AGGREGATE FACILITIES STUDY

SPP-2018-AG1-AFS-1

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SPP Engineering, SPP Transmission Services

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
9/4/2018	SPP	Original	

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EXECUTIVE SUMMARY

This study report provides preliminary results for Southwest Power Pool, Inc. (SPP) Aggregate Transmission Service Study (ATSS) SPP-2018-AG1. Pursuant to Attachment Z1 of the SPP Open Access Transmission Tariff (OATT), 2,915 MW of long-term transmission service requests have been studied in this Aggregate Facilities Study (AFS).

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.

Transmission Customers (Customer) requesting service in this study specified five parameters under which they agreed to confirm service. The five parameters are:

1. Directly Assigned Upgrade Cost (E&C and Credit Payment Obligation)
2. Third-Party Upgrade Cost
3. Latest Deferred Start Date
4. Interim Re-dispatch Acceptance
5. Letter of Credit Amount

The report indicates for each request whether any of the five parameters were exceeded. The specific parameters defined by the Customer are kept confidential and are not included in this report.

SPP will tender an **AFS – Appendix 1 – Update** form on September 4, 2018 to the Customers with a request(s) that have one or more study parameters that were not met. This will open a 5-Business Day window for Customer response. To remain in the ATSS, SPP must receive from the Customer by September 11, 2018, the AFS – Appendix 1 – Update form with the adjusted parameters that were not met. The AFS Appendix 1 – Update will indicate the parameters that were not met and need to be adjusted by the Customer. If the Customer does not increase the exceeded parameter or does not respond within five Business Days, the request will be removed from study. There is no action required on OASIS by the Customer.

Following the end of the response period, SPP will conclude the study using the revised parameters. Any requests that cannot be provided under the parameters specified will be removed from study and the Customer may re-submit the request during the next open season. SPP will post a final study report within 165 days of the close of the open season which will detail the results for all requests, including those that are removed from study. At the conclusion of the ATSS, Service Agreements for each request for service will be tendered identifying the terms and conditions of the confirmed service.

All allocated revenue requirements for facility upgrades are assigned to the Customer in the AFS data tables. Potential base plan funding allowable is contingent upon validation of designated resources meeting Attachment J, Section III B criteria.

INTRODUCTION

All requests for long-term transmission service with a Completed Application received before June 1, 2018 have been included in this ATSS.

The results of the AFS are detailed in Tables 1 through 7. Detailed results depict individual upgrade costs by study and potential base plan allowances determined by Attachments J and Z1 of the SPP OATT.

To understand the extent to which Base Plan Upgrades may be applied to both Point-to-Point (PTP) and Network Integration Transmission Services (NITS), it is necessary to highlight the definition of Designated Resource. Per Section 1 of the SPP OATT, a Designated Resource is:

> "Any designated generation resource owned, purchased or leased by a Transmission Customer to serve load in the SPP Region. Designated Resources do not include any resource, or any portion thereof, that is committed for sale to third parties or otherwise cannot be called upon to meet the Transmission Customer's load on a non-interruptible basis."

Both NITS and PTP service have potential for base plan funding if the conditions for classifying upgrades associated with designated resources as Base Plan Upgrades as defined in Section III.B of Attachment J are met.

Pursuant to Attachment J, Section III.B of the SPP OATT, the Customer must provide SPP information necessary to verify that the new or changed Designated Resource meets the following conditions:

1. Customer's commitment to the requested new or changed Designated Resource must have duration of at least five years.
2. During the first year the Designated Resource is planned to be used by the Customer, the accredited capacity of the Customer's existing Designated Resources plus the lesser of:
    a. The planned maximum net dependable capacity applicable to the Customer or
    b. The requested capacity; shall not exceed 125% of the Customer's projected system peak responsibility determined pursuant to SPP Criteria 2.

According to Attachment Z1 Section V.A, PTP Customers pay the higher of the monthly transmission access charge (base rate) or the monthly revenue requirement associated with the directly assigned portion of the Service Upgrade, if any.

NITS Customers pay the total monthly transmission access charges and the monthly revenue requirement associated with the directly assigned portion of the Service Upgrade, if any.

Customers paying for a directly assigned Network Upgrade shall receive credits for new transmission service using the facility as specified in Attachment Z2.

Facilities identified as limiting the requested Transmission Service have been reviewed to determine the required in-service date of each Network Upgrade. Both previously assigned facilities and the facilities assigned to this request for Transmission Service were evaluated.

In some instances, due to lead times for engineering and construction, Network Upgrades may not be available when required to accommodate a request for Transmission Service. When this occurs, the ATC with available Network Upgrades will be less than the capacity requested during either a portion of or all of the requested reservation period. The ATC may be limited by expansion plan projects or Customer assigned upgrades.

Some constraints identified in the AFS were not assigned to the Customer because SPP determined that upgrades are not required due to various reasons or the Transmission Owner has construction plans pending for these upgrades. These facilities are listed by reservation in Table 3. Table 6 lists possible generation pairs that could be used to allow start of service prior to completion of assigned Network Upgrades by utilizing interim re-dispatch. Table 7 lists the costs allocated per request for each Service Upgrade assigned in this AFS.

By taking the transmission service subject to interim redispatch, the Customer agrees to any limitations to Auction Revenue Rights that may result. In the absence of implementation of interim redispatch as requested by SPP for Customer transactions resulting in overloads on limiting facilities, SPP may curtail the Customer’s schedule.

FINANCIAL ANALYSIS

The AFS utilizes the allocated Customer's E&C cost in a present worth analysis to determine the monthly levelized revenue requirement of each facility upgrade over the term of the reservation. In some cases, Network Upgrades cannot be completed within the requested reservation period, thus deferred reservation periods will be utilized in the present worth analysis. If the Customer chose Option 5, Use of Interim Redispatch, in Appendix 1 of the Aggregate Facilities Study Agreement, the present worth analysis of revenue requirements will be based on the deferred term with redispatch in the subsequent AFS. The upgrade levelized revenue requirement includes interest, depreciation, and carrying costs.

Each request for Transmission Service is evaluated independently as the cost associated with each Network Upgrade is assigned to a request. When facilities are upgraded throughout the reservation period, the Customer will pay the total E&C costs and other annual operating costs associated with the new facilities.

In the event that the engineering and construction of a previously assigned Network Upgrade may be accelerated with no additional upgrades to accommodate a new request for Transmission Service, the levelized present worth of only the incremental expenses through the reservation period of the new request, excluding depreciation, shall be assigned to the new request. These incremental expenses, excluding depreciation, include:

1. The levelized difference in present worth of the engineering and construction expenses given the change in date to complete construction to account for additional interest expense and reduced engineering and construction expense due to inflation,
2. The levelized present worth of all expediting fees, and
3. The levelized present worth of the incremental annual carrying charges, excluding depreciation and interest, during the new reservation period taking into account both:
    a. The reservation in which the project was originally assigned, and
    b. A reservation, if any, in which the project was previously accelerated.

In the case of a Base Plan Upgrade being deferred or displaced by an earlier in service date for a requested upgrade, the methodology for achievable base plan avoided revenue requirements shall be determined per Attachment J, Section VII.A or Section VII.B, respectively. A deferred Base Plan Upgrade is defined as a different requested Network Upgrade needed at an earlier date that negates the need for the initial Base Plan Upgrade within the planning horizon. A displaced Base Plan Upgrade is defined as the same Network Upgrade being displaced by a requested upgrade needed at an earlier date.

A 40-year service life assumption is utilized for Base Plan funded projects, unless another assumption is provided by the Transmission Owner. A present worth analysis of revenue requirements on a common year basis between the Base Plan and Requested Upgrades was performed to determine avoided Base Plan revenue requirements due to the displacement or deferral of the Base Plan Upgrade by the Requested Upgrade. The difference in present worth between the Base Plan and Requested Upgrades is assigned to the transmission requests impacting this upgrade based on the displacement or deferral.

THIRD-PARTY FACILITIES

For third-party facilities listed in Table 3 and Table 5, the Customer is responsible for funding the necessary upgrades of these facilities per Section 21.1 of SPP's OATT. In this AFS, third-party facilities were identified. Total E&C cost estimates for required third-party facility upgrades are applicable. SPP will undertake reasonable efforts to assist the Customer in making arrangements for necessary engineering, permitting, and construction of the third-party facilities. Third-party facility upgrade E&C cost estimates are not utilized to determine the present worth value of levelized revenue requirements for SPP system Network Upgrades.

All modeled facilities within the SPP system were monitored during the development of this study, as well as certain facilities in first-tier neighboring systems. Third-party facilities must be upgraded when it is determined that they are overloaded while accommodating the requested Transmission Service. An agreement between the Customer and third party owner detailing the mitigation of the third party impact must be provided to SPP prior to tendering of a Transmission Service Agreement. These facilities also include those owned by members of SPP who have not placed their facilities under SPP's OATT. Upgrades on the Southwestern Power Administration (SWPA) network requires prepayment of the upgrade cost prior to construction of the upgrade.

Third-party facilities are evaluated for only those requests whose load sinks within the SPP footprint. The Customer must arrange with the applicable Transmission Providers for study of third party facilities for service that sinks outside the SPP footprint.

STUDY METHODOLOGY

DESCRIPTION

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

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

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

A 3% transfer distribution factor (TDF) cutoff was applied to all SPP control area facilities. For first tier non-SPP control area facilities, a 3% TDF cutoff was applied to AECI, AMRN (Ameren), and ENTR (Entergy) control areas. For voltage monitoring, a 0.02 per unit change in voltage must occur due to the transfer or modeling upgrades to be considered a valid limit to the transfer.

MODEL DEVELOPMENT

SPP used the following 2018 Integrated Transmission Planning (ITP) models, used in the 2018 ITP Near-Term, to study the aggregate transfers over a variety of requested service periods and to determine the impact of the requested service on the transmission system:

- 2018/19 Winter Peak (18WP)
- 2019 Summer Peak (19SP)
- 2019/20 Winter Peak (19WP)
- 2022 Summer Peak (22SP)
- 2022/23 Winter Peak (22WP)
- 2027 Summer Peak (27SP)
- 2027/28 Winter Peak (27WP)

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

The chosen base case models were modified to reflect the current modeling information. One group of requests was developed from the aggregate to model the requested service. From the seasonal models, two system scenarios were developed. Scenario 0 includes projected usage of transmission included in the SPP 2018 ITP Cases. Scenario 5 includes transmission service not already included in the SPP 2018 ITP Cases.

TRANSMISSION REQUEST MODELING

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

TRANSFER ANALYSIS

Using the selected cases both with and without the requested transfers modeled, the PSS/E Activity ACCC was run on the cases and compared to determine the facility overloads caused or impacted by the transfer. TDF cutoffs (SPP and 1st-Tier) and voltage threshold (0.02 change) were applied to determine the impacted facilities. The PSS/E options chosen to conduct the analysis can be found in Appendix A.

CURTAILMENT AND REDISPATCH EVALUATION

During any period in which SPP determines that a transmission constraint exists on and may impair Transmission System reliability, SPP will take whatever actions are reasonably necessary to maintain reliability. If SPP determines Transmission System reliability can be maintained by redispatching resources, it will evaluate the interim redispatch of units to provide service prior to completion of any assigned Network Upgrades. Any redispatch may not unduly discriminate between the Transmission Owners' use of the Transmission System on behalf of their Native Load Customers and any Customer's use of the Transmission System to serve its designated load. Redispatch was evaluated to provide only interim service during the time frame prior to completion of any assigned Network Upgrades.

SPP determined potential relief pairs to relieve the incremental MW impact on limiting facilities as identified in Table 6. Using the selected cases where the limiting facilities were identified, potential incremental and decremental units were identified by determining the generation amount available for increasing and decreasing from the units' generation amount, maximum generation amount, and minimum generation amount. If the incremental or decremental amount was greater than 1 MW, the unit was considered as a potential incremental or decremental unit.

Generation shift factors were calculated for the potential incremental and decremental units using the Siemens power flow analysis tool, Managing and Utilizing System Transmission (MUST). Relief pairs from the generation shift factors for the incremental and decremental units with a TDF greater than 3% on the limiting constraint were determined from the incremental units with the lowest generation shift factors and decremental units with highest generation shift factors. If the aggregate redispatch amount for the potential relief pair was determined to be three times greater than the lower of the increment or decrement, then the pair was determined not to be feasible and is not included. Customers can request SPP to provide additional relief pairs beyond those determined. The potential relief pairs were not evaluated to determine impacts on limiting facilities in the SPP and first tier systems.

The AFS analyzes the most probable contingencies and does not account for every situation that may be encountered in real-time operation. Because of this, it is possible that the Customer may be curtailed under certain system conditions to allow system operators to maintain the reliability of the transmission network.

STUDY RESULTS

STUDY ANALYSIS RESULTS

Tables 1 through 7 contain the AFS steady-state analysis results.

TABLE 1

Table 1 identifies the participating long-term Transmission Service requests included in the AFS. This table lists deferred start and stop dates both with and without redispatch (based on Customer selection of redispatch if available) and the minimum annual allocated ATC without upgrades, the season of first impact, and indicates which requests, if any, had parameters that were exceeded.

TABLE 2

Table 2 identifies total E&C cost allocated to each Customer, letter of credit requirements, third party E&C cost assignments, potential base plan E&C funding (lower of allocated E&C or Attachment J Section III B criteria), PTP base rate charge, total revenue requirements for assigned upgrades with consideration of potential base plan funding, final total cost allocation to the Customer, and directly assigned upgrade cost to the Customer. In addition, Table 2 identifies any SWPA upgrade costs that require prepayment in addition to other allocated costs.

TABLE 3

Table 3 provides additional details for each request including all assigned facility upgrades required, allocated E&C costs, allocated revenue requirements for upgrades, upgrades not assigned to the Customer but required for service to be confirmed, credits to be paid for previously assigned AFS or Generation Interconnection Network Upgrades, and any required third party upgrades.

TABLE 4

Table 4 lists all upgrade requirements with associated solutions needed to provide Transmission Service for the AFS, earliest date upgrade is required (DUN), estimated date the upgrade will be completed and in service (EOC), and estimated E&C cost.

TABLE 5

Table 5 lists identified third-party constrained facilities.

TABLE 6

Table 6 identifies potential redispatch pairs available to relieve the aggregate impacts on identified constraints to prevent deferral of start of service. MW amounts listed for redispatch are maximum values observed in a long term study and may only be available in a reduced amount or unavailable at any given time.

TABLE 7

Table 7 lists costs allocated per request for Service Upgrades assigned in this AFS.

BASE PLAN UPGRADES

The potential base plan funding allowable is contingent on meeting each of the conditions for classifying upgrades associated with designated resources as Base Plan Upgrades as defined in Section III.B of Attachment J. If the additional capacity of the new or changed Designated Resource exceeds the 125% resource to load forecast for the year of start of service, the requested resource is not eligible for base plan funding of required Network Upgrades and the full cost of the upgrades is assignable to the Customer.

If the request is for wind generation, the total requested capacity of wind generation plus existing wind generation capacity shall not exceed 20% of the customer's projected system peak responsibility in the first year the Designated Resource is planned to be used by the customer. If the five-year term and 125% resource to load criteria are met, (as well as the 20% wind resource to load criteria for wind generation requests) the requested capacity is multiplied by $180,000 to determine the potential base plan funding allowable. The maximum potential base plan funding allowable may be less than the potential base plan funding allowable, due to the E&C cost allocated to the customer being lower than the potential amount allowable to the Customer. The Customer is responsible for any assigned upgrade costs in excess of potential base plan E&C funding allowable. Network Upgrades required for wind generation requests located in a zone other than the Customer's Point of Delivery (POD) shall be allocated as 67% base plan region-wide charge and 33% directly assigned to the Customer.

Regarding application of base plan funding for PTP requests, if PTP base rate exceeds upgrade revenue requirements without taking into effect the reduction of revenue requirements by potential base plan funding, then the base rate revenue pays back the Transmission Owner for upgrades and no base plan funding is applicable as the access charge must be paid as it is the higher of "OR" pricing.

However, if initially the upgrade revenue requirements exceed the PTP base rate, then potential base plan funding would be applicable. The test of the higher of "OR" pricing would then be made against the remaining assignable revenue requirements versus PTP base rate. Examples are as follows:

Example A:

E&C allocated for upgrades is $74 million with revenue requirements of $140 million and PTP base rate of $101 million. Potential base plan funding is $47 million, with the difference of $27 million E&C assignable to the Customer. If the revenue requirements for the assignable portion is $54 million and the PTP base rate is $101 million, the Customer will pay the higher amount (so-called "or pricing") of $101 million base rate of which $54 million revenue requirements will be paid back to the Transmission Owners for the upgrades, and the remaining revenue requirements of $86 million ($140 million less $54 million) will be paid by base plan funding.

Example B:

E&C allocated for upgrades is $74 million with revenue requirements of $140 million and PTP base rate of $101 million. Potential base plan funding is $10 million with the difference of $64 million

E&C assignable to the Customer. If the revenue requirements for this assignable portion is $128 million and the PTP base rate is $101 million, the Customer will pay the higher amount of $128 million revenue requirements to be paid back to the Transmission Owners, and the remaining revenue requirements of $12 million ($140 million less $128 million) will be paid by base plan funding.

Example C:

E&C allocated for upgrades is $25 million with revenue requirements of $50 million and PTP base rate of $101 million. Potential base plan funding is $10 million. Base plan funding is not applicable as the higher amount of PTP base rate of $101 million must be paid and the $50 million revenue requirements will be paid from this.

The 125% resource to load determination is performed on a per-request basis and is not based on a total of Designated Resource requests per Customer.

STUDY DEFINITIONS

- The date upgrade needed date (DUN) is the earliest date the upgrade is required to alleviate a constraint considering all requests.
- End of construction (EOC) is the estimated date the upgrade will be completed and in service.
- Total engineering and construction cost (E&C) is the upgrade solution cost as determined by the Transmission Owner.
- The Transmission Customer's allocation of the E&C cost is based on the request (1) having an impact of at least 3% on the limiting element, and (2) having a positive impact on the upgraded facility.
- Minimum ATC is the portion of the requested capacity that can be accommodated without upgrading facilities.
- Annual ATC allocated to the Transmission Customer is determined by the least amount of allocated seasonal ATC within each year of a reservation period.

CONCLUSION

The results of the AFS show that limiting constraints exist in many areas of the regional Transmission System. Due to these constraints, Transmission Service cannot be granted unless noted in Table 3.

SPP will tender an "Appendix 1 – Adjustment" form on September 4, 2018. This will open a 5 business day window for Customer response. To remain in the ATSS, SPP must receive from the Customer by September 11, 2018, the updated and signed AFS – Appendix 1 – Update form. The AFS – Appendix 1 – Update will indicate the parameters that were not met and need to be adjusted by the Customer. If the Customer does not increase the exceeded parameter or does not respond within five Business Days, the request will be removed from study. There is no action required on OASIS by the Customer.

APPENDIX A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASE SETTINGS:

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

ACCC CASE SETTINGS:

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

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)	Deferred Stop Date without interim redispatch	Start Date with interim redispatch	Stop Date with interim redispatch	Minimum Allocated ATC (MW) within reservation period	Season of Minimum Allocated ATC within reservation period	[5]One or More Study Parameters Exceeded
AEPM	AG1-2018-001	87008991	CSWS	CSWS	300	6/1/2022	6/1/2027	6/1/2022	6/1/2027	Note 4	Note 4	0	22SP	YES
BEPM	AG1-2018-002	86691232	RCEAST	WAUE	70	10/1/2020	4/1/2028	6/1/2023	12/1/2030	Note 4	Note 4	0	22SP	YES
BEPM	AG1-2018-003	86883893	WAUE	WAUE	200	10/1/2019	12/1/2049	10/1/2019	12/1/2049	Note 4	Note 4	0	22SP	NO
BEPM	AG1-2018-004	86988042	SCSE	WAUE	50	10/1/2020	4/1/2028	10/1/2020	4/1/2028	Note 4	Note 4	0	22SP	NO
BEPM	AG1-2018-005	86988317	SCSE	WAUE	50	10/1/2020	4/1/2028	6/1/2023	12/1/2030	Note 4	Note 4	0	22SP	YES
BPWN	AG1-2018-006	87022977	WAUE	NPPD	2	1/1/2019	1/1/2024	1/1/2019	1/1/2024	1/1/2019	1/1/2024	0	19SP	YES
BPWN	AG1-2018-007	87023394	NPPD	NPPD	1	1/1/2019	1/1/2031	1/1/2019	1/1/2031	1/1/2019	1/1/2031	0	19SP	YES
BPWN	AG1-2018-008	87024184	LES	NPPD	18	1/1/2019	1/1/2024	1/1/2019	1/1/2024	1/1/2019	1/1/2024	0	19SP	NO
BPWN	AG1-2018-009	87024232	LES	NPPD	25	1/1/2019	1/1/2024	1/1/2019	1/1/2024	1/1/2019	1/1/2024	0	19SP	NO
BRPS	AG1-2018-010	87015320	CSWS	NPPD	14	6/1/2021	6/1/2025	6/1/2021	6/1/2025	6/1/2021	6/1/2025	0	22SP	YES
DCT	AG1-2018-011	86527842	CSWS	ERCOTE	100	7/1/2019	9/1/2020	6/1/2021	8/1/2022	Note 4	Note 4	0	22SP	YES
DCT	AG1-2018-012	86527850	CSWS	ERCOTE	200	7/1/2019	9/1/2020	6/1/2021	8/1/2022	Note 4	Note 4	0	22SP	YES
DCT	AG1-2018-013	86527853	CSWS	ERCOTE	150	7/1/2019	9/1/2020	6/1/2021	8/1/2022	Note 4	Note 4	0	22SP	YES
DCT	AG1-2018-014	86765500	CSWS	ERCOTE	500	6/1/2019	9/1/2020	6/1/2023	9/1/2024	Note 4	Note 4	0	19SP	YES
ETCT	AG1-2018-015	87021360	OKGE	CSWS	23	6/1/2019	10/1/2040	6/1/2019	10/1/2040	6/1/2019	10/1/2040	0	19SP	YES
ETEC	AG1-2018-016	87021043	OKGE	CSWS	76	6/1/2019	10/1/2040	6/1/2019	10/1/2040	6/1/2019	10/1/2040	0	19SP	YES
HCPD	AG1-2018-017	86925309	NPPD	NPPD	9	1/1/2019	1/1/2022	1/1/2019	1/1/2022	1/1/2019	1/1/2022	0	19SP	YES
HCPD	AG1-2018-018	86925329	NPPD	NPPD	1	1/1/2019	1/1/2029	1/1/2019	1/1/2029	1/1/2019	1/1/2029	0	19SP	NO
HCPD	AG1-2018-019	86925339	NPPD	NPPD	14	1/1/2019	1/1/2029	1/1/2019	1/1/2029	1/1/2019	1/1/2029	0	19SP	NO
KMEA	AG1-2018-020	86972522	NPPD	SECI	1	5/1/2019	10/1/2054	5/1/2019	10/1/2054	5/1/2019	10/1/2054	0	19SP	NO
MCPI	AG1-2018-021	86527657	CSWS	ERCOTN	70	7/1/2019	9/1/2020	6/1/2021	8/1/2022	Note 4	Note 4	0	22SP	YES
MCPI	AG1-2018-022	86527679	CSWS	ERCOTN	50	7/1/2019	9/1/2020	6/1/2021	8/1/2022	Note 4	Note 4	0	22SP	YES
MCPI	AG1-2018-023	86527696	CSWS	ERCOTN	100	7/1/2019	9/1/2020	6/1/2021	8/1/2022	Note 4	Note 4	0	22SP	YES
MCPI	AG1-2018-024	86638341	WFEC	ERCOTN	100	7/1/2019	9/1/2020	6/1/2023	8/1/2024	Note 4	Note 4	0	22SP	YES
MCPI	AG1-2018-025	86638345	WFEC	ERCOTN	120	7/1/2019	9/1/2020	6/1/2023	8/1/2024	Note 4	Note 4	0	22SP	YES
NWPS	AG1-2018-026	86605281	WAUE	WAUE	20	12/1/2018	1/1/2039	12/1/2018	1/1/2039	12/1/2018	1/1/2039	0	19SP	YES
NWPS	AG1-2018-027	86605298	WAUE	WAUE	20	12/1/2018	1/1/2039	12/1/2018	1/1/2039	12/1/2018	1/1/2039	0	19SP	YES
OPPM	AG1-2018-028	86755780	LES	OPPD	50	6/1/2020	6/1/2025	6/1/2020	6/1/2025	6/1/2020	6/1/2025	0	22SP	NO
OPPM	AG1-2018-029	86755822	LES	OPPD	61	6/1/2020	6/1/2025	6/1/2020	6/1/2025	6/1/2020	6/1/2025	0	22SP	NO
REMC	AG1-2018-030	86527874	CSWS	ERCOTE	100	7/1/2019	9/1/2020	6/1/2023	8/1/2024	Note 4	Note 4	0	22SP	YES
SPSM	AG1-2018-031	86876399	SPS	SPS	80	12/1/2018	12/1/2048	12/1/2018	12/1/2048	Note 4	Note 4	0	19SP	YES
SPSM	AG1-2018-032	86876404	SPS	SPS	150	12/1/2018	12/1/2048	12/1/2018	12/1/2048	Note 4	Note 4	0	19SP	YES
SSCN	AG1-2018-033	87023553	LES	NPPD	5	1/1/2019	1/1/2021	1/1/2019	1/1/2021	1/1/2019	1/1/2021	0	19SP	YES
SSCN	AG1-2018-034	87023685	LES	NPPD	15	1/1/2019	1/1/2024	1/1/2019	1/1/2024	1/1/2019	1/1/2024	0	19SP	NO
TNSK	AG1-2018-035	86527825	CSWS	ERCOTE	50	7/1/2019	9/1/2020	7/1/2019	9/1/2020	7/1/2019	9/1/2020	0	22SP	NO
TNSK	AG1-2018-036	86527828	CSWS	ERCOTE	50	7/1/2019	9/1/2020	7/1/2019	9/1/2020	7/1/2019	9/1/2020	0	22SP	NO
WRGS	AG1-2018-037	86901218	WR	WR	20	1/1/2019	1/1/2029	1/1/2019	1/1/2029	1/1/2019	1/1/2029	0	19SP	NO
WRGS	AG1-2018-038	86901409	WR	WR	50	1/1/2019	1/1/2029	1/1/2019	1/1/2029	1/1/2019	1/1/2029	0	19SP	YES
					2915									

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 the previous studies.

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 paramaters 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	[1]Letter of Credit Amount Required (Parameter)	[2]Potential Base Plan Engineering and Construction Funding Allowable	Notes	[4]Additional Engineering and Construction Cost for 3rd Party Upgrades (Parameter)	[3]Total Revenue Requirements for Assigned Service Upgrades Over Term of Reservation NOT COVERED by Base Plan Funding	[3,5]Total Revenue Requirements for Assigned Service Upgrades Over Term of Reservation COVERED by Base Plan Funding	[6,7]Total Gross CPOs for Creditable Upgrades Over Reservation Period NOT COVERED by Base Plan Funding	[5,6,7]Total Gross CPOs for Creditable Upgrades Over Reservation Period COVERED by Base Plan Funding	[4,9]Point-to-Point Base Rate Available to Offset Revenue Requirements Over Reservation Period	[4]Total Cost of Reservation Assignable to Customer Contingent Upon Base Plan Funding	Directly Assigned Upgrade Cost (DAUC) (Parameter)
AEPM	AG1-2018-001	87008991	$2,056,361	$0	$2,056,361		$3,000,000	$0	$2,689,519	$0	$1,548,331	$0	Schedule 9 & 11 Charges	$0
BEPM	AG1-2018-002	86691232	$40,000,000	$27,400,000	$12,600,000	10	$0	$41,100,000	$18,900,000	$0	$0	$0	$41,100,000	$27,400,000
BEPM	AG1-2018-003	86883893	$819,547	$819,547	$0	8	$0	$0	$0	$1,454,006	$0	$0	$1,454,006	$819,547
BEPM	AG1-2018-004	86988042	$219,595	$0	$219,595		$0	$0	$0	$0	$281,721	$0	Schedule 9 & 11 Charges	$0
BEPM	AG1-2018-005	86988317	$219,595	$0	$219,595		$20,000,000	$0	$0	$0	$281,721	$0	Schedule 9 & 11 Charges	$0
BPWN	AG1-2018-006	87022977	$6,135,043	$5,775,043	$360,000		$0	$7,087,339	$442,274	$19,904	$0	$0	$7,107,243	$5,775,043
BPWN	AG1-2018-007	87023394	$66,102	$464	$65,639		$0	$0	$0	$2,972	$91,513	$0	$2,972	$464
BPWN	AG1-2018-008	87024184	$27,357	$0	$27,357		$0	$0	$0	$0	$116,728	$0	Schedule 9 & 11 Charges	$0
BPWN	AG1-2018-009	87024232	$29,577	$0	$29,577		$0	$0	$0	$0	$127,268	$0	Schedule 9 & 11 Charges	$0
BRPS	AG1-2018-010	87015320	$229,726	$229,726	$0		$0	$0	$0	$369,496	$0	$0	$369,496	$229,726
DCT	AG1-2018-011	86527842	$10,792,449	$10,792,449	$0		$1,492,537	$0	$0	$10,792,449	$0	$6,803,992	$10,792,449	$10,792,449
DCT	AG1-2018-012	86527850	$21,561,065	$21,561,065	$0		$2,985,075	$0	$0	$21,561,065	$0	$13,607,983	$21,561,065	$21,561,065
DCT	AG1-2018-013	86527853	$16,176,761	$16,176,761	$0		$2,238,806	$0	$0	$16,176,761	$0	$10,205,987	$16,176,761	$16,176,761
DCT	AG1-2018-014	86765500	$219,481,897	$219,481,897	$0	10	$0	$416,666,667	$0	$11,148,563	$0	$36,449,955	$427,815,230	$219,481,897
ETCT	AG1-2018-015	87021360	$1,812,201	$14,226	$1,797,976		$0	$0	$0	$114,592	$3,475,793	$0	$114,592	$14,226
ETEC	AG1-2018-016	87021043	$5,851,991	$3,928	$5,848,063		$0	$0	$0	$31,645	$11,352,547	$0	$31,645	$3,928
HCPD	AG1-2018-017	86925309	$1,954	$1,954	$0		$0	$0	$0	$2,514	$0	$0	$2,514	$1,954
HCPD	AG1-2018-018	86925329	$1,133	$0	$1,133		$0	$0	$0	$0	$1,583	$0	Schedule 9 & 11 Charges	$0
HCPD	AG1-2018-019	86925339	$8,500	$0	$8,500		$0	$0	$0	$0	$44,348	$0	Schedule 9 & 11 Charges	$0
KMEA	AG1-2018-020	86972522	$83,709	$0	$83,709		$0	$0	$0	$0	$234,957	$0	Schedule 9 & 11 Charges	$0
MCPI	AG1-2018-021	86527657	$5,480,355	$5,480,355	$0		$1,044,776	$0	$0	$5,480,355	$0	$4,762,794	$5,480,355	$5,480,355
MCPI	AG1-2018-022	86527679	$3,956,771	$3,956,771	$0		$746,269	$0	$0	$3,956,771	$0	$3,401,996	$3,956,771	$3,956,771
MCPI	AG1-2018-023	86527696	$7,765,734	$7,765,734	$0		$1,492,537	$0	$0	$7,765,734	$0	$6,803,992	$7,765,734	$7,765,734
MCPI	AG1-2018-024	86638341	$56,902,493	$56,902,493	$0	10	$0	$109,090,911	$0	$2,357,038	$0	$6,803,992	$111,447,949	$56,902,493
MCPI	AG1-2018-025	86638345	$68,259,702	$68,259,702	$0	10	$0	$130,909,090	$0	$2,805,156	$0	$8,164,790	$133,714,246	$68,259,702
NWPS	AG1-2018-026	86605281	$700,254	$700,254	$0	10	$0	$0	$0	$1,095,241	$0	$0	$1,095,241	$700,254
NWPS	AG1-2018-027	86605298	$700,254	$700,254	$0	10	$0	$0	$0	$1,095,241	$0	$0	$1,095,241	$700,254
OPPM	AG1-2018-028	86755780	$0	$0	$0		$0	$0	$0	$0	$0	$0	Schedule 9 & 11 Charges	$0
OPPM	AG1-2018-029	86755822	$0	$0	$0		$0	$0	$0	$0	$0	$0	Schedule 9 & 11 Charges	$0
REMC	AG1-2018-030	86527874	$41,666,667	$41,666,667	$0	10	$0	$83,333,334	$0	$0	$0	$6,803,992	$83,333,334	$41,666,667
SPSM	AG1-2018-031	86876399	$4,097,876	$4,096,550	$1,326		$0	$0	$0	$7,574,544	$2,369	$0	$7,574,544	$4,096,550
SPSM	AG1-2018-032	86876404	$6,552,265	$6,549,927	$2,337	10	$0	$0	$0	$12,348,986	$4,176	$0	$12,348,986	$6,549,927
SSCN	AG1-2018-033	87023553	$14,768	$14,768	$0		$0	$0	$0	$17,802	$0	$0	$17,802	$14,768
SSCN	AG1-2018-034	87023685	$27,518	$0	$27,518	10	$0	$0	$0	$0	$46,811	$0	Schedule 9 & 11 Charges	$0
TNSK	AG1-2018-035	86527825	$0	$0	$0		$0	$0	$0	$1,125,312	$0	$3,401,996	$3,401,996	$0
TNSK	AG1-2018-036	86527828	$0	$0	$0		$0	$0	$0	$0	$0	$3,401,996	$3,401,996	$0
WRGS	AG1-2018-037	86901218	$93,740	$0	$93,740		$0	$0	$0	$0	$218,947	$0	Schedule 9 & 11 Charges	$0
WRGS	AG1-2018-038	86901409	$5,648,561	$5,615,313	$33,248		$0	$0	$0	$7,379,741	$47,225	$0	$7,379,741	$5,615,313
Grand Total			**$527,441,521**		**$23,475,674**			**$788,187,341**	$0					**$503,965,847**

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

Note 1: 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 & 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.
Note 2: 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.
Note 3: Revenue Requirements (RR) are based upon deferred end dates if applicable. Deferred dates are based upon customer's choice to pursue redispatch. 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.
Note 4: 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, & 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 & 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 redispatch 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.
Note 5: 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.
Note 6: RR for creditable upgrades.
Note 7: CPOs for creditable upgrades may be calculated based on estimated upgrade cost and are subject to change.
Note 8: CPOs for creditable upgrade(s) may be required based on completion of GI review.
Note 9: 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.
Note 10: RR may increase or decrease due to estimated assumptions and is 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	AG1-2018-001

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	87008991	CSWS	CSWS	300	6/1/2022	6/1/2027	6/1/2022	6/1/2027	$ 2,056,361	$ -	$ 2,056,361	$ 4,237,851
									$ 2,056,361	$ -	$ 2,056,361	$ 4,237,851

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87008991	ONETA - ONETA ENERGY CENTER 345KV CKT 1	10/1/2022	10/1/2022			$ 750,000	$ 750,000	$ 1,344,760
	ONETA - ONETA ENERGY CENTER 345KV CKT 2	10/1/2022	10/1/2022			$ 750,000	$ 750,000	$ 1,344,760
					Total	$ 1,500,000	$ 1,500,000	$ 2,689,519

Base Case Violations Projects - Reported for informational purposes only.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
87008991	BROKEN ARROW NORTH - SOUTH TAP - ONETA 138KV CKT 1	10/1/2022	10/1/2022		

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	Total E & C Cost	Total Revenue Requirements
87008991	Gracemont 138kV line terminal addition	10/15/2011	10/15/2011			$ 34,629	$ 53,188
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 163,458	$ 796,306
	Kingfisher Co Tap - Mathewson 345kV CKT 1	3/1/2018	3/1/2018			$ 81,547	$ 106,748
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ 20,964	$ 123,367
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 32,058	$ 136,069
	WASHITA - GRACEMONT 138 KV CKT 2	10/12/2012	10/12/2012			$ 223,705	$ 332,653
					Total	$ 556,361	$ 1,548,331

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
87008991	Oneta 345kV Substation (ONTA-1)	6/1/2022	6/1/2022			$ 1,500,000	$ 1,500,000
	Oneta 345kV Substation (ONTA-2)	6/1/2022	6/1/2022			$ 1,500,000	$ 1,500,000
					Total	$ 3,000,000	$ 3,000,000

*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.

*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**
BEPM	AG1-2018-002

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**
BEPM	86691232	RCEAST	WAUE	70	10/1/2020	4/1/2028	6/1/2023	12/1/2030	$ 12,600,000	$ -	$ 40,000,000	$ 60,000,000
									$ 12,600,000	$ -	$ 40,000,000	$ 60,000,000

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86691232	RCEAST HVDC Tie Expansion	6/1/2022	6/1/2023			$ 40,000,000	$ 40,000,000	$ 60,000,000
					Total	$ 40,000,000	$ 40,000,000	$ 60,000,000

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

Customer	Study Number
BEPM	AG1-2018-003

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
BEPM	86883893	WAUE	WAUE	200	10/1/2019	12/1/2049	10/1/2019	12/1/2049	$ -	$ -	$ 819,547	$ 1,454,006
									$ -	$ -	$ 819,547	$ 1,454,006

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86883893	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
86883893	Daglum - Dickinson 230kV CKT 1	3/1/2019	3/1/2019			$ -	$ 721,628	$ 721,628	$ 1,268,495
	Kelly - Madison County 230kV Ckt 1	11/1/2014	11/1/2014			$ -	$ 97,919	$ 97,919	$ 185,511
					Total	$ -	$ 819,547	$ 819,547	$ 1,454,006

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

**Note: CPOs for creditable upgrade(s) may be required based on completion of GI review.

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

Customer	**Study Number**
BEPM	AG1-2018-004

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**
BEPM	86988042	SCSE	WAUE	50	10/1/2020	4/1/2028	10/1/2020	4/1/2028	$ 219,595	$ -	$ 219,595	$ 281,721
									$ 219,595	$ -	$ 219,595	$ 281,721

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86988042	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
86988042	Daglum - Dickinson 230kV CKT 1	3/1/2019	3/1/2019			$ 158,868	$ 196,277
	Fort Randall - Madison County 230kV Ckt 1	12/23/2013	12/23/2013			$ 60,727	$ 85,444
					Total	$ 219,595	$ 281,721

*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**
BEPM	AG1-2018-005

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**
BEPM	86988317	SCSE	WAUE	50	10/1/2020	4/1/2028	6/1/2023	12/1/2030	$ 219,595	$ -	$ 219,595	$ 281,721
									$ 219,595	$ -	$ 219,595	$ 281,721

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86988317	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
86988317	Daglum - Dickinson 230kV CKT 1	3/1/2019	3/1/2019			$ 158,868	$ 196,277
	Fort Randall - Madison County 230kV Ckt 1	12/23/2013	12/23/2013			$ 60,727	$ 85,444
					Total	$ 219,595	$ 281,721

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86988317	SCSE HVDC Tie Expansion	10/1/2020	6/1/2023			$ 20,000,000	$ 20,000,000
					Total	$ 20,000,000	$ 20,000,000

*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.

*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**
BPWN	AG1-2018-006

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**
BPWN	87022977	WAUE	NPPD	2	1/1/2019	1/1/2024	1/1/2019	1/1/2024	$ 360,000	$ -	$ 6,135,043	$ 7,549,516
									$ 360,000	$ -	$ 6,135,043	$ 7,549,516

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87022977	Kelly - King Hill 115kV Ckt 1	6/1/2019	6/1/2021			$ 6,128,924	$ 6,128,924	$ 7,529,613
					Total	$ 6,128,924	$ 6,128,924	$ 7,529,613

Base Case Violations Projects - Reported for informational purposes only.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
87022977	Circleville - King Hill 115kV Ckt 1	6/1/2019	6/1/2021		

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
87022977	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 579	$ 768
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2011			$ 3,236	$ 15,178
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013			$ 314	$ 1,473
	Hoskins - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015			$ 335	$ 368
	Kelly - Madison County 230kV Ckt 1	11/1/2014	11/1/2014			$ 1,656	$ 2,117
					Total	$ 6,119	$ 19,904

*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**
BPWN	AG1-2018-007

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**
BPWN	87023394	NPPD	NPPD	1	1/1/2019	1/1/2031	1/1/2019	1/1/2031	$ 65,639	$ -	$ 66,102	$ 94,486
									$ 65,639	$ -	$ 66,102	$ 94,486

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87023394	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
87023394	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 271	$ -	$ 271	$ 402
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2011			$ 858	$ 423	$ 1,281	$ 8,211
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013			$ 83	$ 41	$ 124	$ 796
	Rosemont 115kV Substation	11/1/2017	11/1/2017			$ 64,426	$ -	$ 64,426	$ 85,077
					Total	$ 65,639	$ 464	$ 66,102	$ 94,486

*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
BPWN	AG1-2018-008

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
BPWN	87024184	LES	NPPD	18	1/1/2019	1/1/2024	1/1/2019	1/1/2024	$ 27,357	$ -	$ 27,357	$ 116,728
									$ 27,357	$ -	$ 27,357	$ 116,728

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87024184	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
87024184	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 3,444	$ 4,572
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2011			$ 21,798	$ 102,233
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013			$ 2,116	$ 9,922
					Total	$ 27,357	$ 116,728

*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**
BPWN	AG1-2018-009

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**
BPWN	87024232	LES	NPPD	25	1/1/2019	1/1/2024	1/1/2019	1/1/2024	$ 29,577	$ -	$ 29,577	$ 127,268
									$ 29,577	$ -	$ 29,577	$ 127,268

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87024232	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
87024232	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 3,405	$ 4,522
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2011			$ 23,856	$ 111,887
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013			$ 2,315	$ 10,859
					Total	$ 29,577	$ 127,268

*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
BRPS	AG1-2018-010

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
BRPS	87015320	CSWS	NPPD	14	6/1/2021	6/1/2025	6/1/2021	6/1/2025	$ -	$ -	$ 229,726	$ 369,496
									$ -	$ -	$ 229,726	$ 369,496

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87015320	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
87015320	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 6,124	$ 6,124	$ 26,306
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006			$ -	$ 2,122	$ 2,122	$ 17,724
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 1,493	$ 1,493	$ 7,751
	Sweetwater 230kV Substation GEN-2006-035 Addition	10/5/2012	10/5/2012			$ -	$ 43,828	$ 43,828	$ 62,109
	Sweetwater 230kV Substation GEN-2006-043 Addition	3/31/2010	3/31/2010			$ -	$ 9,072	$ 9,072	$ 13,940
	Tap Elk City - Wheeler 230kV (Sweetwater) POI for GEN-2006-002 (NU)	6/1/2012	6/1/2012			$ -	$ 164,047	$ 164,047	$ 234,993
	Twin Church - Dixon County 230kV Line Upgrade	11/1/2018	11/1/2018			$ -	$ 1,845	$ 1,845	$ 2,172
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 1,195	$ 1,195	$ 4,501
					Total	$ -	$ 229,726	$ 229,726	$ 369,496

*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**
DCT	AG1-2018-011

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**
DCT	86527842	CSWS	ERCOTE	100	7/1/2019	9/1/2020	6/1/2021	8/1/2022	$ -	$ 6,803,992	$ 10,792,449	$ 10,792,449
									$ -	$ 6,803,992	$ 10,792,449	$ 10,792,449

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527842	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
86527842	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 1,971,321	$ 1,971,321	$ 1,971,321
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 21,977	$ 21,977	$ 21,977
	Sunnyside Relays for Grady Interconnection	11/23/2016	11/23/2016			$ -	$ 23,840	$ 23,840	$ 23,840
	Terry Road 345kV Station (NU)	11/16/2016	11/16/2016			$ -	$ 6,803,992	$ 6,803,992	$ 6,803,992
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 1,971,321	$ 1,971,321	$ 1,971,321
					Total	$ -	$ 10,792,449	$ 10,792,449	$ 10,792,449

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86527842	RUSHSPR7 345.00 (RUSHSPRW1-1) 345/34.5/13.8KV TRANSFORMER CKT 1	7/1/2019	6/1/2021			$ 1,492,537	$ 1,492,537
					Total	$ 1,492,537	$ 1,492,537

*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.

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

***Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
DCT	AG1-2018-012

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**
DCT	86527850	CSWS	ERCOTE	200	7/1/2019	9/1/2020	6/1/2021	8/1/2022	$ -	$ 13,607,983	$ 21,561,065	$ 21,561,065
									$ -	$ 13,607,983	$ 21,561,065	$ 21,561,065

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527850	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
86527850	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 3,942,641	$ 3,942,641	$ 3,942,641
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 43,961	$ 43,961	$ 43,961
	Sunnyside Relays for Grady Interconnection	11/23/2016	11/23/2016			$ -	$ 23,840	$ 23,840	$ 23,840
	Terry Road 345kV Station (NU)	11/16/2016	11/16/2016			$ -	$ 13,607,983	$ 13,607,983	$ 13,607,983
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 3,942,641	$ 3,942,641	$ 3,942,641
					Total	$ -	$ 21,561,065	$ 21,561,065	$ 21,561,065

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86527850	RUSHSPR7 345.00 (RUSHSPRW1-1) 345/34.5/13.8KV TRANSFORMER CKT 1	7/1/2019	6/1/2021			$ 2,985,075	$ 2,985,075
					Total	$ 2,985,075	$ 2,985,075

*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.

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

***Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
DCT	AG1-2018-013

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**
DCT	86527853	CSWS	ERCOTE	150	7/1/2019	9/1/2020	6/1/2021	8/1/2022	$ -	$ 10,205,987	$ 16,176,761	$ 16,176,761
									$ -	$ 10,205,987	$ 16,176,761	$ 16,176,761

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527853	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
86527853	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 2,956,981	$ 2,956,981	$ 2,956,981
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 32,972	$ 32,972	$ 32,972
	Sunnyside Relays for Grady Interconnection	11/23/2016	11/23/2016			$ -	$ 23,840	$ 23,840	$ 23,840
	Terry Road 345kV Station (NU)	11/16/2016	11/16/2016			$ -	$ 10,205,987	$ 10,205,987	$ 10,205,987
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 2,956,981	$ 2,956,981	$ 2,956,981
					Total	$ -	$ 16,176,761	$ 16,176,761	$ 16,176,761

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86527853	RUSHSPR7 345.00 (RUSHSPRW1-1) 345/34.5/13.8KV TRANSFORMER CKT 1	7/1/2019	6/1/2021			$ 2,238,806	$ 2,238,806
					Total	$ 2,238,806	$ 2,238,806

*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.

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

***Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
DCT	AG1-2018-014

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**
DCT	86765500	CSWS	ERCOTE	500	6/1/2019	9/1/2020	6/1/2023	9/1/2024	$ -	$ 36,449,955	$ 219,481,897	$ 427,815,230
									$ -	$ 36,449,955	$ 219,481,897	$ 427,815,230

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86765500	ERCOT East HVDC Tie Expansion	6/1/2019	6/1/2023			$ 208,333,333	$ 250,000,000	$ 416,666,667
					Total	$ 208,333,333	$ 250,000,000	$ 416,666,667

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
86765500	Gracemont 138kV line terminal addition	10/15/2011	10/15/2011			$ 966,997	$ 966,997
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 4,153,108	$ 4,153,108
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 4,153,108	$ 4,153,108
	WASHITA - GRACEMONT 138 KV CKT 2	10/12/2012	10/12/2012			$ 1,875,350	$ 1,875,350
					Total	$ 11,148,563	$ 11,148,563

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

**Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
ETCT	AG1-2018-015

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**
ETCT	87021360	OKGE	CSWS	23	6/1/2019	10/1/2040	6/1/2019	10/1/2040	$ 1,797,976	$ -	$ 1,812,201	$ 3,590,385
									$ 1,797,976	$ -	$ 1,812,201	$ 3,590,385

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87021360	None					$ -	$ -	$ -	$ -	$ -
					Total	$ -	$ -	$ -	$ -	$ -

Base Case Violations Projects - Reported for informational purposes only.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
87021360	NORTH MINEOLA - QUITMAN 69KV CKT 1	6/1/2023	6/1/2023		

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
87021360	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 71,383	$ -	$ 71,383	$ 476,390
	HUGO 345/138KV TRANSFORMER CKT 1	7/1/2012	7/1/2012			$ 10,903	$ -	$ 10,903	$ 72,243
	Leonard 138kV Switching Station (NU - OGE)	10/31/2017	10/31/2017			$ 4,766	$ -	$ 4,766	$ 7,450
	Leonard 138kV Switching Station (NU)	10/31/2017	10/31/2017			$ 1,668,238	$ -	$ 1,668,238	$ 2,607,583
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ 28,882	$ 14,226	$ 43,108	$ 347,249
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 13,803	$ -	$ 13,803	$ 79,470
					Total	$ 1,797,976	$ 14,226	$ 1,812,201	$ 3,590,385

*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**
ETEC	AG1-2018-016

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**
ETEC	87021043	OKGE	CSWS	76	6/1/2019	10/1/2040	6/1/2019	10/1/2040	$ 5,848,063	$ -	$ 5,851,991	$ 11,384,192
									$ 5,848,063	$ -	$ 5,851,991	$ 11,384,192

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87021043	None					$ -	$ -	$ -	$ -	$ -
					Total	$ -	$ -	$ -	$ -	$ -

Base Case Violations Projects - Reported for informational purposes only.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
87021043	NORTH MINEOLA - QUITMAN 69KV CKT 1	6/1/2023	6/1/2023		

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
87021043	ALUMAX TAP - BANN 138KV CKT 1	3/26/2008	3/26/2008			$ 77,820	$ -	$ 77,820	$ 624,809
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 248,950	$ -	$ 248,950	$ 1,661,422
	HUGO 345/138KV TRANSFORMER CKT 1	7/1/2012	7/1/2012			$ 36,030	$ -	$ 36,030	$ 238,743
	Leonard 138kV Switching Station (NU - OGE)	10/31/2017	10/31/2017			$ 15,476	$ -	$ 15,476	$ 24,189
	Leonard 138kV Switching Station (NU)	10/31/2017	10/31/2017			$ 5,413,672	$ -	$ 5,413,672	$ 8,461,980
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ 7,976	$ 3,928	$ 11,904	$ 95,892
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 48,138	$ -	$ 48,138	$ 277,156
					Total	$ 5,848,063	$ 3,928	$ 5,851,991	$ 11,384,192

*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**
HCPD	AG1-2018-017

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**
HCPD	86925309	NPPD	NPPD	9	1/1/2019	1/1/2022	1/1/2019	1/1/2022	$ -	$ -	$ 1,954	$ 2,514
									$ -	$ -	$ 1,954	$ 2,514

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86925309	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
86925309	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 1,954	$ 2,514
					Total	$ 1,954	$ 2,514

*Note: CPOs may be calculated based on estimated upgrade cost and are subject to change.
**Note: This request is related to OASIS request 86762380.

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

Customer	**Study Number**
HCPD	AG1-2018-018

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**
HCPD	86925329	NPPD	NPPD	1	1/1/2019	1/1/2029	1/1/2019	1/1/2029	$ 1,133	$ -	$ 1,133	$ 1,583
									$ 1,133	$ -	$ 1,133	$ 1,583

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86925329	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
86925329	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 305	$ 438
	Kelly - Madison County 230kV Ckt 1	11/1/2014	11/1/2014			$ 828	$ 1,145
					Total	$ 1,133	$ 1,583

*Note: This request is related to OASIS request 86762380.

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

Customer	**Study Number**
HCPD	AG1-2018-019

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**
HCPD	86925339	NPPD	NPPD	14	1/1/2019	1/1/2029	1/1/2019	1/1/2029	$ 8,500	$ -	$ 8,500	$ 44,348
									$ 8,500	$ -	$ 8,500	$ 44,348

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86925339	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
86925339	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 1,283	$ 1,842
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2011			$ 6,579	$ 38,746
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013			$ 638	$ 3,761
					Total	$ 8,500	$ 44,348

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

**Note: This request is related to OASIS request 86762380.

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

Customer	Study Number
KMEA	AG1-2018-020

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
KMEA	86972522	NPPD	SECI	1	5/1/2019	10/1/2054	5/1/2019	10/1/2054	$ 83,709	$ -	$ 83,709	$ 234,957
									$ 83,709	$ -	$ 83,709	$ 234,957

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86972522	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
86972522	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 180	$ 374
	Antelope - County Line - 115kV Rebuild	5/1/2017	5/1/2017			$ 957	$ 1,798
	Battle Creek - County Line 115kV Rebuild	5/1/2017	5/1/2017			$ 913	$ 1,717
	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	12/1/2009			$ 1,093	$ 14,144
	Ft. Dodge - North Ft. Dodge 115 kV Ckt 2	5/1/2015	5/1/2015			$ 40,066	$ 76,734
	Kelly - Madison County 230kV Ckt 1	11/1/2014	11/1/2014			$ 427	$ 854
	MEDICINE LODGE - PRATT 115KV CKT 1	12/1/2009	12/1/2009			$ 3,758	$ 46,963
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	12/1/2009			$ 346	$ 4,964
	North Ft. Dodge - Spearville 115kV Ckt 2	5/1/2015	5/1/2015			$ 11,874	$ 22,742
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ 1,849	$ 21,628
	Rice County 230/115 kV transformer Ckt 1	10/1/2012	10/1/2012			$ 2,495	$ 5,211
	Spearville 345/115 kV Transformer CKT 1	5/1/2015	5/1/2015			$ 19,752	$ 37,829
					Total	$ 83,709	$ 234,957

*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**
MCPI	AG1-2018-021

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**
MCPI	86527657	CSWS	ERCOTN	70	7/1/2019	9/1/2020	6/1/2021	8/1/2022	$ -	$ 4,762,794	$ 5,480,355	$ 5,480,355
									$ -	$ 4,762,794	$ 5,480,355	$ 5,480,355

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527657	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
86527657	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 203,514	$ 203,514	$ 203,514
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 162,731	$ 162,731	$ 162,731
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ -	$ 123,961	$ 123,961	$ 123,961
	Sunnyside Relays for Grady Interconnection	11/23/2016	11/23/2016			$ -	$ 23,840	$ 23,840	$ 23,840
	Terry Road 345kV Station (NU)	11/16/2016	11/16/2016			$ -	$ 4,762,794	$ 4,762,794	$ 4,762,794
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 203,514	$ 203,514	$ 203,514
					Total	$ -	$ 5,480,355	$ 5,480,355	$ 5,480,355

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86527657	RUSHSPR7 345.00 (RUSHSPRW1-1) 345/34.5/13.8KV TRANSFORMER CKT 1	7/1/2019	6/1/2021			$ 1,044,776	$ 1,044,776
					Total	$ 1,044,776	$ 1,044,776

*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.

**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**
MCPI	AG1-2018-022

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**
MCPI	86527679	CSWS	ERCOTN	50	7/1/2019	9/1/2020	6/1/2021	8/1/2022	$ -	$ 3,401,996	$ 3,956,771	$ 3,956,771
									$ -	$ 3,401,996	$ 3,956,771	$ 3,956,771

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527679	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
86527679	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 145,367	$ 145,367	$ 145,367
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 116,239	$ 116,239	$ 116,239
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ -	$ 123,961	$ 123,961	$ 123,961
	Sunnyside Relays for Grady Interconnection	11/23/2016	11/23/2016			$ -	$ 23,840	$ 23,840	$ 23,840
	Terry Road 345kV Station (NU)	11/16/2016	11/16/2016			$ -	$ 3,401,996	$ 3,401,996	$ 3,401,996
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 145,367	$ 145,367	$ 145,367
					Total	$ -	$ 3,956,771	$ 3,956,771	$ 3,956,771

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86527679	RUSHSPR7 345.00 (RUSHSPRW1-1) 345/34.5/13.8KV TRANSFORMER CKT 1	7/1/2019	6/1/2021			$ 746,269	$ 746,269
					Total	$ 746,269	$ 746,269

*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.

**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**
MCPI	AG1-2018-023

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**
MCPI	86527696	CSWS	ERCOTN	100	7/1/2019	9/1/2020	6/1/2021	8/1/2022	$ -	$ 6,803,992	$ 7,765,734	$ 7,765,734
									$ -	$ 6,803,992	$ 7,765,734	$ 7,765,734

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527696	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
86527696	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ -	$ 290,735	$ 290,735	$ 290,735
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ -	$ 232,472	$ 232,472	$ 232,472
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ -	$ 123,961	$ 123,961	$ 123,961
	Sunnyside Relays for Grady Interconnection	11/23/2016	11/23/2016			$ -	$ 23,840	$ 23,840	$ 23,840
	Terry Road 345kV Station (NU)	11/16/2016	11/16/2016			$ -	$ 6,803,992	$ 6,803,992	$ 6,803,992
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ -	$ 290,735	$ 290,735	$ 290,735
					Total	$ -	$ 7,765,734	$ 7,765,734	$ 7,765,734

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
86527696	RUSHSPR7 345.00 (RUSHSPRW1-1) 345/34.5/13.8KV TRANSFORMER CKT 1	7/1/2019	6/1/2021			$ 1,492,537	$ 1,492,537
					Total	$ 1,492,537	$ 1,492,537

*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.

**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**
MCPI	AG1-2018-024

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**
MCPI	86638341	WFEC	ERCOTN	100	7/1/2019	9/1/2020	6/1/2023	8/1/2024	$ -	$ 6,803,992	$ 56,902,493	$ 111,447,949
									$ -	$ 6,803,992	$ 56,902,493	$ 111,447,949

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86638341	ERCOT North HVDC Tie Expansion	7/1/2019	6/1/2023			$ 54,545,455	$ 120,000,000	$ 109,090,911
					Total	$ 54,545,455	$ 120,000,000	$ 109,090,911

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
86638341	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 304,070	$ 304,070
	Kingfisher Co Tap - Mathewson 345kV CKT 1	3/1/2018	3/1/2018			$ 477,708	$ 477,708
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ 562,193	$ 562,193
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ 116,504	$ 116,504
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 304,070	$ 304,070
	Woodward EHV 138kV Phase Shifting Transformer circuit #1	8/2/2017	8/2/2017			$ 592,492	$ 592,492
					Total	$ 2,357,038	$ 2,357,038

*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**
MCPI	AG1-2018-025

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**
MCPI	86638345	WFEC	ERCOTN	120	7/1/2019	9/1/2020	6/1/2023	8/1/2024	$ -	$ 8,164,790	$ 68,259,702	$ 133,714,246
									$ -	$ 8,164,790	$ 68,259,702	$ 133,714,246

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86638345	ERCOT North HVDC Tie Expansion	7/1/2019	6/1/2023			$ 65,454,545	$ 120,000,000	$ 130,909,090
					Total	$ 65,454,545	$ 120,000,000	$ 130,909,090

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
86638345	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 364,885	$ 364,885
	Kingfisher Co Tap - Mathewson 345kV CKT 1	3/1/2018	3/1/2018			$ 573,250	$ 573,250
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010			$ 674,643	$ 674,643
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ 116,504	$ 116,504
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 364,885	$ 364,885
	Woodward EHV 138kV Phase Shifting Transformer circuit #1	8/2/2017	8/2/2017			$ 710,990	$ 710,990
					Total	$ 2,805,156	$ 2,805,156

*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**
NWPS	AG1-2018-026

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**
NWPS	86605281	WAUE	WAUE	20	12/1/2018	1/1/2039	12/1/2018	1/1/2039	$ -	$ -	$ 700,254	$ 1,095,241
									$ -	$ -	$ 700,254	$ 1,095,241

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86605281	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
86605281	Gavins Point - Yankton Junction 115 kV	12/31/2019	12/31/2019			$ -	$ 692,968	$ 692,968	$ 1,083,577
	Kelly - Madison County 230kV Ckt 1	11/1/2014	11/1/2014			$ -	$ 7,286	$ 7,286	$ 11,664
					Total	$ -	$ 700,254	$ 700,254	$ 1,095,241

*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**
NWPS	AG1-2018-027

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**
NWPS	86605298	WAUE	WAUE	20	12/1/2018	1/1/2039	12/1/2018	1/1/2039	$ -	$ -	$ 700,254	$ 1,095,241
									$ -	$ -	$ 700,254	$ 1,095,241

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86605298	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
86605298	Gavins Point - Yankton Junction 115 kV	12/31/2019	12/31/2019			$ -	$ 692,968	$ 692,968	$ 1,083,577
	Kelly - Madison County 230kV Ckt 1	11/1/2014	11/1/2014			$ -	$ 7,286	$ 7,286	$ 11,664
					Total	$ -	$ 700,254	$ 700,254	$ 1,095,241

*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**
OPPM	AG1-2018-028

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**
OPPM	86755780	LES	OPPD	50	6/1/2020	6/1/2025	6/1/2020	6/1/2025	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86755780	None					$ -	$ -	$ -
					Total	$ -	$ -	$ -

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

Customer	**Study Number**
OPPM	AG1-2018-029

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**
OPPM	86755822	LES	OPPD	61	6/1/2020	6/1/2025	6/1/2020	6/1/2025	$ -	$ -	$ -	$ -
									$ -	$ -	$ -	$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86755822	None					$ -	$ -	$ -
					Total	$ -	$ -	$ -

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

Customer	**Study Number**
REMC	AG1-2018-030

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**
REMC	86527874	CSWS	ERCOTE	100	7/1/2019	9/1/2020	6/1/2023	8/1/2024	$ -	$ 6,803,992	$ 41,666,667	$ 83,333,334
									$ -	$ 6,803,992	$ 41,666,667	$ 83,333,334

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527874	ERCOT East HVDC Tie Expansion	7/1/2019	6/1/2023			$ 41,666,667	$ 250,000,000	$ 83,333,334
					Total	$ 41,666,667	$ 250,000,000	$ 83,333,334

*Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
SPSM	AG1-2018-031

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**
SPSM	86876399	SPS	SPS	80	12/1/2018	12/1/2048	12/1/2018	12/1/2048	$ 1,326	$ -	$ 4,097,876	$ 7,576,913
									$ 1,326	$ -	$ 4,097,876	$ 7,576,913

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86876399	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
86876399	Crosby County Interchange - Floyd County Interchange 115kV Ckt 1	11/6/2017	11/6/2017			$ -	$ 3,996,004	$ 3,996,004	$ 7,382,941
	HARRINGTON MID - NICHOLS 230 KV CKT 2	12/1/2012	12/1/2012			$ -	$ 49,507	$ 49,507	$ 94,342
	HARRINGTON WEST - NICHOLS 230KV CKT 1	12/1/2012	12/1/2012			$ -	$ 51,039	$ 51,039	$ 97,261
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ 1,326	$ -	$ 1,326	$ 2,369
					Total	$ 1,326	$ 4,096,550	$ 4,097,876	$ 7,576,913

*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**
SPSM	AG1-2018-032

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**
SPSM	86876404	SPS	SPS	150	12/1/2018	12/1/2048	12/1/2018	12/1/2048	$ 2,337	$ -	$ 6,552,265	$ 12,353,162
									$ 2,337	$ -	$ 6,552,265	$ 12,353,162

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86876404	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
86876404	HARRINGTON MID - NICHOLS 230 KV CKT 2	12/1/2012	12/1/2012			$ -	$ 96,309	$ 96,309	$ 183,528
	HARRINGTON WEST - NICHOLS 230KV CKT 1	12/1/2012	12/1/2012			$ -	$ 99,516	$ 99,516	$ 189,637
	Lost Draw 115 kV Substation (NU)	10/31/2018	10/31/2018			$ -	$ 5,738,204	$ 5,738,204	$ 10,899,583
	PLANT X - TOLK 230KV REBUILD CIRCUIT #1	12/31/2017	12/31/2017			$ -	$ 106,430	$ 106,430	$ 185,980
	PLANT X - TOLK 230KV REBUILD CIRCUIT #2	12/31/2017	12/31/2017			$ -	$ 103,519	$ 103,519	$ 180,893
	POWER SYSTEM STABILIZERS IN SPS	11/30/2014	11/30/2014			$ 2,337	$ -	$ 2,337	$ 4,176
	TUCO INTERCHANGE 345/230KV CKT 1 REPLACEMENT	6/1/2018	6/1/2018			$ -	$ 405,949	$ 405,949	$ 709,366
					Total	$ 2,337	$ 6,549,927	$ 6,552,265	$ 12,353,162

*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**
SSCN	AG1-2018-033

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**
SSCN	87023553	LES	NPPD	5	1/1/2019	1/1/2021	1/1/2019	1/1/2021	$ -	$ -	$ 14,768	$ 17,802
									$ -	$ -	$ 14,768	$ 17,802

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87023553	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
87023553	Fort Randall - Madison County 230kV Ckt 1	12/23/2013	12/23/2013			$ 13,609	$ 16,591
	Twin Church - Dixon County 230kV Line Upgrade	11/1/2018	11/1/2018			$ 1,159	$ 1,212
					Total	$ 14,768	$ 17,802

*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
SSCN	AG1-2018-034

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
SSCN	87023685	LES	NPPD	15	1/1/2019	1/1/2024	1/1/2019	1/1/2024	$ 27,518	$ -	$ 27,518	$ 46,811
									$ 27,518	$ -	$ 27,518	$ 46,811

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
87023685	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
87023685	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	12/31/2012	12/31/2012			$ 933	$ 1,239
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2011			$ 3,739	$ 17,535
	Fort Randall - Madison County 230kV Ckt 1	12/23/2013	12/23/2013			$ 6,284	$ 8,034
	Gavins Point - Yankton Junction 115 kV	12/31/2019	12/31/2019			$ 15,659	$ 17,707
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013			$ 363	$ 1,702
	Twin Church - Dixon County 230kV Line Upgrade	11/1/2018	11/1/2018			$ 540	$ 595
					Total	$ 27,518	$ 46,811

*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**
TNSK	AG1-2018-035

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**
TNSK	86527825	CSWS	ERCOTE	50	7/1/2019	9/1/2020	7/1/2019	9/1/2020	$ -	$ 3,401,996	$ -	$ -
									$ -	$ 3,401,996	$ -	$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527825	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
86527825	Gracemont 138kV line terminal addition	10/15/2011	10/15/2011			$ 175,033	$ 175,033
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012			$ 387,623	$ 387,623
	Valliant 345 kV (AEP)	4/17/2012	4/17/2012			$ 387,623	$ 387,623
	WASHITA - GRACEMONT 138 KV CKT 2	10/12/2012	10/12/2012			$ 175,033	$ 175,033
					Total	$ 1,125,312	$ 1,125,312

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

**Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
TNSK	AG1-2018-036

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**
TNSK	86527828	CSWS	ERCOTE	50	7/1/2019	9/1/2020	7/1/2019	9/1/2020	$ -	$ 3,401,996	$ -	$ -
									$ -	$ 3,401,996	$ -	$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86527828	None					$ -	$ -	$ -
					Total	$ -	$ -	$ -

*Available capacity will be allocated on a first come first served basis in accordance with Attachment Z1 III.C.6 of SPP OATT.

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

Customer	**Study Number**
WRGS	AG1-2018-037

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**
WRGS	86901218	WR	WR	20	1/1/2019	1/1/2029	1/1/2019	1/1/2029	$ 93,740	$ -	$ 93,740	$ 218,947
									$ 93,740	$ -	$ 93,740	$ 218,947

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86901218	None					$ -	$ -	$ -
					Total	$ -	$ -	$ -

Base Case Violations Projects - Reported for informational purposes only.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
86901218	Wolf Creek 345/69kV Transformer #6 (69kV)	1/1/2019	10/1/2021		

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
86901218	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006			$ 11,972	$ 102,457
	Rice - Lyons 115 kV Ckt 1	4/1/2013	4/1/2013			$ 43,990	$ 62,279
	Rice County 230/115 kV transformer Ckt 1	10/1/2012	10/1/2012			$ 25,259	$ 36,343
	Wheatland 115 kV #2	12/31/2012	12/31/2012			$ 12,519	$ 17,868
					Total	$ 93,740	$ 218,947

*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**
WRGS	AG1-2018-038

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**
WRGS	86901409	WR	WR	50	1/1/2019	1/1/2029	1/1/2019	1/1/2029	$ 33,248	$ -	$ 5,648,561	$ 7,426,966
									$ 33,248	$ -	$ 5,648,561	$ 7,426,966

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
86901409	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
86901409	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	12/1/2009			$ -	$ 13,588	$ 13,588	$ 72,077
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006			$ -	$ 10,598	$ 10,598	$ 90,702
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	12/1/2009			$ -	$ 4,297	$ 4,297	$ 25,309
	Rice - Lyons 115 kV Ckt 1	4/1/2013	4/1/2013			$ -	$ 111,281	$ 111,281	$ 157,543
	Rice County 230/115 kV transformer Ckt 1	10/1/2012	10/1/2012			$ -	$ 64,629	$ 64,629	$ 92,990
	Tap Wichita - Thistle 345 kV Ckt 1 & 2 - Pratt Addition (NU)	12/31/2016	12/31/2016			$ 1,579	$ -	$ 1,579	$ 2,026
	Tap Wichita - Thistle 345 kV Ckt 1 & 2 - Pratt Co Addition (NU)	10/16/2016	10/16/2016			$ -	$ 5,410,920	$ 5,410,920	$ 6,941,119
	Wheatland 115 kV #2	12/31/2012	12/31/2012			$ 31,669	$ -	$ 31,669	$ 45,199
					Total	$ 33,248	$ 5,615,313	$ 5,648,561	$ 7,426,966

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

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
AEPW	ERCOT EAST DC Tie Expansion	Add 550 MW HVDC Tie	6/1/2019	6/1/2023	$250,000,000.00
AEPW	EROCT NORTH DC Tie Expansion	Add 200 MW HVDC Tie	6/1/2019	6/1/2023	$120,000,000.00
AEPW	ONETA - ONETA ENERGY CENTER 345KV CKT 1	Replace two switches and a CT at Oneta substation.	10/1/2022	10/1/2022	$750,000.00
AEPW	ONETA - ONETA ENERGY CENTER 345KV CKT 2	Replace two switches and a CT at Oneta substation.	10/1/2022	10/1/2022	$750,000.00
BEPC	RCEAST HVDC Tie Expansion	Add 70 MW HVDC Tie	6/1/2022	6/1/2023	$40,000,000.00
WERE	Kelly - King Hill 115kV Ckt 1	Rebuild 7.4 miles of 115 kV line from Kelly to King Hill.	6/1/2019	6/1/2021	$6,128,924.00

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

Base Case Violations Projects - Reported for informational purposes only.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
AEPW	BROKEN ARROW NORTH - SOUTH TAP - ONETA 138KV CKT 1	Increase relay settings at Oneta substation.	10/1/2022	10/1/2022
AEPW	NORTH MINEOLA - QUITMAN 69KV CKT 1	Replace switches and jumpers at Quitman.	6/1/2023	6/1/2023
WERE	Circleville - King Hill 115kV Ckt 1	Rebuild 15.1 miles of 115 kV line from Circleville to King Hill.	6/1/2019	6/1/2021
WERE	Wolf Creek 345/69kV Transformer #6 (69kV)	Replace 100 Mva Tx #6 with 150 Mva & associated equipments.	1/1/2019	10/1/2021

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
BEPM	Daglum - Dickinson 230kV CKT 1	Build new 230kV line from Daglum - Dickinson	3/1/2019	3/1/2019	$ 1,661,048
CSWS	ALUMAX TAP - BANN 138KV CKT 1	Replace six (6) 138 kV switches, five at Bann & one at Alumax Tap. Rebuild 0.67 miles of 1024 ACAR with 2156 ACSR. Replace wavetrap & jumpers @ Bann. Replace breaker 3300 @ Bann.	3/26/2008	3/26/2008	$ 624,809
CSWS	Leonard 138kV Switching Station (NU)	138 kV, three-breaker ring bus substation including three (3) 138 kV, 3000 Amp circuit breakers, line relaying, 3000 Amp disconnect switches and all associated work and equipment. The Leonard switching station will be located on the Cornville - Cimarron (OG&E) 138 kV transmission line. Transmission Owner and Interconnection Customer will cooperate to identify a mutually agreeable location for the Leonard switching station.; Line terminals for the 138 kV transmission lines to Cimarron (OG&E) and Cornville.; A 138 kV line terminal to connect the transmission line from the Generating Facility.; Turning structures to loop the Cornville - Cimarron (OG&E) line into the new Leonard switching station.	10/31/2017	10/31/2017	$ 11,069,563
CSWS	Sweetwater 230kV Substation GEN-2006-035 Addition	Add 230kV Ring Bus Line Terminal to include one (1) 230kV Circuit Breaker and Disconnect Switches	10/5/2012	10/5/2012	$ 62,109
CSWS	Sweetwater 230kV Substation GEN-2006-043 Addition	Add 230kV Ring Bus Line Terminal to include one (1) 230kV Circuit Breaker and Disconnect Switches	3/31/2010	3/31/2010	$ 13,940
CSWS	Tap Elk City - Wheeler 230kV (Sweetwater) POI for GEN-2006-002 (NU)	Construct new 230 kV ring bus substation. Substation to be configured as a three breaker ring bus (expandable to breaker-and-a-half) to include, but not be limited to the following: Three (3) 230 kV circuit breakers, Six (6) 230 kV breaker disconnect switches, Two (2) 230 kV line traps, Two (2) sets of primary and redundant 230 kV line relaying, Two (2) sets of 230 kV transmission line terminal equipment including 230 kV PTs and arresters, Control House; Transmission Line – Transmission Owner to terminate the existing Elk City – Grapevine 230 kV transmission line into the new 230 kV substation. Estimate based on transmission line being located within two spans of the new 230 kV substation; Elk City Substation - Replace line panel and carrier equipment at Elk City 230 kV substation.	6/1/2012	6/1/2012	$ 234,993
CSWS	Terry Road 345kV Station (NU)	Construct the 345 kV Terry Road switching station including a three breaker ring bus configured for future expansion to breaker-and-a-half. The Terry Road switching station will be located on property acceptable to Transmission Owner in the vicinity of the structure 29/2 of the existing Lawton Eastside - Sunnyside (OG&E) 345 kV line. The Terry Road switching station will have line terminals for transmission lines to Lawton Eastside 345 kV, Sunnyside (OG&E) 345kV and the Generating Facility. The substation will include three (3) 3000A circuit breakers, disconnect switches, line relaying, monitoring equipment (DME, SDR and PMU's on both transmission lines), and all associated and miscellaneous equipment. The Terry Road switching station will include a 50 MVAR reactor with a reactor switcher on the line to Sunnyside.; Install turning structures and loop the existing Lawton Eastside - Sunnyside (OG&E) transmission line in and out of the new Terry Road switching station.; Engineering support, project oversight and construction supervision of Transmission Owner's Interconnection Facilities and Stand Alone Network Upgrades constructed by Interconnection Customer.	11/16/2016	11/16/2016	$ 45,586,744
CSWS	Valliant 345 kV (AEP)	Install 345 kV terminal equipment at Valliant substation.	4/17/2012	4/17/2012	$ 15,217,440
ITCM	HUGO - VALLIANT 345KV CKT 1	Install new line from Valliant 345 kV to Hugo Power Plant with 19 miles of bundled 1590 ACSR conductior.	7/1/2012	7/1/2012	$ 17,680,670
ITCM	HUGO 345/138KV TRANSFORMER CKT 1	Install new line from Valliant 345 kV to Hugo Power Plant with 19 miles of bundled 1590 ACSR conductior. Note that ITC is building the line from Valiant to Hugo.	7/1/2012	7/1/2012	$ 310,986
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	$ 210,883
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	$ 219,822
MIDW	Rice County 230/115 kV transformer Ckt 1	Install 230/115 kV transformer at Rice County.	10/1/2012	10/1/2012	$ 134,544
MIDW	Wheatland 115 kV #2	Install metering equipment at the Wheatland 115 kV substation.	12/31/2012	12/31/2012	$ 63,067
MKEC	CLIFTON - GREENLEAF 115KV CKT 1	Rebuild 14.4 miles	6/1/2011	6/1/2011	$ 293,790
MKEC	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	Rebuild 8.05 mile line	12/1/2009	12/1/2009	$ 86,221
MKEC	Ft. Dodge - North Ft. Dodge 115 kV Ckt 2	Build appoximately 0.5 mile 115 kV line	5/1/2015	5/1/2015	$ 76,734
MKEC	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	Rebuild 43.5% Ownership of 20.9 miles	6/1/2013	6/1/2013	$ 28,513
MKEC	MEDICINE LODGE - PRATT 115KV CKT 1	Rebuild 26 mile line	12/1/2009	12/1/2009	$ 46,963
MKEC	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	Upgrade transformer	12/1/2009	12/1/2009	$ 30,273
MKEC	North Ft. Dodge - Spearville 115kV Ckt 2	Build appoximately 20 mile 115 kV line	5/1/2015	5/1/2015	$ 22,742
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	$ 37,829
NPPD	Albion - Petersburg 115kV Ckt 1 Hansford Upgrade	Replace Breaker Switch 1106-D & jumpers; Replace Petersburg 115kV Substation main bus; Upgrade and replace transmission structures on 115kV lines TL1168 A & B to facilitate 100 degrees Centigrade line operation	12/31/2012	12/31/2012	$ 16,670
NPPD	Antelope - County Line - 115kV Rebuild	Rebuild/Upgrade the Antelope – County Line 115kV to rerate line segments to greater than 125 MVA.	5/1/2017	5/1/2017	$ 1,798
NPPD	Battle Creek - County Line 115kV Rebuild	Rebuild/Upgrade the Battle Creek – County Line 115kV to rerate line segments to greater than 125 MVA.	5/1/2017	5/1/2017	$ 1,717
NPPD	Fort Randall - Madison County 230kV Ckt 1	Raise structures and line clearances as necessary to re-rate the transmission line to 320 MVA	12/23/2013	12/23/2013	$ 195,513

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

NPPD	Hoskins - Dixon County 230kV Line Upgrade	Increase clearances to accommodate 320MVA facility rating to address loading issues	10/24/2015	10/24/2015	$	368
NPPD	Kelly - Madison County 230kV Ckt 1	Raise structures and line clearances as necessary to re-rate the transmission line to 320MVA	11/1/2014	11/1/2014	$	212,955
NPPD	Rosemont 115kV Substation	115kV Substation addition to accommodate new 115kV interconnection & 115kV breakers at Guide Rock due to addition of Rosemont 115kV Substation	11/1/2017	11/1/2017	$	85,077
NPPD	Twin Church - Dixon County 230kV Line Upgrade	Increase clearances to accommodate 320MVA facility rating	11/1/2018	11/1/2018	$	3,979
OKGE	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.	10/15/2011	10/15/2011	$	1,195,218
OKGE	Kingfisher Co Tap - Mathewson 345kV CKT 1	Replace terminal equipment to achieve conductor limit	3/1/2018	3/1/2018	$	1,157,707
OKGE	Leonard 138kV Switching Station (NU - OGE)	Cimarron Substation - Relay settings verification and field testing.	10/31/2017	10/31/2017	$	31,639
OKGE	NORTHWEST - WOODWARD 345KV CKT 1	Build 345 kV line	1/1/2010	1/1/2010	$	2,443,075
OKGE	Sunnyside Relays for Grady Interconnection	Sunnyside (OG&E) 345kV Substation: Verify relay settings are compatible with relays at Transmission Owner 345 kV Interconnection Substation.	11/23/2016	11/23/2016	$	143,039
OKGE	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	$	1,303,481

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

SPS	Crosby County Interchange - Floyd County Interchange 115kV Ckt 1	115kV Disturbance Monitoring Device, 3- ring bus, Right of Way, Transmission line work, Upgrades to Terminals, and replace static with fiber optic in static.	11/6/2017	11/6/2017	$	7,382,941
SPS	HARRINGTON MID - NICHOLS 230 KV CKT 2	Reconductor Harrington Mid - Nichols 230kV. Replace switches and breakers to get circuit to 727/727 MVA rating. New limit should be bus rating.	12/1/2012	12/1/2012	$	277,870
SPS	HARRINGTON WEST - NICHOLS 230KV CKT 1	Reconductor Harrington West - Nichols 230kV. Replace switches and breakers to get circuit to 727/727 MVA rating. New limit should be bus rating.	12/1/2012	12/1/2012	$	286,898
SPS	Lost Draw 115 kV Substation (NU)	Transmission Owner Interconnection Substation - Acquire five (5) acres of land for constructing a new substation, tapping, looping in, and re-terminating Cochran – Lehman 115kV transmission circuit, construct a new three (3) breaker ring 115kV bus, two (2) line terminals, three (3) 3000A circuit breakers, control panel replacement, line relaying, disconnect switches, and associated equipment. Transmission Owner Lost Draw 115kV Switching Station: Construct two (2) line terminals, and tap, loop-in, and re-terminate Lehman – Cochran 115kV transmission circuit into the new Lost Draw Switching Station. Construct and install new line structures, foundations, conductors, insulators, switches, and all other associated work and materials.	10/31/2018	10/31/2018	$	10,899,583
SPS	PLANT X - TOLK 230KV REBUILD CIRCUIT #1	Rebuild Plant X – Tolk 230kV transmission circuit #1 which is approximately 10 miles in length. The existing 795 MCM ACSR conductor will be replaced with 995 MCM ACCS conductor along with upgrading associated disconnect switches and structural steel.	12/31/2017	12/31/2017	$	185,980
SPS	PLANT X - TOLK 230KV REBUILD CIRCUIT #2	Rebuild Plant X – Tolk 230kV transmission circuit #2 which is approximately 10 miles in length. The existing 795 MCM ACSR conductor will be replaced with 995 MCM ACCS conductor along with upgrading associated disconnect switches and structural steel.	12/31/2017	12/31/2017	$	180,893
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	$	611,437
SPS	TUCO INTERCHANGE 345/230KV CKT 1 REPLACEMENT	The existing 345/230kV 560/560MVA autotransformer at Tuco Substation will be replaced with a new transformer unit to match the other transformer at this site. The new transformer can be installed at Tuco Substation by removing the existing transformer fro	6/1/2018	6/1/2018	$	709,366
WAPA	Gavins Point - Yankton Junction 115 kV	Western Area Power Administration ("WAPA")/NorthWestern Energy Gavins Point – Yankton Junction 115 kV1: Rebuild approximately four (4) miles of 115 kV and replace associated terminal equipment.	12/31/2019	12/31/2019	$	2,184,861
WFEC	WASHITA - GRACEMONT 138 KV CKT 2	BUILD WASHITA - GRACEMONT 138KV CKT 2 (APPROXIMATELY 7 MILES). ADD LINE TERMINAL AT WASHITA AND PROCURE RIGHT OF WAY.	10/12/2012	10/12/2012	$	2,383,036
WR	Tap Wichita - Thistle 345 kV Ckt 1 & 2 - Pratt Addition (NU)	Relaying settings changes at the new 345kV switching station.	12/31/2016	12/31/2016	$	2,026
WR	Tap Wichita - Thistle 345 kV Ckt 1 & 2 - Pratt Co Addition (NU)	345 kV Breaker and Half Substation (No metering or customer equipment); Eight (8) 345 kV Breakers; Twenty (20) 345 kV switches; Two (2) 345 kV reactor switches; Fourteen (14) VTs; Two (2) 345 kV 50 Mvar line reactors; New redundant primary relaying, relaying setting changes at Wichita and Thistle; All associated site, yard, cable, grounding and conduit work; Available Funds Used During Construction; Contingency; 345 kV Transmission Line Work; Four (4) 3-pole steel dead end and turning structures to connect to the existing Wichita - Thistle 345 kV transmission lines (circuit #1 and #2) into the interconnection substation, plus associated foundations and labor. These facilities and estimated costs assume that the interconnection substation is immediately adjacent to the existing 345 kV line easements.; Available Funds Used During Construction; Contingency;	10/16/2016	10/16/2016	$	6,941,119

*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 6 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

No Redispatch Requirements

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
ERCOT EAST HVDC Tie Expansion	DCT	AG1-2018-014	86765500	83.33%	$208,333,333
ERCOT EAST HVDC Tie Expansion	REMC	AG1-2018-030	86527874	16.67%	$41,666,667
				Total:	$250,000,000

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
ERCOT NORTH HVDC Tie Expansion	MCPI	AG1-2018-024	86638341	45.45%	$54,545,455
ERCOT NORTH HVDC Tie Expansion	MCPI	AG1-2018-025	86638345	54.55%	$65,454,545
				Total:	$120,000,000

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
Kelly - King Hill 115kV Ckt 1	BPWN	AG1-2018-006	87022977	100.00%	$6,128,924
				Total:	$6,128,924

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
ONETA - ONETA ENERGY CENTER 345KV CKT 1	AEPM	AG1-2018-001	87008991	100.00%	$750,000
				Total:	$750,000

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
ONETA - ONETA ENERGY CENTER 345KV CKT 2	AEPM	AG1-2018-001	87008991	100.00%	$750,000
				Total:	$750,000

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
RCEAST HVDC TIE EXPANSION	BEPM	AG1-2018-002	86691232	100.00%	$40,000,000
				Total:	$40,000,000