SPP Southwest Power Pool

System Facilities Study
For The Designation of a New Network Resource

Option 2 is for OASIS # *614698, 614699, 614701, 614702, 614704, 614707, 614712, 614718, 614722, and 614724.*

Requested by Empire District Electric Company

In The Requested Amount Of 250 MW

From 6/1/2007 To 6/1/2028

SPP Tariff Studies
#SPP-2003-253-2
Created October 8, 2004

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Executive Summary

At the request of Empire District Electric Company (Transmission Customer), the Southwest Power Pool (Transmission Provider) developed this Facilities Study to summarize the operating limits and to determine the financial characteristics associated with Transmission Service Requests. Option 2 is for OASIS #614698, 614699, 614701, 614702, 614704, 614707, 614712, 614718, 614722, and 614724. Facility Study SPP-2003-253-2 is Option 2 for the designation of a new network resource in the amount of 250MW. The requested term of this Transmission Service is 21 years from 6/1/2007 to 6/1/2028.

To complete the request for Transmission Service, the Transmission Customer must confirm this request on the Transmission Provider's OASIS pursuant to the results of this Facilities Study within 15 days of receipt of this study.

For third-party facilities listed in Table 14, the Transmission Customer is responsible for obtaining arrangements for the necessary upgrades of the facilities per Section 21.1 of the Transmission Provider's OATT. The Transmission Customer is responsible for the cost of upgrading all identified third-party facilities that are overloaded due to the requested service. In this case, one third-party facility was identified. The Brookline-Springfield 161kv AECI facility requires reconductoring 954 ACSR with 1272 ACSR conductor with an engineering and construction cost estimate of $390,000. This upgrade needs to be in service by the start date of the requested service of June 1, 2007. Other potential costs may incur on this facility to evaluate load capacity of two steel towers not owned by AECI. 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. Upgrades of the Associated Electric Cooperative , Inc (AECI) system shall be coordinated per the AECI-SPP Transmission Coordination Agreement dated August 19, 2004. For transmission service to be accepted, a mutually agreeable mitigation plan for ATC limitations must be implemented per Section 3.2 of the agreement. Not all third-party facilities were monitored during the development of the

corresponding Impact Study. Therefore, additional third-party facility upgrades may be required to accommodate the requested Transmission Service.

Annual available transfer capability (ATC) allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period. For the development of this study, a contract date of October 15, 2004 was assumed. Allocated ATC and associated revenue requirements are based on this request being complete by this date. The minimum ATC during the term of service is summarized in Table 8.

A Transmission Owner may require that a Transmission Customer pre-pay for all assignable Network Upgrades which it designs and constructs. These pre-payments are in the amount of the Transmission Owner's estimated engineering and construction costs. Pre-payments will be required prior to the scheduled in-service dates. However, levelized amortization and interest credits associated with these pre-payments are included in the monthly revenue requirements of the Transmission Customer. The Southwestern Power Administration is the only Transmission Owner that requires these pre-payments.

Network Upgrades will be required on the Empire District Electric (EMDE) and Southwestern Power Administration (SWPA) transmission systems. The engineering and construction cost estimates for assignable Network Upgrades total $8,890,000 excluding expedited upgrades. The sum of engineering and construction cost estimates for expedited (non-assignable) Network Upgrades is $0. Interest and other indirect expenses associated with expedited Network Upgrades are assigned and included in the total estimated cost.

For new Network Integrated Transmission Service, the Transmission Customer is required to pay the revenue requirements associated with all Network Upgrades. This request is to designate a new network resource for EMDE to serve existing native load per Network Integrated Transmission Service Agreement FERC Docket No. ER02-2649 executed 11/14/02. Only those Network Upgrades outside the EMDE control area are

included in the total levelized revenue requirements for this request. EMDE Network Upgrade costs for this request are not recovered through the Transmission Provider present worth analysis of revenue requirements methodology. However, EMDE Network Upgrades assigned in this study must be completed prior to the new network resource serving network load. Other rates and charges for Network Integrated Transmission Service are specified per section 34 of the Transmission Providers OATT.

The estimated levelized revenue requirements for providing the necessary SWPA Network Upgrades to accommodate the Transmission Service request are $23,688 excluding pre-payments. Pre-payment costs are $310,000 for estimated engineering and construction expenses. Therefore, the total estimate for assignable SWPA Network Upgrades is $333,688. The average rate based on this total estimated cost of Network Upgrades is $94/Month over the entire term excluding prepayments. Excluding the engineering and construction costs of upgrades being expedited and by accounting for only interest and other indirect costs over the term of Transmission Service, the average indirect cost multiplier is 1.0764 over the entire term.

The revenue requirements for generation re-dispatching total $0 and are listed in Table 11. These requirements are only to accommodate the construction of Network Upgrades. Therefore, the total estimated cost for Network Upgrades with generation re-dispatch is $0. The average rate based on this total estimated cost of Network Upgrades with generation re-dispatch, including the expediting of pre-planned Network Upgrades, is $0/MW-Month over the entire term.

The total estimated revenue requirements of the Transmission Customer on a monthly basis are listed in **Table 12**. A list of the average annual Transmission Service costs is in Table 13. A summary of all costs is included in Table 15.

Beyond the initial reservation period within the current planning horizon, there are no overloaded transmission facilities identified in the corresponding impact study.

If the Transmission customer confirms this request on the Transmission Provider's OASIS pursuant to the results of this Facilities Study on or before October 15, 2004, Network Integrated Transmission Service may be provided on approximately June 1, 2007 given no unexpected delays in design, permitting, and construction. The upgrade of constraints identified in the corresponding Impact Study may not be completed until after the start-date of the requested Transmission Service due to lead times for engineering & construction.

This study provides no assurance of the availability of transmission capacity or the adequacy of existing or planned transmission facilities for Transmission Service in excess of this allocated capacity.

Introduction

The principal objective of this Facilities Study is to identify the costs of Network Upgrades that must be added or modified to provide the requested Transmission Service while maintaining a reliable transmission system. This study includes a good faith estimate of the Transmission Customer's assigned cost for the required Network Upgrades and the time required to complete such construction and to initiate the requested service. No Direct Assignment facilities are included in this study as none were identified to provide the requested Transmission Service.

Another objective is to estimate the levelized revenue requirement for all identified Network Upgrades by Transmission Owner. The levelized revenue requirement is based on cost components of each upgrade including depreciation, weighted cost of capital, composite income tax, other tax, and deferred income tax credit.

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 ATC within each annual period will be offered to the Transmission Customer on an applicable annual basis within the reservation period.

A corresponding Impact Study was completed that identified limitations and required modifications of the Transmission Provider system necessary to provide the specified Transmission Service. Network Upgrades are assigned based on SPP criteria 4.2.3. The Network Upgrades that were not assigned to a previous request and are required to provide the specified Transmission Service are listed in Table 1. Due to the in-service dates of these Network Upgrades, some may limit and delay the requested Transmission Service. The minimum ATC values and associated case season with only transfer-limiting upgrades are listed in Table 7. The date upgrade is needed is based on season of first impact.

All Network Upgrades assigned to previous Transmission Service requests that have not yet been constructed were monitored to determine whether the previously assigned upgrades are adequate to support this additional request. To accommodate a new request for Transmission Service, a previously assigned Network Upgrade may require capacity in addition to that previously specified. A previously assigned Network Upgrade may be required to be in service at an earlier date than previously indicated to accommodate a new request. With regard to the capacity and in-service date of a previously assigned Network Upgrade, an upgrade may require both additional capacity and an earlier in-service date to accommodate this request for Transmission Service.

Network Upgrades that were previously assigned and will require only accelerated in-service dates to accommodate the specified Transmission Service are listed in Table 2. Network Upgrades that were previously assigned and will require only additional capacity to accommodate the specified Transmission Service are listed in Table 3. Network Upgrades that were previously assigned and will require both additional capacity and accelerated in-service dates to accommodate the specified Transmission Service are listed in Table 4. Due to the in-service dates of these Network Upgrades, some may limit and delay the requested Transmission Service. The ATC values associated with only transfer-limiting upgrades are listed in Table 6.

Some constraints identified in the Impact Study are not addressed in this Facilities Study as the Transmission Owners determined that upgrades are not required due to various reasons. These facilities are listed in Table 5. This table also includes overloaded facilities in the current planning horizon that limit the rollover rights of the Transmission Customer.

Given the estimated dates when Network Upgrades will be required for the specified Transmission Service to be provided, there are facility limits that may either delay the start date of the service or limit the ATC to less than that requested. Transfer-limiting facilities are listed in Tables 6 and 7. Seasonal and annual transfer limits given engineering and construction lead times are also listed in these tables. A summary of ATC throughout the reservation period is included in Table 8.

The Transmission Provider does not accept requests for firm Transmission Service without restrictions if the design criteria specified in the corresponding Impact Study are not met. However, the Transmission Provider may accept a request with either or both of the following: 1) a reduction of provided capacity to designated levels within the specified time frames, and 2) a deferral of service, as listed in Table 8. The Transmission

Provider accepts this request for Transmission Service given this allocation of capacity during the term of service of June 1, 2007 through June 1, 2028.

Tables 6 through 10, 12 and 13 include lists of capacity of which may be less than that requested through the reservation period. Table 9 includes the ATC and the estimate of base rate transmission service charges (not applicable for Network Integrated Transmission Service). The ATC and the estimate of levelized revenue requirements plus any pre-payments for Network Upgrade are provided in Table 10.

Third-Party Facilities

For third-party facilities listed in Table 14, the Transmission Customer is responsible for obtaining arrangements for the necessary upgrades of the facilities per Section 21.1 of the Transmission Provider's OATT. Upgrades of the Associated Electric Cooperative , Inc (AECI) system shall be coordinated per the AECI-SPP Transmission Coordination Agreement dated August 19, 2004. For transmission service to be accepted, a mutually agreeable mitigation plan for ATC limitations must be implemented per Section 3.2 of the agreement. If requested, the Transmission Provider is willing to undertake reasonable efforts to assist the Transmission Customer in making arrangements for necessary engineering, permitting, and construction of the third-party facilities. In this case, one third-party facility was identified. Total engineering and construction cost estimates for required third-party facility upgrades are $390,000. 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 the corresponding Impact Study. Third-party facilities must be upgraded when it is determined that they are overloaded while accommodating the requested Transmission Service. Third-party facilities include those owned by members of the Transmission Provider who have not placed their facilities under the Transmission Provider's OATT.

Financial Methodology

The revenue requirements associated with each assigned Network Upgrade is calculated using the estimated installed cost for each Network Upgrade reflected herein and the annual fixed charge rate of the constructing Transmission Owner. A present worth analysis is conducted, based on each Transmission Owner's annual fixed charge rates including weighted cost of capital, to determine the levelized revenue requirement of each Network Upgrade. The levelized revenue requirements of all applicable Network Upgrades are summed to determine the total revenue requirements for Network Upgrades associated with the Transmission Service request.

Each request for Transmission Service is evaluated independently as the cost associated with each Network Upgrade is assigned to a request. For new facilities, the Transmission Customer shall pay the total cost through the reservation period including engineering and construction costs and other annual operating costs. When facilities are upgraded throughout the reservation period, the Transmission Customer shall 1) pay the total engineering and construction 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.

The amortization period for Network Upgrades and Direct Assignment facilities shall be the lesser of 1) the reservation period, or 2) the period between the completion of construction within the reservation period and the end of the reservation period. The annual fixed charge rate for each Transmission Owner shall be based on the sum of expenses for a previous calendar year, including weighted cost of capital, composite income tax, other tax, and deferred income tax credit, divided by the plant investment for the same year.

Categories of costs and credits associated with Network Upgrades and Direct Assignment facilities shall include 1) amortized engineering and construction costs associated with the new facilities, 2) annual carrying charges, excluding depreciation, based on the product of a) applicable gross and net engineering and construction costs associated with the new facilities, and b) annual fixed charge rate (per-unit), 3) amortized existing facility credit associated with the replaced facilities including the sum of the depreciated book values of only the reusable facilities within the respective remaining depreciation periods, 4) the salvage value credit of non-usable facilities, 5) annual carrying charge credits, excluding depreciation, based on the product of a) applicable gross and net book values associated with all replaced usable facilities, and salvage value of non-usable, and b) annual fixed charge rate (per-unit). The costs allocated to the Transmission Customer throughout the entire reservation period shall be the sum of the levelized present worth of each of the identified cost and credit components based on each Transmission Owner's weighted cost of capital.

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

If the capacity of a previously assigned Network Upgrade is insufficient to accommodate a new request for Transmission Service, expediting the upgrade may be needed, and sufficient time is available for the Transmission Owner to accomplish necessary re-design and construction of the upgrade with additional capacity while accommodating previous requests, then the levelized present worth of only the incremental expenses though the reservation period of the new request, including depreciation, shall be assigned to the new request. These incremental expenses include 1) if expediting, the levelized difference in present worth of the previously assigned 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) if expediting, the levelized present worth of all expediting fees, 3) the levelized present worth of the incremental annual carrying charges associated with the previously assigned upgrade, 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, and 4) the levelized present worth of the incremental annual carrying charges, including depreciation, associated with the additional capacity though the reservation period of the new request.

A Transmission Owner may require that a Transmission Customer pre-pay for all assignable Network Upgrades which it designs and constructs. These pre-payments are the Transmission Owner's estimated engineering and construction costs. Pre-payments will be required prior to the scheduled in-service dates. However, amortization and associated interest reductions are made to the total monthly revenue requirements of the Transmission Customer due to all pre-payment requirements. Pre-payment dates and costs are listed in Tables 1 through 4.

The Southwestern Power Administration is the only Transmission Owner that requires these pre-payments. In the event that a previously assigned Network Upgrade is expedited, then the Transmission Customer requiring the expediting will make the pre-payment prior to the new in-service date. When the Transmission Customer with the

earlier reservation, which the Network Upgrade was previously assigned to, submits it's pre-payment, the Transmission Provider will immediately reimburse the Transmission Customer requiring the expediting in the amount of the pre-payment. Refund dates are listed in Tables 2 and 4.

Financial Analysis

Table 10 includes a summary of ATC values with all assigned Network Upgrades energized by the Date In Service specified in Tables 6 and 7.

The estimate of total revenue requirements for the required Network Upgrades throughout the reservation period is determined on a levelized basis. A Transmission Owner may require that a Transmission Customer pre-pay for all assignable Network Upgrades which it designs and constructs in the amount of estimated engineering and construction costs. When a pre-payment is required, the estimate of total monthly revenue requirements is reduced by a credit including amortization and associated interest. Pre-payment dates and costs are listed in Tables 1 through 4 with a total cost of $310,000.

The sum of the estimated monthly revenue requirements listed in Table 10 for the required Network Upgrades throughout the reservation period is $333,688. These monthly revenue requirements include pre-payment requirements for a Transmission Owner's engineering and construction costs.

The revenue requirements for generation re-dispatching are listed in Table 11. These requirements are only to accommodate the construction of Network Upgrades. The total estimated revenue requirements of the Transmission Customer on a monthly basis are listed in **Table 12**. A list of the average annual Transmission Service costs is in Table 13. A summary of all costs is included in Table 15.

The Transmission Provider and the affected Transmission Owners shall use due diligence to add necessary facilities or upgrade the Transmission System to provide the requested Transmission Service, provided the Transmission Customer agrees to compensate the Transmission Provider for such costs pursuant to the terms of Section 27 of the Open Access Transmission Tariff. Partial Interim Service is available per Section 19.7 of the Open Access Transmission Tariff.

Engineering and construction of all new facilities and modifications will not start until the affected Transmission Owners receive the appropriate authorization to proceed from the Transmission Provider.

Conclusion

Given the constraints identified in the corresponding Impact Study, estimated engineering and construction costs in addition to lead times for construction of Network Upgrades are provided. These estimated costs are for facilities required to provide the requested Transmission Service. The lead times do not include any allowances for possible delays due to outage conflicts during construction, conflicts with construction during the summer peak, engineering and construction manpower constraints, etc. The lead times are based on when the Transmission Provider notifies the Transmission Owners to proceed with the necessary projects.

Based on the results of the corresponding Impact Study, Network Upgrades that were identified as required to provide the requested Transmission Service are listed in Tables 1 through 4. Table 1 includes the Network Upgrades and costs assigned to the Transmission Customer to accommodate its Transmission Service Request. Table 2 includes previously assigned Network Upgrades requiring only accelerated in-service dates. Table 3 includes previously assigned Network Upgrades requiring only additional capacity to accommodate this request. Table 4 includes previously assigned Network Upgrades requiring both additional capacity and accelerated in-service dates to accommodate this request.

Throughout the reservation period of the specified Transmission Service, the estimate of the levelized revenue requirements for the required Network Upgrades is $333,688 for Transmission Service Requests 614734, 614735, 614736, 614738, 614739, 614740, 614741, 614742, 614747, and 614748. ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC on an annual basis. A listing of ATC values and monthly revenue requirements for the required Network Upgrades is in Table 10. The revenue requirements for generation re-dispatching to accommodate construction total $0 and are listed in Table 11. Therefore, the total estimated cost for Network Upgrades with generation re-dispatch is $0. The total estimated revenue requirement is listed in **Table 12** in the amount of $333,688. Total engineering and construction cost estimates for required third-party facility upgrades are $390,000

To complete the request for Transmission Service, the Transmission Customer must confirm this request on the Transmission Provider's OASIS pursuant to the results of this Facilities Study within 15 days of receipt of this study. The Transmission Provider will then authorize the applicable Transmission Owners to proceed with the engineering and construction of the Network Upgrades assigned to this request.

In the event that Transmission Customers do not confirm other requests for Transmission Service that have previously assigned Network Upgrades, the assignment of applicable Network Upgrades will need to be reevaluated.

Table 1
Assigned Network Upgrades

Facility & Network Upgrade	Transmission Owner	Engineering & Construction Costs ($)	Eng. & Const. Lead Time (Months)	Const. Only Lead Time (Months)	Date Needed (M/D/Y)	Scheduled Date In Service (M/D/Y)	Pre-Payment Date (M/D/Y)
Brookline-Springfield 161KV. Upgrade main and transfer bus and buswork within bay at Springfield to 1600A. Replace disconnect switches at Springfield	SWPA	250,000	9		6/1/2008	6/1/2008	9/30/2007
Carthage Sub 109-Atlas Jct. 161kv. Replace 600A disconnect switches	SWPA	60,000	12		6/1/2007	6/1/2007	9/30/2006
Neosho- Sub 292-Tipton Ford 161kv. Reconductor 10.6 mi. with 556 ACSR	EMDE	2,350,000	30		6/1/2007	6/1/2007	
Sub 109-Atlas Jct-Sub 432-Joplin Oakland North 161kv. Reconductor 3.76 mi. with 795 ACSR	EMDE	1,140,000	30		6/1/2007	6/1/2007	
Sub 110-Oronogo Jct-Sub 167-Riverton 161kv. Install new 75mva Auto transformer at Riverton Sub.	EMDE	1,500,000	30		6/1/2007	6/1/2007	
Sub-110-Oronogo Jct to Sub 432-Joplin Oakland North 161kv. Reconstruct and replace 1.4 mi. of 556 with 795 ACSR	EMDE	375,000	30		6/1/2007	6/1/2007	
Sub 145-Joplin West 7th-Sub 439-Stateline161kv Sub 393 Reinmiller 161/69 Transformer Sub 110 Oronogo Jct-Sub 432-Joplin Oakland North 161kv still slightly overloaded in 10SP after reconductor above in '07. These three facilities are relieved by Sub 393 Reinmiller-Sub 292-Tipton Ford 161kv. Construct new 161kv line from Tipton Ford to Reinmiller. 4.12mi.	EMDE	3,215,000	30		6/1/2010	6/1/2010	

Note: Pre-payment dates are only specified when applicable.

Table 1 (Continued)
Assigned Network Upgrades

Facility & Network Upgrade	Transmission Owner	Engineering & Construction Costs ($)	Eng. & Const. Lead Time (Months)	Const. Only Lead Time (Months)	Date Needed (M/D/Y)	Scheduled Date In Service (M/D/Y)	Pre-Payment Date (M/D/Y)
Subtotal for AEPW							
Subtotal for EMDE	EMDE	8,580,000					
Subtotal for GRRD							
Subtotal for KACP							
Subtotal for MIDW							
Subtotal for OKGE							
Subtotal for SPRM							
Subtotal for SWPA	SWPA	310,000					
Subtotal for SWPS							
Subtotal for WFEC							
Subtotal for WR							
Total		8,890,000					

Note: Pre-payment dates are only specified when applicable.

Table 2
Previously Assigned Network Upgrades

Requiring Only Accelerated In-Service Dates

Facility, Previously Assigned Network Upgrade, & Transmission Owner	Previous Request (No.)	Engineering & Construction Cost ($)	Eng. & Const. Lead Time (Months)	Const. Only Lead Time (Months)	Date Needed (M/D/Y)	Previous Date In Service (M/D/Y)	Scheduled Date In Service (M/D/Y)	Pre-Payment Date (M/D/Y)	Refund Date (M/D/Y)
NONE									
Subtotal for AEPW									
Subtotal for EMDE									
Subtotal for GRRD									
Subtotal for KACP									
Subtotal for MIDW									
Subtotal for OKGE									
Subtotal for SPRM									
Subtotal for SWPA									
Subtotal for SWPS									
Subtotal for WFEC									
Subtotal for WR									
Total		$0							

Note: Pre-payment and refund dates are only specified when applicable.
Pre-payments and refunds, if applicable, are in the amount of the engineering and construction cost.

Table 3
Previously Assigned Network Upgrades
Requiring Only Additional Capacity

Facility, Previously Assigned Network Upgrade, & Transmission Owner	New Network Upgrade	Previous Request (No.)	Previous Eng. & Const. Costs ($)	New Eng. & Const. Costs ($)	Assigned Eng. & Const. Costs ($)	Eng. & Const. Lead Time (Months)	Const. Only Lead Time (Months)	New Date Needed (M/D/Y)	Previously Scheduled Date In Service (M/D/Y)	Pre-Payment Date (M/D/Y)
None.										
Total			$0	$0	$0					

Note: Pre-payment dates are only specified when applicable.
Assignable and pre-payment amounts are only the difference of the previous and new cost estimates for engineering and construction.

Table 4
Previously Assigned Network Upgrades
Requiring Both Accelerated In-Service Dates And Additional Capacity

Facility, Previously Assigned Network Upgrade, & Trans. Owner	New Network Upgrade	Previous Request (No.)	Previous Eng. & Const. Cost ($)	New Eng. & Const. Cost ($)	Assigned Eng. & Const. Cost ($)	Eng. & Const. Lead Time (Month)	Const. Only Lead Time (Month)	New Date Needed (M/D/Y)	Previous Date In Service (M/D/Y)	New Scheduled Date In Service (M/D/Y)	Pre-Payment Date (M/D/Y)	Refund Date (M/D/Y)
None												
Total			$0	$0	$0							

Note: Pre-payment and refund dates are only specified when applicable.
Pre-payment amounts, if applicable at the pre-payment date, are the new cost estimates for engineering and construction.
Assignable amounts are only the difference of the previous and new cost estimates for engineering and construction.
Refundable amounts, if applicable at the refund date, are the previous engineering and construction costs.

Table 5
Facilities Requiring No Upgrades Or Limiting Rollover Rights

Facility	Transmission Owner	Reason For No Upgrade	Reservation Rollover Limit In Planning Horizon Where Applicable (M/D/Y)
SUB 389 - JOPLIN SOUTHWEST 161/69KV TRANSFORMER	EMDE	Relieved or impact removed by other upgrades modeled.	
SUB 145 - JOPLIN WEST 7TH - SUB 439 - STATELINE 161KV	EMDE	Relieved or impact removed by other upgrades modeled.	
SUB 393 - REINMILLER 161/69/12.5KV TRANSFORMER	EMDE	Relieved or impact removed by other upgrades modeled.	

Table 6
Facilities That Limit Transmission Service
And Have Network Upgrades Assigned To Previous Reservations

Previous Reservations								This Reservation			
					Possible (1)		Scheduled				
Reservation / Study (No.)	Facility & Network Upgrade, Plus Summary Of Restricted Operating Period	Trans. Owner	Eng. & Const. Lead (Month)	Const. Only Lead (Month)	Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)	ATC (MW)	Impact Study (Model)	Upgrade Needed (M/D/Y)	Changes Required (3)

Note: (1) Some existing facilities may not be taken out of service during the summer peaking period. When a facility may not be taken out of service and the projected completion of a Network Upgrade is between either 1) June 1 and September 15, or 2) September 15 and the date when construction ends given construction starts September 15, then the construction time is added to September 15. However, the Possible Date Available is limited to June 1 of the following year. Delay is the difference of the Possible Date Available and the Upgrade Needed date for the previous reservation.

(2) The Scheduled In Service date is based on when continuous annual service may be started that is on or after the Possible Date Available. If N/A, then the facility upgrade/addition is not required, due to its lead time for engineering and construction, as a) continuous annual service above the ATC limit may be provided only after the requested reservation period, or b) the facility is not required at a later time within the reservation period due to reduced loading of the facility below its emergency rating. The Scheduled In Service date may be later than the Possible Date Available when either a) another facility with a lower value of associated ATC has a longer Engineering & Construction Lead time, or b) the start of the season, in which the Network Upgrade is required, is later than the Possible Date Available.

(3) Changes Required may include expediting the previously assigned Network Upgrade to an earlier Scheduled In Service date and providing additional capacity. The Scheduled In Service date is based on items received by an assumed date as documented in this study including authorization to proceed with engineering and construction received by the Transmission Owners from the Transmission Provider.

Impact Study Models

Example Season Designation: From Date – To Date (M/D/Y), Season Description

02AP: 4/1/02 – 6/1/02, Spring Minimum
02FA: 10/1/02 – 12/1/02, Fall Peak
02G: 4/1/02 – 6/1/02, Spring Peak
02WP: 12/1/02 – 4/1/03, Winter Peak
02SP: 6/1/02 – 10/1/02, Summer Peak

Table 6 (Continued)
Facilities That Limit Transmission Service
And Have Network Upgrades Assigned To Previous Reservations

Previous Reservations								This Reservation			
					Possible (1)		Scheduled				
Reservation / Study (No.)	Facility & Network Upgrade, Plus Summary Of Restricted Operating Period	Trans. Owner	Eng. & Const. Lead (Month)	Const. Only Lead (Month)	Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)	ATC (MW)	Impact Study (Model)	Upgrade Needed (M/D/Y)	Changes Required (3)

Table 7
Facilities That Limit Transmission Service
And Have Network Upgrades Assigned To This Reservation

							Possible (1)		Scheduled
Facility & Network Upgrade, Plus Summary Of Restricted Operating Period	Trans. Owner	Min. ATC (MW)	Impact Study (Model)	Upgrade Needed (M/D/Y)	Eng. & Const. Lead (Month)	Const. Lead Only (Month)	Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)
Brookline-Springfield 161KV. Upgrade main and transfer bus and buswork within bay at Springfield to 1600A. Replace disconnect switches at Springfield	SWPA	0	10SP	6/1/2008	9				6/1/2008
Carthage Sub 109-Atlas Jct. 161kv. Replace 600A disconnect switches	SWPA	48	07SP	6/1/2007	12				6/1/2007
Neosho- Sub 292-Tipton Ford 161kv. Reconductor 10.6 mi. with 556 ACSR	EMDE	84	10SP	6/1/2007	30				6/1/2007
Sub 109-Atlas Jct-Sub 432-Joplin Oakland North 161kv. Reconductor 3.76 mi. with 795 ACSR	EMDE	64	07SP	6/1/2007	30				6/1/2007
Sub 110-Oronogo Jct-Sub 167-Riverton 161kv. Install new 75mva Auto transformer at Riverton Sub.	EMDE	165	10SP	6/1/2007	30				6/1/2007
Sub-110-Oronogo Jct to Sub 432-Joplin Oakland North 161kv. Reconstruct and replace 1.4 mi. of 556 with 795 ACSR	EMDE	11	10SP	6/1/2007	30				6/1/2007
Sub 145-Joplin West 7th-Sub 439-Stateline161kv Sub 393 Reinmiller 161/69 Transformer Sub 110 Oronogo Jct-Sub 432-Joplin Oakland North 161kv still slightly overloaded in 10SP after reconductor above in '07. These three facilities are relieved by Sub 393 Reinmiller-Sub 292-Tipton Ford 161kv. Construct new 161kv line from Tipton Ford to Reinmiller. 4.12mi.	EMDE	0	10SP	6/1/2010	30				6/1/2010

Note: (1) Some existing facilities may not be taken out of service during the summer peaking period. When a facility may not be taken out of service and the projected completion of a Network Upgrade is between either a) June 1 and September 15, or b) September 15 and the date when construction ends given construction starts September 15, then the construction time is added to September 15. However, the Possible Date Available is limited to June 1 of the following year. Delay is the difference of the Possible Date Available and the Upgrade Needed date for this reservation.

(2) The Scheduled In Service date is based on when continuous annual service may be started that is on or after the Possible Date Available. If N/A, then the facility upgrade/addition is not required, due to its lead time for engineering and construction, as a) continuous annual service above the ATC limit may be provided only after the requested reservation period, or b) the facility is not required at a later time within the reservation period due to reduced loading of the facility below its emergency rating. The Scheduled In Service date may be later than the Possible Date Available when either a) another facility with a lower value of associated ATC has a longer Engineering & Construction Lead time, or b) the start of the season, in which the Network Upgrade is required, is later than the Possible Date Available. The Scheduled In Service date is based on items received by an assumed date as documented in this study including authorization to proceed with engineering and construction received by the Transmission Owners from the Transmission Provider.

Table 7 (Continued)
Facilities That Limit Transmission Service
And Have Network Upgrades Assigned To This Reservation

							Possible (1)		Scheduled
Facility & Network Upgrade, Plus Summary Of Restricted Operating Period	Trans. Owner	ATC (MW)	Impact Study (Model)	Upgrade Needed (M/D/Y)	Eng. & Const. Lead (Month)	Const. Lead Only (Month)	Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)

Table 8
Summary Of Available Transfer Capability With Network Upgrades

Insufficient ATC (1)			Sufficient ATC		
Operating Period (Year)	Operating Period (M/D - M/D)	ATC (MW)	Operating Period (Year)	Operating Period (M/D - M/D)	ATC (MW)
			2007-	6/1	250
			2028	6/1	250

Note: Values of ATC are based on items received by October 15, 2004 including authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

(1) When the ATC is insufficient to provide the Transmission Customer with reliable service for a significant portion of the requested reservation period without impairing or degrading reliability to existing firm services, the Deferral of Service is applicable.

(2) Allocated ATC to the Transmission Customer on an annual basis.

Table 9
Base Rate Transmission Service Charges

Operating Period	2007		2008		Intermediate Years		2028	
(Month)	ATC (MW)	Base Rate Revenues ($)	ATC (MW)	Base Rate Revenues ($)	ATC (MW)	Base Rate Revenues ($)	ATC (MW)	Base Rate Revenues ($)
January	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
February	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
March	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
April	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
May	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
September	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal By Year		$0		$0		$0		$0
Total For All Years								$0

Note: Values of ATC are based on items received by October 15, 2004 including authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

Table 10
Network Upgrade Revenue Requirements Including Pre-Payments

Operating Period	2006		2007		2008		2009	
(Month)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)
January	N/A	N/A	N/A	N/A	250	94	250	94
February	N/A	N/A	N/A	N/A	250	94	250	94
March	N/A	N/A	N/A	N/A	250	94	250	94
April	N/A	N/A	N/A	N/A	250	94	250	94
May	N/A	N/A	N/A	N/A	250	94	250	94
June	N/A	N/A	250	94	250	94	250	94
July	N/A	N/A	250	94	250	94	250	94
August	N/A	N/A	250	94	250	94	250	94
September	N/A	N/A	250	94	250	94	250	94
October	N/A	60,000	250	250,094	250	94	250	94
November	N/A	N/A	250	94	250	94	250	94
December	N/A	N/A	250	94	250	94	250	94
Subtotal By Year		$60,000		$250,658		$1,128		$1,128

Note: Values of ATC are based on items received by October 15, 2004 including authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

A Transmission Owner may require that a Transmission Customer pre-pay for all assignable Network Upgrades which it designs and constructs. These pre-payments are in the amount of the Transmission Owner's estimated engineering and construction costs. Applicable refunds are also included. The estimated monthly revenue requirements listed in this table include these pre-payments and refunds. All estimated monthly revenue requirements excluding pre-payments and refunds are $94.

Table 10 (Continued)
Network Upgrade Revenue Requirements Including Pre-Payments

Operating Period	2010		2011		Intermediate Years 2012-2027		2028	
(Month)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)
January	250	94	250	94	250	1,504	250	94
February	250	94	250	94	250	1,504	250	94
March	250	94	250	94	250	1,504	250	94
April	250	94	250	94	250	1,504	250	94
May	250	94	250	94	250	1,504	250	94
June	250	94	250	94	250	1,504	N/A	N/A
July	250	94	250	94	250	1,504	N/A	N/A
August	250	94	250	94	250	1,504	N/A	N/A
September	250	94	250	94	250	1,504	N/A	N/A
October	250	94	250	94	250	1,504	N/A	N/A
November	250	94	250	94	250	1,504	N/A	N/A
December	250	94	250	94	250	1,504	N/A	N/A
Subtotal By Year		$1,128		$1,128		$18,048		$470
Total For All Years								$333,688

Note: Values of ATC are based on items received by October 15, 2004 including authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

A Transmission Owner may require that a Transmission Customer pre-pay for all assignable Network Upgrades which it designs and constructs. These pre-payments are in the amount of the Transmission Owner's estimated engineering and construction costs. Applicable refunds are also included. The estimated monthly revenue requirements listed in this table include these pre-payments and refunds. All estimated monthly revenue requirements excluding pre-payments and refunds are $94.

Table 11
Generation Re-Dispatching Revenue Requirements

Operating Period (Month)	Generation Re-Dispatching Revenue Requirements					
	2003 ($)	2004 ($)	2005 ($)	2006 ($)	2007 ($)	2008 ($)
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	0	0	0	0	0	0
October	0	0	0	0	0	0
November	0	0	0	0	0	0
December	0	0	0	0	0	0
Subtotal By Year	$0	$0	$0	$0	$0	$0
Total For All Years						$0

Table 12
Total Estimated Revenue Requirements

Operating Period	2006		2007		2008		2009	
(Month)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)	ATC (MW)	Network Upgrade Revenues ($)
January	N/A	N/A	N/A	N/A	250	94	250	94
February	N/A	N/A	N/A	N/A	250	94	250	94
March	N/A	N/A	N/A	N/A	250	94	250	94
April	N/A	N/A	N/A	N/A	250	94	250	94
May	N/A	N/A	N/A	N/A	250	94	250	94
June	N/A	N/A	250	94	250	94	250	94
July	N/A	N/A	250	94	250	94	250	94
August	N/A	N/A	250	94	250	94	250	94
September	N/A	N/A	250	94	250	94	250	94
October	N/A	60,000	250	250,094	250	94	250	94
November	N/A	N/A	250	94	250	94	250	94
December	N/A	N/A	250	94	250	94	250	94
Subtotal By Year		$60,000		$250,658		$1,128		$1,128
Total For All Years								

Note: Values of ATC are based on items received by October 15, 2004 authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

Table 12 (Continued)
Total Estimated Revenue Requirements

Operating Period	2010		2011		Intermediate Years 2012-2027		2028	
(Month)	ATC (MW)	Revenue Requirements ($)	ATC (MW)	Revenue Requirements ($)	ATC (MW)	Revenue Requirements ($)	ATC (MW)	Revenue Requirements ($)
January	250	94	250	94	250	1,504	250	94
February	250	94	250	94	250	1,504	250	94
March	250	94	250	94	250	1,504	250	94
April	250	94	250	94	250	1,504	250	94
May	250	94	250	94	250	1,504	250	94
June	250	94	250	94	250	1,504	N/A	N/A
July	250	94	250	94	250	1,504	N/A	N/A
August	250	94	250	94	250	1,504	N/A	N/A
September	250	94	250	94	250	1,504	N/A	N/A
October	250	94	250	94	250	1,504	N/A	N/A
November	250	94	250	94	250	1,504	N/A	N/A
December	250	94	250	94	250	1,504	N/A	N/A
Subtotal By Year		$1,128		$1,128		$18,048		$470
Total For All Years								$333,688

Note: Values of ATC are based on items received by October 15, 2004 including authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

Table 13
Annual Average Transmission Service Costs

Annual Average Transmission Service Costs Calendar Period (Year)	Maximum ATC (MW)	Average Of Allocated Monthly Peak ATC (MW)	Total Revenue Requirements ($)	Average Transmission Service Cost (1) (2) ($/MW-Month)
2007	250	250	310,658	103.55
2008	250	250	1,128	0.38
2009	250	250	1,128	0.38
2010	250	250	1,128	0.38
2011	250	250	1,128	0.38
2012	250	250	1,128	0.38
2013	250	250	1,128	0.38
2014	250	250	1,128	0.38
2015	250	250	1,128	0.38
2016	250	250	1,128	0.38
2017	250	250	1,128	0.38
2018-2027	250	250	11,280	0.38
2028	250	250	470	0.38
Total	250	250	333,688	5.30

Note: Values of ATC are based on items received by October 15, 2004 including authorization to proceed with engineering and construction received by Transmission Owners from the Transmission Provider. Annual ATC allocated to the Transmission Customer is determined by the least amount of seasonal ATC within each year of a reservation period.

(1) The average transmission service cost is based on the average of the monthly peak ATC within the calendar year.

(2) If revenues are required of the Transmission Customer for Network Upgrade pre-payments and generation re-dispatching prior to the calendar year that includes the initial portion of the first operating year, then these costs are added to those in the first calendar year for the purpose of determining an Average Transmission Service Cost in the first calendar year. Therefore, all costs prior to and including the first calendar year, which includes all or the first portion of the first operating year, are accumulated for determining the Average Transmission Service Cost as listed for the first calendar year.

Table 14
Identified Third-Party Facilities

Facility & Network Upgrade	Transmission Owner	Engineering & Construction Costs ($)	Eng. & Const. Lead Time (Months)	Const. Only Lead Time (Months)	Date Needed (M/D/Y)
Brookline-Springfield 161kv. Reconductor 1.73 mi. of 954 ACSR with 1272 ACSR. Need to evaluate load capacity of two steel towers not owned by AECI.	AECI	390,000	8	2	6/1/2007

Table 15

Summary of Transmission Service Costs

Cost Components & Descriptions	Units	
Start Date	(M/D/Y)	June 1, 2007
End Date	(M/D/Y)	June 1, 2028
Term	(Years)	21 years
Maximum Allocated Capacity	(MW)	250
Average Of Allocated Monthly Peak Capacity Over Term	(MW)	250.00
Pricing Methodology	(And/Or)	Total cost of non-EMDE Network Upgrades
Base Rate Estimate		
Total Revenue Requirements	($)	N/A
Average Rate Over Term	($/MW-Month)	N/A
Network Upgrade Estimate		
SPP Total Assigned Eng. & Const. (Includes all Network Upgrades required)	($)	8,890,000
Expedited Eng. & Const.	($)	0
Total Levelized Cost excluding prepayments (Non EMDE Network Upgrades)	($)	23,688
Average Rate Over Term	($/MW-Month)	.38
Average Indirect Cost Multiplier	(Per-Unit)	1.0764
(Based On Assigned Eng. & Const.).		
Network Upgrades Requiring Pre-Payment	($)	310,000
(Included In Assigned Eng. & Const)		
Expedited Network Upgrades Requiring Pre-Payment & Refund	($)	0
(Included In Expedited Eng. & Const)		
Total Assigned Eng. & Const. for Third-Party Network upgrades (Levelized cost over term not applicable)	($)	390,000
Generation Re-Dispatching Estimate As Required For Construction Only		
Total	($)	0
Average Rate Over Term	($/MW-Month)	0.00
Network Upgrade & Generation Re-Dispatching		
Total Levelized Cost including prepayments	($)	333,688
Average Rate Over Term	($/MW-Month)	5.30
Total Transmission Service		
Total Estimate Of Allocable Levelized Costs including prepayments	($)	333,688
Average Rate Over Term	($/MW-Month)	5.30