



*Aggregate Facility Study
SPP-2007-AG3-AFS-9
For Transmission Service
Requested by
Aggregate Transmission Customers*

SPP Engineering, SPP Tariff Studies

SPP AGGREGATE FACILITY STUDY (SPP-2007-AG3-AFS-9)

September 4, 2009

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1. Executive Summary

Pursuant to Attachment Z1 of the Southwest Power Pool Open Access Transmission Tariff (OATT), 1335 MW of long-term transmission service requests have been restudied in this Aggregate Facility Study (AFS). The first phase of the AFS consisted of a revision of the impact study to reflect the withdrawal of requests for which an Aggregate Facility Study Agreement was not executed. The principal objective of the AFS is to identify system problems and potential modifications necessary to facilitate these transfers while maintaining or improving system reliability as well as summarizing the operating limits and determination of the financial characteristics associated with facility upgrades. Facility upgrade costs are allocated on a prorated basis to all requests positively impacting any individual overloaded facility. Further, Attachment Z2 provides for facility upgrade cost recovery by stating that “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 total assigned facility upgrade Engineering and Construction (E &C) cost determined by the AFS is \$39 Million. The total upgrade levelized revenue requirement for all transmission requests is \$ 88 Million. This is based on full allocation of levelized revenue requirements for upgrades to customers without consideration of base plan funding. AFS data table 3 reflects the allocation of upgrade costs to each request without potential base plan funding based on either the requested reservation period or the deferred reservation period if applicable. Total upgrade levelized revenue requirements for all transmission requests after consideration of potential base plan funding is \$14 Million.

Third-party facilities must be upgraded when it is determined they are constrained in order to accommodate the requested Transmission Service. These 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 engineering and construction cost estimates for required third-party facility upgrades are indeterminate.

The Transmission Provider will tender a Letter of Intent on September 4th, 2009. 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 (Customer) by September 19th, 2009, an executed Letter of Intent. The Letter of Intent 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.

If customers withdraw from the ATSS after posting of this AFS, the AFS will be re-performed to determine final cost allocation and Available Transmission Capability (ATC) in consideration of the remaining ATSS participants. 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.

2. Introduction

On January 21, 2005, the Federal Energy Regulatory Commission accepted Southwest Power Pool's proposed aggregate transmission study procedures in Docket ER05-109 to become effective February 1, 2005. In compliance with this Order, the third open season of 2007 commenced on June 1, 2007. All requests for long-term transmission service received prior to

October 1, 2007 with a signed study agreement were then included in this third Aggregate Transmission Service Study (ATSS) of 2007.

Approximately 1335 MW of long-term transmission service has been restudied in this Aggregate Facility Study (AFS) with over \$38 Million in transmission upgrades being proposed. The results of the AFS are detailed in Tables 1 through 7. A highly tangible benefit of studying transmission requests aggregately under the SPP OATT Attachment Z1 is the sharing of costs among customers using the same facility. The detailed results show individual upgrade costs by study as well as potential base plan allowances as determined by Attachments J and Z1. The following URL can be used to access the SPP OATT:

http://www.spp.org/Publications/SPP_Tariff.pdf. In order to understand the extent to which base plan upgrades may be applied to both point-to-point 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.” Therefore, not only network service, but also point-to-point 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 a 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, Point-to-Point 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 as 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 (if applicable) lists deferment of expansion plan projects with different upgrades with the new required in service date as a result of this AFS.

A. Financial Analysis

The AFS utilizes the allocated customer 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 Letter of Intent sent coincident with the initial AFS, 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 expedited, with no additional upgrades, to accommodate a new request for Transmission Service, then the levelized present worth of only the incremental expenses through the reservation period of the new request, excluding depreciation, shall be assigned to the new request. These incremental expenses, excluding depreciation, include 1) the levelized difference in present worth of the engineering and construction expenses given the change in date to complete construction to account for additional interest expense and reduced engineering and construction expense due to inflation, 2) the levelized present worth of all expediting fees, and 3) the levelized present worth of the incremental annual carrying charges, excluding depreciation and interest, during the new reservation period taking into account both a) the reservation in which the project was originally assigned, and b) a reservation, if any, in which the project was previously expedited.

Achievable Base Plan Avoided Revenue Requirements 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.B methodology. A deferred Base Plan upgrade being 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 being defined as the same network upgrade being displaced by a requested upgrade needed at an earlier date. Assumption of a 40 year service life is utilized for Base Plan funded projects unless provided otherwise 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.

B. Third Party Facilities

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 not identified. 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 engineering and construction cost estimates are not utilized to determine the present worth value of levelized revenue requirements for SPP system network upgrades.

All modeled facilities within the Transmission Provider system were monitored during the development of this Study as well as certain facilities in first-tier neighboring systems. Third-party facilities must be upgraded when it is determined that they are overloaded while accommodating the requested Transmission Service. An agreement between the Customer and 3rd Party Owner detailing the mitigation of the 3rd 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 3rd party facilities for load that sinks outside the SPP footprint with the applicable Transmission Providers.

3. Study Methodology

A. Description

The system impact 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 done to ensure current SPP Criteria and NERC Reliability Standards requirements are fulfilled. The Southwest Power Pool conforms to the NERC Reliability Standards, which provide the strictest requirements, related to voltage violations and thermal overloads during normal conditions and during a contingency. It requires that all facilities 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 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 69kV 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, and ENTR and a 2 % TDF cutoff was applied to MEC. 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.

B. Model Development

SPP used six seasonal models to study the aggregate transfers of 1335 MW over a variety of requested service periods. The SPP STEP 2008 Q4 Series Cases 2009/10 Winter Peak (09WP), 2010 Summer Peak (10SP), 2010/11 Winter Peak (10WP), 2013 Summer Peak (13SP), 2013/14 Winter Peak (13WP), and 2018 Summer Peak (18SP) were used to study the impact of the requested service on the transmission system. The Spring Peak models apply to April and May, the Summer Peak models apply to June through September, the Fall Peak models apply to October and November, and the Winter Peak models apply to December through March.

The chosen base case models were modified to reflect the current modeling information. Five groups of requests were developed from the aggregate of 1335 MW in order to minimize counter flows among requested service. Each request was included in at least two of the four groups depending on the requested path. All requests were included in group five. From the twelve seasonal models, five system scenarios were developed. Scenario 1 includes SWPP OASIS transmission requests not already included in the SPP 2008 Series Cases flowing in a West to East direction with ERCOTN HVDC Tie South to North, ERCOTE HVDC Tie East to West, SPS exporting, and SPS importing from the Lamar HVDC Tie. Scenario 2 includes transmission requests not already included in the SPP 2008 Series Cases flowing in an East to West direction with ERCOTN HVDC tie North to South, ERCOTE HVDC tie East to West, SPS importing, and SPS exporting to the Lamar HVDC Tie. Scenario 3 includes transmission requests not already included in the SPP 2008 Series Cases flowing in a South to North direction with ERCOTN HVDC tie South to North, ERCOTE HVDC tie East to West, SPS exporting, and SPS exporting to the Lamar HVDC Tie. Scenario 4 includes transmission requests not already included in the SPP 2008 Series Cases flowing in a North to South direction with ERCOTN HVDC tie North to

South, ERCOTE HVDC tie East to West, SPS importing, and SPS importing from the Lamar HVDC tie. Scenario 5 include all transmission not already included in the SPP 2008 Series Cases with ERCOTN North to South, ERCOTE East to West, SPS importing and SPS exporting to the Lamar HVDC tie. The system scenarios were developed to minimize counter flows from previously confirmed, higher priority requests not included in the MDWG Base Case.

C. Transmission Request Modeling

Network Integration Transmission Service requests are modeled as Generation to Load transfers in addition to Generation to Generation transfers. The Generation to Load modeling is accomplished by developing a pre-transfer case by redispatching the existing designated network resource(s) down by the new designated network resource request amount and scaling down the applicable network load by the same amount proportionally. The post-transfer case for comparison is developed by scaling the network load back to the forecasted amount and dispatching the new designated network resource being requested. 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. If the Network Integration Transmission Service request application clearly documents that the existing designated network resource(s) is being replaced or undesignated by the new designated network resource then MW impact credits will be given to the request as is done for a redirect of existing transmission service. 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.

D. 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 1st-Tier) and voltage threshold (0.02 change) were applied to determine the impacted facilities. The PSS/E options chosen to conduct the analysis can be found in Appendix A.

E. Curtailment and Redispatch Evaluation

During any period when SPP determines that a transmission constraint exists on the Transmission System, and such constraint may impair the reliability of the Transmission System, SPP will take whatever actions that are reasonably necessary to maintain the reliability of the Transmission System. To the extent SPP determines that the reliability of the Transmission System can be maintained by redispatching resources, SPP will evaluate interim curtailment 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. Curtailment of existing confirmed service is evaluated to provide only interim service. Curtailment of existing confirmed service is only evaluated at the request of the transmission customer.

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

was greater than 1 MW, the unit was considered as a potential incremental or decremental unit. Generation shift factors were calculated for the potential incremental and decremental units using Managing and Utilizing System Transmission (MUST). Relief pairs from the generation shift factors for the incremental and decremental units with a greater than 3% TDF on the limiting constraint were determined from the incremental units with the lowest generation shift factors and decremental units with highest generation shift factors. If the aggregate redispatch amount for the potential relief pair was determined to be three times greater than the lower of the increment or decrement then the pair was determined not to be feasible and is not included. If transmission customer would like to see additional relief pairs beyond the relief pairs determined, the transmission customer can request SPP to provide the additional pairs. The potential relief pairs **were not** evaluated to determine impacts on limiting facilities in the SPP and 1st-Tier systems. The redispatch requirements would be called upon prior to implementing NERC TLR Level 5a.

4. Study Results

A. Study Analysis Results

Tables 1 through 6 contain the steady-state analysis results of the AFS. 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), 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), total revenue requirements for assigned upgrades without consideration of potential base plan funding, 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 customer but required for service to be confirmed, credits to be paid for previously assigned AFS or GI network upgrades, and any third party upgrades required. 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 and 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. Table 7 (if applicable) identifies deferred expansion plan projects that were replaced with requested upgrades at earlier dates.

The potential base plan funding allowable is contingent upon 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. Additionally, 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 5 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 Engineering and Construction

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 “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 (140-54) or 86 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 “OR” pricing of 128 million revenue requirements to be paid back to the Transmission Owners and the remaining revenue requirements of (140-128) or 12 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 “OR” pricing 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.

B. 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. The Total Engineering and Construction Cost (E & C) is the upgrade solution cost as determined by the transmission owner. The Transmission Customer Allocation Cost is the estimated engineering and construction cost based upon the allocation of

costs to all Transmission Customers in the AFS who positively impact facilities by at least 3% subsequently overloaded by the AFS. 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.

5. Conclusion

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

The Transmission Provider will tender a Letter of Intent on September 4th, 2009. 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 (Customer) by September 19th, 2009, an executed Letter of Intent. The Letter of Intent will list options the Customer must choose to clarify their commitment to remain in the ATSS. The only action required on OASIS is to WITHDRAW the request or leave the request in STUDY mode.

The Transmission Provider must receive an unconditional and irrevocable letter of credit in the amount of the total allocated Engineering and Construction costs assigned to the Customer. This letter of credit is not required for those facilities that are base plan funded. This amount is for all assignable Network Upgrades less pre-payment requirements. The amount of the letter of credit will be adjusted down on an annual basis to reflect amortization of these costs. The Transmission Provider will issue notifications to construct facility upgrades to the constructing Transmission Owner. This date is determined by the engineering and construction lead time provided for each facility upgrade.

6. Appendix A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASES:

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 CASES:

Solutions – AC contingency checking (ACCC)
MW mismatch tolerance – 0.5
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 form 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
Var limits - Apply automatically
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	Deferred Stop Date without interim redispatch	Start Date with interim redispatch	Stop Date with interim redispatch	Minimum Allocated ATC (MW) withing reservation period	Season of Minimum Allocated ATC within reservation period
AEPM	AG3-2007-015	1337138	CSWS	EES	22	1/1/2009	1/1/2010	10/1/2012	10/1/2013	11/1/2009	11/1/2010	0	09SP
AEPM	AG3-2007-054	1352732	CSWS	CSWS	100	1/1/2010	1/1/2011	12/1/2010	12/1/2011	11/1/2009	11/1/2010	0	10SP
AEPM	AG3-2007-063	1352923	CSWS	CSWS	50	1/1/2009	1/1/2011	10/1/2012	10/1/2014	11/1/2009	11/1/2011	0	09SP
AEPM	AG3-2007-065	1352934	CSWS	CSWS	54	6/1/2010	6/1/2015	10/1/2012	10/1/2017	6/1/2010	6/1/2015	0	10SP
CMLP	AG3-2007-047	1352193	GRDA	CSWS	197	6/1/2008	6/1/2042	6/1/2012	6/1/2046	11/1/2009	1/1/2043	0	09SP
EDE	AG3-2007-037	1350960	KCPL	EDE	5	11/1/2008	11/1/2018	1/1/2010	1/1/2020	11/1/2009	11/1/2019	0	09SP
EDE	AG3-2007-046	1352109	KCPL	EDE	5	1/1/2010	1/1/2030	1/1/2010	1/1/2030	11/1/2009	11/1/2029	0	10SP
GRDA	AG3-2007-034	1350396	OKGE	GRDA	150	6/1/2008	6/1/2013	1/1/2010	1/1/2015	11/1/2009	11/1/2014	0	09SP
KBPU	AG3-2007-017D	1339117	MPS	KACY	5	2/1/2008	2/1/2009	6/1/2011	6/1/2012			0	09SP
KCPS	AG3-2007-074	1353013	KCPL	KCPL	45	11/1/2008	11/1/2018	11/1/2009	11/1/2019	11/1/2009	11/1/2019	0	09SP
KEPC	AG3-2007-064	1352933	WR	KCPL	15	6/1/2008	6/1/2040	6/1/2011	6/1/2043	11/1/2009	11/1/2041	0	09SP
KEPC	AG3-2007-066	1352938	WR	WR	68	6/1/2008	6/1/2040	6/1/2013	6/1/2045	11/1/2009	11/1/2041	0	09SP
KMEA	AG3-2007-104	1355377	OPPD	KCPL	20	1/1/2009	1/1/2013	1/1/2010	1/1/2014			0	09SP
KPP	AG3-2007-040	1351224	WR	WR	4	2/1/2008	2/1/2018	1/1/2010	1/1/2020	11/1/2009	11/1/2019	0	09SP
MIDW	AG3-2007-087	1353103	WR	WR	1	6/1/2008	6/1/2013	6/1/2011	6/1/2016	11/1/2009	11/1/2014	0	09SP
MIDW	AG3-2007-091	1353111	WR	WR	25	1/1/2009	1/1/2029	1/1/2010	1/1/2030	11/1/2009	11/1/2029	0	09SP
OMPA	AG3-2007-035	1350945	OKGE	OKGE	23	5/1/2008	5/1/2017	1/1/2010	1/1/2019	11/1/2009	11/1/2018	0	09SP
SPSM	AG3-2007-080	1353054	WPEK	KCPL	50	10/1/2008	6/1/2010	11/1/2009	6/1/2010	11/1/2009	6/1/2010	0	09SP
SPSM	AG3-2007-080	1353055	WPEK	KCPL	50	10/1/2008	6/1/2010	11/1/2009	6/1/2010	11/1/2009	6/1/2010	0	09SP
SPSM	AG3-2007-081	1353057	WPEK	KCPL	50	6/1/2010	1/1/2012	6/1/2011	1/1/2012	6/1/2010	1/1/2012	0	10SP
SPSM	AG3-2007-081	1353059	WPEK	KCPL	50	6/1/2010	1/1/2012	6/1/2011	1/1/2012	6/1/2010	1/1/2012	0	10SP
WFEC	AG3-2007-043	1510704	WFEC	WFEC	150	5/1/2009	5/1/2039	1/1/2010	1/1/2040			0	09SP
WRGS	AG3-2007-025	1346837	SECI	WR	96	11/1/2008	11/1/2018	6/1/2013	6/1/2023	11/1/2009	11/1/2019	0	09SP
WRGS	AG3-2007-026	1346842	SECI	WR	100	12/31/2008	12/31/2018	6/1/2013	6/1/2023	11/1/2009	11/1/2019	0	09SP

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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.

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

Customer	Study Number	Reservation	Engineering and Construction Cost of Upgrades Allocated to Customer for Revenue Requirements	¹ Letter of Credit Amount Required	² Potential Base Plan Engineering and Construction Funding Allowable	Notes	⁴ Additional Engineering and Construction Cost for 3rd Party Upgrades	³ Total Revenue Requirements for Assigned Upgrades Over Term of Reservation WITHOUT Potential Base Plan Funding Allocation	^{3,5} Total Revenue Requirements for Assigned Upgrades Over Term of Reservation WITH Potential Base Plan Funding Allocation	Point-to-Point Base Rate Over Reservation Period	⁴ Total Cost of Reservation Assignable to Customer Contingent Upon Base Plan Funding
AEPM	AG3-2007-015	1337138	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
AEPM	AG3-2007-054	1352732	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
AEPM	AG3-2007-063	1352923	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
AEPM	AG3-2007-065	1352934	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
CMLP	AG3-2007-047	1352193	\$ 12,404,090	\$ -	\$ 12,404,090	7	\$ -	\$ 44,291,388	\$ -	\$ -	Schedule 9 Charges
EDE	AG3-2007-037	1350960	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
EDE	AG3-2007-046	1352109	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
GRDA	AG3-2007-034	1350396	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
KBPU	AG3-2007-017D	1339117	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 52,800	\$ 52,800
KCPS	AG3-2007-074	1353013	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
KEPC	AG3-2007-064	1352933	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
KEPC	AG3-2007-066	1352938	\$ 262,400	\$ -	\$ 262,400		\$ -	\$ 1,224,400	\$ -	\$ -	Schedule 9 Charges
KMEA	AG3-2007-104	1355377	\$ -	\$ -	\$ -	6	\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
KPP	AG3-2007-040	1351224	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
MIDW	AG3-2007-087	1353103	\$ 57,786	\$ -	\$ -		\$ -	\$ 109,448	\$ 109,448	\$ 143,940	\$ 143,940
MIDW	AG3-2007-091	1353111	\$ 116,997	\$ 38,999	\$ 77,998		\$ -	\$ 368,941	\$ 106,284	\$ -	\$ 106,284
OMPA	AG3-2007-035	1350945	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
SPSM	AG3-2007-080	1353054	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 880,000	\$ 880,000
SPSM	AG3-2007-080	1353055	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ 880,000	\$ 880,000
SPSM	AG3-2007-081	1353057	\$ 221,817	\$ -	\$ -		\$ -	\$ 344,001	\$ 344,001	\$ 836,000	\$ 836,000
SPSM	AG3-2007-081	1353059	\$ 221,817	\$ -	\$ -		\$ -	\$ 344,001	\$ 344,001	\$ 836,000	\$ 836,000
WFEC	AG3-2007-043	1510704	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Schedule 9 Charges
WRGS	AG3-2007-025	1346837	\$ 3,708,464	\$ 1,221,229	\$ 2,487,235		\$ -	\$ 7,410,903	\$ 2,430,149	\$ -	\$ 2,430,149
WRGS	AG3-2007-026	1346842	\$ 15,271,075	\$ 4,955,859	\$ 10,315,215		\$ -	\$ 34,147,953	\$ 10,417,848	\$ -	\$ 10,417,848
Grand Total			\$ 32,264,446					\$ 88,241,034	\$ 13,751,730		

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 not required for upgrades fully funded by PTP base rate or base plan funding. 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 or 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

Note 6: Waiver approved to fully Base Plan Fund upgrades

Note 7: Waiver approved to fully Base Plan Fund jurisdictional upgrades up to safe harbor limit.

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

Customer Study Number
 AEPM AG3-2007-015

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
AEPM	1337138	CSWS	EES	22	1/1/2009	1/1/2010	10/1/2012	10/1/2013	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1337138	BETHEL - BROKEN BOW 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	BETHEL - NASHOBA 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	CLAYTON - NASHOBA 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	CLAYTON - SARDIS 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1337138	BULL SHOALS - BULL SHOALS HES 161KV CKT 1	6/1/2010	6/1/2010	1/1/2010	
	SALLISAW CAP BANK	6/1/2013	6/1/2013		

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 Service Date	Redispatch Available
1337138	ASHDOWN WEST - CRAIG JUNCTION 138KV CKT 1	6/1/2013	6/1/2013		

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 Service Date	Redispatch Available
1337138	BARTLESVILLE SOUTHEAST - NORTH BARTLESVILLE 138KV CKT 1	1/1/2010	6/1/2011		Yes
	COFFEYVILLE TAP - DEARING 138KV CKT 1 AEPW	1/1/2010	6/1/2010		Yes
	COFFEYVILLE TAP - DEARING 138KV CKT 1 WERE	1/1/2010	6/1/2010		Yes
	COFFEYVILLE TAP - DEARING 138KV CKT 1 WERE #2	1/1/2010	6/1/2010		Yes

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1337138	ALUMAX TAP - BANN 138KV CKT 1	6/1/2008	6/1/2008		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
 AEPM AG3-2007-054

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	1352732	CSWS	CSWS	100	1/1/2010	1/1/2011	12/1/2010	12/1/2011	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352732	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352732	DIANA - LONE STAR SOUTH 138KV CKT 1	1/1/2010	12/1/2010		Yes

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352732	COFFEYVILLE TAP - DEARING 138KV CKT 1 AEPW	1/1/2010	6/1/2010		Yes
	COFFEYVILLE TAP - DEARING 138KV CKT 1 WERE	1/1/2010	6/1/2010		Yes
	COFFEYVILLE TAP - DEARING 138KV CKT 1 WERE #2	1/1/2010	6/1/2010		Yes

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

Customer Study Number
 AEPM AG3-2007-063

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	1352923	CSWS	CSWS	50	1/1/2009	1/1/2011	10/1/2012	10/1/2014	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352923	BETHEL - BROKEN BOW 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	BETHEL - NASHOBA 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	CLAYTON - NASHOBA 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	CLAYTON - SARDIS 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352923	DIANA - LONE STAR SOUTH 138KV CKT 1	1/1/2010	12/1/2010		Yes
	SALLISAW CAP BANK	6/1/2013	6/1/2013		

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 Service Date	Redispatch Available
1352923	ASHDOWN WEST - CRAIG JUNCTION 138KV CKT 1	6/1/2013	6/1/2013		

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

Customer Study Number
 AEPM AG3-2007-065

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
AEPM	1352934	CSWS	CSWS	54	6/1/2010	6/1/2015	10/1/2012	10/1/2017	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352934	BETHEL - BROKEN BOW 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	BETHEL - NASHOBA 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	CLAYTON - NASHOBA 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
	CLAYTON - SARDIS 138KV CKT 1	6/1/2010	10/1/2012		Yes	\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352934	DIANA - LONE STAR SOUTH 138KV CKT 1	1/1/2010	12/1/2010		
	SALLISAW CAP BANK	6/1/2013	6/1/2013		

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 Service Date	Redispatch Available
1352934	ASHDOWN WEST - CRAIG JUNCTION 138KV CKT 1	6/1/2013	6/1/2013		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352934	HUGO POWER PLANT - VALLIANT 345 KV AEPW	7/1/2012	7/1/2012		
	HUGO POWER PLANT - VALLIANT 345 KV WFEC	7/1/2012	7/1/2012		

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

Customer Study Number
 CMLP AG3-2007-047

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable**	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
CMLP*	1352193	GRDA	CSWS	197	6/1/2008	6/1/2042	6/1/2012	6/1/2046	\$ 12,404,090	\$ -	\$ 12,404,090	\$ 44,291,388
									\$ 12,404,090	\$ -	\$ 12,404,090	\$ 44,291,388

Reservation	Jurisdictional Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352193	COFFEYVILLE FARMLAND - SOUTH COFFEYVILLE CITY 138KV CKT 1 AEPW	6/1/2012	6/1/2012			\$ 2,200,000	\$ 2,200,000	\$ 10,080,270
	COFFEYVILLE TAP - SOUTH COFFEYVILLE CITY 138KV CKT 1	6/1/2011	6/1/2012		Yes	\$ 6,000,000	\$ 6,000,000	\$ 28,514,774
	DEARING 138KV Capacitor	6/1/2012	6/1/2012			\$ 1,104,090	\$ 1,215,000	\$ 5,696,344
	Total					\$ 9,304,090	\$ 9,415,000	\$ 44,291,388

Reservation	Nonjurisdictional Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost
1352193	COFFEYVILLE FARMLAND - SOUTH COFFEYVILLE CITY 138KV CKT 1 CMLP	6/1/2012	6/1/2012			\$ 3,100,000	\$ 3,100,000
	Total					\$ 3,100,000	\$ 3,100,000

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352193	Multi - Stateline - Joplin - Reinmiller conversion	6/1/2017	6/1/2017		

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352193	PRYOR JUNCTION (PRY-JCT1) 115/69/13.8KV TRANSFORMER CKT 1	6/1/2015	6/1/2015		

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 Service Date	Redispatch Available
1352193	BARTLESVILLE SOUTHEAST - NORTH BARTLESVILLE 138KV CKT 1	1/1/2010	6/1/2011		Yes

*STUDY AG3-2007-047 IS BASED ON UNITY POWER FACTOR AT THE POINT OF INTERCONNECTION DURING PEAK LOAD CONDITIONS. THE CUSTOMER SHALL MAINTAIN UNITY POWER FACTOR AT THE POINT OF INTERCONNECTION, OTHERWISE THE CUSTOMER SHALL TAKE ALL ACTIONS TO CORRECT CONDITION.

**POTENTIAL BASE PLAN FUNDING INCLUDES BOTH JURISDICTIONAL AND NONJURISDICTIONAL FACILITIES.

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

Customer Study Number
EDE AG3-2007-037

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
EDE	1350960	KCPL	EDE	5	11/1/2008	11/1/2018	11/1/2009	11/1/2019	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1350960	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1350960	BULL SHOALS - BULL SHOALS HES 161KV CKT 1	6/1/2010	6/1/2010	1/1/2010	
	Multi - Stateline - Joplin - Reinmillier conversion	6/1/2017	6/1/2017		
	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	6/1/2010	12/1/2010		
	SUB 145 - JOPLIN WEST 7TH - SUB 64 - JOPLIN 10TH ST. 69KV CKT 1	6/1/2017	6/1/2017		
	SUB 170 - NICHOLS ST. - SUB 80 - SEDALIA 69KV CKT 1	6/1/2010	6/1/2013		
	SUB 376 - MONETT CITY SOUTH 161/69/12.5KV TRANSFORMER CKT 1	6/1/2017	6/1/2017		
	SUB 383 - MONETT - SUB 376 - MONETT CITY SOUTH 161KV CKT 1	6/1/2017	6/1/2017		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1350960	SUB 110 - ORONOJO JCT. - SUB 167 - RIVERTON 161KV CKT 1	6/1/2011	6/1/2011		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
EDE AG3-2007-046

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
EDE	1352109	KCPL	EDE	5	1/1/2010	1/1/2030			\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352109	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352109	BULL SHOALS - BULL SHOALS HES 161KV CKT 1	6/1/2010	6/1/2010	1/1/2010	
	Multi - Stateline - Joplin - Reinmillier conversion	6/1/2017	6/1/2017		
	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	6/1/2010	12/1/2010		
	SUB 145 - JOPLIN WEST 7TH - SUB 64 - JOPLIN 10TH ST. 69KV CKT 1	6/1/2017	6/1/2017		
	SUB 170 - NICHOLS ST. - SUB 80 - SEDALIA 69KV CKT 1	6/1/2010	6/1/2013		
	SUB 376 - MONETT CITY SOUTH 161/69/12.5KV TRANSFORMER CKT 1	6/1/2017	6/1/2017		
	SUB 383 - MONETT - SUB 376 - MONETT CITY SOUTH 161KV CKT 1	6/1/2017	6/1/2017		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352109	SUB 110 - ORONOGO JCT. - SUB 167 - RIVERTON 161KV CKT 1	6/1/2011	6/1/2011		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
GRDA AG3-2007-034

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
GRDA	1350396	OKGE	GRDA	150	6/1/2008	6/1/2013	11/1/2009	11/1/2014	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1350396	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1350396	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	6/1/2010	6/1/2010		
	CLAREMORE (CLRAUTO2) 161/69/13.8KV TRANSFORMER CKT 2	6/1/2010	6/1/2010		
	MAID - PRYOR FOUNDRY SOUTH 69KV CKT 1	6/1/2014	6/1/2014		
	MAID - REDDEN 69KV CKT 1	6/1/2014	6/1/2014		
	SALLISAW CAP BANK	6/1/2013	6/1/2013		

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

Customer Study Number
KBPU AG3-2007-017D

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
KBPU	1339117	MPS	KACY	5	2/1/2008	2/1/2009	6/1/2011	6/1/2012	\$ -	\$ 52,800	\$ -	\$ -
									\$ -	\$ 52,800	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1339117	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1339117	South Harper 161 kV cut-in to Stilwell-Archie JCT 161 kV line	1/1/2010	6/1/2011		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1339117	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

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

Customer Study Number
 KCPS AG3-2007-074

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	1353013	KCPL	KCPL	45	11/1/2008	11/1/2018	11/1/2009	11/1/2019	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1353013	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1353013	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	6/1/2010	12/1/2010		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1353013	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
 KEPC AG3-2007-064

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
KEPC	1352933	WR	KCPL	15	6/1/2008	6/1/2040	6/1/2011	6/1/2043	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352933	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352933	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	6/1/2015	6/1/2015		
	CIRCLE - HUTCHINSON GAS TURBINE STATION 115KV CKT 1	6/1/2010	6/1/2011		Yes
	LAWRENCE HILL - MOCKINGBIRD HILL SWITCHING STATION 115KV CKT 1	6/1/2013	6/1/2013		
	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	6/1/2010	12/1/2010		
	South Harper 161 kV cut-in to Stilwell-Archie JCT 161 kV line	1/1/2010	6/1/2011		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352933	HUGO POWER PLANT - VALLIANT 345 KV AEPW	7/1/2012	7/1/2012		
	HUGO POWER PLANT - VALLIANT 345 KV WFEC	7/1/2012	7/1/2012		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUB 110 - ORONGO JCT. - SUB 167 - RIVERTON 161KV CKT 1	6/1/2011	6/1/2011		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
 KEPC AG3-2007-066

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
KEPC	1352938	WR	WR	68	6/1/2008	6/1/2040	6/1/2013	6/1/2045	\$ 262,400	-	\$ 262,400	\$ 1,224,400
									\$ 262,400	\$	\$ 262,400	\$ 1,224,400

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1352938	MEDICINE LODGE - PRATT 115KV CKT 1	1/1/2010	6/1/2013			\$ 107,503	\$ 6,500,000	\$ 501,626
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1 Displacement	1/1/2010	6/1/2013		Yes	\$ 154,897	\$ 1,250,597	\$ 722,774
					Total	\$ 262,400	\$ 7,750,597	\$ 1,224,400

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 Service Date	Redispatch Available
1352938	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	6/1/2015	6/1/2015		
	CIRCLE - HUTCHINSON GAS TURBINE STATION 115KV CKT 1	6/1/2010	6/1/2011		Yes
	EAST MANHATTAN - NW MANHATTAN 230/115KV	6/1/2010	12/1/2011		
	East Manhattan to McDowell 230 kV	6/1/2010	6/1/2012		
	LAWRENCE HILL - MOCKINGBIRD HILL SWITCHING STATION 115KV CKT 1	6/1/2013	6/1/2013		
	PRATT - ST JOHN 115KV CKT 1	6/1/2017	6/1/2017		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1352938	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1	6/1/2006	6/1/2008		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		
	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		

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

Customer Study Number
KMEA AG3-2007-104

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	1355377	OPPD	KCPL	20	1/1/2009	1/1/2013	11/1/2009	11/1/2013	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1355377	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1355377	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
KPP AG3-2007-040

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
KPP	1351224	WR	WR	4	2/1/2008	2/1/2018	11/1/2009	11/1/2019	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1351224	None					\$ -	\$ -	\$ -
Total						\$ -	\$ -	\$ -

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1351224	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	6/1/2015	6/1/2015		
	LAWRENCE HILL - MOCKINGBIRD HILL SWITCHING STATION 115KV CKT 1	6/1/2013	6/1/2013		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1351224	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
MIDW AG3-2007-087

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
MIDW	1353103	WR	WR	1	6/1/2008	6/1/2013	6/1/2011	6/1/2016	\$ -	\$ 143,940	\$ 57,786	\$ 109,448
									\$ -	\$ 143,940	\$ 57,786	\$ 109,448

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1353103	MEDICINE LODGE - PRATT 115KV CKT 1	1/1/2010	6/1/2013			\$ 53,996	\$ 6,500,000	\$ 102,270
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1 Displacement	1/1/2010	6/1/2013			\$ 3,790	\$ 1,250,597	\$ 7,178
						\$ 57,786	\$ 7,750,597	\$ 109,448

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 Service Date	Redispatch Available
1353103	CIRCLE - HUTCHINSON GAS TURBINE STATION 115KV CKT 1	6/1/2010	6/1/2011		Yes
	EAST MANHATTAN - NW MANHATTAN 230/115KV	6/1/2010	12/1/2011		
	East Manhattan to McDowell 230 kV	6/1/2010	6/1/2012		
	LAWRENCE HILL - MOCKINGBIRD HILL SWITCHING STATION 115KV CKT 1	6/1/2013	6/1/2013		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1353103	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
MIDW AG3-2007-091

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
MIDW	1353111	WR	WR	25	1/1/2009	1/1/2029	11/1/2009	11/1/2029	\$ 77,998	\$ -	\$ 116,997	\$ 368,941
									\$ 77,998	\$ -	\$ 116,997	\$ 368,941

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1353111	DEARING 138KV Capacitor	6/1/2012	6/1/2012			\$ 7,655	\$ 3,828	\$ 11,483	\$ 1,215,000	\$ 41,625
	FLATRDG3 138.00 - MEDICINE LODGE 138KV CKT 1	1/1/2010	6/1/2013			\$ 24,013	\$ 12,007	\$ 36,020	\$ 2,012,500	\$ 110,160
	FLATRDG3 138.00 - HARPER 138KV CKT 1	1/1/2010	6/1/2013			\$ 33,297	\$ 16,648	\$ 49,945	\$ 6,037,500	\$ 152,747
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1 Displacement	1/1/2010	6/1/2013			\$ 13,033	\$ 6,516	\$ 19,549	\$ 1,250,597	\$ 64,409
	Total					\$ 77,998	\$ 38,999	\$ 116,997	\$ 10,515,597	\$ 368,941

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 Service Date	Redispatch Available
1353111	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	6/1/2015	6/1/2015		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1353111	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
 OMPA AG3-2007-035

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
OMPA	1350945	OKGE	OKGE	23	5/1/2008	5/1/2017	11/1/2009	11/1/2018	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1350945	None					\$ -	\$ -	\$ -
						Total	\$ -	\$ -

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1350945	HUGO POWER PLANT - VALLIANT 345 KV AEPW	7/1/2012	7/1/2012		
	HUGO POWER PLANT - VALLIANT 345 KV WFEC	7/1/2012	7/1/2012		
	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		

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

Customer Study Number
 SPSM AG3-2007-080

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	1353054	WPEK	KCPL	50	10/1/2008	6/1/2010	11/1/2009	6/1/2010	\$ -	\$ 880,000	\$ -	\$ -
SPSM	1353055	WPEK	KCPL	50	10/1/2008	6/1/2010	11/1/2009	6/1/2010	\$ -	\$ 880,000	\$ -	\$ -
									\$ -	\$ 1,760,000	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1353054	None					\$ -	\$ -	\$ -
						Total	\$ -	\$ -
1353055	None					\$ -	\$ -	\$ -
						Total	\$ -	\$ -

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

Customer Study Number
SPSM AG3-2007-081

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	1353057	WPEK	KCPL	50	6/1/2010	1/1/2012	6/1/2011	1/1/2012	\$ -	\$ 836,000	\$ 221,817	\$ 344,000
SPSM	1353059	WPEK	KCPL	50	6/1/2010	1/1/2012	6/1/2011	1/1/2012	\$ -	\$ 836,000	\$ 221,817	\$ 344,000
									\$ -	\$ 1,672,000	\$ 443,634	\$ 688,000

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements	
1353057	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013			\$ 41,565	\$ 3,600,000	\$ 60,357	
	FLATRDG3 138.00 - HARPER 138KV CKT 1	1/1/2010	6/1/2013			\$ 180,252	\$ 6,037,500	\$ 283,643	
						Total	\$ 221,817	\$ 9,637,500	\$ 344,000
1353059	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013			\$ 41,565	\$ 3,600,000	\$ 60,357	
	FLATRDG3 138.00 - HARPER 138KV CKT 1	1/1/2010	6/1/2013			\$ 180,252	\$ 6,037,500	\$ 283,643	
						Total	\$ 221,817	\$ 9,637,500	\$ 344,000

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1353057	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	6/1/2010	12/1/2010		
	South Harper 161 kV cut-in to Stilwell-Archie JCT 161 kV line	1/1/2010	6/1/2011		Yes
1353059	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	6/1/2010	12/1/2010		
	South Harper 161 kV cut-in to Stilwell-Archie JCT 161 kV line	1/1/2010	6/1/2011		Yes

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1353057	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		
1353059	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	NORTHWEST - WOODWARD 345KV CKT 1	1/1/2010	1/1/2010		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
WFEC AG3-2007-043

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
WFEC	1510704	WFEC	WFEC	150	5/1/2009	5/1/2039	11/1/2009	11/1/2039	\$ -	\$ -	\$ -	\$ -
									\$ -	\$ -	\$ -	\$ -

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1510704	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 Service Date	Redispatch Available
1510704	CARNEGIE - FORT COBB 138KV CKT 1	6/1/2017	6/1/2017		
	CARNEGIE - HOBART JUNCTION 138KV CKT 1	6/1/2017	6/1/2017		
	ELECTRA SW 69KV CAP BANK	6/1/2018	6/1/2018	6/1/2013	
	FORT COBB - SOUTHWESTERN STATION 138KV CKT 1	6/1/2017	6/1/2017		

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1510704	HUGO POWER PLANT 345/138KV TRANSFORMER CKT 1	7/1/2012	7/1/2012		
	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1	6/1/2006	6/1/2008		
	NORTHWEST - WOODWARD 345KV 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		

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

Customer Study Number
 WRGS AG3-2007-025

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
WRGS	1346837	SECI	WR	96	11/1/2008	11/1/2018	6/1/2013	6/1/2023	\$ 2,487,235	\$ -	\$ 3,708,464	\$ 7,410,903
									\$ 2,487,235	\$ -	\$ 3,708,464	\$ 7,410,903

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1346837	CLIFTON - GREENLEAF 115KV CKT 1	6/1/2011	6/1/2013			\$ 2,344,580	\$ 1,172,290	\$ 3,516,870	\$ 3,600,000	\$ 6,974,911
	DEARING 138KV Capacitor	6/1/2012	6/1/2012			\$ 44,778	\$ -	\$ 44,778	\$ 1,215,000	\$ 120,457
	FLATRDG3 138.00 - MEDICINE LODGE 138KV CKT 1	1/1/2010	6/1/2013			\$ 429	\$ 214	\$ 643	\$ 2,012,500	\$ 1,382
	FLATRDG3 138.00 - HARPER 138KV CKT 1	1/1/2010	6/1/2013			\$ 97,449	\$ 48,724	\$ 146,173	\$ 6,037,500	\$ 314,153
Total						\$ 2,487,235	\$ 1,221,229	\$ 3,708,464	\$ 12,865,000	\$ 7,410,903

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 Service Date	Redispatch Available
1346837	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	6/1/2015	6/1/2015		
	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV CKT 1	6/1/2010	6/1/2012		Yes
	EAST MANHATTAN - NW MANHATTAN 230/115KV	6/1/2010	12/1/2011		Yes
	East Manhattan to Mcdowell 230 kV	6/1/2010	6/1/2012		Yes

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

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1346837	ROSE HILL (ROSEHL1X) 345/138/13.8KV TRANSFORMER CKT 3 Displacement	6/1/2010	6/1/2011		Yes

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1346837	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Customer Study Number
 WRGS AG3-2007-026

Customer	Reservation	POR	POD	Requested Amount	Requested Start Date	Requested Stop Date	Deferred Start Date Without Redispatch	Deferred Stop Date Without Redispatch	Potential Base Plan Funding Allowable	Point-to-Point Base Rate	Allocated E & C Cost	Total Revenue Requirements
WRGS	1346842	SECI	WR	100	12/31/2008	12/31/2018	6/1/2013	6/1/2023	\$ 10,315,215	\$ -	\$ 15,271,075	\$ 34,147,953
									\$ 10,315,215	\$ -	\$ 15,271,075	\$ 34,147,953

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available	Base Plan Funding for Wind	Directly Assigned for Wind	Allocated E & C Cost	Total E & C Cost	Total Revenue Requirements
1346842	DEARING 138KV Capacitor	6/1/2012	6/1/2012			\$ 54,648	\$ -	\$ 54,648	\$ 1,215,000	\$ 147,009
	FLATRDG3 138.00 - MEDICINE LODGE 138KV CKT 1	1/1/2010	6/1/2013		Yes	\$ 1,317,225	\$ 658,612	\$ 1,975,837	\$ 2,012,500	\$ 4,246,435
	FLATRDG3 138.00 - HARPER 138KV CKT 1	1/1/2010	6/1/2013		Yes	\$ 3,653,919	\$ 1,826,959	\$ 5,480,878	\$ 6,037,500	\$ 11,779,410
	GILL ENERGY CENTER EAST - MACARTHUR 69KV CKT 1 Displacement	6/1/2012	6/1/2012			\$ 342,620	\$ -	\$ 342,620	\$ 342,620	\$ 802,266
	MACARTHUR - OATVILLE 69KV CKT 1 Displacement	6/1/2012	6/1/2012			\$ 6,229	\$ -	\$ 6,229	\$ 6,229	\$ 14,281
	MEDICINE LODGE - PRATT 115KV CKT 1	1/1/2010	6/1/2013		Yes	\$ 4,225,668	\$ 2,112,834	\$ 6,338,502	\$ 6,500,000	\$ 14,675,689
	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1 Displacement	1/1/2010	6/1/2013		Yes	\$ 714,907	\$ 357,454	\$ 1,072,361	\$ 1,250,597	\$ 2,482,863
Total						\$ 10,315,215	\$ 4,955,859	\$ 15,271,075	\$ 17,364,446	\$ 34,147,953

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 Service Date	Redispatch Available
1346842	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	6/1/2015	6/1/2015		
	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV CKT 1	6/1/2010	6/1/2012		Yes
	EAST MANHATTAN - NW MANHATTAN 230/115KV	6/1/2010	12/1/2011		Yes
	East Manhattan to McDowell 230 kV	6/1/2010	6/1/2012		Yes

Credits may be required for the following network upgrades directly assigned to transmission customers in previous aggregate study.

Reservation	Upgrade Name	DUN	EOC	Earliest Service Date	Redispatch Available
1346842	LACYGNE - WEST GARDNER 345KV CKT 1	6/1/2006	6/1/2006		
	RENO 345/115KV CKT 1	6/1/2009	6/1/2009		
	RENO 345/115KV CKT 2	6/1/2010	6/1/2010		
	SUMMIT - RENO 345KV	6/1/2010	6/1/2010		
	WICHITA - RENO 345KV	6/1/2009	6/1/2009		

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

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost
AEPW	BETHEL - BROKEN BOW 138KV CKT 1	Interim redispatch	6/1/2010	10/1/2012	\$ -
AEPW	BETHEL - NASHOBA 138KV CKT 1	Interim redispatch	6/1/2010	10/1/2012	\$ -
AEPW	CLAYTON - NASHOBA 138KV CKT 1	Interim redispatch	6/1/2010	10/1/2012	\$ -
AEPW	CLAYTON - SARDIS 138KV CKT 1	Interim redispatch	6/1/2010	10/1/2012	\$ -
AEPW	COFFEYVILLE FARMLAND - SOUTH COFFEYVILLE CITY 138KV CKT 1 AEPW	Rebuild 2.20 miles of 795 ACSR Rebuild 6 miles of 556 ACSR. Replace 138 kV line switch at S. Coffeyville Tap.	6/1/2012	6/1/2012	\$ 2,200,000
AEPW	COFFEYVILLE TAP - SOUTH COFFEYVILLE CITY 138KV CKT 1	Rebuild 4.5 miles of 795 ACSR. Rebuild 0.8 miles of 1272 ACSR. Replace wave traps, wave trap jumpers, reset CT ratios, and revise relay settings	6/1/2011	6/1/2012	\$ 6,000,000
CMLP	COFFEYVILLE FARMLAND - SOUTH COFFEYVILLE CITY 138KV CKT 1 CMLP		6/1/2012	6/1/2012	\$ 3,100,000
MKEC	CLIFTON - GREENLEAF 115KV CKT 1	Rebuild 14.4 miles	6/1/2011	6/1/2013	\$ 3,600,000
MKEC	FLATRDG3 138.00 - MEDICINE LODGE 138KV CKT 1	Rebuild 8.05 mile line	1/1/2010	6/1/2013	\$ 2,012,500
MKEC	FLATRDG3 138.00 - HARPER 138KV CKT 1	Rebuild 24.15 mile line	1/1/2010	6/1/2013	\$ 6,037,500
MKEC	MEDICINE LODGE - PRATT 115KV CKT 1	Rebuild 26 mile line	1/1/2010	6/1/2013	\$ 6,500,000
MKEC	MEDICINE LODGE 138/115KV TRANSFORMER CKT 1 Displacement	Upgrade transformer	1/1/2010	6/1/2013	\$ 5,625,000
WERE	DEARING 138KV Capacitor	Dearing 138 kV 20 MVAR Capacitor Addition	6/1/2012	6/1/2012	\$ 1,215,000
WERE	GILL ENERGY CENTER EAST - MACARTHUR 69KV CKT 1 Displacement	Rebuild 5.56-mile line	6/1/2012	6/1/2012	\$ 2,200,000
WERE	MACARTHUR - OATVILLE 69KV CKT 1 Displacement	Replace the 69 kV bus and jumpers on the Oatville-Mac Arthur 69 kV line.	6/1/2012	6/1/2012	\$ 40,000

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)
AEPW	BARTLESVILLE SOUTHEAST - NORTH BARTLESVILLE 138KV CKT 1	Rebuild 8.37 miles of 795 ACSR & reset relays @ BSE	1/1/2010	6/1/2011
AEPW	COFFEYVILLE TAP - DEARING 138KV CKT 1 AEPW	Tie Line, Reconductor 1.09 miles of 795 ACSR.	1/1/2010	6/1/2010
WERE	COFFEYVILLE TAP - DEARING 138KV CKT 1 WERE	Tie Line, Rebuild 3.93 miles of 795 ACSR.	1/1/2010	6/1/2010
WERE	COFFEYVILLE TAP - DEARING 138KV CKT 1 WERE #2	Replace Disconnect Switches, Wavetrap, Breaker, Jumpers	1/1/2010	6/1/2010
WERE	ROSE HILL (ROSEHL1X) 345/138/13.8KV TRANSFORMER CKT 3 Displacement	Add third 345-138 kV transformer at Rose Hill	6/1/2010	6/1/2011

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)
AEPW	DIANA - LONE STAR SOUTH 138KV CKT 1	Replace 138 kV switch 10387 at Diana on the line to Lone Star South.	1/1/2010	12/1/2010
EMDE	Multi - Stateline - Joplin - Reinmiller conversion	Tear down the Riverton to Joplin 59 69 kV line, rebuilding the line to 161 kV from Stateline to outside Joplin 59 sub. Tear down and rebuild Joplin 59 to Gateway to Pillsbury to Reinmiller, converting those 69 kV lines to 161 kV. Tap the 161 kV line betwe	6/1/2017	6/1/2017
EMDE	SUB 145 - JOPLIN WEST 7TH - SUB 64 - JOPLIN 10TH ST. 69KV CKT 1	Replace Disconnect Switches and Leads on Breaker #6965 at Sub #64 and #6932 at Sub #145	6/1/2017	6/1/2017
EMDE	SUB 170 - NICHOLS ST. - SUB 80 - SEDALIA 69KV CKT 1	Reconductor line from Sub #80 to Sub #170 from 1/0 CU and replace Jumpers in Sub #80	6/1/2010	6/1/2013
EMDE	SUB 376 - MONETT CITY SOUTH 161/69/12.5KV TRANSFORMER CKT 1	Install 3-wind transformer from 161 kV new Sub MONETT 5 to Monett city south 69kV	6/1/2017	6/1/2017
EMDE	SUB 383 - MONETT - SUB 376 - MONETT CITY SOUTH 161KV CKT 1	Install new line from Sub #383 to new Sub MONETT 5	6/1/2017	6/1/2017
GRDA	CLAREMORE (CLRAUTO1) 161/69/13.8KV TRANSFORMER CKT 1	Replace existing transformer	6/1/2010	6/1/2010
GRDA	CLAREMORE (CLRAUTO2) 161/69/13.8KV TRANSFORMER CKT 2	Replace existing transformer	6/1/2010	6/1/2010
GRDA	MAID - PRYOR FOUNDRY SOUTH 69KV CKT 1	Upgrade conductor size	6/1/2014	6/1/2014
GRDA	MAID - REDDEN 69KV CKT 1	Upgrade conductor size	6/1/2014	6/1/2014
GRDA	SALLISAW CAP BANK	Add 7.2 mvar capacitor at Sallisaw 69 kV.	6/1/2013	6/1/2013
MIPU	PLATTE CITY - SMITHVILLE 161KV CKT 1 #1	Increase the normal/emergency ratings to 233/265 MVA by replacing wave trapes	6/1/2010	12/1/2010
MIPU	South Harper 161 kV cut-in to Stilwell-Archie JCT 161 kV line	To tap Stilwell-Archie JCT 161 kV line into South Harper 161 kV sub and make it two new 161 kV sections: Stilwell-South Harper and Archie JCT- South Harper .	1/1/2010	6/1/2011
MKEC	PRATT - ST JOHN 115KV CKT 1	Rebuild and reconductor the St. John - Pratt 115 kV line	6/1/2017	6/1/2017
SWPA	BULL SHOALS - BULL SHOALS HES 161KV CKT 1	Replace bus at Bull Shoals. That should increase rating to 223 MVA.	6/1/2010	6/1/2010
WERE	AUBURN ROAD (AUBRN77X) 230/115/13.8KV TRANSFORMER CKT 2	Add second Auburn 230-115 kV transformer.	6/1/2015	6/1/2015
WERE	CIRCLE - HUTCHINSON GAS TURBINE STATION 115KV CKT 1	Rebuild Circle - HEC GT 115 kV line.	6/1/2010	6/1/2011
WERE	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV CKT 1	Upgrade JEC- E. Manhattan 230 kV line to 100 deg C operation by raising structures	6/1/2010	6/1/2012
WERE	EAST MANHATTAN - NW MANHATTAN 230/115KV	Tap the Concordia - East Manhattan 230kV line and add a new substation "NW Manhattan"; Add a 230kV/115kV transformer and tap the KSU - Wildcat 115kV line into NW Manhattan	6/1/2010	12/1/2011
WERE	East Manhattan to McDowell 230 kV	The East Manhattan-McDowell 115 kV is built as a 230 kV line, but is operated at 115 kV. Substation work will have to be performed in order to convert this line.	6/1/2010	6/1/2012
WERE	LAWRENCE HILL - MOCKINGBIRD HILL SWITCHING STATION 115KV CKT 1	Rebuild 5.49 mile line	6/1/2013	6/1/2013

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	ASHDOWN WEST - CRAIG JUNCTION 138KV CKT 1	Rebuild 2.45 miles of 795 ACSR	6/1/2013	6/1/2013
AEPW	CARNEGIE - FORT COBB 138KV CKT 1	Rebuild 11.03 miles	6/1/2017	6/1/2017
AEPW	CARNEGIE - HOBART JUNCTION 138KV CKT 1	Rebuild 26.15 miles of 397 ACSR and replace switches, wavetrap & reset CT @ Hobart Jct.	6/1/2017	6/1/2017
AEPW	FORT COBB - SOUTHWESTERN STATION 138KV CKT 1	Rebuild 3.34 miles South West Station - Fort Cobb, replace wavetrap and jumpers at Southwestern Station, and replace sub conductor at Fort Cobb.	6/1/2017	6/1/2017
AEPW	PRYOR JUNCTION (PRY-JCT1) 115/69/13.8KV TRANSFORMER CKT 1	Replace (3) 600 A switches with 1200 A switches replace and replace transformer 130/143 MVA autotransformer also replace 500 Cu 69 kV jumpers and raise CT	6/1/2015	6/1/2015
WFEC	ELECTRA SW 69KV CAP BANK	Add 6 Mvar capacitor at Electra 69 kV bus for a total of 18 MVAR at this location	6/1/2018	6/1/2018

Previously Assigned Aggregate Study Upgrades requiring credits to Previous Aggregate Study Customers.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
AEPW	ALUMAX TAP - BANN 138KV CKT 1	Replace six (6) 138 kV switches, five at Bann & one at Alumax Tap. Rebuild 0.67 miles of 1024 ACAR. Replace wavetrap & jumpers @ Bann. Replace breaker 3300 @ Bann.	6/1/2008	6/1/2008
AEPW	HUGO POWER PLANT - VALLIANT 345 KV AEPW	Valliant 345 KV line terminal	7/1/2012	7/1/2012
EMDE	SUB 110 - OROLOGO JCT. - SUB 167 - RIVERTON 161KV CKT 1	Reconductor Oronogo 59467 to Riverton 59469 with Bundled 556 ACSR	6/1/2011	6/1/2011
KACP	LACYGNE - WEST GARDNER 345KV CKT 1	KCP. Sponsored Project to Reconductor Line to be In-Service by 6/1/2006	6/1/2006	6/1/2006
OKGE	NOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1	Replace bus tie with 100MVA transformer	6/1/2006	6/1/2008
OKGE	NORTHWEST - WOODWARD 345KV CKT 1	Build 120 miles of 345 kV	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
WERE	RENO 345/115KV CKT 1	New stepdown transformer at a new substation in Reno County east northeast of Hutchinson	6/1/2009	6/1/2009
WERE	RENO 345/115KV CKT 2	Install 2nd stepdown transformer at Reno County substation east northeast of Hutchinson	6/1/2010	6/1/2010
WERE	SUMMIT - RENO 345KV	Install new 50.55-mile 345 kV line from Reno county to Summit; 31 miles of 115 kV line between Circle and S Philips would be rebuilt as double circuit with the 345 kV line to minimize ROW impacts; Substation work required at Summit for new 345 kV	6/1/2010	6/1/2010
WERE	WICHITA - RENO 345KV	40 mile 345 kV transmission line from existing Wichita 345 kV substation to a new 345-115 kV substation in Reno County east northeast of Hutchinson (Wichita to Reno)	6/1/2009	6/1/2009
WFEC	HUGO POWER PLANT - VALLIANT 345 KV WFEC	New 19 miles 345 KV	7/1/2012	7/1/2012
WFEC	HUGO POWER PLANT 345/138KV TRANSFORMER CKT 1	New 345/138 kv Auto	7/1/2012	7/1/2012