	\$ 13,219
OGE	Woodward EHV 138kV Phase Shifting Transformer circuit #1	Install one (1) 138 kV phase shifting transformer along with upgrading relay, protective, and metering equipment, and all associated and miscellaneous materials.	8/2/2017	8/2/2017	\$ 103,834
SPS	Power System Stabilizers in SPS	Install Power System Stabilizers (PSS) at Tolk (Units: 1,2) and Jones (Units: 1,2,3).	11/30/2014	11/30/2014	\$ 437
WR	COFFEYVILLE TAP - DEARING 138KV CKT 1 (WR) #2	Replace Disconnect Switches, Wavetrap, Breaker, Jumpers with a minimum 2000 amp emergency rating equipment	6/9/2010	6/9/2010	\$ 1
WR	NEOSHO - NORTHEAST PARSONS 138KV CKT 1	Replace bus and Jumpers at NE Parsons 138 kV substation	6/1/2011	6/1/2011	\$ 5
WR	Neosho - Riverton 161kV Line Rebuild (WERE)	Rebuild 2.44 miles of Neosho-Riverton 161kV line using bundled 1590 Lapwing ACSR and OPGW. Remove the wavetrap.	10/1/2023	10/1/2023	\$ 60,358
WFEC	Lake Creek - Lone Wolf 69kV Ckt 1 Current Transformers	Replace current transformers at Lake Creek and Lone Wolf substation	8/8/2015	8/8/2015	\$ 222,707
WFEC	Snyder 138kV (WFEC) - Kiowa County Addition (NU)	Install one (1) new line terminal, one (1) 2000A circuit breaker, line relaying, disconnect switches, additional 4" IPS aluminum buss, and associated equipment.	8/15/2019	8/15/2019	\$ 2,870,737
WFEC	WASHITA - GRACEMONT 138 KV CKT 2	Build Washita - Gracemont 138 kV ckt 2 (approximately 7 miles). Add line terminal at Washita and procure right of way.	10/12/2012	10/12/2012	\$ 66,385

\*Note: CPOs may be calculated based on upgrade(s) currently in study and/or estimated upgrade cost(s), which may be subject to change.

**Table 5 - Third Party Facility Constraints**

Transmission Owner	UpgradeName	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost
	None				

## Table 6 - Reserved

Reserved

**Table 7- Service Upgrade Cost Allocation per Request**

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
Boundary Dam - Tande 230 kV new line (BEPC)	NRPT	AG2-2021-013	95341900	23.08%	\$15,807,692
Boundary Dam - Tande 230 kV new line (BEPC)	NRPT	AG2-2021-014	95341902	38.46%	\$26,346,154
Boundary Dam - Tande 230 kV new line (BEPC)	NRPT	AG2-2021-015	95341903	38.46%	\$26,346,154
				<b>Total:</b>	<b>\$68,500,000</b>

**Table - Service Upgrade Cost Allocation per Reservation**

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
Boundary Dam - Wheelock 230 kV new line (BEPC)	NRPT	AG2-2021-013	95341900	23.08%	\$18,346,154
Boundary Dam - Wheelock 230 kV new line (BEPC)	NRPT	AG2-2021-014	95341902	38.46%	\$30,576,923
Boundary Dam - Wheelock 230 kV new line (BEPC)	NRPT	AG2-2021-015	95341903	38.46%	\$30,576,923
				<b>Total:</b>	<b>\$79,500,000</b>

**Table 7- Service Upgrade Cost Allocation per Request**

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
SE Williston 115kV 12 MVAR capacitor bank	NRPT	AG2-2021-013	95341900	23.08%	\$131,814
SE Williston 115kV 12 MVAR capacitor bank	NRPT	AG2-2021-014	95341902	38.46%	\$219,691
SE Williston 115kV 12 MVAR capacitor bank	NRPT	AG2-2021-015	95341903	38.46%	\$219,691
				<b>Total:</b>	\$571,195