



SPP

*Southwest
Power Pool*

System Facilities Study

*Firm Point-To-Point Transmission Service
Request 274981*

Empire District Electric

*From American Electric Power West
To Empire District Electric*

*In The Requested Amount Of 100MW
With 100MW Allocated*

From June 1, 2003

To June 1, 2013

*With Deferral To The Period From
March 1, 2006 To March 1, 2016*

SPP Coordinated Planning

#SPP-2001-245-1

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Table of Contents

Executive Summary	3
Introduction	6
Third-Party Facilities	9
Financial Methodology	10
Financial Analysis	13
Conclusion	15
Table 1: Assigned Network Upgrades	18
Table 2: Previously Assigned Network Upgrades Requiring Only Accelerated In-Service Dates	21
Table 3: Previously Assigned Network Upgrades Requiring Only Additional Capacity	22
Table 4: Previously Assigned Network Upgrades Requiring Both Accelerated In-Service Dates And Additional Capacity	22
Table 5: Facilities Requiring No Upgrade Or Limiting Rollover Rights	23
Table 6: Facilities That Limit Transmission Service And Have Network Upgrades Assigned To Previous Reservations	25
Table 7: Facilities That Limit Transmission Service And Have Network Upgrades Assigned To This Reservation	26
Table 8: Summary Of Available Transfer Capability With Network Upgrades	31
Table 9: Base Rate Transmission Service Charges	32
Table 10: Network Upgrade Revenue Requirements Including Pre-Payments	33
Table 11: Generation Re-Dispatching Revenue Requirements	37
Table 12: Total Estimated Revenue Requirements	39
Table 13: Average Annual Transmission Service Costs	43
Table 14: Annual Letter Of Credit Requirements	44
Table 15: Identified Third-Party Facilities	45
Table 16: Summary Of Transmission Service Costs	46

Executive Summary

At the request of Empire District Electric (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 Request 274981. This request is for 100MW of Firm Point-To-Point Transmission Service from American Electric Power West (AEPW) to Empire District Electric (EDE). The requested term of this Transmission Service is 10 years from June 1, 2003 to June 1, 2013.

To complete the request for Transmission Service, the Transmission Provider must receive the following items from the Transmission Customer within 15 days of receipt of this study: 1) an executed Service Agreement, and 2) an unconditional and irrevocable letter of credit, in the amount of \$23,480,856, associated with the engineering and construction of assigned Network Upgrades excluding pre-payment requirements. The Transmission Customer must also confirm this request on the Transmission Provider's OASIS pursuant to the results of this Facilities Study.

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 September 1, 2003 was assumed. Allocated ATC and associated revenue requirements are based on this request being complete by this date. In the event that the Transmission Provider does not receive an executed Service Agreement and letter of credit by this date, then the ATC of the existing transmission system with Network Upgrades will have to be reevaluated due to subsequent delays in scheduling engineering and construction for the required Network Upgrades. The minimum ATC during the 2003 summer peak, from June 1 to October 1, is 0MW. The ATC does not increase during the term of service as summarized in Table 8.

The ATC listed in Table 8 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. Therefore, the Deferral of Service as provided for in section 15.5 of the Transmission Provider's Open Access Transmission Tariff (OATT) was deemed applicable to this request for Transmission Service. The period in which 10.0 years of requested Transmission Service may be provided at or near the capacity level requested is from March 1, 2006 to March 1, 2016.

Network Upgrades will be required on the AEPW, Grand River Dam Authority (GRRD), Kansas City Power & Light (KACP), OG+E Electric Services (OKGE), City Utilities of Springfield (SPRM), and Southwestern Power Administration (SWPA) transmission systems. The engineering and construction cost estimates for assignable Network Upgrades total \$24,920,856 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.

As the requested reservation period includes the entire planning horizon, all constraints have been identified in the corresponding impact study. Therefore, there are no identified limits regarding the rollover rights of the Transmission Customer.

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.

The estimated levelized revenue requirements for providing the necessary Network Upgrades to accommodate the Transmission Service request are \$36,119,040 excluding pre-payments. Pre-payment costs are \$1,440,000 for estimated engineering and

construction expenses. Therefore, the total estimate for assignable Network Upgrades is \$37,559,040. The average rate based on this total estimated cost of Network Upgrades, including the expediting of pre-planned Network Upgrades, is \$3,130/MW-Month over the entire term. 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 1.5071 over the entire term.

The projected base rate transmission service charges (excluding charges for ancillary services) are \$15,382,560 during the reservation period based on the ATC of the existing transmission system with Network Upgrades. The Transmission Customer is required to pay the higher of either the base rate transmission service charges or the revenue requirements associated with the Network Upgrades. The total estimated revenue requirements for providing the necessary Network Upgrades to accommodate the Transmission Service request are \$37,559,040. As the estimated base rate transmission service charges are less than the total estimated revenue requirements for Network Upgrades, the Transmission Customer shall pay the revenue requirements associated with the Network Upgrades.

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 16. The total estimated cost is \$37,559,040. The average rate based on this total estimated cost is \$3,130/MW-Month over the entire term.

The development of the corresponding System Impact Study was based on the Transmission Customer confirming Transmission Service Request 274980. The total estimated amount of \$37,559,040 for this Transmission Service Request 274981 is based on the Transmission Customer confirming request 274980 with a total estimated cost of

\$53,691,500 for Network Upgrades. In the event that the Transmission Customer does not confirm request 274980, then request 274981 will be reevaluated upon request, and new System Impact and Facilities Studies will be created to determine the required Network Upgrades.

If a completed Service Agreement is received by the Transmission Provider on or before September 1, 2003, Firm Point-To-Point Transmission Service may be provided on approximately March 1, 2006 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.

The Transmission Provider must receive an unconditional and irrevocable letter of credit, in the amount of \$23,480,856, before the Transmission Owners incur initial engineering and construction costs. This amount is for all assignable Network Upgrades less pre-payment requirements. The amount of the letter of credit will be adjusted on an annual basis to reflect amortization of these costs. Table 14 includes the required annual amounts. Also, 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.

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, third-party facilities were identified. 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.

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. This information will be used to allocate revenue to Transmission Owners even if it is not the basis for billing the Transmission Customer pursuant to "or" pricing.

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. 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 ATC values associated with only transfer-limiting upgrades are listed in [Table 7](#).

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 of which is equal to that requested beginning March 2006. Thereafter, the specified capacity throughout the remainder of the reservation period through February 2016 is available to accommodate the Transmission Service deferred to the period from March 2006 to March 2016.

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. The ATC and the estimate of levelized revenue requirements plus any pre-payments for Network Upgrade are provided in Table 10. The Transmission Customer shall pay the higher of the base rate transmission service charges or the revenue requirements for the Network Upgrades.

Third-Party Facilities

For third-party facilities listed in Table 15, 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. 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.

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 its 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

The zone interfaced to the sink with the lowest zonal rate for Firm Point-To-Point Transmission Service is Empire District Electric (EDE). The current zonal rate of EDE is \$1,281.88/MW-Month. 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. Given the lesser of these values of ATC and the requested capacity, corresponding base rate transmission service charges are listed on a monthly basis in Table 9. The base rate transmission service charges for the Transmission Service are estimated to be \$15,382,560.

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 \$1,440,000.

The sum of the estimated monthly revenue requirements listed in Table 10 for the required Network Upgrades throughout the reservation period is \$37,559,040. These monthly revenue requirements include pre-payment requirements for a Transmission Owner's engineering and construction costs. The estimated revenue requirements for the required Network Upgrades are greater than the projected base rate transmission service charges over the specified reservation period. Therefore, the Transmission Customer will be responsible for the revenue requirements associated with the Network Upgrades of which are estimated to be \$37,559,040 throughout the reservation period.

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 16.

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 after an executed Service Agreement has been received by the Transmission Provider and the affected Transmission Owners receive the appropriate authorization to proceed from the Transmission Provider. In accordance with section 19.4 of the Open Access Transmission Tariff, the Transmission Customer shall provide an unconditional and irrevocable letter of credit to the Transmission Provider in the amount of no less than \$23,480,856 for the initial engineering and construction costs to be incurred by the

Transmission Owners. This amount is for all assignable Network Upgrades less pre-payment requirements. The Transmission Customer shall also maintain a letter of credit in effect during the term of the Transmission Service Agreement. The amount of the letter of credit will be adjusted on an annual basis to reflect amortization of these costs. Table 14 includes the required annual amounts. This amount does not include or offset other letters of credit or deposits as may be required under the tariff.

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 \$37,559,040 for Transmission Service Request 274981. 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 base rate transmission service charges are estimated to be \$15,382,560 and the monthly revenue requirements are listed in Table 9. As the base rate transmission service charges are less than the revenue requirements for the required Network Upgrades, the revenue requirements from the Transmission Customer are for those associated with the Network Upgrades. The total estimated revenue requirement is listed in Table 12 in the amount of \$37,559,040.

The development of the corresponding System Impact Study was based on the Transmission Customer confirming Transmission Service Request 274980. The total estimated amount of \$37,559,040 for this Transmission Service Request 274981 is based on the Transmission Customer confirming request 274980 with a total estimated cost of \$53,691,500 for Network Upgrades. In the event that the Transmission Customer does not confirm request 274980, then request 274981 will be reevaluated upon request, and new System Impact and Facilities Studies will be created to determine the required Network Upgrades.

To complete the request for Transmission Service, the Transmission Provider must receive the following items from the Transmission Customer within 15 days of receipt of this study: 1) an executed Service Agreement, and 2) an unconditional and irrevocable letter of credit associated with the engineering and construction of assigned Network Upgrades. The Transmission Customer must also confirm this request on the Transmission Provider's OASIS pursuant to the results of this Facilities Study. Upon receipt of these items and confirmation by the Transmission Customer, the Transmission Provider will 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)
GREGGTON - LAKE LAMOND 69KV: Rebuild 2.66 miles of 755 ACAR with 1590 ACSR	AEPW	1,100,000	15.0	6.0	6/1/2006	6/1/2006	
KNOX LEE - OAK HILL #2 138KV: Reset relays & replace wavetrap @ Knoxlee	AEPW	50,000	12.0	1.0	6/1/2004	6/1/2006	
MARSHALL 138/69KV TRANSFORMER CKT 1: Replace 755 ACAR Strain Bus.	AEPW	25,000	9.0	2.0	6/1/2003	6/1/2006	
MARSHALL 138/69KV TRANSFORMER CKT 1: Replace 1033 AAC Jumpers	AEPW	15,000	6.0	1.0	6/1/2003	6/1/2006	
MARSHALL 138/69KV TRANSFORMER CKT 2: Replace 755 ACAR Strain Bus.	AEPW	25,000	9.0	2.0	6/1/2003	6/1/2006	
MARSHALL 138/69KV TRANSFORMER CKT 2: Replace 1033 AAC Jumpers	AEPW	15,000	6.0	1.0	6/1/2003	6/1/2006	
ORU WEST TAP - RIVERSIDE STATION 138KV: Replace wavetrap jumpers @ Riverside	AEPW	10,000	6.0	1.0	6/1/2004	6/1/2006	
DIANA - LONE STAR SOUTH 138KV: Replace 1200A switch @ Diana	AEPW	30,000	9.0	2.0	10/1/2004	10/1/2006	
FLOURNOY - OAK PAN-HARR REC 138KV: Rebuild 10.42 miles 666 ACSR to 1590 ACSR.	AEPW	4,200,000	24.0	12.0	6/1/2007	6/1/2007	
LONGWOOD - OAK PAN-HARR REC 138KV: Rebuild 1.8 miles of 666 ACSR with 1590 ACSR	AEPW	800,000	12.0	4.0	6/1/2007	6/1/2007	
HOWELL - KILGORE 69KV: Rebuild 3.49 miles with 795 ACSR.	AEPW	1,400,000	15.0	8.0	6/1/2008	6/1/2008	
MARSHALL - NORTH MARSHALL 69KV: Replace 350 CU bus & jumpers @ North Marshall.	AEPW	23,356	9.0		6/1/2008	6/1/2008	
NORTH MARSHALL - WOODLAWN 69KV: Replace 3/0 CU jumpers @ North Marshall	AEPW	15,000	9.0	1.0	6/1/2008	6/1/2008	
ROCK HILL - ROSBOROUGH 69KV: Replace Rock Hill switches 6492 & 6493 & replace the jumpers between the switches & the breaker 6490	AEPW	75,000	12.0	3.0	6/1/2009	6/1/2009	
WHITNEY 138/69KV TRANSFORMER CKT 1: Add 3rd Whitney Auto	AEPW	1,300,000	15.0	6.0	6/1/2009	6/1/2009	
Subtotal for AEPW		9,083,356					

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)
AFTON 161/69KV TRANSFORMER: Replace 50 MVA Transformer with 84 MVA unit.	GRRD	890,000	18.0	5.0	6/1/2003	6/1/2006	
STILWELL - TITANTIC TAP 69KV: Rebuild 9.2 miles with 795MCM ACSR	GRRD	1,518,000	18.0	5.0	6/1/2005	6/1/2006	
TAHLEQUAH - TITANTIC TAP 69KV: Rebuild 9.4 miles with 795MCM ACSR	GRRD	1,551,000	18.0	5.0	6/1/2006	6/1/2006	
412SUB - KANSAS TAP 161KV: Reconductor 9.7 miles with 1590MCM ACSR.	GRRD	1,488,000	12.0	5.0	6/1/2007	6/1/2007	
412SUB - KERR 161KV: Reconductor 12.5 miles with 1590MCM ACSR	GRRD	1,918,000	12.0	5.0	6/1/2007	6/1/2007	
Subtotal for GRRD		7,365,000					
COLLEGE - CRAIG 161KV: Reconductor 4 miles with 1192.5 ACSS, 558 normal/emergency rating and upgrade breaker.	KACP	700,000	24.0	12.0	6/1/2009	6/1/2009	
Subtotal for KACP		700,000					
CONTINENTAL BLACKS - OSAGE 69KV: Replace Wavetrap and increase CT ratio.	OKGE	30,000	9.0		6/1/2003	6/1/2006	
MUSKOGEE - PECAN CREEK 345KV: Increase CT ratio at Pecan Creek from 800-5 to 2000-5 to allow a 1500 amp rating of line section.	OKGE	2,500	12.0		6/1/2009	6/1/2009	
Subtotal for OKGE		32,500					
SOUTHWEST - SOUTHWEST DISPOSAL 161KV: Parallel Southwest - Southwest Disposal - Battlefield 161 kV line with new line	SPRM	6,300,000	24.0	12.0	6/1/2009	6/1/2009	
Subtotal for SPRM		6,300,000					

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.									
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)
CHAMBER SPRINGS - FARMINGTON AECC 161KV	AEPW	Relieved or impact removed by selected upgrades.	
CHAMBER SPRINGS - TONTITOWN 161KV	AEPW	Relieved or impact removed by selected upgrades.	
CHEROKEE REC - KNOX LEE 138KV	AEPW	Upgrade scheduled to be completed 5/1/2005.	
CHEROKEE REC - TATUM 138KV	AEPW	Upgrade scheduled to be completed 5/1/2005.	
DYESS - EAST ROGERS 161KV	AEPW	Tontitown Project scheduled to be completed 6/1/2004.	
EAST CENTERTON - GENTRY REC 161KV	AEPW	Relieved or impact removed by selected upgrades, and an upgrade scheduled to be completed 5/1/2005.	
ELM SPRINGS REC - TONTITOWN 161KV	AEPW	Relieved or impact removed by selected upgrades.	
FARMINGTON AECC - SOUTH FAYETTEVILLE 161KV	AEPW	Relieved or impact removed by selected upgrades.	
FLINT CREEK - GENTRY REC 161KV	AEPW	Relieved or impact removed by selected upgrades, and an upgrade scheduled to be completed 5/1/2005.	
INTERNATIONAL PAPER - WALLACE LAKE 138KV	AEPW	Dolet Hills Operating Guide Applied	
IPC JEFFERSON - LIEBERMAN 138KV	AEPW	Upgrade scheduled to be completed 4/1/2005.	
JACKSONVILLE (SWE-RC-ETEC) - OVERTON 138KV	AEPW	Third Party Line Owned by Rayburn Country Electric Co-op	
ROCK HILL - TATUM 138KV	AEPW	Upgrade scheduled to be completed 5/1/2005.	
SOUTH SHREVEPORT - WALLACE LAKE 138KV	AEPW	Dolet Hills Operating Guide Applied	
SUB 438 - RIVERSIDE - TABLE ROCK 161KV	EMDE	Contingency modeled is not applicable.	

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

Previous Reservations								This Reservation			
Reservation / Study (No.)	Facility & Network Upgrade, Plus Summary Of Restricted Operating Period	Trans. Owner	Eng. & Const. Lead (Month)	Const. Only Lead (Month)	Possible (1)		Scheduled	ATC (MW)	Impact Study (Model)	Upgrade Needed (M/D/Y)	Changes Required (3)
					Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)				
274980	East Centerton 345/161kV Transformer: Add 345/161kV 600/660MVA auto transformer.	AEPW	30.0	24.0	3/1/2006	33.0	3/1/2006	0	SP & WP (4)	6/1/2003	None
274980	Flint Creek - East Centerton 345kV: Add 20 miles of 345 kV line.	AEPW	30.0	24.0	3/1/2006	33.0	3/1/2006	0	SP & WP (4)	6/1/2003	None
274980	Flint Creek - East Centerton 345kV: Add 345kV terminal at Flint Creek.	AEPW	30.0	24.0	3/1/2006	33.0	3/1/2006	0	SP & WP (4)	6/1/2003	None

- 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 a) a signed Service Agreement and letter of credit received by the Transmission Provider, and b) authorization to proceed with engineering and construction received by the Transmission Owners from the Transmission Provider.
- (4) Required for winter season as documented in SPP-2001-244.

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

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)	Possible (1)		Scheduled
							Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)
DIANA - LONE STAR SOUTH 138KV: Replace 1200A switch @ Diana	AEPW	47	04FA	10/1/ 2004	9.0	2.0	5/31/ 2004		10/1/ 2006
Minimum ATC Summary									
10/1 – 12/1, 2003 - 2005		47							
10/1 – 12/1, 2006 - 2016		100							
AFTON 161/69KV TRANSFORMER: Replace 50 MVA Transformer with 84 MVA unit.	GRRD	0	03SP	6/1/2003	18.0	5.0	3/1/2005	21.0	6/1/2006
MARSHALL 138/69KV TRANSFORMER CKT 1: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	03SP	6/1/2003	9.0	2.0	5/31/ 2004	12.0	6/1/2006
MARSHALL 138/69KV TRANSFORMER CKT 2: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	03SP	6/1/2003	9.0	2.0	5/31/ 2004	12.0	6/1/2006

- 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 a) a signed Service Agreement and letter of credit received by the Transmission Provider, and b) 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 7 (Continued)
Facilities That Limit Transmission Service
And Have Network Upgrades Assigned To This Reservation**

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)	Possible (1)		Scheduled
							Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)
AFTON 161/69KV TRANSFORMER: Replace 50 MVA Transformer with 84 MVA unit.	GRRD	0	04SP	6/1/2004	18.0	5.0	3/1/2005	9.0	6/1/2006
MARSHALL 138/69KV TRANSFORMER CKT 1: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	04SP	6/1/2004	9.0	2.0	5/31/ 2004		6/1/2006
MARSHALL 138/69KV TRANSFORMER CKT 2: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	04SP	6/1/2004	9.0	2.0	5/31/ 2004		6/1/2006
ORU WEST TAP - RIVERSIDE STATION 138KV: Replace wavetrap jumpers @ Riverside	AEPW	0	04SP	6/1/2004	6.0	1.0	3/1/2004		6/1/2006
KNOX LEE - OAK HILL #2 138KV: Reset relays & replace wavetrap @ Knoxlee	AEPW	56	04SP	6/1/2004	12.0	1.0	10/15/ 2004	4.5	6/1/2006
412SUB - KANSAS TAP 161KV: Reconductor 9.7 miles with 1590MCM ACSR.	GRRD	0	09SP	6/1/2007	12.0	5.0	2/14/ 2005		6/1/2007
412SUB - KERR 161KV: Reconductor 12.5 miles with 1590MCM ACSR	GRRD	0	09SP	6/1/2007	12.0	5.0	2/14/ 2005		6/1/2007
BATTLEFIELD - SPRINGFIELD 161KV: Replace the disconnect switches and metering CTs at Springfield	SWPA	0	09SP	6/1/2009	9.0	1.0	5/31/ 2004		6/1/2009
BROOKLINE - SPRINGFIELD 161KV: Replace disconnect switches at Springfield.	SWPA	0	09SP	6/1/2009	9.0	1.0	5/31/ 2004		6/1/2009
GREGGTON - LAKE LAMOND 69KV: Rebuild 2.66 miles of 755 ACAR with 1590 ACSR	AEPW	0	09SP	6/1/2006	15.0	6.0	3/16/ 2005		6/1/2006
LONGWOOD - OAK PAN-HARR REC 138KV: Rebuild 1.8 miles of 666 ACSR with 1590 ACSR	AEPW	0	09SP	6/1/2007	12.0	4.0	1/14/ 2005		6/1/2007

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

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)	Possible (1)		Scheduled
							Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)
MARSHALL - NORTH MARSHALL 69KV: Replace 350 CU bus & jumpers @ North Marshall.	AEPW	0	09SP	6/1/2008	9.0		5/31/ 2004		6/1/2008
MARSHALL 138/69KV TRANSFORMER CKT 1: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	09SP	6/1/2005	9.0	2.0	5/31/ 2004		6/1/2006
MARSHALL 138/69KV TRANSFORMER CKT 2: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	09SP	6/1/2005	9.0	2.0	5/31/ 2004		6/1/2006
ORU WEST TAP - RIVERSIDE STATION 138KV: Replace wavetrap jumpers @ Riverside	AEPW	0	09SP	6/1/2005	6.0	1.0	3/1/2004		6/1/2006
SPRINGFIELD 161/69KV TRANSFORMER CKT 1: Replace 25/25MVA transformer #3 with 80MVA unit.	SWPA	0	09SP	6/1/2009	12.0		9/15/ 2004		6/1/2009
WHITNEY 138/69KV TRANSFORMER CKT 1: Add 3rd Whitney Auto	AEPW	0	09SP	6/1/2009	15.0	6.0	3/16/ 2005		6/1/2009
WHITNEY 138/69KV TRANSFORMER CKT 2: Add 3rd Whitney Auto	AEPW	0	09SP	6/1/2009	15.0	6.0	3/16/ 2005		6/1/2009
COLLEGE - CRAIG 161KV: Reconductor 4 miles with 1192.5 ACSS, 558 normal/emergency rating and upgrade breaker.	KACP	0	09SP	6/1/2009	24.0	12.0	6/1/2006		6/1/2009
STILWELL - TITANTIC TAP 69KV: Rebuild 9.2 miles with 795MCM ACSR	GRRD	0	09SP	6/1/2005	18.0	5.0	3/1/2005		6/1/2006
TAHLEQUAH - TITANTIC TAP 69KV: Rebuild 9.4 miles with 795MCM ACSR	GRRD	0	09SP	6/1/2006	18.0	5.0	3/1/2005		6/1/2006

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

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)	Possible (1)		Scheduled
							Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)
CONTINENTAL BLACKS - OSAGE 69KV: Replace Wavetrap and increase CT ratio.	OKGE	0	09SP	6/1/2003	9.0		5/31/ 2004	12.0	6/1/2006
ROCK HILL - ROSBOROUGH 69KV: Replace Rock Hill switches 6492 & 6493 & replace the jumpers between the switches & the breaker 6490	AEPW	8	09SP	6/1/2009	12.0	3.0	12/15/ 2004		6/1/2009
NORTH MARSHALL - WOODLAWN 69KV: Replace 3/0 CU jumpers @ North Marshall	AEPW	8	09SP	6/1/2008	9.0	1.0	5/31/ 2004		6/1/2008
MUSKOGEE - PECAN CREEK 345KV: Increase CT ration at Pecan Creek from 800-5 to 2000-5 to allow a 1500 amp rating of line section.	OKGE	39	09SP	6/1/2009	12.0		9/15/ 2004		6/1/2009
HOWELL - KILGORE 69KV: Rebuild 3.49 miles with 795 ACSR.	AEPW	43	09SP	6/1/2008	15.0	8.0	5/16/ 2005		6/1/2008
SOUTHWEST - SOUTHWEST DISPOSAL 161KV: Parallel Southwest - Southwest Disposal - Battlefield 161 kV line with new line	SPRM	44	09SP	6/1/2009	24.0	12.0	8/31/ 2005		6/1/2009
FLOURNOY - OAK PAN-HARR REC 138KV: Rebuild 10.42 miles 666 ACSR to 1590 ACSR.	AEPW	77	09SP	6/1/2007	24.0	12.0	6/1/2006		6/1/2007
Minimum ATC Summary									
6/1 – 10/1, 2003 - 2005		0							
6/1 – 10/1, 2006 - 2016		100							

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

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)	Possible (1)		Scheduled
							Date Available (M/D/Y)	Delay (Month)	In Service (2) (M/D/Y)
MARSHALL 138/69KV TRANSFORMER CKT 1: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	09WP	12/1/ 2006	9.0	2.0	5/31/ 2004		6/1/2006
MARSHALL 138/69KV TRANSFORMER CKT 2: Replace 755 ACAR Strain Bus & Replace 1033 AAC Jumpers.	AEPW	0	09WP	12/1/ 2006	9.0	2.0	5/31/ 2004		6/1/2006
Minimum ATC Summary									
12/1 – 4/1, 2003 - 2005		0 (1)							
12/1/2005 – 3/1/2006		0 (1)							
3/1 – 4/1, 2006		100							
12/1 – 4/1, 2006 - 2016		100							
(1) Flint Creek - East Centerton 345kV upgrades, scheduled in service 3/1/2006, are required to provide 100MW of ATC as documented in SPP-2001-244									
Annual Limits									
6/1/2003 - 3/1/2006		0							
3/1/2006 - 3/1/2016		100							

Table 9
Base Rate Transmission Service Charges

Operating Period (Month)	2006		2007		Intermediate Years		2016	
	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	100	128,188	100	128,188	100	128,188
February	N/A	N/A	100	128,188	100	128,188	100	128,188
March	100	128,188	100	128,188	100	128,188	N/A	N/A
April	100	128,188	100	128,188	100	128,188	N/A	N/A
May	100	128,188	100	128,188	100	128,188	N/A	N/A
June	100	128,188	100	128,188	100	128,188	N/A	N/A
July	100	128,188	100	128,188	100	128,188	N/A	N/A
August	100	128,188	100	128,188	100	128,188	N/A	N/A
September	100	128,188	100	128,188	100	128,188	N/A	N/A
October	100	128,188	100	128,188	100	128,188	N/A	N/A
November	100	128,188	100	128,188	100	128,188	N/A	N/A
December	100	128,188	100	128,188	100	128,188	N/A	N/A
Subtotal By Year	\$1,281,880		\$1,538,256		\$1,538,256		\$256,376	
Total For All Years	\$15,382,560							

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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	2004		2005		2006		2007	
(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	N/A	N/A	100	300,992
February	N/A	N/A	N/A	N/A	N/A	N/A	100	300,992
March	N/A	N/A	N/A	N/A	100	300,992	100	300,992
April	N/A	N/A	N/A	N/A	100	300,992	100	300,992
May	N/A	N/A	N/A	N/A	100	300,992	100	300,992
June	N/A	N/A	N/A	N/A	100	300,992	100	300,992
July	N/A	N/A	N/A	N/A	100	300,992	100	300,992
August	N/A	N/A	N/A	N/A	100	300,992	100	300,992
September	N/A	N/A	N/A	N/A	100	300,992	100	300,992
October	N/A	N/A	N/A	N/A	100	300,992	100	300,992
November	N/A	N/A	N/A	N/A	100	300,992	100	300,992
December	N/A	N/A	N/A	N/A	100	300,992	100	300,992
Subtotal By Year	\$0		\$0		\$3,009,920		\$3,611,904	

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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 \$300,992.

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

Operating Period	2008		2009		2010		2011	
(Month)	ATC (MW)	Network Upgrade Revenues (\$)						
January	100	300,992	100	300,992	100	300,992	100	300,992
February	100	300,992	100	300,992	100	300,992	100	300,992
March	100	300,992	100	300,992	100	300,992	100	300,992
April	100	300,992	100	300,992	100	300,992	100	300,992
May	100	300,992	100	300,992	100	300,992	100	300,992
June	100	300,992	100	300,992	100	300,992	100	300,992
July	100	300,992	100	300,992	100	300,992	100	300,992
August	100	300,992	100	300,992	100	300,992	100	300,992
September	100	300,992	100	300,992	100	300,992	100	300,992
October	100	1,740,992	100	300,992	100	300,992	100	300,992
November	100	300,992	100	300,992	100	300,992	100	300,992
December	100	300,992	100	300,992	100	300,992	100	300,992
Subtotal By Year		\$5,051,904		\$3,611,904		\$3,611,904		\$3,611,904

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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 \$300,992.

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

Operating Period	2012		2013		2014		2015	
(Month)	ATC (MW)	Network Upgrade Revenues (\$)						
January	100	300,992	100	300,992	100	300,992	100	300,992
February	100	300,992	100	300,992	100	300,992	100	300,992
March	100	300,992	100	300,992	100	300,992	100	300,992
April	100	300,992	100	300,992	100	300,992	100	300,992
May	100	300,992	100	300,992	100	300,992	100	300,992
June	100	300,992	100	300,992	100	300,992	100	300,992
July	100	300,992	100	300,992	100	300,992	100	300,992
August	100	300,992	100	300,992	100	300,992	100	300,992
September	100	300,992	100	300,992	100	300,992	100	300,992
October	100	300,992	100	300,992	100	300,992	100	300,992
November	100	300,992	100	300,992	100	300,992	100	300,992
December	100	300,992	100	300,992	100	300,992	100	300,992
Subtotal By Year	\$3,611,904		\$3,611,904		\$3,611,904		\$3,611,904	

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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 \$300,992.

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

Operating Period (Month)	2016		2017		2018		2019	
	ATC (MW)	Network Upgrade Revenues (\$)	ATC (MW)	Network Upgrade Revenues (\$)	ATC (MW)	Network Upgrade Revenues (\$)	ATC (MW)	Network Upgrade Revenues (\$)
January	100	300,992	N/A	N/A	N/A	N/A	N/A	N/A
February	100	300,992	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	\$601,984		\$0		\$0		\$0	
Total For All Years	\$37,559,040							

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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 \$300,992.

Table 11
Generation Re-Dispatching Revenue Requirements

Operating Period (Month)	Generation Re-Dispatching Revenue Requirements					
	2005 (\$)	2006 (\$)	2007 (\$)	2008 (\$)	2009 (\$)	2010 (\$)
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

Table 11 (Continued)**Generation Re-Dispatching Revenue Requirements**

Operating Period (Month)	Generation Re-Dispatching Revenue Requirements					
	2011 (\$)	2012 (\$)	2013 (\$)	2014 (\$)	2015 (\$)	2016 (\$)
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	2004		2005		2006		2007	
(Month)	ATC (MW)	Revenue Requirements (\$)	ATC (MW)	Revenue Requirements (\$)	ATC (MW)	Revenue Requirements (\$)	ATC (MW)	Revenue Requirements (\$)
January	N/A	N/A	N/A	N/A	N/A	N/A	100	300,992
February	N/A	N/A	N/A	N/A	N/A	N/A	100	300,992
March	N/A	N/A	N/A	N/A	100	300,992	100	300,992
April	N/A	N/A	N/A	N/A	100	300,992	100	300,992
May	N/A	N/A	N/A	N/A	100	300,992	100	300,992
June	N/A	N/A	N/A	N/A	100	300,992	100	300,992
July	N/A	N/A	N/A	N/A	100	300,992	100	300,992
August	N/A	N/A	N/A	N/A	100	300,992	100	300,992
September	N/A	N/A	N/A	N/A	100	300,992	100	300,992
October	N/A	N/A	N/A	N/A	100	300,992	100	300,992
November	N/A	N/A	N/A	N/A	100	300,992	100	300,992
December	N/A	N/A	N/A	N/A	100	300,992	100	300,992
Subtotal By Year	\$0		\$0		\$3,009,920		\$3,611,904	

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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	2008		2009		2010		2011	
(Month)	ATC (MW)	Revenue Requirements (\$)						
January	100	300,992	100	300,992	100	300,992	100	300,992
February	100	300,992	100	300,992	100	300,992	100	300,992
March	100	300,992	100	300,992	100	300,992	100	300,992
April	100	300,992	100	300,992	100	300,992	100	300,992
May	100	300,992	100	300,992	100	300,992	100	300,992
June	100	300,992	100	300,992	100	300,992	100	300,992
July	100	300,992	100	300,992	100	300,992	100	300,992
August	100	300,992	100	300,992	100	300,992	100	300,992
September	100	300,992	100	300,992	100	300,992	100	300,992
October	100	1,740,992	100	300,992	100	300,992	100	300,992
November	100	300,992	100	300,992	100	300,992	100	300,992
December	100	300,992	100	300,992	100	300,992	100	300,992
Subtotal By Year		\$5,051,904		\$3,611,904		\$3,611,904		\$3,611,904

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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	2012		2013		2014		2015	
(Month)	ATC (MW)	Revenue Requirements (\$)						
January	100	300,992	100	300,992	100	300,992	100	300,992
February	100	300,992	100	300,992	100	300,992	100	300,992
March	100	300,992	100	300,992	100	300,992	100	300,992
April	100	300,992	100	300,992	100	300,992	100	300,992
May	100	300,992	100	300,992	100	300,992	100	300,992
June	100	300,992	100	300,992	100	300,992	100	300,992
July	100	300,992	100	300,992	100	300,992	100	300,992
August	100	300,992	100	300,992	100	300,992	100	300,992
September	100	300,992	100	300,992	100	300,992	100	300,992
October	100	300,992	100	300,992	100	300,992	100	300,992
November	100	300,992	100	300,992	100	300,992	100	300,992
December	100	300,992	100	300,992	100	300,992	100	300,992
Subtotal By Year	\$3,611,904		\$3,611,904		\$3,611,904		\$3,611,904	

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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	2016		2017		2018		2019	
(Month)	ATC (MW)	Revenue Requirements (\$)	ATC (MW)	Revenue Requirements (\$)	ATC (MW)	Revenue Requirements (\$)	ATC (MW)	Revenue Requirements (\$)
January	100	300,992	N/A	N/A	N/A	N/A	N/A	N/A
February	100	300,992	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	\$601,984		\$0		\$0		\$0	
Total For All Years	\$37,559,040							

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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**

Calendar Period (Year)	Maximum ATC (MW)	Average Of Allocated Monthly Peak ATC (MW)	Total Revenue Requirements (\$)	Average Transmission Service Cost (1) (2) (\$/MW-Month)
2003	0	0	0	0
2004	0	0	0	0
2005	0	0	0	0
2006	100	100.00	3,009,920	3,009.92
2007	100	100.00	3,611,904	3,009.92
2008	100	100.00	5,051,904	4,209.92
2009	100	100.00	3,611,904	3,009.92
2010	100	100.00	3,611,904	3,009.92
2011	100	100.00	3,611,904	3,009.92
2012	100	100.00	3,611,904	3,009.92
2013	100	100.00	3,611,904	3,009.92
2014	100	100.00	3,611,904	3,009.92
2015	100	100.00	3,611,904	3,009.92
2016	100	100.00	601,984	3,009.92
Total	100	100	\$37,559,040	\$3,129.92

Note: Values of ATC are based on items received by September 1, 2003 including 1) a signed Service Agreement and letter of credit received by the Transmission Provider, and 2) 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
Annual Letter Of Credit Requirements

Start Date (M/D/Y)	Annual Amount (\$)
3/1/2006	23,480,856.00
3/1/2007	21,132,770.40
3/1/2008	18,784,684.80
3/1/2009	16,436,599.20
3/1/2010	14,088,513.60
3/1/2011	11,740,428.00
3/1/2012	9,392,342.40
3/1/2013	7,044,256.80
3/1/2014	4,696,171.20
3/1/2015	2,348,085.60

**Table 15
Identified Third-Party Facilities**

Modeled Control Areas	Identified Third-Party Facilities & Owners
SWPA - SPRM	BROOKLINE - SPRINGFIELD 161KV line, 52692 SPRGFLD5 161 to 59969 BRKLN5 161 CKT 1, owned by AECl (Impact Removed by Selected Upgrades to be Assigned to Customer's Previous Contiguous Request, SPP-2001-244).
ENTR - SWPA	JONES - JONESBORO 161KV line, 99755 5JONES 161 to 52618 JONESBO5 161 CKT 1, owned by Entergy (Impact Removed by Selected Upgrades to be Assigned to Customer's Previous Contiguous Request (SPP-2001-244) and Transfer Impact Less than 3%).
AEPW - AEPW	JACKSONVILLE (SWE-RC-ETEC) - OVERTON 138KV line, 53549 JACKSNV4 138 to 53588 OVERTON4 138 CKT 1, owned by Rayburn Country Electric Co-op (Contingency Solution Blown Up in 09SP only, Contingency Converged by putting 120 MW at Tenaska Frontier)
AECI - AECI	96079 5FREDTN 161 to 97267 2MARQUA 69 CKT 1
AECI - AECI	96089 5JAMESV 161 to 96673 2JAMESV 69 CKT 1
AECI - AECI	96108 5OSCEOL 161 to 96071 5CLINTN 161 CKT 1
AECI - AECI	96654 2MILO 69 to 96802 2CLARK 69 CKT 1
AECI - AECI	96692 2CLINTN 69 to 96701 2GAINES 69 CKT 1
AECI - AECI	96701 2GAINES 69 to 96810 2MTZION 69 CKT 1
AEPW - CELE	53461 WALLAKE4 138 to 50090 IPAPER 4 138 CKT 1 (Dolet Hills Operating Guide Applied)
CELE - CELE	50179 SHOAKS 4 138 to 50154 PINEV 4 138 CKT 1
CELE - ENTR	50024 CARROLL4 138 to 99167 3RINGLD 115 CKT 1
CELE - ENTR	50057 FISHER 4 138 to 99115 3FISHER 115 CKT 1
ENTR - CELE	99115 3FISHER 115 to 50057 FISHER 4 138 CKT 1
ENTR - ENTR	97454 4WALDEN 138 to 97469 4APRIL 138 CKT 1
ENTR - ENTR	97454 4WALDEN 138 to 97514 4GRIMES 138 CKT 1
ENTR - ENTR	97469 4APRIL 138 to 97470 4LFOREST 138 CKT 1
ENTR - ENTR	97470 4LFOREST 138 to 97539 4WDHAVN 138 CKT 1
ENTR - ENTR	97480 L558T485 138 to 97484 4HUNTSVL 138 CKT 1
ENTR - ENTR	97487 4MT.ZION 138 to 97480 L558T485 138 CKT 1
ENTR - ENTR	97513 7GRIMES 345 to 97514 4GRIMES 138 CKT 1
ENTR - ENTR	97513 7GRIMES 345 to 97514 4GRIMES 138 CKT 2
ENTR - ENTR	97514 4GRIMES 138 to 97454 4WALDEN 138 CKT 1
ENTR - ENTR	97514 4GRIMES 138 to 97487 4MT.ZION 138 CKT 1
ENTR - ENTR	97522 4TUBULAR 138 to 97453 4DOBBIN 138 CKT 1
ENTR - ENTR	97539 4WDHAVN 138 to 97459 4CONROE 138 CKT 1
ENTR - ENTR	98905 6NORTHSD 230 to 98918 6RX BRN 230 CKT 1
ENTR - ENTR	98905 6NORTHSD 230 to 98931 6R.BRAS 230 CKT 1
ENTR - ENTR	98930 8R.BRAS 500 to 98931 6R.BRAS 230 CKT 1
ENTR - ENTR	98930 8R.BRAS 500 to 98932 3R.BRAS 115 CKT 1
ENTR - ENTR	98931 6R.BRAS 230 to 98905 6NORTHSD 230 CKT 1
ENTR - ENTR	99167 3RINGLD 115 to 99168 3SAILES 115 CKT 1 (See comments in SIS)
ENTR - ENTR	99197 8P HILL 500 to 99196 5P HILL 161 CKT 1
ENTR - ENTR	99387 3MURF-S 115 to 99389 4MURFRE 138 CKT 1 (See comments in SIS)
ENTR - ENTR	99389 4MURFRE 138 to 99387 3MURF-S 115 CKT 1

Note: Owner is included if it is known and different from the modeled control area.

Table 16
Summary Of Transmission Service Costs

Cost Components & Descriptions	Units	
Start Date	(M/D/Y)	March 1, 2006
End Date	(M/D/Y)	March 1, 2016
Term	(Years)	10.00
Maximum Allocated Capacity	(MW)	100
Average Of Allocated Monthly Peak Capacity Over Term	(MW)	100.00
Pricing Methodology	(And/Or)	Or
Base Rate Estimate		
Total Revenue Requirements	(\$)	15,382,560
Average Rate Over Term	(\$/MW-Month)	1,281.88
Network Upgrade Estimate		
Total Assigned Eng. & Const.	(\$)	24,920,856
Expedited Eng. & Const.	(\$)	0
Total Levelized Cost	(\$)	37,559,040
Average Rate Over Term	(\$/MW-Month)	3,129.92
Average Indirect Cost Multiplier (Based On Assigned Eng. & Const.).	(Per-Unit)	1.5071
Network Upgrades Requiring Pre-Payment (Included In Assigned Eng. & Const)	(\$)	1,440,000
Expedited Network Upgrades Requiring Pre-Payment & Refund (Included In Expedited Eng. & Const)	(\$)	0
Generation Re-Dispatching Estimate As Required For Construction Only		
Total	(\$)	0
Average Rate Over Term	(\$/MW-Month)	0.00
Note: All Re-Dispatch Costs Require Pre-Payment		
Network Upgrade & Generation Re-Dispatching		
Total	(\$)	37,559,040
Average Rate Over Term	(\$/MW-Month)	3,129.92
Total Transmission Service		
Total Estimate Of Allocable Costs	(\$)	37,559,040
Average Rate Over Term	(\$/MW-Month)	3,129.92