



# Aggregate Facility Study SPP-2014-AG1-AFS-5

5/5/2015  
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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), 4,869 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, \$23 million in 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 **\$200 thousand**.

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.

SPP will tender an Aggregate Completion Agreement on May 5, 2015. This will open a 15-day window for Customer response. To remain in the Aggregate Transmission Service Study (ATSS), SPP must receive from the Customer by May 20, 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 June 1, 2014 for 2014-AG1 have been included in this first Aggregate Transmission Service Study (ATSS) of 2013.

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 leveled 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 Summer Peak (15SP)
- 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 unit's 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.

The Transmission Provider will tender an Aggregate Completion Agreement on May 5, 2015. This will open a 15-day window for Customer response. To remain in the Aggregate Transmission Service Study (ATSS), the Transmission Provider must receive from the Transmission Customer by May 20, 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.

Upon completion of the study, 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
AECC	AG1-2014-018	79744195	EES	CSWS	9	6/1/2018	6/1/2023	6/1/2019	6/1/2024	6/1/2019	6/1/2024	0	25SP
CHAN	AG1-2014-036	79776973	SPA	WR	2	12/1/2014	12/1/2019	6/1/2020	6/1/2025	6/1/2020	6/1/2025	0	15SP
CRGL	AG1-2014-039	79778660	NPPD	EES	100	1/1/2016	1/1/2021	8/1/2016	8/1/2021	1/1/2016	1/1/2021	0	16SP
CRGL	AG1-2014-040	79778715	NPPD	EES	100	1/1/2016	1/1/2021	8/1/2016	8/1/2021	1/1/2016	1/1/2021	0	16SP
CRGL	AG1-2014-041	79778716	NPPD	EES	50	1/1/2016	1/1/2021	8/1/2016	8/1/2021	1/1/2016	1/1/2021	0	16SP
CRGL	AG1-2014-042	79778812	OKGE	EES	200	1/1/2016	1/1/2021	3/1/2021	3/1/2026	1/1/2016	1/1/2021	27	16SP
CRGL	AG1-2014-043	79778860	OKGE	EES	100	1/1/2016	1/1/2021	3/1/2021	3/1/2026	1/1/2016	1/1/2021	13	16SP
CRGL	AG1-2014-044	79778862	OKGE	EES	50	1/1/2016	1/1/2021	3/1/2021	3/1/2026	1/1/2016	1/1/2021	6	16SP
ETEC	AG1-2014-027	79775026	CSWS	CSWS	1178	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	1178	15SP
ETEC	AG1-2014-028	79775032	CSWS	CSWS	79	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	79	15SP
ETEC	AG1-2014-029	79775043	CSWS	CSWS	550	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	550	15SP
ETEC	AG1-2014-030	79775047	EES	CSWS	30	1/1/2015	1/1/2020	10/1/2015	10/1/2020	10/1/2015	10/1/2020	30	15SP
ETEC	AG1-2014-031	79775056	CSWS	CSWS	378	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	378	15SP
ETEC	AG1-2014-032	79775058	CLEC	CSWS	38	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	38	15SP
ETEC	AG1-2014-033	79775062	SPA	CSWS	128	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	128	15SP
ETEC	AG1-2014-034	79775065	SPA	CSWS	1	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	1	15SP
ETEC	AG1-2014-035	79775091	CSWS	CSWS	52	1/1/2015	1/1/2040	10/1/2015	10/1/2040	10/1/2015	10/1/2040	52	15SP
GRDX	AG1-2014-016	79734977	GRDA	GRDA	110	4/1/2017	4/1/2022	4/1/2017	4/1/2022	4/1/2017	4/1/2022	0	20SP
GRDX	AG1-2014-017	79735001	GRDA	GRDA	385	4/1/2017	4/1/2022	6/1/2019	6/1/2024	4/1/2017	4/1/2022	0	20SP
GRDX	AG1-2014-020	79772133	OKGE	GRDA	70	1/1/2016	1/1/2021	8/1/2016	8/1/2021	8/1/2016	8/1/2021	0	16SP
GRDX	AG1-2014-021	79773177	OKGE	GRDA	50	10/1/2015	10/1/2020	8/1/2016	8/1/2021	8/1/2016	8/1/2021	0	16SP
GRDX	AG1-2014-022	79773246	OKGE	GRDA	30	10/1/2015	10/1/2020	8/1/2016	8/1/2021	8/1/2016	8/1/2021	0	16SP
GSECGS	AG1-2014-004	79247189	OKGE	SPS	100	12/1/2014	12/1/2034	3/1/2021	3/1/2041	10/1/2015	10/1/2035	0	15SP
KCPS	AG1-2014-005	79385758	WR	KCPL	101	7/1/2015	1/1/2036	6/1/2017	12/1/2037	10/1/2015	4/1/2036	67	16SP
KCPS	AG1-2014-006	79385763	WR	KCPL	51	7/1/2015	1/1/2036	10/1/2015	4/1/2036	10/1/2015	4/1/2036	34	16SP
KCPS	AG1-2014-007	79385767	WR	KCPL	50	7/1/2015	1/1/2036	10/1/2015	4/1/2036	10/1/2015	4/1/2036	33	16SP
KMEA	AG1-2014-015	79729929	SECI	SECI	10	1/1/2015	1/1/2020	10/1/2015	10/1/2020	10/1/2015	10/1/2020	0	15SP
NMEC	AG1-2014-014	79702349	NPPD	WR	1	12/1/2014	10/1/2024	10/1/2015	8/1/2025	10/1/2015	8/1/2025	0	15SP
NPPM	AG1-2014-019	79768713	NPPD	NPPD	75	12/1/2014	12/1/2024	1/1/2018	1/1/2028	10/1/2015	10/1/2025	0	15SP
OMPA	AG1-2014-003	79164464	CSWS	OKGE	50	10/1/2018	10/1/2024	10/1/2018	10/1/2024	10/1/2018	10/1/2024	0	25SP
PSCM	AG1-2014-012	79512345	SPS	LAM345	101	6/1/2018	6/1/2023	6/1/2018	6/1/2023	Note 4	Note 4	101	25SP
PSCM	AG1-2014-013	79512393	SPS	LAM345	101	6/1/2018	6/1/2023	6/1/2018	6/1/2023	Note 4	Note 4	0	25SP
SPSM	AG1-2014-024	79774645	SPS	SPS	177	6/1/2018	6/1/2038	6/1/2018	6/1/2038	6/1/2018	6/1/2038	0	25SP
SPSM	AG1-2014-025	79774647	SPS	SPS	62	6/1/2018	6/1/2038	6/1/2018	6/1/2038	6/1/2018	6/1/2038	0	25SP
WFEC	AG1-2014-001	78997137	OKGE	WFEC	100	6/1/2015	6/1/2035	3/1/2021	3/1/2041	10/1/2015	10/1/2035	13	15SP
WRGS	AG1-2014-002	79147640	OKGE	WR	200	10/1/2015	10/1/2035	6/1/2017	6/1/2037	10/1/2015	10/1/2035	0	16SP

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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>4</sup> Total Cost of Reservation Assignable to Customer Contingent Upon Base Plan Funding	Directly Assigned Upgrade Cost (DAUC) (ACA Parameter 1)
AECC	AG1-2014-018	79744195	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
CHAN	AG1-2014-036	79776973	\$0	\$0	\$0		\$9,754,602	\$0	\$0	Schedule 9 & 11 Charges	\$
CRGL	AG1-2014-039	79778660	\$0	\$0	\$0		\$0	\$0	\$7,809,600	\$7,809,600	\$
CRGL	AG1-2014-040	79778715	\$0	\$0	\$0		\$0	\$0	\$7,809,600	\$7,809,600	\$
CRGL	AG1-2014-041	79778716	\$0	\$0	\$0		\$0	\$0	\$3,904,800	\$3,904,800	\$
CRGL	AG1-2014-042	79778812	\$0	\$0	\$0		\$0	\$0	\$15,619,200	\$15,619,200	\$
CRGL	AG1-2014-043	79778860	\$0	\$0	\$0		\$0	\$0	\$7,809,600	\$7,809,600	\$
CRGL	AG1-2014-044	79778862	\$0	\$0	\$0		\$0	\$0	\$3,904,800	\$3,904,800	\$
ETEC	AG1-2014-027	79775026	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-028	79775032	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-029	79775043	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-030	79775047	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-031	79775056	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-032	79775058	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-033	79775062	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-034	79775065	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
ETEC	AG1-2014-035	79775091	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
GRDX	AG1-2014-016	79734977	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
GRDX	AG1-2014-017	79735001	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
GRDX	AG1-2014-020	79772133	\$412,216	\$53,194	\$359,022		\$0	\$100,214	\$0	\$100,214	\$100,214
GRDX	AG1-2014-021	79773177	\$242,858	\$34,816	\$208,042		\$0	\$65,592	\$0	\$65,592	\$65,592
GRDX	AG1-2014-022	79773246	\$145,714	\$20,890	\$124,824		\$0	\$39,355	\$0	\$39,355	\$39,355
GSECGS	AG1-2014-004	79247189	\$1,118,328	\$0	\$1,118,328		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
KCPS	AG1-2014-005	79385758	\$115,507	\$0	\$115,507		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
KCPS	AG1-2014-006	79385763	\$58,325	\$0	\$58,325		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
KCPS	AG1-2014-007	79385767	\$57,182	\$0	\$57,182		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
KMEA	AG1-2014-015	79729929	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
NMEC	AG1-2014-014	79702349	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
NPPM	AG1-2014-019	79768713	\$51,632	\$0	\$51,632		\$13,662,520	\$0	\$0	Schedule 9 & 11 Charges	\$
OMPA	AG1-2014-003	79164464	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
PSCM	AG1-2014-012	79512345	\$0	\$0	\$0	6	\$0	\$0	\$13,428,960	\$13,428,960	\$
PSCM	AG1-2014-013	79512393	\$0	\$0	\$0	6	\$0	\$0	\$13,428,960	\$13,428,960	\$
SPSM	AG1-2014-024	79774645	\$11,108,787	\$0	\$11,108,787		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
SPSM	AG1-2014-025	79774647	\$3,891,213	\$0	\$3,891,213		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
WFEC	AG1-2014-001	78997137	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
WRGS	AG1-2014-002	79147640	\$0	\$0	\$0		\$0	\$0	\$0	Schedule 9 & 11 Charges	\$
<b>Grand Total</b>			<b>\$17,201,762</b>		<b>\$17,092,862</b>			<b>\$205,161</b>			<b>\$</b>



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

**Note 1:** Letter of Credit required for financial security for transmission owner for network upgrades is determined by allocated engineering and construction costs less engineering and construction costs for upgrades when network customer is the transmission owner less the E & C allocation of expedited projects. Letter of Credit is required for upgrades assigned to PTP requests. The amount of the letter of credit will be adjusted down on an annual basis to reflect cost recovery based on revenue allocation. This letter of credit is not required for those facilities that are fully base plan funded. The Letter Of Credit Amount listed is based on meeting OATT Attachment J requirements for base plan funding.

**Note 2:** If potential base plan funding is applicable, this value is the lesser of the Engineering and Construction costs of assignable upgrades or the value of base plan funding calculated pursuant to Attachment J, Section III B criteria. Allocation of base plan funding is contingent upon verification of customer agreements meeting Attachment J, Section II B criteria. Not applicable if Point-to-Point base rate exceeds revenue requirements.

**Note 3:** Revenue Requirements (RR) are based upon deferred end dates if applicable. Deferred dates are based upon customer's choice to pursue redispatch. Achievable Base Plan Avoided RR in the case of a Base Plan upgrade being displaced or deferred by an earlier in service date for a Requested Upgrade shall be determined per Attachment J, Section VII.C methodology. Assumption of a 40 year service life is utilized for Base Plan funded projects. A present worth analysis of RR on a common year basis between the Base Plan and Requested Upgrades was performed to determine avoided Base Plan RR due to the displacement or deferral of the Base Plan upgrade by the Requested Upgrade. The incremental increase in present worth of a Requested Upgrade on a common year basis as a Base Plan upgrade is assigned to the transmission requests impacting the upgrade based on the displacement or deferral. If the displacement analysis results in lower RR due to the shorter amortization period of the requested upgrade when compared to a base plan amortization period, then no direct assignment of the upgrade cost is made due to the displacement to an earlier start date.

**Note 4:** For Point-to-Point requests, total cost is based on the higher of the base rate or assigned upgrade revenue requirements. For Network requests, the total cost is based on the 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 & C of 3rd Party upgrades is assignable to Customer. This includes prepayments required for any SWPA upgrades. Revenue requirements for 3rd Party facilities are not calculated. Total cost to customer is based on assumption of Revenue Requirements with confirmation of base plan funding. Customer is responsible for negotiating redispatch costs if applicable. Customer is also responsible to pay credits for previously assigned upgrades that are impacted by their request. Credits can be paid from base plan funding if applicable.

**Note 5:** RR with base plan funding may increase or decrease even if no base plan funding is applicable to a particular request if another request that shares the upgrade is now full base plan funded resulting in a different amortization period for the upgrade and thus different RR.

**Note 6:** Mutually exclusive requests: 79512345 and 79512393. System impacts were identified by only modeling mutually exclusive request 79512393.

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

Customer Study Number  
 AECC AG1-2014-018

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AECC	79744195	EES	CSWS	9	6/1/2018	6/1/2023	6/1/2019	6/1/2024	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79744195	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
79744195	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	HUGO 345/138KV TRANSFORMER 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		
	MCNAB REC - Turk 115KV CKT 1 #2 (AEP)	12/1/2011	12/1/2011		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	TURK 138/115KV TRANSFORMER CKT 1	12/1/2011	12/1/2011		
	Valliant 345 kV (AEP)	7/1/2012	7/1/2012		

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
79744195	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1 AECC	6/1/2018	6/1/2019		No	\$ -	\$ -
Total						\$ -	\$ -

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

\*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  
 CHAN AG1-2014-036

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
CHAN	79776973	SPA	WR	2	12/1/2014	12/1/2019	6/1/2020	6/1/2025	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79776973	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
79776973	DEARING 138KV	6/1/2012	6/1/2012		
	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		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
79776973	BULL SHOALS - MIDWAY (YVEPA) 161KV CKT 1	6/1/2016	6/1/2020		No	\$ 9,754,602	\$ 9,754,602
Total						\$ 9,754,602	\$ 9,754,602

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

\*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  
CRGL AG1-2014-039

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
CRGL	79778660	NPPD	EES	100	1/1/2016	1/1/2021	8/1/2016	8/1/2021	\$ -	\$ 7,809,600	\$ -	\$ -
									\$ -	\$ 7,809,600	\$ -	\$ -

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
79778660	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

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
79778660	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	10/1/2015	8/1/2016		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
79778660	Hoskins - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	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		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Twin Church - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	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  
CRGL AG1-2014-040

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
CRGL	79778715	NPPD	EES	100	1/1/2016	1/1/2021	8/1/2016	8/1/2021	\$ -	\$ 7,809,600	\$ -	\$ -
									\$ -	\$ 7,809,600	\$ -	\$ -

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
79778715	None					\$ -	\$ -	\$ -	\$ -	\$ -
					Total	\$ -	\$ -	\$ -	\$ -	\$ -

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
79778715	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	10/1/2015	8/1/2016		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
79778715	Hoskins - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	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		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Twin Church - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	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  
CRGL AG1-2014-041

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
CRGL	79778716	NPPD	EES	50	1/1/2016	1/1/2021	8/1/2016	8/1/2021	\$ -	\$ 3,904,800	\$ -	\$ -
									\$ -	\$ 3,904,800	\$ -	\$ -

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
79778716	None					\$ -	\$ -	\$ -	\$ -	\$ -
					Total	\$ -	\$ -	\$ -	\$ -	\$ -

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
79778716	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	10/1/2015	8/1/2016		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
79778716	Hoskins - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	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		
	TATONGA - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	Twin Church - Dixon County 230kV Line Upgrade	10/24/2015	10/24/2015		
	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  
CRGL AG1-2014-042

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
CRGL	79778812	OKGE	EES	200	1/1/2016	1/1/2021	3/1/2021	3/1/2026	\$ -	\$ 15,619,200	\$ -	\$ -
									\$ -	\$ 15,619,200	\$ -	\$ -

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
79778812	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

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
79778812	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2017		Yes
	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	10/1/2015	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
79778812	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		
	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  
CRGL AG1-2014-043

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
CRGL	79778860	OKGE	EES	100	1/1/2016	1/1/2021	3/1/2021	3/1/2026	\$ -	\$ 7,809,600	\$ -	\$ -
									\$ -	\$ 7,809,600	\$ -	\$ -

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
79778860	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

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
79778860	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2017		Yes
	Multi - Woodward District EHV - Tatonga - Mathewson - Cimarron 345 kV	10/1/2015	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
79778860	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		
	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  
CRGL AG1-2014-044

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
CRGL	79778862	OKGE	EES	50	1/1/2016	1/1/2021	3/1/2021	3/1/2026	\$ -	\$ 3,904,800	\$ -	\$ -
									\$ -	\$ 3,904,800	\$ -	\$ -

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
79778862	None					\$ -	\$ -	\$ -	\$ -	\$ -
					Total	\$ -	\$ -	\$ -	\$ -	\$ -

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
79778862	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2017		
	Multi - Woodward District EHV - Tatonga - Mathewson - Cimarron 345 kV	10/1/2015	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
79778862	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		
	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  
 ETEC AG1-2014-027

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
ETEC	79775026	CSWS	CSWS	1178	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775026	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-028

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
ETEC	79775032	CSWS	CSWS	79	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775032	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-029

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
ETEC	79775043	CSWS	CSWS	550	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775043	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-030

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
ETEC	79775047	EES	CSWS	30	1/1/2015	1/1/2020	10/1/2015	10/1/2020	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775047	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-031

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
ETEC	79775056	CSWS	CSWS	378	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775056	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-032

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
ETEC	79775058	CLEC	CSWS	38	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775058	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-033

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
ETEC	79775062	SPA	CSWS	128	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775062	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-034

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
ETEC	79775065	SPA	CSWS	1	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775065	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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 AG1-2014-035

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
ETEC	79775091	CSWS	CSWS	52	1/1/2015	1/1/2040	10/1/2015	10/1/2040	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79775091	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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  
GRDX AG1-2014-016

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
GRDX	79734977	GRDA	GRDA	110	4/1/2017	4/1/2022	4/1/2017	4/1/2022	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79734977	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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
79734977	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 2	6/1/2021	6/1/2021		
	CPP TRANSF #2 - WILGRO 69KV CKT 1	6/1/2016	8/1/2016		
	STILLWATER KINZIE (KINAUTO1) 138/69/13.8KV TRANSFORMER CKT 1	6/1/2017	6/1/2019		

\*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  
GRDX AG1-2014-017

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
GRDX	79735001	GRDA	GRDA	385	4/1/2017	4/1/2022	6/1/2019	6/1/2024	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79735001	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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
79735001	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 2	6/1/2021	6/1/2021		
	CPP TRANSF #2 - WILGRO 69KV CKT 1	6/1/2016	8/1/2016		
	STILLWATER KINZIE (KINAUTO1) 138/69/13.8KV TRANSFORMER CKT 1	6/1/2017	6/1/2019		Yes

\*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  
GRDX AG1-2014-020

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
GRDX	79772133	OKGE	GRDA	70	1/1/2016	1/1/2021	8/1/2016	8/1/2021	\$ 359,022	\$ -	\$ 412,216	\$ 580,068
									\$ 359,022	\$ -	\$ 412,216	\$ 580,068

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
79772133	HANCOCK - MUSKOGEE 161KV CKT 1	6/1/2017	6/1/2017			\$ 107,999	\$ 53,194	\$ 161,193	\$ 330,000	\$ 303,679
	STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	6/1/2021	6/1/2021			\$ 197,273	\$ -	\$ 197,273	\$ 358,434	\$ 187,559
	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 53,750	\$ -	\$ 53,750	\$ 395,000	\$ 88,830
					Total	\$ 359,022	\$ 53,194	\$ 412,216	\$ 1,083,434	\$ 580,068

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
79772133	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 2	6/1/2021	6/1/2021		
	CPP TRANSF #2 - WILGRO 69KV CKT 1	6/1/2016	8/1/2016		No
	STILLWATER KINZIE (KINAUTO1) 138/69/13.8KV TRANSFORMER CKT 1	6/1/2017	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
79772133	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	Osage - Shidler 138kv	1/15/2014	1/15/2014		
	Shidler 138 kv	2/8/2014	2/8/2014		
	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  
GRDX AG1-2014-021

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
GRDX	79773177	OKGE	GRDA	50	10/1/2015	10/1/2020	8/1/2016	8/1/2021	\$ 208,042	\$ -	\$ 242,858	\$ 355,063
									\$ 208,042	\$ -	\$ 242,858	\$ 355,063

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
79773177	HANCOCK - MUSKOGEE 161KV CKT 1	6/1/2017	6/1/2017			\$ 70,688	\$ 34,816	\$ 105,504	\$ 330,000	\$ 198,764
	STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	6/1/2021	6/1/2021			\$ 100,726	\$ -	\$ 100,726	\$ 358,434	\$ 95,766
	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 36,628	\$ -	\$ 36,628	\$ 395,000	\$ 60,533
					Total	\$ 208,042	\$ 34,816	\$ 242,858	\$ 1,083,434	\$ 355,063

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
79773177	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 2	6/1/2021	6/1/2021		
	CPP TRANSF #2 - WILGRO 69KV CKT 1	6/1/2016	8/1/2016		No
	STILLWATER KINZIE (KINAUTO1) 138/69/13.8KV TRANSFORMER CKT 1	6/1/2017	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
79773177	MATHEWSON - NORTHWEST 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  
GRDX AG1-2014-022

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
GRDX	79773246	OKGE	GRDA	30	10/1/2015	10/1/2020	8/1/2016	8/1/2021	\$ 124,824	\$ -	\$ 145,714	\$ 213,037
									\$ 124,824	\$ -	\$ 145,714	\$ 213,037

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
79773246	HANCOCK - MUSKOGEE 161KV CKT 1	6/1/2017	6/1/2017			\$ 42,412	\$ 20,890	\$ 63,302	\$ 330,000	\$ 119,258
	STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	6/1/2021	6/1/2021			\$ 60,435	\$ -	\$ 60,435	\$ 358,434	\$ 57,459
	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 21,977	\$ -	\$ 21,977	\$ 395,000	\$ 36,320
					Total	\$ 124,824	\$ 20,890	\$ 145,714	\$ 1,083,434	\$ 213,037

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
79773246	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 2	6/1/2021	6/1/2021		
	CPP TRANSF #2 - WILGRO 69KV CKT 1	6/1/2016	8/1/2016		No
	STILLWATER KINZIE (KINAUTO1) 138/69/13.8KV TRANSFORMER CKT 1	6/1/2017	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
79773246	MATHEWSON - NORTHWEST 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  
GSECGS AG1-2014-004

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
GSECGS	79247189	OKGE	SPS	100	12/1/2014	12/1/2034	3/1/2021	3/1/2041	\$ 1,118,328	-	\$ 1,118,328	\$ 2,960,135
									\$ 1,118,328	\$ -	\$ 1,118,328	\$ 2,960,135

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
79247189	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	6/1/2017	6/1/2018		Yes	\$ 1,118,328	-	\$ 1,118,328	\$ 1,118,328	\$ 2,960,135
					Total	\$ 1,118,328	\$ -	\$ 1,118,328	\$ 1,118,328	\$ 2,960,135

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
79247189	CANYON EAST SUB - CANYON WEST SUB 115KV CKT 1	10/1/2015	5/1/2017		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
79247189	Amoco - Sundown 230 kV Terminal Upgrades	10/1/2021	10/1/2021		
	CANYON EAST SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	10/1/2015	5/1/2016		Yes
	CANYON WEST SUB - DAWN SUB 115KV CKT 1	10/1/2015	6/1/2018		Yes
	CARLISLE INTERCHANGE (WH XHS70711) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	DAWN SUB - Panda Energy Substation Hereford 115KV CKT 1	10/1/2015	6/1/2018		Yes
	DEAF SMITH COUNTY INTERCHANGE - Panda Energy Substation Hereford 115KV CKT 1	10/1/2015	6/1/2018		Yes
	Multi - Tuco - Yoakum - Hobbs 345/230 kV Ckt 1	10/1/2015	6/1/2020		Yes
	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	10/1/2015	3/1/2021		Yes
	SUNDOWN INTERCHANGE (WH XDS70381) 230/115/13.8KV TRANSFORMER CKT 1	6/1/2021	6/1/2021		
	WOLFFORTH INTERCHANGE (WH 7001668) 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
79247189	EDDY CO 230kV Bus Tie	10/1/2021	10/1/2021		
	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	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
79247189	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  
 KCPS AG1-2014-005

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
KCPS	79385758	WR	KCPL	101	7/1/2015	1/1/2036	6/1/2017	12/1/2037	\$ 115,507	\$ -	\$ 115,507	\$ 288,734
									\$ 115,507	\$ -	\$ 115,507	\$ 288,734

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79385758	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 115,507	\$ -	\$ 115,507	\$ 395,000	\$ 288,734
					Total	\$ 115,507	\$ -	\$ 115,507	\$ 395,000	\$ 288,734

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
79385758	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2017		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
79385758	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 AG1-2014-006

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
KCPS	79385763	WR	KCPL	51	7/1/2015	1/1/2036	10/1/2015	4/1/2036	\$ 58,325	\$ -	\$ 58,325	\$ 145,796
									\$ 58,325	\$ -	\$ 58,325	\$ 145,796

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
79385763	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 58,325	\$ -	\$ 58,325	\$ 395,000	\$ 145,796
					Total	\$ 58,325	\$ -	\$ 58,325	\$ 395,000	\$ 145,796

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
79385763	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	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
79385763	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 AG1-2014-007

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
KCPS	79385767	WR	KCPL	50	7/1/2015	1/1/2036	10/1/2015	4/1/2036	\$ 57,182	\$ -	\$ 57,182	\$ 142,938
									\$ 57,182	\$ -	\$ 57,182	\$ 142,938

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
79385767	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 57,182	\$ -	\$ 57,182	\$ 395,000	\$ 142,938
					Total	\$ 57,182	\$ -	\$ 57,182	\$ 395,000	\$ 142,938

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
79385767	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	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
79385767	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 AG1-2014-015

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
KMEA	79729929	SECI	SECI	10	1/1/2015	1/1/2020	10/1/2015	10/1/2020	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

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
79729929	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

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
79729929	North Liberal - Walkemeyer 115 kV Ckt 1	6/1/2016	1/16/2018		

\*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  
NMEC AG1-2014-014

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
NMEC	79702349	NPPD	WR	1	12/1/2014	10/1/2024	10/1/2015	8/1/2025	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79702349	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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
79702349	BENTON 138kV Terminal Equipment	6/1/2016	6/1/2017		
	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	6/1/2021	6/1/2021		
	BUCKNER - SPEARVILLE 345 KV CKT 1 Terminal Upgrades	10/1/2015	8/1/2016		

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
79702349	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		
	Rice - Lyons 115 kV Ckt 1	4/1/2013	4/1/2013		
	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  
 NPPM AG1-2014-019

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
NPPM	79768713	NPPD	NPPD	75	12/1/2014	12/1/2024	1/1/2018	1/1/2028	\$ 51,632	\$ -	\$ 51,632	\$ 95,245
									\$ 51,632	\$ -	\$ 51,632	\$ 95,245

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
79768713	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	6/1/2021	6/1/2021			\$ 51,632	\$ -	\$ 51,632	\$ 395,000	\$ 95,245
					Total	\$ 51,632	\$ -	\$ 51,632	\$ 395,000	\$ 95,245

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
79768713	Multi - Gentleman - Cherry Co. - Holt Co. 345 kV	6/1/2016	1/1/2018		
	Theford 345/115 kV Transformer	6/1/2016	1/1/2018		

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
79768713	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013		
	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	6/1/2013	6/1/2013		

Third Party Limitations.

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	*Allocated E & C Cost	*Total E & C Cost
79768713	FT RANDAL - SPENCER 115KV CKT 1	6/1/2021	6/1/2021			\$ 10,662,520	\$ 10,662,520
	SUB C - SUB E 115KV CKT 1	6/1/2017	6/1/2017			\$ 3,000,000	\$ 3,000,000
					Total	\$ 13,662,520	\$ 13,662,520

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

\*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  
 OMPA AG1-2014-003

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
OMPA	79164464	CSWS	OKGE	50	10/1/2018	10/1/2024	10/1/2018	10/1/2024	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79164464	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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
79164464	OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1	6/1/2021	6/1/2021		

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
79164464	BEELINE - EXPLORER GLENPOOL 138KV CKT 1	6/1/2009	6/1/2009		
	CACHE - SNYDER 138KV CKT 1	5/21/2008	5/21/2008		
	EXPLORER GLENPOOL - RIVERSIDE STATION 138KV CKT 1 (AEP)	6/1/2009	6/1/2009		
	EXPLORER GLENPOOL - RIVERSIDE STATION 138KV CKT 1 (OGE)	6/1/2009	6/1/2009		
	Fairfax - Pawnee 138kv Ckt 1	6/30/2014	6/1/2014		
	MATHEWSON - NORTHWEST 345KV CKT 1	1/1/2010	1/1/2010		
	Osage - Shidler 138kv	1/15/2014	1/15/2014		
	Pawnee 138 kv	6/30/2014	6/1/2014		
	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  
PSCM AG1-2014-012

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
PSCM	79512345	SPS	LAM345	101	6/1/2018	6/1/2023	6/1/2018	6/1/2023	\$ -	\$ 13,428,960	\$ -	\$ -
									\$ -	\$ 13,428,960	\$ -	\$ -

  

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79512345	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

\*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  
PSCM AG1-2014-013

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
PSCM	79512393	SPS	LAM345	101	6/1/2018	6/1/2023	6/1/2018	6/1/2023	\$ -	\$ 13,428,960	\$ -	\$ -
									\$ -	\$ 13,428,960	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79512393	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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
79512393	PCA INTERCHANGE - QUAHADA 3115.00 115KV CKT 1	6/1/2021	6/1/2021		

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

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available
79512393	HUGO - VALLIANT 345KV CKT 1	7/1/2012	7/1/2012		
	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  
SPSM AG1-2014-024

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
SPSM	79774645	SPS	SPS	177	6/1/2018	6/1/2038	6/1/2018	6/1/2038	\$ 11,108,787	\$ -	\$ 11,108,787	\$ 29,118,350
									\$ 11,108,787	\$ -	\$ 11,108,787	\$ 29,118,350

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79774645	Andrews - Hobbs 345 kV Ckt 1 Voltage Conversion & Andrews 345/115kV Ckt 1	6/1/2022	6/1/2022			\$ 11,108,787	\$ 15,000,000	\$ 29,118,350
						\$ 11,108,787	\$ 15,000,000	\$ 29,118,351

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
79774645	BYRD SUB - COOPER RANCH SUB 115KV CKT 1	6/1/2021	6/1/2021		
	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1	6/1/2021	6/1/2021		
	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1	6/1/2021	6/1/2021		
	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	6/1/2018	6/1/2018		
	JAL SUB - TEAGUE SUB 115KV CKT 1	6/1/2021	6/1/2021		
	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1	6/1/2021	6/1/2021		
	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1	6/1/2021	6/1/2021		
	National Enrichment Plant - Targa 115 kV Ckt 1 #2	6/1/2021	6/1/2021		
	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	6/1/2018	6/1/2018		
	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1	6/1/2018	6/1/2018		
	PCA INTERCHANGE - QUAHADA 3115.00 115KV CKT 1	6/1/2021	6/1/2021		
	PECOS INTERCHANGE (WH BCS15041) 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
79774645	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2017	6/1/2018		

\*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 AG1-2014-025

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
SPSM	79774647	SPS	SPS	62	6/1/2018	6/1/2038	6/1/2018	6/1/2038	\$ 3,891,213	\$ -	\$ 3,891,213	\$ 10,199,647
									\$ 3,891,213	\$ -	\$ 3,891,213	\$ 10,199,647

Reservation	Upgrade Name	DUN	EOC	Earliest Start Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
79774647	Andrews - Hobbs 345 kV Ckt 1 Voltage Conversion & Andrews 345/115kV Ckt 1	6/1/2022	6/1/2022			\$ 3,891,213	\$ 15,000,000	\$ 10,199,647
						\$ 3,891,213	\$ 15,000,000	\$ 10,199,647

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
79774647	BYRD SUB - COOPER RANCH SUB 115KV CKT 1	6/1/2021	6/1/2021		
	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1	6/1/2021	6/1/2021		
	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1	6/1/2021	6/1/2021		
	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	6/1/2018	6/1/2018		
	JAL SUB - TEAGUE SUB 115KV CKT 1	6/1/2021	6/1/2021		
	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1	6/1/2021	6/1/2021		
	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1	6/1/2021	6/1/2021		
	National Enrichment Plant - Targa 115 kV Ckt 1 #2	6/1/2021	6/1/2021		
	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	6/1/2018	6/1/2018		
	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1	6/1/2018	6/1/2018		
	PCA INTERCHANGE - QUAHADA 3115.00 115KV CKT 1	6/1/2021	6/1/2021		
	PECOS INTERCHANGE (WH_BCS15041) 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
79774647	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	6/1/2017	6/1/2018		

\*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 AG1-2014-001

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
WFEC	78997137	OKGE	WFEC	100	6/1/2015	6/1/2035	3/1/2021	3/1/2041	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

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
78997137	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

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
78997137	Multi - Woodward District EHV - Tatonga - Mathewson - Cimarron 345 kV	10/1/2015	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
78997137	BLUCAN5 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 - 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 AG1-2014-002

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
WRGS	79147640	OKGE	WR	200	10/1/2015	10/1/2035	6/1/2017	6/1/2037	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

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
79147640	None					\$ -	\$ -	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -	\$ -	\$ -

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
79147640	BENTON 138kV Terminal Equipment	6/1/2016	6/1/2017		Yes
	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	6/1/2021	6/1/2021		
	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	6/1/2016	6/1/2017		Yes
	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	10/1/2015	6/1/2017		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
79147640	BARBER - SAWYER 115KV CKT 1	12/1/2009	6/1/2013		
	BARBER (BARBER 4) 138/115/2.72KV TRANSFORMER 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		
	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
GRDA	STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	Replace WaveTrap	6/1/2021	6/1/2021	\$358,434.00
OKGE	HANCOCK - MUSKOGEE 161KV CKT 1	Replace Muskogee Terminal Equipment	6/1/2017	6/1/2017	\$330,000.00
SPS	Andrews - Hobbs 345 kV Ckt 1 Voltage Conversion & Andrews 345/115kV Ckt 1	Convert existing 30.5-mile 230 kV line from Andrews to Hobbs to 345 kV. Re-terminate line on 345 kV bus at Hobbs. Ratings will be based on current conductors - bundled 795 ACSR. Install new 345/115 kV 448 MVA transformer at Andrews substation and remove two 230/115 kV transformers. Install any necessary 115 kV terminal equipment.	6/1/2022	6/1/2022	\$15,000,000.00
SPS	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	Rebuild 2.236 miles to at least 192 MVA Rate B	6/1/2017	6/1/2018	\$1,118,328.00
WERE	SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	Replace Terminal Equipment	6/1/2021	6/1/2021	\$395,000.00

\*Andrews - Hobbs 345 kV Ckt 1 Voltage Conversion and Andrews 345/115 kV Ckt 1 Transformer are being re-evaluated for need."

**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	EDDY CO 230kV Bus Tie	Build the 230kV main and transfer bus to a double breaker double bus.	10/1/2021	10/1/2021
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.	6/1/2017	6/1/2018

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

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)
NPPD	Multi - Gentleman - Cherry Co. - Holt Co. 345 kV	Build new 222 mile, 345 kV line from Gentleman - Cherry Co - Holt Co. Build new 345 kV substations at Cherry Co and Holt Co. Terminal upgrades at Gentleman. This project is contingent upon WAPA approval to tap the Grand Island - Fort Thompson 345 kV line.	6/1/2016	1/1/2018
NPPD	Theford 345/115 kV Transformer	Install new 345/115 kV 400 MVA transformer at Theford substation. Install any necessary 115 kV terminal equipment.	6/1/2016	1/1/2018
SPS	CANYON EAST SUB - CANYON WEST SUB 115KV CKT 1	Rebuild 3.73 mile 115 kV line.	10/1/2015	5/1/2017

**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)
AEPW	OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1	Rebuild 8.59 miles with 1533.3 ACSR/TW	6/1/2021	6/1/2021
GRDA	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	Upgrade the 161/69/13.8KV TRANSFORMER.	6/1/2021	6/1/2021
GRDA	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 2	Upgrade the 161/69/13.8KV TRANSFORMER.	6/1/2021	6/1/2021
GRDA	CPP TRANSF #2 - WILGRO 69KV CKT 1	Upgrade break and relay at CPPX 69 kv station.	6/1/2016	8/1/2016
GRDA	STILLWATER KINZIE (KINAUTO1) 138/69/13.8KV TRANSFORMER CKT 1	Replace Stillwater Kinzie Transformer with 112/140 unit	6/1/2017	6/1/2019
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.	10/1/2015	3/1/2021
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	BYRD SUB - COOPER RANCH SUB 115KV CKT 1	Rebuild 4.86-mile 115 kv line from Cooper Ranch to Byrd to at least 162 MVA Rate B.	6/1/2021	6/1/2021
SPS	CANYON EAST SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	Rebuild 13.5-mile 4/0 segment of 115 kv line from Canyon East Sub to Randall County Interchange with 795 ACSR conductor.	10/1/2015	5/1/2016
SPS	CANYON WEST SUB - DAWN SUB 115KV CKT 1	Remove the existing W40 circuit and construct a new 115-kV transmission line between Canyon West and Dawn using the existing ROW. The total line length is 15.2 miles. Tubular steel monopoles will be utilized to support new 795 ACSR Drake conductor.	10/1/2015	6/1/2018
SPS	CARLISLE INTERCHANGE (WH XHS70711) 230/115/13.2KV TRANSFORMER CKT 1	Upgrade transformer to 250 MVA.	6/1/2021	6/1/2021
SPS	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1	Rebuild 3.54 miles to at least 159 MVA Rate B	6/1/2021	6/1/2021
SPS	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1	Rebuild 6.5-mile 115 kv line to at least 192 MVA Rate B	6/1/2021	6/1/2021
SPS	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	Replace WaveTrap at Chaves	6/1/2018	6/1/2018
SPS	DAWN SUB - Panda Energy Substation Hereford 115KV CKT 1	Remove the existing W40 circuit and construct a new 115-kV transmission line between Dawn and Panda Tap using the existing ROW. The total line length is 8.4 miles. Tubular steel monopoles will be utilized to support new 795 ACSR Drake conductor.	10/1/2015	6/1/2018
SPS	DEAF SMITH COUNTY INTERCHANGE - Panda Energy Substation Hereford 115KV CKT 1	Remove the existing W40 circuit and construct a new 115-kV transmission line between Panda Tap to Deaf Smith using the existing ROW. The total line length is 3.5 miles, with 2.4 miles being wrecked out and rebuilt. Tubular steel monopoles will be utilized	10/1/2015	6/1/2018
SPS	JAL SUB - TEAGUE SUB 115KV CKT 1	Rebuild 10.28 miles of transmission line to at least 184 MVA Rate B	6/1/2021	6/1/2021
SPS	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1	Rebuild 3.11 Miles of line	6/1/2021	6/1/2021
SPS	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1	Replace Wavetrap	6/1/2021	6/1/2021
SPS	Multi - Tuco - Yoakum - Hobbs 345/230 kv Ckt 1	Construct new 345 kv line from Tuco - Yoakum - Hobbs (167 miles). Build new Amoco 345/230 kv transformer. Build new Hobbs 345/230 kv transformer.	10/1/2015	6/1/2020
SPS	National Enrichment Plant - Targa 115 kv Ckt 1 #2	Wreck out and rebuild the 115kv line between National Enrich Plant and Targa to at least 309 MVA	6/1/2021	6/1/2021
SPS	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	Rebuild 6.8 miles to at least 148 MVA Rate B	6/1/2018	6/1/2018



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

SPS	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1	Rebuild 9.1-mile 115 kV line from Ochoa to Ponderosa Tap to achieve an emergency rating of 239 MVA.	6/1/2018	6/1/2018
SPS	PCA INTERCHANGE - QUAHADA 3115.00 115KV CKT 1	Rebuild of the PCA Interchange and Quahada 115kV line.	6/1/2021	6/1/2021
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	SUNDOWN INTERCHANGE (WH XDS70381) 230/115/13.8KV TRANSFORMER CKT 1	Increase Sundown 230/115 kV transformer to 250 MVA	6/1/2021	6/1/2021
SPS	WOLFFORTH INTERCHANGE (WH 7001668) 230/115/13.2KV TRANSFORMER CKT 1	Upgrade transformer to 250 MVA.	6/1/2021	6/1/2021
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.	10/1/2015	8/1/2016
TBD	North Liberal - Walkemeyer 115 kV Ckt 1	Construct new 21-mile 115 kV line from North Liberal to Walkemeyer.	6/1/2016	1/16/2018
WERE	BENTON 138kV Terminal Equipment	Replace Terminal Equipment	6/1/2016	6/1/2017
WERE	BPU - CITY OF MCPHERSON PLANT - WEST MCPHERSON 115KV CKT 1	Replace Terminal Equipment	6/1/2021	6/1/2021
WERE	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	JEC-Summit and McDowell Creek-Junction City #2 ckt separate. Construct new	6/1/2016	6/1/2017
WERE	Multi - Viola 345/138kV Transformer and 138 kV Lines to Clearwater and Gill	line from Viola to Clearwater substation. Build 138 kV line from Viola to Gill	10/1/2015	6/1/2017

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

Network Upgrades requiring credits per Attachment 22 of the SPP OATT.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
AEPW	CACHE - SNYDER 138KV CKT 1	Replace Snyder wavetrap	5/21/2008	5/21/2008
AEPW	EXPLORER GLENPOOL - RIVERSIDE STATION 138KV CKT 1 (AEP)	Reconductor 1.9 miles with ACCC. Replace wave trap jumpers at Riverside.	6/1/2009	6/1/2009
AEPW	MCNAB REC - Turk 115KV CKT 1 #2 (AEP)	Build a new two mile, 138kV, 1590 ACSR line section (operated at 115kV) from Turk Substation to the existing Okay-Hope 115kV line to form a Turk - Hope 115kV line.	12/1/2011	12/1/2011
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	TURK 138/115KV TRANSFORMER CKT 1	Build Turk 138-115 kV station and relocate autotransformer (and spare) from Patterson to this new Turk station	12/1/2011	12/1/2011
AEPW	Valliant 345 kV (AEP)	Valliant 345 kV line terminal	7/1/2012	7/1/2012
GRDA	Fairfax - Pawnee 138kV Ckt 1	Construct Approx. 15 miles of 138kV transmission line from Fairfax to a new substation on the Cleveland-Stillwater 138kV line near Pawnee. & Fairfax Substation: Install 138kV line terminal and any additional modifications that are necessary to connect to	6/30/2014	6/1/2014
GRDA	Pawnee 138 kV	New three breaker ring bus on the Cleveland-Stillwater 138kV line near Pawnee. Station will have terminals to Cleveland, Stillwater, and Fairfax.	6/30/2014	6/1/2014
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
MKEC	BARBER - SAWYER 115KV CKT 1	Rebuild line	12/1/2009	6/1/2013
MKEC	BARBER (BARBER 4) 138/115/2.72KV TRANSFORMER CKT 1	Upgrade transformer	12/1/2009	6/1/2013
MKEC	CLIFTON - GREENLEAF 115KV CKT 1	Rebuild 14.4 miles	6/1/2011	6/1/2013
MKEC	FLATRDG3 - MEDICINE LODGE 138KV CKT 1	Rebuild 8.05 mile line	12/1/2009	6/1/2013
MKEC	GREENLEAF - KNOB HILL 115KV CKT 1 (MKEC)	Rebuild 43.5% Ownership of 20.9 miles	6/1/2013	6/1/2013
MKEC	RIVER ROAD - SAWYER 115KV CKT 1	Rebuild line	12/1/2009	6/1/2013
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	Twin Church - Dixon County 230kV Line Upgrade	Increase clearances to accommodate 320MVA facility rating	10/24/2015	10/24/2015
OKGE	BEE LINE - EXPLORER GLENPOOL 138KV CKT 1	Reconductor .92miles of line with Drake ACCC/TW.	6/1/2009	6/1/2009
OKGE	EXPLORER GLENPOOL - RIVERSIDE STATION 138KV CKT 1 (OGE)	Reconductor 1.82 miles line with Drake ACCC/TW.	6/1/2009	6/1/2009
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	DEARING 138KV	Dearing 138 kV 20 MVAR Capacitor Addition	6/1/2012	6/1/2012
WERE	Wheatland 115 kV #2	Install metering equipment at the Wheatland 115 kV substation for GEN-2010-057.	12/31/2012	12/31/2012

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

WFEC	BLUCANS 4 138.00 - PARADISE 138KV CKT 1	Upgrade Paradise to G03-05T to 1113	6/1/2010	6/1/2013
WFEC	HUGO - VALLIANT 345KV CKT 1	New 19 miles 345 KV	7/1/2012	7/1/2012
WFEC	HUGO 345/138KV TRANSFORMER CKT 1	New 345/138 kv Auto	7/1/2012	7/1/2012

**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
AECC	CHAMBER SPRINGS - FARMINGTON AECC 161KV CKT 1 AECC	Upgrade 1272 AAC bus at Farmington REC. Replace bus at Farmington REC and rebuild 400 feet of the 161 kV line going to Chamber Springs.	6/1/2018	6/1/2019	Note 1
EES	BULL SHOALS - MIDWAY (YVEPA) 161KV CKT 1	Bull Shoals - Midway Jordan: Rebuild 161kV line	6/1/2016	6/1/2020	\$9,754,602.00
GRIS	SUB C - SUB E 115KV CKT 1	Rebuild 4.57 miles of transmission line	6/1/2017	6/1/2017	\$3,000,000.00
WAPA	FT RANDAL - SPENCER 115KV CKT 1	Reconductor 20 Miles of line	6/1/2021	6/1/2021	\$10,662,520.00

**Note 1:** AECC Network Upgrade - Construction Pending - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
Andrews - Hobbs 345 kV Ckt 1 Voltage Conversion & Andrews 345/115kV Ckt 1	SPSM	AG1-2014-024	79774645	74.06%	\$11,108,787
Andrews - Hobbs 345 kV Ckt 1 Voltage Conversion & Andrews 345/115kV Ckt 1	SPSM	AG1-2014-025	79774647	25.94%	\$3,891,213
				<b>Total:</b>	<b>\$15,000,000</b>

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	GSECGS	AG1-2014-004	79247189	100.00%	\$1,118,328
				<b>Total:</b>	<b>\$1,118,328</b>

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
HANCOCK - MUSKOGEE 161KV CKT 1	GRDX	AG1-2014-020	79772133	48.85%	\$161,193
HANCOCK - MUSKOGEE 161KV CKT 1	GRDX	AG1-2014-021	79773177	31.97%	\$105,504
HANCOCK - MUSKOGEE 161KV CKT 1	GRDX	AG1-2014-022	79773246	19.18%	\$63,302
				<b>Total:</b>	<b>\$330,000</b>

Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	GRDX	AG1-2014-020	79772133	55.04%	\$197,273
STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	GRDX	AG1-2014-021	79773177	28.10%	\$100,726
STILLWATER 19TH STREET - STILLWATER KINZIE 138KV CKT 1	GRDX	AG1-2014-022	79773246	16.86%	\$60,435
				<b>Total:</b>	<b>\$358,434</b>



Table 7- Service Upgrade Cost Allocation per Request

Upgrade Name	Customer	Study Number	Reservation	Allocation Percentage	Allocated E & C Cost
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	KCPS	AG1-2014-005	79385758	29.24%	\$115,507
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	KCPS	AG1-2014-006	79385763	14.77%	\$58,325
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	KCPS	AG1-2014-007	79385767	14.48%	\$57,182
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	NPPM	AG1-2014-019	79768713	13.07%	\$51,632
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	GRDX	AG1-2014-020	79772133	13.61%	\$53,750
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	GRDX	AG1-2014-021	79773177	9.27%	\$36,628
SWISSVALE - WEST GARDNER 345KV CKT 1 WERE	GRDX	AG1-2014-022	79773246	5.56%	\$21,977
				<b>Total:</b>	<b>\$395,000</b>