



# Aggregate Facility Study SPP-2015-AG1-AFS-4

9/22/2015  
Reposted 9/29/2015

SPP Engineering, SPP Transmission Service Studies



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## Executive Summary

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Pursuant to Attachment Z1 of the Southwest Power Pool, Inc. (SPP) Open Access Transmission Tariff (OATT), 2,992 MW of long-term transmission service requests have been studied in this Aggregate Facility 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. A highly tangible benefit of studying transmission requests aggregately under the SPP OATT Attachment Z1 is the sharing of costs among Transmission Customers using the same facility. Facility upgrade costs are allocated on a prorated basis to all requests positively impacting any individual overloaded facility.

Attachment Z2 further provides for facility upgrade cost recovery by stating: “Transmission Customers paying Directly Assigned Upgrade Costs for Service Upgrades or that are in excess of the Safe Harbor Cost Limit for Network Upgrades associated with new or changed Designated Resources and Project Sponsors paying Directly Assigned Upgrade Costs for Sponsored Upgrades shall receive revenue credits in accordance with Attachment Z2. Generation Interconnection Customers paying for Network Upgrades shall receive credits for new transmission service using the facility as specified in Attachment Z1.”

- The AFS determined that the total assigned facility upgrade Engineering and Construction (E&C) cost is \$17 million. Additionally, no third party facility upgrades are assignable to the Transmission Customers.
- Total upgrade levelized revenue requirements for all transmission requests after consideration of potential base plan funding is \$15 million.

To accommodate the requested SPP Transmission Service, third-party facilities must be upgraded when the third-party transmission provider determines that they are constrained. Third-party facilities include both first-tier neighboring facilities outside SPP and Transmission Owner facilities within SPP that are not under the SPP OATT. In this AFS, third-party facilities were not identified. Total E&C cost estimates for required third-party facility upgrades are applicable.

Due to this study being reposted, SPP will extend the ACA response period. To remain in the Aggregate Transmission Service Study (ATSS), SPP must receive from the Customer by October 14, 2015, an executed Aggregate Completion Agreement. The Aggregate Completion Agreement will list options the Customer must choose to clarify their commitment to remain in the ATSS. The only action required on OASIS is to withdraw the request or leave the request in study mode.

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.

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## Introduction

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Important milestones and dates in SPP's Aggregate Transmission Study process:

- All requests for long-term transmission service with a signed study agreement received before March 1, 2015 for 2015-AG1 have been included in this first Aggregate Transmission Service Study (ATSS) of 2015.

The results of the AFS are detailed in Tables 1 through 6. Detailed results depict individual upgrade costs by study and potential base plan allowances determined by Attachments J and Z1. The [OATT](#) may be accessed at SPP's website by going to [SPP.org](#)>Org Groups>Governing Documents.

To understand the extent to which Base Plan Upgrades may be applied to both Point-to-Point (PTP) and Network Transmission Services, it is necessary to highlight the definition of Designated Resource. Per Section 1.9a of the SPP OATT, a Designated Resource is:

“[a]ny 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.”

Network and PTP service has 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 Transmission Customer must provide SPP information necessary to verify that the new or changed Designated Resource meets the following conditions:

1. Transmission 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 Transmission Customer, the accredited capacity of the Transmission Customer's existing Designated Resources plus the lesser of:
  - a. The planned maximum net dependable capacity applicable to the Transmission Customer or

- b. The requested capacity; shall not exceed 125% of the Transmission Customer's projected system peak responsibility determined pursuant to SPP Criteria 2.

According to Attachment Z1 Section VI.A, PTP customers pay the higher of the monthly transmission access charge (base rate) or the monthly revenue requirement associated with the assigned facility upgrades, including any prepayments for redispatch required during construction.

Network Integration Service Customers pay the total monthly transmission access charges and the monthly revenue requirement associated with the facility upgrades, including any prepayments for redispatch during construction.

Transmission 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. The year that each Network Upgrade is required to accommodate a request is determined by interpolating between the applicable model years given the respective loading data. 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. As a result, the lowest seasonal allocated ATC within the requested reservation period will be offered to the Transmission Customer on an applicable annual basis as listed in Table 1. The ATC may be limited by transmission owner planned projects, expansion plan projects, or Customer assigned upgrades.

Some constraints identified in the AFS were not assigned to the Customer because SPP, the Transmission Provider, 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. This table also includes constrained facilities in the current planning horizon that limit the rollover rights of the Transmission Customer. Table 6 lists possible redispatch pairs to allow start of service prior to completion of assigned Network Upgrades. Table 7 lists costs allocated per request for Service Upgrades assigned in this AFS.

By taking the transmission service subject to interim redispatch, the Transmission Customer agrees to provide interim redispatch. Once the Transmission Provider identifies the possible redispatch pairs, the Transmission Customer can enter into bilateral agreements to provide redispatch. Should the need to implement redispatch arise in order to maintain Network reliability, it is up to the Transmission Customer to contact parties with whom they have entered into redispatch agreements to implement that service. Such redispatch shall occur in advance of curtailment of other firm reservations impacting these constraints. In the absence of implementation of interim redispatch as requested by the Transmission Provider for Transmission Customer transactions resulting in overloads on limiting facilities, the Transmission Provider shall curtail the Transmission Customers schedule.

## Financial Analysis

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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 2, Redispatch, in the Aggregate Completion 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 Transmission Customer shall 1) pay the total E&C costs and other annual operating costs associated with the new facilities, and 2) receive credits associated with the depreciated book value of removed usable facilities; salvage value of removed non-usable facilities; and the carrying charges, excluding depreciation, associated with all removed usable facilities based on their respective book values.

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 though 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 displaced or deferred by an earlier in service date for a requested upgrade, achievable base plan avoided revenue requirements shall be determined per Attachment J, Section VII.B methodology. 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.

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## **Third-Party Facilities**

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For third-party facilities listed in Table 3 and Table 5, the Transmission Customer is responsible for funding the necessary upgrades of these facilities per Section 21.1 of the Transmission Provider's OATT. In this AFS, third-party facilities were identified. Total E&C cost estimates for required third-party facility upgrades are applicable. The Transmission Provider will undertake reasonable efforts to assist the Transmission 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 Transmission Provider 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 the Transmission Provider prior to tendering of a Transmission Service Agreement. These facilities also include those owned by members of the Transmission Provider who have not placed their facilities under the Transmission Provider's OATT. Upgrades on the Southwest Power Administration 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 for study of third party facilities for load that sinks outside the SPP footprint with the applicable Transmission Providers.

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## **Make-Whole Payment**

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Make-whole payment (MWP) is a potential cost that may be allocated to a Withdrawn Request inside an Aggregate Facilities Study (AFS). The MWP for the Withdrawn Request(s) is determined as the sum of the increase in Directly Assigned Upgrade Costs (DAUC) for the remaining requests in the AFS. If a MWP is required, the customer(s) with the Withdrawn Request(s) shall be obligated to pay such costs pursuant to the ACA.

If multiple requests are withdrawn at the conclusion of this study iteration, then the impact of each Withdrawn Request on the shared upgrades causing an increase in DAUC for the remaining requests in the AFS with shared costs shall be determined. Upgrade costs for facilities allocated solely to the Withdrawn Request(s) will not be included in the MWP calculation. If a MWP is required for a

Withdrawn Request, the customer shall enter into a Sponsored Upgrade Agreement with SPP in accordance with Attachment J and will be eligible for revenue credits in accordance with Attachment Z2. For additional details, refer to the Tariff language.

The MWP has not been calculated in this report posting. However, one can be assessed by the following:

1. Refer to Table 3 of the relevant AFS and identify the Service Upgrades allocated to the request.
2. For Service Upgrades where “Allocated E&C Cost” is less than the “Total E&C Cost,” sum the “Total Revenue Requirements.”
3. The sum calculated in (2) is the maximum potential MWP.

In most cases, the MWP will not include costs of non-shared upgrades. Non-shared upgrade costs may be included in the event that SPP grants service in a subsequent study that required the use of the non-shared upgrade.

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## Study Methodology

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### **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 monitor 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 AECL, AMRN (Ameren), and



ENTR (Entergy) control areas. A 2 % TDF cutoff was applied to WAPA. 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 eight seasonal models to study the aggregate transfers over a variety of requested service periods. The following SPP Transmission Expansion Plan 2014 Build 1 Cases were used to study the impact of the requested service on the transmission system:

- 2015/16 Winter Peak (15WP)
- 2016 Summer Peak (16SP)
- 2016/17 Winter Peak (16WP)
- 2020 Summer Peak (20SP)
- 2020/21 Winter Peak (20WP)
- 2025 Summer Peak (25SP)
- 2025/26 Winter Peak (25WP)

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 2014 Series Cases. Scenario 5 includes transmission service not already included in the SPP 2014 Series Cases.

## **Transmission Request Modeling**

Network Integration Transmission Service requests are modeled as Generation to Load transfers in addition to Generation to Generation transfers. Network Integration Transmission Service requests are modeled as Generation to Load transfers in addition to Generation to Generation because the requested Network Integration Transmission Service is a request to serve network load with the new designated network resource, and the impacts on Transmission System are determined accordingly. Point-To-Point 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. Transfer distribution factor cutoffs (SPP and 1<sup>st</sup>-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.

## **Curtailement 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 curtailement of existing confirmed service or 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 Transmission 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. Curtailement of existing confirmed service is evaluated to provide only interim service. Curtailement of existing confirmed service is only evaluated at the request of the transmission Customer.

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 Managing and Utilizing System Transmission (MUST). Relief pairs from the generation shift factors for the incremental and decremental units with a greater than 3% TDF 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. Transmission 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 SPP Reliability Coordinator would call upon the redispatch requirements before implementing NERC TLR Level 5a.

The Aggregate Study 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.

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## **Study Results**

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### **Study Analysis Results**

Tables 1 through 6 contain the AFS steady-state analysis results. 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 and season of first impact.

Table 2 identifies total E&C cost allocated to each Transmission 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), point-to-point base rate charge, total revenue requirements for assigned upgrades with consideration of potential base plan funding, and final total cost allocation to the Transmission Customer. In addition, Table 2 identifies SWPA upgrade costs which require prepayment in addition to other allocated costs.

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

Table 5 lists identified third-party constrained facilities.

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

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 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. A footnote will provide the maximum resource designation allowable for base plan funding consideration per Customer basis per year.

Base plan funding verification requires that each Transmission Customer with potential for base plan funding provide SPP attestation statements verifying that the firm capacity of the requested Designated Resource is committed for a minimum five year duration.

## **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.

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## **Conclusion**

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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.

**Due to this study being reposted, SPP will extend the ACA response period.** To remain in the Aggregate Transmission Service Study (ATSS), the Transmission Provider must receive from the Transmission Customer by **October 14, 2015**, an executed Aggregate Completion Agreement. The Aggregate Completion Agreement will list options the Customer must choose to clarify their commitment to remain in the ATSS. The only action required on OASIS is to WITHDRAW the request or leave the request in STUDY mode.

The Transmission Provider must receive an unconditional and irrevocable letter of credit in the amount of the total allocated E&C costs assigned to the Customer. This letter of credit is not required for those facilities that are fully base plan funded. The amount of the letter of credit will be adjusted down on an annual basis to reflect cost recovery based on revenue allocation. The Transmission Provider will issue notifications to construct Network Upgrades to the constructing Transmission Owner after filing of necessary service agreements at FERC.

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## Appendix A

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### 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:
  - 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: 3mw
- Excl'd 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:
  - 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 (ACA Parameter 3)	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
APM	AG1-2015-056	80853948	AECI	MPS	3	7/1/2016	7/1/2026	7/1/2016	7/1/2026	7/1/2016	7/1/2026	1	16SP
BRPS	AG1-2015-003	80873830	MEC	NPPD	46	1/1/2018	1/1/2029	1/1/2018	1/1/2029	Note 4	Note 4	46	25SP
BRPS	AG1-2015-004	80882173	NPPD	NPPD	73	1/1/2018	1/1/2029	1/1/2018	1/1/2029	Note 4	Note 4	73	25SP
ETEC	AG1-2015-007	80515981	OKGE	CSWS	102	1/1/2016	1/1/2036	6/1/2019	6/1/2039	2/1/2016	2/1/2036	0	16SP
HZN	AG1-2015-019	80566529	CSWS	EES	45	1/1/2018	1/1/2023	1/1/2018	1/1/2023	Note 4	Note 4	45	25SP
HZN	AG1-2015-020	80566532	CSWS	EES	45	1/1/2018	1/1/2023	1/1/2018	1/1/2023	Note 4	Note 4	45	25SP
HZN	AG1-2015-021	80566535	CSWS	EES	45	1/1/2018	1/1/2023	1/1/2018	1/1/2023	Note 4	Note 4	45	25SP
HZN	AG1-2015-022	80707447	SPS	EES	80	1/1/2018	1/1/2023	1/1/2018	1/1/2023	Note 4	Note 4	80	25SP
HZN	AG1-2015-023	80889467	SPS	EES	80	1/1/2018	1/1/2023	1/1/2018	1/1/2023	Note 4	Note 4	80	25SP
HZN	AG1-2015-024	80889471	SPS	EES	80	1/1/2018	1/1/2023	1/1/2018	1/1/2023	Note 4	Note 4	80	25SP
KCPS	AG1-2015-025	80878929	WR	KCPL	150	9/1/2015	3/1/2036	6/1/2019	12/1/2039	2/1/2016	8/1/2036	0	16SP
KCPS	AG1-2015-026	80887601	MPS	KCPL	300	6/1/2016	6/1/2037	12/31/2016	12/31/2037	12/31/2016	12/31/2037	300	16SP
KCPS	AG1-2015-027	80888058	MPS	KCPL	200	6/1/2016	6/1/2037	12/31/2016	12/31/2037	12/31/2016	12/31/2037	200	16SP
KMEA	AG1-2015-028	80715468	KCPL	KCPL	10	1/1/2016	1/1/2021	2/1/2016	2/1/2021	2/1/2016	2/1/2021	10	16SP
KMEA	AG1-2015-029	80850246	NPPD	WR	1	10/1/2015	5/1/2025	2/1/2016	9/1/2025	2/1/2016	9/1/2025	0	16SP
KPP	AG1-2015-030	80716628	WR	WR	22	1/1/2016	1/1/2037	6/1/2019	6/1/2040	2/1/2016	2/1/2037	0	16SP
KPP	AG1-2015-031	80716676	WR	WR	25	4/1/2016	4/1/2037	6/1/2019	6/1/2040	4/1/2016	4/1/2037	0	16SP
KPP	AG1-2015-032	80888916	WR	WR	6	9/1/2015	6/1/2026	2/1/2016	11/1/2026	2/1/2016	11/1/2026	0	16SP
LESM	AG1-2015-034	80792734	WR	LES	101	1/1/2016	1/1/2021	6/1/2018	6/1/2023	Note 4	Note 4	0	16SP
MOWR	AG1-2015-035	80848073	SPA	KCPL	3	9/1/2015	9/1/2020	2/1/2016	2/1/2021	Note 4	Note 4	3	16SP
MOWR	AG1-2015-036	80848092	MPS	MPS	25	9/1/2015	9/1/2020	1/21/2017	1/21/2021	1/21/2017	1/21/2022	0	16SP
MOWR	AG1-2015-037	80868666	WR	MPS	5	6/1/2016	6/1/2021	6/1/2016	6/1/2021	Note 4	Note 4	0	16SP
OPPM	AG1-2015-040	80008188	WAUE	OPPD	400	1/1/2018	7/1/2037	1/1/2018	7/1/2037	1/1/2018	7/1/2037	0	25SP
RESN	AG1-2015-043	80888988	OKGE	OKGE	201	1/1/2017	1/1/2022	3/1/2021	3/1/2026	Note 4	Note 4	0	20SP
SPSM	AG1-2015-044	80868905	SPS	SPS	30	10/1/2016	10/1/2031	10/1/2016	10/1/2031	10/1/2016	10/1/2031	0	20SP
SPSM	AG1-2015-045	80871942	SPS	SPS	70	12/1/2016	12/1/2041	12/15/2018	12/1/2041	12/1/2016	12/1/2041	0	20SP
SPSM	AG1-2015-046	80871945	SPS	SPS	70	12/1/2016	12/1/2041	12/15/2018	12/1/2041	12/1/2016	12/1/2041	0	20SP
SPSM	AG1-2015-047	80872689	OKGE	SPS	249	1/1/2018	12/1/2034	3/1/2021	12/1/2034	1/1/2018	12/1/2034	0	25SP
UCU	AG1-2015-048	80499812	WPEK	MPS	50	11/26/2016	11/25/2031	3/1/2021	3/1/2036	11/26/2016	11/25/2031	0	20SP
WFEC	AG1-2015-049	80271483	SPS	WFEC	25	9/1/2016	9/1/2041	3/1/2021	3/1/2046	9/1/2016	9/1/2041	0	20SP
WFEC	AG1-2015-050	80647634	OKGE	WFEC	50	1/1/2016	1/1/2036	3/1/2021	3/1/2041	2/1/2016	2/1/2036	0	16SP
WRGS	AG1-2015-052	80812246	WR	WR	200	10/1/2015	10/1/2025	6/1/2019	6/1/2029	2/1/2016	2/1/2026	0	16SP
WRGS	AG1-2015-053	80812328	WR	WR	200	7/1/2016	10/1/2025	3/1/2021	6/1/2030	7/1/2016	10/1/2025	0	20SP

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**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.

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

Customer	Study Number	Reservation	Engineering and Construction Cost of Upgrades Allocated to Customer for Revenue Requirements	<sup>1</sup> Letter of Credit Amount Required (ACA Parameter 5)	<sup>2</sup> Potential Base Plan Engineering and Construction Funding Allowable	Notes	<sup>4</sup> Additional Engineering and Construction Cost for 3rd Party Upgrades (ACA Parameter 2)	<sup>3,5</sup> Total Revenue Requirements for Assigned Upgrades Over Term of Reservation WITH Potential Base Plan Funding Allocation	Point-to-Point Base Rate Over Reservation Period	<sup>6</sup> Total Cost of Reservation Assignable to Customer Contingent Upon Base Plan Funding	Directly Assigned Upgrade Cost (DAUC) (ACA Parameter 1)
APM	AG1-2015-056	80853948	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
BRPS	AG1-2015-003	80873830	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
BRPS	AG1-2015-004	80882173	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
ETEC	AG1-2015-007	80515981	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
HZN	AG1-2015-019	80566529	\$0	\$0	\$0	6	\$0	\$0	\$7,077,771	\$7,077,771	\$ -
HZN	AG1-2015-020	80566532	\$0	\$0	\$0	6	\$0	\$0	\$7,077,771	\$7,077,771	\$ -
HZN	AG1-2015-021	80566535	\$0	\$0	\$0	6	\$0	\$0	\$7,077,771	\$7,077,771	\$ -
HZN	AG1-2015-022	80707447	\$0	\$0	\$0	7	\$0	\$0	\$12,582,704	\$12,582,704	\$ -
HZN	AG1-2015-023	80889467	\$0	\$0	\$0	7	\$0	\$0	\$12,582,704	\$12,582,704	\$ -
HZN	AG1-2015-024	80889471	\$0	\$0	\$0	7	\$0	\$0	\$12,582,704	\$12,582,704	\$ -
KCPS	AG1-2015-025	80878929	\$61,776	\$20,386	\$41,390		\$0	\$65,776	\$0	\$65,776	\$ 65,776
KCPS	AG1-2015-026	80887601	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
KCPS	AG1-2015-027	80888058	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
KMEA	AG1-2015-028	80715468	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
KMEA	AG1-2015-029	80850246	\$145,773	\$0	\$145,773		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
KPP	AG1-2015-030	80716628	\$2,259,353	\$0	\$2,259,353		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
KPP	AG1-2015-031	80716676	\$2,592,543	\$6,096	\$2,586,447		\$0	\$15,552	\$0	\$15,552	\$ 15,552
KPP	AG1-2015-032	80888916	\$10,922	\$0	\$10,922		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
LESM	AG1-2015-034	80792734	\$306,112	\$306,112	\$0		\$0	\$570,886	\$0	\$570,886	\$ 570,886
MOWR	AG1-2015-035	80848073	\$0	\$0	\$0		\$0	\$0	\$375,035	\$375,035	\$ -
MOWR	AG1-2015-036	80848092	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
MOWR	AG1-2015-037	80868666	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
OPPM	AG1-2015-040	80008188	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
RESN	AG1-2015-043	80888988	\$0	\$0	\$0		\$0	\$0	\$29,828,482	\$29,828,482	\$ -
SPSM	AG1-2015-044	80868905	\$212,615	\$212,615	\$0		\$0	\$441,958	\$0	\$441,958	\$ 441,958
SPSM	AG1-2015-045	80871942	\$436,472	\$0	\$436,472		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
SPSM	AG1-2015-046	80871945	\$436,472	\$0	\$436,472		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
SPSM	AG1-2015-047	80872689	\$4,023,456	\$0	\$4,023,456		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
UCU	AG1-2015-048	80499812	\$5,577,343	\$5,577,343	\$0		\$0	\$13,043,880	\$0	\$13,043,880	\$ 13,043,880
WFEC	AG1-2015-049	80271483	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
WFEC	AG1-2015-050	80647634	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$ -
WRGS	AG1-2015-052	80812246	\$284,332	\$284,332	\$0		\$0	\$527,955	\$0	\$527,955	\$ 527,955
WRGS	AG1-2015-053	80812328	\$276,516	\$276,516	\$0		\$0	\$519,298	\$0	\$519,298	\$ 519,298
<b>Grand Total</b>			<b>\$16,623,685</b>		<b>\$9,940,285</b>			<b>\$15,185,305</b>			<b>\$ -</b>



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

<p><b>Note 1:</b> Letter of Credit required for financial security for transmission owner for network upgrades is determined by allocated engineering and construction costs less engineering and construction costs for upgrades when network customer is the transmission owner less the E &amp; C allocation of expedited projects. Letter of Credit is required for upgrades assigned to PTP requests. The amount of the letter of credit will be adjusted down on an annual basis to reflect cost recovery based on revenue allocation. This letter of credit is not required for those facilities that are fully base plan funded. The Letter Of Credit Amount listed is based on meeting OATT Attachment J requirements for base plan funding.</p>
<p><b>Note 2:</b> If potential base plan funding is applicable, this value is the lesser of the Engineering and Construction costs of assignable upgrades or the value of base plan funding calculated pursuant to Attachment J, Section III B criteria. Allocation of base plan funding is contingent upon verification of customer agreements meeting Attachment J, Section II B criteria. Not applicable if Point-to-Point base rate exceeds revenue requirements.</p>
<p><b>Note 3:</b> Revenue Requirements (RR) are based upon deferred end dates if applicable. Deferred dates are based upon customer's choice to pursue redispach. Achievable Base Plan Avoided RR in the case of a Base Plan upgrade being displaced or deferred by an earlier in service date for a Requested Upgrade shall be determined per Attachment J, Section VII.C methodology. Assumption of a 40 year service life is utilized for Base Plan funded projects. A present worth analysis of RR on a common year basis between the Base Plan and Requested Upgrades was performed to determine avoided Base Plan RR due to the displacement or deferral of the Base Plan upgrade by the Requested Upgrade. The incremental increase in present worth of a Requested Upgrade on a common year basis as a Base Plan upgrade is assigned to the transmission requests impacting the upgrade based on the displacement or deferral. If the displacement analysis results in lower RR due to the shorter amortization period of the requested upgrade when compared to a base plan amortization period, then no direct assignment of the upgrade cost is made due to the displacement to an earlier start date.</p>
<p><b>Note 4:</b> For Point-to-Point requests, total cost is based on the higher of the base rate or assigned upgrade revenue requirements. For Network requests, the total cost is based on the assigned upgrade revenue requirement. Allocation of base plan funding will be determined after verification of designated resource meeting Attachment J, Section II B Criteria. Additionally E &amp; C of 3rd Party upgrades is assignable to Customer. This includes prepayments required for any SWPA upgrades. Revenue requirements for 3rd Party facilities are not calculated. Total cost to customer is based on assumption of Revenue Requirements with confirmation of base plan funding. Customer is responsible for negotiating redispach costs if applicable. Customer is also responsible to pay credits for previously assigned upgrades that are impacted by their request. Credits can be paid from base plan funding if applicable.</p>
<p><b>Note 5:</b> RR with base plan funding may increase or decrease even if no base plan funding is applicable to a particular request if another request that shares the upgrade is now full base plan funded resulting in a different amortization period for the upgrade and thus different RR.</p>
<p><b>Note 6:</b> Mutually exclusive requests: 80566532 and 80566535. System impacts were identified by only modeling mutually exclusive request 80566529.</p>
<p><b>Note 7:</b> Mutually exclusive requests: 80889467 and 80889471. System impacts were identified by only modeling mutually exclusive request 80707447.</p>

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

Customer Study Number  
 APM AG1-2015-056

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
APM	80853948	AECI	MPS	3	7/1/2016	7/1/2026	7/1/2016	7/1/2026	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80853948	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80853948	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		

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
80853948	IATAN - ST JOE 345KV CKT 1	12/15/2009	12/15/2009		
	Iatan 161 kV	12/15/2009	12/15/2009		
	Iatan 345/161 kV transformer	12/15/2009	12/15/2009		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
BRPS AG1-2015-003

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
BRPS	80873830	MEC	NPPD	46	1/1/2018	1/1/2029	1/1/2018	1/1/2029	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80873830	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80873830	Hoskins - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	Twin Church - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
BRPS AG1-2015-004

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
BRPS	80882173	NPPD	NPPD	73	1/1/2018	1/1/2029	1/1/2018	1/1/2029	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80882173	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80882173	Albion - Petersburg 115kV Ckt 1 GEN-2006-044N Upgrade	12/31/2012	12/31/2012		
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013		
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013		
	Hoskins - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	Neligh - Petersburg North 115kV Ckt 1	12/31/2012	12/31/2012		
	Twin Church - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 ETEC AG1-2015-007

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
ETEC	80515981	OKGE	CSWS	102	1/1/2016	1/1/2036	6/1/2019	6/1/2039	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

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
80515981	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80515981	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes

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
80515981	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 HZN AG1-2015-019

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
HZN	80566529	CSWS	EES	45	1/1/2018	1/1/2023	1/1/2018	1/1/2023	\$ -	\$ 7,077,771	\$ -	\$ -
									\$ -	\$ 7,077,771	\$ -	\$ -

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
80566529	None					\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>						\$ -	\$ -	\$ -	\$ -	\$ -

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
80566529	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	Southwestern Station - Washita 138kv Ckt 1	10/1/2005	10/1/2005		
	Southwestern Station - Washita 138kv Ckt 1 (AEP)	10/1/2005	10/1/2005		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kv (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 HZN AG1-2015-020

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
HZN	80566532	CSWS	EES	45	1/1/2018	1/1/2023	1/1/2018	1/1/2023	\$ -	\$ 7,077,771	\$ -	\$ -
									\$ -	\$ 7,077,771	\$ -	\$ -

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
80566532	None					\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>						\$ -	\$ -	\$ -	\$ -	\$ -

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
80566532	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	Southwestern Station - Washita 138kv Ckt 1	10/1/2005	10/1/2005		
	Southwestern Station - Washita 138kv Ckt 1 (AEP)	10/1/2005	10/1/2005		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kv (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 HZN AG1-2015-021

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
HZN	80566535	CSWS	EES	45	1/1/2018	1/1/2023	1/1/2018	1/1/2023	\$ -	\$ 7,077,771	\$ -	\$ -
									\$ -	\$ 7,077,771	\$ -	\$ -

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
80566535	None					\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>						\$ -	\$ -	\$ -	\$ -	\$ -

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
80566535	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	Southwestern Station - Washita 138kV Ckt 1	10/1/2005	10/1/2005		
	Southwestern Station - Washita 138kV Ckt 1 (AEP)	10/1/2005	10/1/2005		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.



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

Customer Study Number  
 HZN AG1-2015-022

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
HZN	80707447	SPS	EES	80	1/1/2018	1/1/2023	1/1/2018	1/1/2023	\$ -	\$ 12,582,704	\$ -	\$ -
									\$ -	\$ 12,582,704	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80707447	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80707447	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kv (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 HZN AG1-2015-023

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
HZN	80889467	SPS	EES	80	1/1/2018	1/1/2023	1/1/2018	1/1/2023	\$ -	\$ 12,582,704	\$ -	\$ -
									\$ -	\$ 12,582,704	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80889467	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80889467	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kv (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 HZN AG1-2015-024

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
HZN	80889471	SPS	EES	80	1/1/2018	1/1/2023	1/1/2018	1/1/2023	\$ -	\$ 12,582,704	\$ -	\$ -
									\$ -	\$ 12,582,704	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80889471	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80889471	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kv (AEP)	7/1/2012	7/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 KCPS AG1-2015-025

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
KCPS	80878929	WR	KCPL	150	9/1/2015	3/1/2036	6/1/2019	12/1/2039	\$ 41,390	\$ -	\$ 61,776	\$ 199,320
									\$ 41,390	\$ -	\$ 61,776	\$ 199,320

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
80878929	ARKANSAS CITY - PARIS 69KV CKT 1	6/1/2017	6/1/2017			\$ 41,390	\$ 20,386	\$ 61,776	\$ 145,773	\$ 199,320
					Total	\$ 41,390	\$ 20,386	\$ 61,776	\$ 145,773	\$ 199,320

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80878929	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes

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
80878929	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	Osage - Shidler 138kV	1/15/2014	1/15/2014		
	Shidler 138 kv	2/8/2014	2/8/2014		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 KCPS AG1-2015-026

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
KCPS	80887601	MPS	KCPL	300	6/1/2016	6/1/2037	12/31/2016	12/31/2037	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

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
80887601	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
80887601	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
 KCPS AG1-2015-027

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
KCPS	80888058	MPS	KCPL	200	6/1/2016	6/1/2037	12/31/2016	12/31/2037	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80888058	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80888058	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
KMEA AG1-2015-028

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
KMEA	80715468	KCPL	KCPL	10	1/1/2016	1/1/2021	2/1/2016	2/1/2021	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80715468	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80715468	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
KMEA AG1-2015-029

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
KMEA	80850246	NPPD	WR	1	10/1/2015	5/1/2025	2/1/2016	9/1/2025	\$ 145,773	\$ -	\$ 145,773	\$ 204,586
									\$ 145,773	\$ -	\$ 145,773	\$ 204,586

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80850246	CRAWFORD - NEOSHO 69KV CKT 1	6/1/2021	6/1/2021			\$ 145,773	\$ 145,773	\$ 204,586
					Total	\$ 145,773	\$ 145,773	\$ 204,586

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80850246	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	6/1/2016	12/31/2016		
	Multi - Geary County 345/115 kv and Geary - Chapman 115 kv	6/1/2016	6/1/2018		

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
80850246	Albion - Petersburg 115KV Ckt 1 GEN-2006-044N Upgrade	12/31/2012	12/31/2012		
	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013		
	Fort Randall - Madison County 230kv Ckt 1	10/1/2014	10/1/2014		
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013		
	Kelly - Madison County 230kv Ckt 1	11/1/2014	11/1/2014		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	Neligh - Petersburg North 115KV Ckt 1	12/31/2012	12/31/2012		

\*Credits may be required for applicable generation interconnection network upgrades.



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

Customer Study Number  
KPP AG1-2015-030

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
KPP	80716628	WR	WR	22	1/1/2016	1/1/2037	6/1/2019	6/1/2040	\$ 2,259,353	\$ -	\$ 2,259,353	\$ 6,128,913
									\$ 2,259,353	\$ -	\$ 2,259,353	\$ 6,128,913

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80716628	ARKANSAS CITY - PARIS 69KV CKT 1	6/1/2017	6/1/2017			\$ 37,022	\$ 145,773	\$ 122,365
	NORTH STREET - NORTHVIEW 115KV CKT 1	6/1/2021	6/1/2021			\$ 1,097,767	\$ 2,348,355	\$ 2,966,674
	NORTH STREET - NORTHVIEW 115KV CKT 2	6/1/2021	6/1/2021			\$ 1,097,767	\$ 2,348,355	\$ 2,966,674
	SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021			\$ 26,797	\$ 200,000	\$ 73,199
					Total	\$ 2,259,353	\$ 5,042,483	\$ 6,128,913

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80716628	BENTON 138kV Terminal Equipment	6/1/2016	6/1/2016		
	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes

Planned Projects

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80716628	Furley Tap-Towanda-Midian 69 kV	6/1/2017	6/1/2017		

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
80716628	BARBER - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	Longview - KC South 161kV Ckt 1	1/31/2011	1/31/2011		
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	6/1/2013		
	RIVER ROAD - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
KPP AG1-2015-031

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
KPP	80716676	WR	WR	25	4/1/2016	4/1/2037	6/1/2019	6/1/2040	\$ 2,586,447	\$ -	\$ 2,592,543	\$ 7,113,000
									\$ 2,586,447	\$ -	\$ 2,592,543	\$ 7,113,000

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
80716676	ARKANSAS CITY - PARIS 69KV CKT 1	6/1/2017	6/1/2017			\$ 42,060	\$ -	\$ 42,060	\$ 145,773	\$ 140,686
	NORTH STREET - NORTHVIEW 115KV CKT 1	6/1/2021	6/1/2021			\$ 1,250,588	\$ -	\$ 1,250,588	\$ 2,348,355	\$ 3,419,978
	NORTH STREET - NORTHVIEW 115KV CKT 2	6/1/2021	6/1/2021			\$ 1,250,588	\$ -	\$ 1,250,588	\$ 2,348,355	\$ 3,419,978
	SHELDON - SW7&BENNET7 115.00 115KV CKT 1	6/1/2021	6/1/2021			\$ 12,377	\$ 6,096	\$ 18,473	\$ 324,585	\$ 47,126
	SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021			\$ 30,834	\$ -	\$ 30,834	\$ 200,000	\$ 85,231
	<b>Total</b>					\$ 2,586,447	\$ 6,096	\$ 2,592,543	\$ 5,367,068	\$ 7,113,000

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80716676	BENTON 138kV Terminal Equipment	6/1/2016	6/1/2016		
	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	6/1/2016	12/31/2016		Yes
	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes

Planned Projects

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80716676	Furley Tap-Towanda-Midian 69 kV	6/1/2017	6/1/2017		

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
80716676	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013		
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
KPP AG1-2015-032

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
KPP	80888916	WR	WR	6	9/1/2015	6/1/2026	2/1/2016	11/1/2026	\$ 10,922	\$ -	\$ 10,922	\$ 24,002
									\$ 10,922	\$ -	\$ 10,922	\$ 24,002

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80888916	ARKANSAS CITY - PARIS 69KV CKT 1	6/1/2017	6/1/2017			\$ 4,916	\$ 145,773	\$ 11,943
	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	6/1/2021	6/1/2021			\$ 74	\$ 324,585	\$ 148
	SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021			\$ 5,932	\$ 200,000	\$ 11,911
	<b>Total</b>					\$ 10,922	\$ 670,358	\$ 24,002

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80888916	BENTON 138kv Terminal Equipment	6/1/2016	6/1/2016		
	Multi - Geary County 345/115 kv and Geary - Chapman 115 kv	6/1/2016	6/1/2018		
	Multi - Viola 345/138kv Transformer and 138 kv Lines to Clearwater and Gill	6/1/2016	6/1/2019		

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
80888916	BARBER - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	6/1/2013		
	RIVER ROAD - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
LESM AG1-2015-034

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
LESM	80792734	WR	LES	101	1/1/2016	1/1/2021	6/1/2018	6/1/2023	\$ -	\$ -	\$ 306,112	\$ 570,886
									\$ -	\$ -	\$ 306,112	\$ 570,886

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
80792734	SHELDON - SW7&BENNET7 115.00 115KV CKT 1	6/1/2021	6/1/2021			\$ -	\$ 306,112	\$ 306,112	\$ 324,585	\$ 570,886
					Total	\$ -	\$ 306,112	\$ 306,112	\$ 324,585	\$ 570,886

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80792734	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		

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
80792734	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013		
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
MOWR AG1-2015-035

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
MOWR	80848073	SPA	KCPL	3	9/1/2015	9/1/2020	2/1/2016	2/1/2021	\$ -	\$ 375,035	\$ -	\$ -
									\$ -	\$ 375,035	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80848073	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80848073	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
MOWR AG1-2015-036

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
MOWR	80848092	MPS	MPS	25	9/1/2015	9/1/2020	1/21/2017	1/21/2022	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80848092	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80848092	South Waverly 161/69 kV Ckt 1 Transformer	6/1/2016	6/1/2016		

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80848092	HARRIONSVILLE NORTH - RALPH GREEN 69KV CKT 1	6/1/2016	1/21/2017		No

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
80848092	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	Longview - KC South 161kV Ckt 1	1/31/2011	1/31/2011		

\*Credits may be required for applicable generation interconnection network upgrades.

\*\*Harrionsville North - Ralph Green 69KV ckt 1 is being re-evaluated.

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

Customer Study Number  
MOWR AG1-2015-037

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
MOWR	80868666	WR	MPS	5	6/1/2016	6/1/2021	6/1/2016	6/1/2021	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

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
80868666	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80868666	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		
	South Waverly 161/69 kV Ckt 1 Transformer	6/1/2016	6/1/2016		

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80868666	HARRIONSVILLE NORTH - RALPH GREEN 69KV CKT 1	6/1/2016	1/21/2017		

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
80868666	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013		
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

\*\*Harrionsville North - Ralph Green 69kv ckt 1 is being re-evaluated.

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

Customer Study Number  
 OPPM AG1-2015-040

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	80008188	WAUE	OPPD	400	1/1/2018	7/1/2037	1/1/2018	7/1/2037	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80008188	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80008188	53459 345/161 kV Transformer	6/1/2021	6/1/2021		

\*Credits may be required for applicable generation interconnection network upgrades.



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

Customer Study Number  
RESN AG1-2015-043

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
RESN	80888988	OKGE	OKGE	201	1/1/2017	1/1/2022	3/1/2021	3/1/2026	\$ -	\$ 29,828,482	\$ -	\$ -
									\$ -	\$ 29,828,482	\$ -	\$ -

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
80888988	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80888988	Multi - Woodward District EHV - Tatonga - Mathewson - Cimarron 345 kV	2/1/2016	3/1/2021		

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
80888988	Harrington Mid - Nichols 230 kV Ckt 2	12/1/2012	12/1/2012		
	Harrington West - Nichols 230kV Ckt 1	12/1/2012	12/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - IODINE 138KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - WOODWARD EHV 138KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD 345/138KV TRANSFORMER CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
SPSM AG1-2015-044

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	80868905	SPS	SPS	30	10/1/2016	10/1/2031	10/1/2016	10/1/2031	\$ -	\$ -	\$ 212,615	\$ 441,958
									\$ -	\$ -	\$ 212,615	\$ 441,958

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
80868905	CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	6/1/2021	6/1/2021			\$ -	\$ 212,615	\$ 212,615	\$ 2,117,364	\$ 441,958
					Total	\$ -	\$ 212,615	\$ 212,615	\$ 2,117,364	\$ 441,958

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80868905	PCA Interchange - Quahada 115 kV Ckt 1	6/1/2017	6/1/2017		

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80868905	Cunningham - Quahada 115 kV Ckt 1	6/1/2021	6/1/2021		
	SUNDOWN INTERCHANGE (WH XDS70381) 230/115/13.8KV TRANSFORMER 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
80868905	Harrington Mid - Nichols 230 kV Ckt 2	12/1/2012	12/1/2012		
	Harrington West - Nichols 230kV Ckt 1	12/1/2012	12/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
SPSM AG1-2015-045

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	80871942	SPS	SPS	70	12/1/2016	12/1/2041	12/15/2018	12/1/2041	\$ 436,472	\$ -	\$ 436,472	\$ 1,274,754
									\$ 436,472	\$ -	\$ 436,472	\$ 1,274,754

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80871942	CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	6/1/2017	6/1/2017			\$ 44,243	\$ 121,650	\$ 155,739
	CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	6/1/2021	6/1/2021			\$ 392,229	\$ 2,117,364	\$ 1,119,015
	<b>Total</b>					\$ 436,472	\$ 2,239,014	\$ 1,274,754

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80871942	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1	6/1/2017	6/1/2017		

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80871942	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	6/1/2021	6/1/2021		
	POTASH JUNCTION INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		

Construction Pending - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80871942	EDCO 230 KV Double Bus Double Breaker	10/1/2017	12/15/2018		Yes

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
80871942	Harrington Mid - Nichols 230 kv Ckt 2	12/1/2012	12/1/2012		
	Harrington West - Nichols 230kv Ckt 1	12/1/2012	12/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
SPSM AG1-2015-046

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	80871945	SPS	SPS	70	12/1/2016	12/1/2041	12/15/2018	12/1/2041	\$ 436,472	\$ -	\$ 436,472	\$ 1,274,754
									\$ 436,472	\$ -	\$ 436,472	\$ 1,274,754

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80871945	CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	6/1/2017	6/1/2017			\$ 44,243	\$ 121,650	\$ 155,739
	CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	6/1/2021	6/1/2021			\$ 392,229	\$ 2,117,364	\$ 1,119,015
	<b>Total</b>					\$ 436,472	\$ 2,239,014	\$ 1,274,754

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80871945	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1	6/1/2017	6/1/2017		

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80871945	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	6/1/2021	6/1/2021		
	POTASH JUNCTION INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		

Construction Pending - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80871945	EDCO 230 KV Double Bus Double Breaker	10/1/2017	12/15/2018		Yes

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
80871945	Harrington Mid - Nichols 230 kv Ckt 2	12/1/2012	12/1/2012		
	Harrington West - Nichols 230kv Ckt 1	12/1/2012	12/1/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
SPSM AG1-2015-047

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	80872689	OKGE	SPS	249	1/1/2018	12/1/2034	3/1/2021	12/1/2034	\$ 4,023,456	\$ -	\$ 4,023,456	\$ 10,734,170
									\$ 4,023,456	\$ -	\$ 4,023,456	\$ 10,734,170

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80872689	CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	6/1/2017	6/1/2017			\$ 33,165	\$ 121,650	\$ 99,451
	CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	6/1/2021	6/1/2021			\$ 1,120,291	\$ 2,117,364	\$ 2,722,575
	MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	1/1/2018	6/1/2018			\$ 2,870,000	\$ 2,870,000	\$ 7,912,144
	<b>Total</b>					\$ 4,023,456	\$ 5,109,014	\$ 10,734,170

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80872689	Amoco - Sundown 230 kV Terminal Upgrades	10/1/2021	10/1/2021		
	Canyon West - Dawn 115 kV Ckt 1	1/1/2018	4/1/2018		Yes
	CARLISLE INTERCHANGE - TUOCO INTERCHANGE 230KV CKT 1	6/1/2017	6/1/2017		
	Dawn - Panda 115 kV Ckt 1	1/1/2018	4/1/2018		Yes
	Deaf Smith - Panda 115 kV Ckt 1	1/1/2018	4/1/2018		Yes
	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	2/1/2016	3/1/2021		Yes

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80872689	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	6/1/2021	6/1/2021		
	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	6/1/2021	6/1/2021		
	NORTHWEST INTERCHANGE - ROLLHILLS 3115.00 115KV CKT 1	1/1/2018	6/1/2018		Yes
	PECOS INTERCHANGE (WH BCS15041) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	POTASH JUNCTION INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	SUNDOWN INTERCHANGE (WH XDS70381) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2023	6/1/2023		
	WOLFFORTH INTERCHANGE (WH 7001668) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2024	6/1/2024		

Construction Pending - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80872689	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	1/1/2018	6/1/2018		Yes
	EDCO 230 kV Double Bus Double Breaker	10/1/2017	12/15/2018		Yes
	TUOCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	1/1/2018	6/1/2019		Yes

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
80872689	Harrington Mid - Nichols 230 kV Ckt 2	12/1/2012	12/1/2012		
	Harrington West - Nichols 230kV Ckt 1	12/1/2012	12/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
UCU AG1-2015-048

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
UCU	80499812	WPEK	MPS	50	11/26/2016	11/25/2031	3/1/2021	3/1/2036	\$ -	\$ -	\$ 5,577,343	\$ 13,043,882
									\$ -	\$ -	\$ 5,577,343	\$ 13,043,882

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80499812	GREENSBURG - SSTARTP3 115.00 115KV CKT 1	6/1/2021	6/1/2021			\$ 5,577,343	\$ 5,577,343	\$ 13,043,882
Total						\$ 5,577,343	\$ 5,577,343	\$ 13,043,882

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80499812	Multi - Woodward District EHV - Tatonga - Mathewson - Cimarron 345 kV	2/1/2016	3/1/2021		Yes
	Walkemeyer - Walkemeyer Tap 115 kV Ckt 1 (SEPC)	6/1/2017	6/1/2018		Yes

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
80499812	BARBER - MEDICINE LODGE 115KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - HARPER 138KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	6/1/2013		
	Ft. Dodge - North Ft. Dodge 115 kv Ckt 2	5/1/2015	5/1/2015		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	6/1/2013		
	North Ft. Dodge - Spearville 115kv Ckt 2	5/1/2015	5/1/2015		
	Spearville 345/115 kv Transformer CKT 1	5/1/2015	5/1/2015		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
WFEC AG1-2015-049

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
WFEC	80271483	SPS	WFEC	25	9/1/2016	9/1/2041	3/1/2021	3/1/2046	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80271483	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80271483	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	2/1/2016	3/1/2021	Yes	

Construction Pending - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80271483	EDCO 230 kV Double Bus Double Breaker	10/1/2017	12/15/2018	Yes	

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
80271483	BLUCANS 4 138.00 - PARADISE 138KV CKT 1	6/1/2010	6/1/2013		
	Harrington Mid - Nichols 230 kV Ckt 2	12/1/2012	12/1/2012		
	Harrington West - Nichols 230KV Ckt 1	12/1/2012	12/1/2012		
	HUGO 345/138KV TRANSFORMER CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - IODINE 138KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - WOODWARD EHV 138KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - WOODWARD EHV 138KV CKT 2	1/1/2010	1/1/2010		
	WOODWARD 345/138KV TRANSFORMER CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
WFEC AG1-2015-050

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
WFEC	80647634	OKGE	WFEC	50	1/1/2016	1/1/2036	3/1/2021	3/1/2041	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
80647634	None					\$ -	\$ -	\$ -
<b>Total</b>						\$ -	\$ -	\$ -

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80647634	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes
	Multi - Woodward District EHV - Tatonga - Mathewson - Cimarron 345 kV	2/1/2016	3/1/2021		Yes

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
80647634	BLUCAN5 4 138.00 - PARADISE 138KV CKT 1	6/1/2010	6/1/2013		
	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	HUGO 345/138KV TRANSFORMER CKT 1	7/1/2012	7/1/2012		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012		
	WOODWARD - IODINE 138KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - WOODWARD EHV 138KV CKT 1	1/1/2010	1/1/2010		
	WOODWARD - WOODWARD EHV 138KV CKT 2	1/1/2010	1/1/2010		
	WOODWARD 345/138KV TRANSFORMER CKT 1	1/1/2010	1/1/2010		

\*Credits may be required for applicable generation interconnection network upgrades.



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

Customer Study Number  
WRGS AG1-2015-052

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	80812246	WR	WR	200	10/1/2015	10/1/2025	6/1/2019	6/1/2029	\$ -	\$ -	\$ 284,332	\$ 527,955
									\$ -	\$ -	\$ 284,332	\$ 527,955

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
80812246	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	6/1/2021	6/1/2021			\$ -	\$ 153,944	\$ 153,944	\$ 324,585	\$ 301,580
	Pawnee 115 kV Add 2.7Mvar cap bank	6/1/2021	6/1/2021			\$ -	\$ 55,419	\$ 55,419	\$ 99,900	\$ 78,849
	SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021			\$ -	\$ 74,969	\$ 74,969	\$ 200,000	\$ 147,527
	<b>Total</b>					\$ -	\$ 284,332	\$ 284,332	\$ 624,485	\$ 527,955

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80812246	BENTON 138kV Terminal Equipment	6/1/2016	6/1/2016		
	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes

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
80812246	FLATRDG3 - HARPER 138KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	6/1/2013		
	Rice - Lyons 115 kV Ckt 1	4/1/2013	4/1/2013		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Wheatland 115 kV #2	12/31/2012	12/31/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

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

Customer Study Number  
WRGS AG1-2015-053

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	80812328	WR	WR	200	7/1/2016	10/1/2025	3/1/2021	6/1/2030	\$ -	\$ -	\$ 276,516	\$ 519,298
									\$ -	\$ -	\$ 276,516	\$ 519,298

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
80812328	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	6/1/2021	6/1/2021			\$ -	\$ 170,567	\$ 170,567	\$ 324,585	\$ 334,700
	Pawnee 115 kV Add 2.7Mvar cap bank	6/1/2021	6/1/2021			\$ -	\$ 44,481	\$ 44,481	\$ 99,900	\$ 63,438
	SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021			\$ -	\$ 61,468	\$ 61,468	\$ 200,000	\$ 121,160
	Total					\$ -	\$ 276,516	\$ 276,516	\$ 624,485	\$ 519,298

Expansion Plan - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
80812328	BENTON 138kV Terminal Equipment	6/1/2016	6/1/2016		
	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2018		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	6/1/2016	6/1/2019		Yes
	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	2/1/2016	3/1/2021		Yes

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
80812328	BARBER - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - HARPER 138KV CKT 1	12/1/2009	6/1/2013		
	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	12/1/2009	6/1/2013		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	MATHEWSON - TATONGA 345KV CKT 1	1/1/2010	1/1/2010		
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	12/1/2009	6/1/2013		
	Rice - Lyons 115 kV Ckt 1	4/1/2013	4/1/2013		
	RIVER ROAD - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Wheatland 115 kV #2	12/31/2012	12/31/2012		

\*Credits may be required for applicable generation interconnection network upgrades.

**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
MIDW	Pawnee 115 kV Add 2.7Mvar cap bank	Add 2.7Mvar of capacitors to existing bank at Pawnee 115kV	6/1/2021	6/1/2021	\$99,900.00
NPPD	SHELDON - SW7&BENNET7 115.00 115KV CKT 1	Terminal Equipment	6/1/2021	6/1/2021	\$324,585.00
SPS	CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	Replace Terminal Equipment	6/1/2017	6/1/2017	\$121,650.00
SPS	CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	Rebuild 3.1-mile 115 kV line to at least 167 MVA Rate B	6/1/2021	6/1/2021	\$2,117,364.07
SPS	MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	Rebuild 4.1 miles to at least 161 MVA Rate B	1/1/2018	6/1/2018	\$2,870,000.00
SUNC	GREENSBURG - SSTARTP3 115.00 115KV CKT 1	Rebuild 7.6 Miles of line	6/1/2021	6/1/2021	\$5,577,343.00
WERE	ARKANSAS CITY - PARIS 69KV CKT 1	Terminal Equipment	6/1/2017	6/1/2017	\$145,773.00
WERE	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	Replace Terminal Equipment	6/1/2021	6/1/2021	\$324,585.00
WERE	CRAWFORD - NEOSHO 69KV CKT 1	Replace jumper	6/1/2021	6/1/2021	\$145,773.00
WERE	NORTH STREET - NORTHVIEW 115KV CKT 1	Rebuild 3.2 Miles of line	6/1/2021	6/1/2021	\$2,348,355.00
WERE	NORTH STREET - NORTHVIEW 115KV CKT 2	Rebuild 3.2 Miles of line	6/1/2021	6/1/2021	\$2,348,355.00
WERE	SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	Upgrade 115kV terminal equipment at Summit (533381). New ratings will be Rate A= 280 MVA, Rate B=308 MVA on Summit 230-115kV TX-2 (533381-532873-532896) and Summit 230-115kV TX-3 (533381-532873-532896).	6/1/2021	6/1/2021	\$200,000.00

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

Construction Pending Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
SPS	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	Rebuild 2.236 miles to at least 192 MVA Rate B	1/1/2018	6/1/2018
SPS	EDCO 230 kV Double Bus Double Breaker	Build the 230kV main and transfer bus to a double breaker double bus.	10/1/2017	12/15/2018
SPS	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	Replace 1st 230/115 kV transformer at Tuco with 230/115 kV 288 MVA transformer.	1/1/2018	6/1/2019

Planned Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
WERE	Furley Tap-Towanda-Midian 69 kV	Rebuild of 15.5 miles from Furley Tap- Towanda- Midian 69kV	6/1/2017	6/1/2017

Expansion Plan Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
KCPL	South Waverly 161/69 kV Ckt 1 Transformer	Replace Existing 161/69 kV transformer at South Waverly to increase ratings from 22 MVA to 50 MVA.	6/1/2016	6/1/2016
OKGE	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	Build new 126 mile Woodward - Tatonga 345 kV circuit 2 and Tatonga - Matthewson - Cimarron 345 kV line.	2/1/2016	3/1/2021
OPPD	S3459 345/161 kV Transformer	Install a new 345/161 kV transformer at S3459. Install any necessary 161 kV terminal equipment.	6/1/2021	6/1/2021
SPS	Amoco - Sundown 230 kV Terminal Upgrades	Upgrade wave traps at Sundown and Amoco to 1200 A to achieve a new emergency rating of 437 MVA on the 230 kV line from Amoco to Sundown.	10/1/2021	10/1/2021
SPS	Canyon West - Dawn 115 kV Ckt 1	Rebuild 13.7-mile 115 kV line from Canyon West to Dawn to achieve a new emergency rating of 273 MVA.	1/1/2018	4/1/2018
SPS	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1	Replace the wave trap at Carlisle to increase the line rating to at least 416MVA. Replace the wave trap on the Carlisle line terminal at Tuco substation.	6/1/2017	6/1/2017
SPS	Dawn - Panda 115 kV Ckt 1	Rebuild 8.4-mile 115 kV line from Dawn to Panda achieve a new emergency rating of 273 MVA.	1/1/2018	4/1/2018
SPS	Deaf Smith - Panda 115 kV Ckt 1	Rebuild 2.4-mile 4/0 segment of 115 kV line from Deaf Smith to Panda HFD with 795 ACSR conductor.	1/1/2018	4/1/2018
SPS	PCA Interchange - Quahada 115 kV Ckt 1	Rebuild of the PCA Interchange and Quahada 115kV line.	6/1/2017	6/1/2017
SUNC	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	Replace breaker, switches, CTs, and relays at the Buckner and Spearville 345 kV substations to increase the rating of the 345 kV line from Buckner to Spearville.	6/1/2016	12/31/2016
SUNC	Walkemeyer - Walkemeyer Tap 115 kV Ckt 1 (SEPC)	Construct new 115kV line from Walkemeyer to the new Walkemeyer Tap substation. The total estimated length of the Walkemeyer to Walkemeyer Tap line is 1 mile.	6/1/2017	6/1/2018
WERE	BENTON 138kV Terminal Equipment	Replace Terminal Equipment	6/1/2016	6/1/2016
WERE	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	Build new Geary County 345/115 kV substation south of Junction City where JEC-Summit and McDowell Creek-Junction City #2 ckt separate. Construct new Geary County - Chapman 115 kV line.	6/1/2016	6/1/2018
WERE	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	Install 345/138 kV transformer at future Viola 345 kV substation. Build 138kV line from Viola to Clearwater substation. Build 138 kV line from Viola to Gill substation	6/1/2016	6/1/2019

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

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
MIPU	HARRISONVILLE NORTH - RALPH GREEN 69KV CKT 1	Rebuild of Harrisonville North and Ralph Green 69kv line.	6/1/2016	1/21/2017
SPS	Cunningham - Quahada 115 kv Ckt 1	Rebuild of the Cunningham - Quahada 115 kv line.	6/1/2021	6/1/2021
SPS	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	Replace WaveTrap	6/1/2021	6/1/2021
SPS	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	Rebuild 2.75 miles of transmission line.	6/1/2021	6/1/2021
SPS	NORTHWEST INTERCHANGE - ROLLHILLS 3115.00 115KV CKT 1	Rebuild 8.34 miles of line	1/1/2018	6/1/2018
SPS	PECOS INTERCHANGE (WH BCS15041) 230/115/13.2KV TRANSFORMER CKT 1	Replace Transformer to at least 186 MVA	6/1/2021	6/1/2021
SPS	POTASH JUNCTION INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 1	Replace Transformer to at least 327 MVA	6/1/2021	6/1/2021
SPS	SUNDOWN INTERCHANGE (WH XDS70381) 230/115/13.8KV TRANSFORMER CKT 1	Increase Sundown 230/115 kv transformer to 250 MVA	6/1/2023	6/1/2023
SPS	WOLFFORTH INTERCHANGE (WH 7001668) 230/115/13.2KV TRANSFORMER CKT 1	Upgrade transformer to 250 MVA.	6/1/2024	6/1/2024

\*\*Harrionsville North - Ralph Green 69kv ckt 1 is being re-evaluated.

**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)
AEPW	Osage - Shidler 138kV	Osage Substation: Replace Shidler 138kV line terminal primary and redundant relaying with SEL uProcessor based relays, install 3-138kV PTs, Install 1-138kV CB, Install metering, Install 2000A line Trap	1/15/2014	1/15/2014
AEPW	Shidler 138 kV	138kV four (4) Breaker ring-bus including 138kV transmission line terminal to KAMO's Remington 138kV Substation, replace grounding switch with circuit switcher, move OGE's Osage 138kV line terminal, replace relay panels on OGE's Osage and Mound Road 138kV line terminals, metering, and associated equipment.	2/8/2014	2/8/2014
AEPW	Southwestern Station - Washita 138kV Ckt 1 (AEP)	Expand Southwestern Station for termination of WFEC 2.75 mile 138kV Transmission Line from Washita Switch Station	10/1/2005	10/1/2005
AEPW	Valliant 345 kV (AEP)	Valliant 345 kV line terminal	7/1/2012	7/1/2012
ITCGP	HUGO - VALLIANT 345KV CKT 1	New 19 miles 345 KV	7/1/2012	7/1/2012
ITCGP	HUGO 345/138KV TRANSFORMER CKT 1	New 345/138 kv Auto	7/1/2012	7/1/2012
KACP	IATAN - ST JOE 345KV CKT 1	Relocate Iatan St. Joseph 345kV line	12/15/2009	12/15/2009
KACP	Iatan 161 kV	Iatan 161kV substation work including the installation of a ring bus, three (3) 161kV circuit breakers, and associated equipment	12/15/2009	12/15/2009
KACP	Iatan 345/161 kV transformer	Iatan 345/161 kV XFMR and Iatan 161 kV substation work	12/15/2009	12/15/2009
KACP	LACYGNE - WEST GARDNER 345KV CKT 1	KCPPL Sponsored Project to Reconductor Line to be In-Service by 6/1/2006	6/1/2006	6/1/2006
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
MIPU	Longview - KC South 161kV Ckt 1	Install new 161kV wavetrap in place of existing wavetrap	1/31/2011	1/31/2011
MKEC	BARBER - MEDICINE LODGE 115KV CKT 1	Rebuild line	12/1/2009	6/1/2013
MKEC	BARBER - SAWYER 115KV CKT 1	Rebuild line	12/1/2009	6/1/2013
MKEC	CLIFTON - GREENLEAF 115KV CKT 1	Rebuild 14.4 miles	6/1/2011	6/1/2013
MKEC	FLATRDG3 - HARPER 138KV CKT 1	Rebuild 24.15 mile line	12/1/2009	6/1/2013
MKEC	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	Rebuild 8.05 mile line	12/1/2009	6/1/2013
MKEC	Ft. Dodge - North Ft. Dodge 115 kV Ckt 2	Build approximately 0.5 mile 115 kV line	5/1/2015	5/1/2015
MKEC	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	Rebuild 43.5% Ownership of 20.9 miles	6/1/2013	6/1/2013
MKEC	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1	Upgrade transformer	12/1/2009	6/1/2013
MKEC	North Ft. Dodge - Spearville 115kV Ckt 2	Build approximately 20 mile 115 kV line	5/1/2015	5/1/2015
MKEC	RIVER ROAD - SAWYER 115KV CKT 1	Rebuild line	12/1/2009	6/1/2013
MKEC	Spearville 345/115 kV Transformer CKT 1	Add 345/115 kV transformer at Spearville. Needed as Network Upgrade for GEN-2008-079 but cost shared with GEN-2006-006 & previously with GEN-2009-062 prior to that project's withdrawal.	5/1/2015	5/1/2015
NPPD	Albion - Petersburg 115kV Ckt 1 GEN-2006-044N 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
NPPD	Fort Randall - Madison County 230kV Ckt 1	Raise structures and line clearances as necessary to re-rate the transmission line to 320 MVA	10/1/2014	10/1/2014
NPPD	Hoskins - Dixon County 230kV Line Upgrade	Increase clearances to accommodate 320MVA facility rating to address loading issues	10/24/2015	10/24/2015
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
NPPD	Neligh - Petersburg North 115kV Ckt 1	Replace Breaker 1106, jumpers, & 115kV Switch 1106-D2; 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
NPPD	Twin Church - Dixon County 230kV Line Upgrade	Increase clearances to accommodate 320MVA facility rating	10/24/2015	10/24/2015

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

OKGE	MATHEWSON - NORTHWEST 345KV CKT 1	Build 345 kV line	1/1/2010	1/1/2010
OKGE	MATHEWSON - TATONGA 345KV CKT 1	Build 345 kV line	1/1/2010	1/1/2010
OKGE	TATONGA - WOODWARD 345KV CKT 1	Build 345 kV line	1/1/2010	1/1/2010
OKGE	WOODWARD - IODINE 138KV CKT 1	Tap Iodine to Woodward 138 kV line	1/1/2010	1/1/2010
OKGE	WOODWARD - WOODWARD EHV 138KV CKT 1	Build .5 miles of 138 kV and install terminal equipment	1/1/2010	1/1/2010
OKGE	WOODWARD - WOODWARD EHV 138KV CKT 2	Build .5 miles of 138 kV and install terminal equipment	1/1/2010	1/1/2010
OKGE	WOODWARD 345/138KV TRANSFORMER CKT 1	Install 345/138 kV XF	1/1/2010	1/1/2010
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
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
WERE	Wheatland 115 kv #2	Install metering equipment at the Wheatland 115 kV substation for GEN-2010-057.	12/31/2012	12/31/2012
WFEC	BLUCANS 4 138.00 - PARADISE 138KV CKT 1	Upgrade Paradise to G03-05T to 1113	6/1/2010	6/1/2013
WFEC	Southwestern Station - Washita 138kV Ckt 1	Expand Washita Switch Station from a 4-breaker to a 5-breaker 138kV ring bus & Construct 2.75 mile 138kV Transmission Line to the AEP/PSO Southwestern Station	10/1/2005	10/1/2005

Table 5 - Third Party Facility Constraints

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



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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
ARKANSAS CITY - PARIS 69KV CKT 1	KCPS	AG1-2015-025	80878929	42.38%	\$61,776
ARKANSAS CITY - PARIS 69KV CKT 1	KPP	AG1-2015-030	80716628	25.40%	\$37,022
ARKANSAS CITY - PARIS 69KV CKT 1	KPP	AG1-2015-031	80716676	28.85%	\$42,060
ARKANSAS CITY - PARIS 69KV CKT 1	KPP	AG1-2015-032	80888916	3.37%	\$4,916
				<b>Total:</b>	<b>\$145,773</b>

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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	KPP	AG1-2015-032	80888916	0.02%	\$74
BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	WRGS	AG1-2015-052	80812246	47.43%	\$153,944
BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	WRGS	AG1-2015-053	80812328	52.55%	\$170,567
				<b>Total:</b>	<b>\$324,585</b>

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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	SPSM	AG1-2015-045	80871942	36.37%	\$44,243
CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	SPSM	AG1-2015-046	80871945	36.37%	\$44,243
CARLSBAD INTERCHANGE - PECOS INTERCHANGE 115KV CKT 1 Accelerate	SPSM	AG1-2015-047	80872689	27.26%	\$33,165
				<b>Total:</b>	<b>\$121,650</b>

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

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
CRAWFORD - NEOSHO 69KV CKT 1	KMEA	AG1-2015-029	80850246	100.00%	\$145,773
				<b>Total:</b>	<b>\$145,773</b>

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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	SPSM	AG1-2015-044	80868905	10.04%	\$212,615
CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	SPSM	AG1-2015-045	80871942	18.52%	\$392,229
CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	SPSM	AG1-2015-046	80871945	18.52%	\$392,229
CUNNINGHAM STATION - MADDOX STATION 115KV CKT 1	SPSM	AG1-2015-047	80872689	52.91%	\$1,120,291
				<b>Total:</b>	<b>\$2,117,364</b>

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

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
GREENSBURG - SSTARTP3 115.00 115KV CKT 1	UCU	AG1-2015-048	80499812	100.00%	\$5,577,343
				<b>Total:</b>	<b>\$5,577,343</b>

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

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	SPSM	AG1-2015-047	80872689	100.00%	\$2,870,000
				<b>Total:</b>	<b>\$2,870,000</b>

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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
NORTH STREET - NORTHVIEW 115KV CKT 1	KPP	AG1-2015-030	80716628	46.75%	\$1,097,767
NORTH STREET - NORTHVIEW 115KV CKT 1	KPP	AG1-2015-031	80716676	53.25%	\$1,250,588
				<b>Total:</b>	<b>\$2,348,355</b>



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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
NORTH STREET - NORTHVIEW 115KV CKT 2	KPP	AG1-2015-030	80716628	46.75%	\$1,097,767
NORTH STREET - NORTHVIEW 115KV CKT 2	KPP	AG1-2015-031	80716676	53.25%	\$1,250,588
				<b>Total:</b>	<b>\$2,348,355</b>

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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
Pawnee 115 kV Add 2.7Mvar cap bank	WRGS	AG1-2015-052	80812246	55.47%	\$55,419
Pawnee 115 kV Add 2.7Mvar cap bank	WRGS	AG1-2015-053	80812328	44.53%	\$44,481
				<b>Total:</b>	<b>\$99,900</b>

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

<b>Upgrade Name</b>	<b>Customer</b>	<b>Study Number</b>	<b>Reservation</b>	<b>Allocation Percentage</b>	<b>Allocated E &amp; C Cost</b>
SHELDON - SW7&BENNET7 115.00 115KV CKT 1	KPP	AG1-2015-031	80716676	5.69%	\$18,473
SHELDON - SW7&BENNET7 115.00 115KV CKT 1	LESM	AG1-2015-034	80792734	94.31%	\$306,112
				<b>Total:</b>	<b>\$324,585</b>

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

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	KPP	AG1-2015-030	80716628	13.40%	\$26,797
SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	KPP	AG1-2015-031	80716676	15.42%	\$30,834
SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	KPP	AG1-2015-032	80888916	2.97%	\$5,932
SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	WRGS	AG1-2015-052	80812246	37.48%	\$74,969
SUMMIT (SUMM TX-2) 230/115/13.8KV TRANSFORMER CKT 1	WRGS	AG1-2015-053	80812328	30.73%	\$61,468
				<b>Total:</b>	<b>\$200,000</b>