



SPP *Southwest
Power Pool*

*System Facilities Study
For Transmission Service*

*Requested By
Constellation Power Source, Inc.*

*From Central And South West Services
To Ameren*

*For The Reserved Amount Of 150MW
From December 1, 2002
To December 1, 2004*

*SPP Transmission Planning
(#SPP-2000-044)*

Created December 6, 2000

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**Southwest Power Pool
Transmission Service Requests #194668, 194669
SPP System Facilities Study SPP-2000-044**

Executive Summary

At the request of the Constellation Power Source, Inc. (CPS), the Southwest Power Pool developed this Facility Study for the purpose of evaluating the financial characteristics of Transmission Service Requests 194668, 194669. The requests total 150MW of firm transmission service from CSWS control area to Ameren. The requested Point-To-Point Service is from December 1, 2002 to December 1, 2004.

The projected base revenues for the requested transmission service are \$2,070,000 throughout the entire reservation period based on the available transfer capability of the existing transmission system with Network Upgrades. The maximum monthly base rate revenue requirements are \$103,500. However, CPS as the Transmission Customer is required to pay the higher of either the base revenues or the costs associated with the Network Upgrades.

The estimated revenue requirements for providing the necessary Network Upgrades to accommodate the transmission service request are \$5,713,888. The monthly upgrade revenue requirements are \$238,079. As the estimated revenue requirements for Network Upgrades are higher than the estimated base rate revenues, CPS shall pay the revenue requirements for the Network Upgrades.

The customer is responsible for upgrading the Rayburn Country Electric Cooperative (RCEC), Jacksonville to Overton 138 kV, facility that is a third-party line. Presently existing long-term customers have reserved the Ameren interface capability. The interface will need to be expanded by Constellation in the event these existing customers renew their service.

An irrevocable letter of credit is required in the amount of \$5,228,326 for the initial engineering and construction costs to be incurred by the transmission owners. 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 the requested 150MW.

Introduction

Constellation Power Source, Inc. previously requested an Impact Study for Transmission Service from Central & South West Services (CSWS) to Ameren (AMRN). Based on the results of the completed Impact Study constraints were identified that will limit the transfer capability of the existing transmission system to levels below those requested.

The principal objective of this Facility 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.

The staff of SPP completed System Impact Study SPP-2000-044 that identified system limitations and required modifications to the SPP system necessary to provide the requested Transmission Service. The Network Facility Upgrades assigned to previous transmission customers that limit the requested 150MW transmission service are listed in Tables 1, 1A, 1B, and 1C. These Network Facility Upgrades are required to be in service to provide the requested transmission service. The in service dates of these previously assigned Network Facility Upgrades will limit and delay the requested transmission service. Any ATC values specified in Tables 1 thru 1C apply to the 150MW transmission request. The Network Facility Upgrades that have been assigned to the previous CPS CSWS to EES 250MW transmission request are listed in Table 1C.

The Network Upgrades, in addition to the facilities listed in Table 1 thru 1C, required to provide the requested transmission service are listed in Table 2. CPS is responsible for the costs associated with

the Network Upgrades found in Table 2. Network Upgrades will be required on the CSWS, Oklahoma Gas & Electric (OKGE), and Western Farmer Electric Cooperative (WFEC) transmission systems. These Network Upgrades listed in Table 2 include reconductoring two 69kV transmission lines, and replacing two sets of jumpers, two sets of switches, and two buses. The estimated total cost to engineer and construct these upgrades in year 2000 dollars is \$5,160,447.

The Ameren interface is currently limited to 1287 MW on a firm basis. Long-term customers have reserved the entire interface amount for 2001 some for additional years. These existing customers have a reservation priority as defined in Section 2.2 of the Tariff. Constellation is responsible for increase this interface capability in the event the renewals limit the interface to less the 150 MW needed.

All Network Upgrades assigned to previous transmission requests were monitored to determine whether the previously assigned upgrades are adequate to support additional transmission requests. Two previously assigned facilities were identified as needing additional upgrades due to the additional impact of the requested transmission service. The network facilities that require additional upgrades due to the 150MW transfer are listed in Table 2A. The Cherokee REC to Knox Lee line requires the replacement of 1200Amp Switches at Cherokee Tap and Knox Lee for the 2004 Summer. The Rock Hill to Tatum line requires the replacement of jumpers for the 2004 Summer. The additional cost associated with the two facilities needing additional upgrades is \$67,879, bringing the total estimated Engineering and Construction costs to \$5,228,326.

In addition, all facilities identified as limiting the requested transmission service for the 2004 Summer Peak were studied further to determine the required in service date of the Network Upgrade. The year that each facility is required was determined by interpolating between the 2004 Summer Peak loading and 2001 Summer Peak loading. Both the previously assigned facilities and the facilities assigned to the requested transmission service were evaluated. One facility assigned to the previous CPS transmission request needs an accelerated in service date and is listed in Table 3. The Raines to Noram 138kV line reconductor, found in Table 1C and required to be in service by 6/1/04, is required to be in service by 6/1/03 due to the 150MW Impact. The estimated engineering and construction cost responsibility of

the 150MW request remains unchanged due to the earlier in service date of the Network Facility Upgrades.

The Rayburn Country Electric Cooperative (RCEC), Jacksonville to Overton 138 kV, facility has been identified as needing to be reconducted at an estimated engineering and construction cost of \$2,220,000 with an 18-month lead time. The facility was identified as a 2003 Summer Peak constraint for the previous CPS 250MW transmission service by interpolation. This facility is a third-party facility and the transmission customer is responsible for obtaining arrangements for construction upgrades on the facility per Section 21.1 of the SPP OATT. If requested, SPP is willing to undertake reasonable efforts to assist the transmission customer in making arrangements for necessary engineering, permitting, and construction of the transmission limiting facility.

Some facilities identified in the Impact Study are not included in this Facility Study as the Transmission Owners and SPP defined them as not required due to various reasons. As stated in the previous Constellation Facility Study SPP-2000-043, the CSWS South Shreveport to Wallace Lake 138kV line and the Wallace Lake to International Paper 138kV line overloads fall under the Dolet Hills Operating Guide. The CSWS Patterson to South Nashville 138kV line was excluded due to incorrect rating of the line. The line was monitored with the revised rating. The loading on the Patterson to South Nashville 138kV line for the Longwood to El Dorado 345kV outage did not exceed the revised emergency rating due to the impact of the 150MW transfer. The Patterson to South Nashville 138kV line will be monitored with the revised rating for additional transmission requests. The Hope to Patmos 138kV line and North Marshall to Woodlawn 69kV line upgrades were assigned to reservation 171555 and can be found in [Table 1B](#). The SWPA and EES Bull Shoals to Midway 161kV line is considered an Entergy Limit. The CSWS Blocker Tap to Rosborough 69kV line is already scheduled to have 600Amp switches replaced by June 2001. The CSWS Pirkey to Sabine Mining Co. 138kV line and South Nashville to Murfreesboro 138kV line were excluded due to incorrect ratings. These lines will be monitored with their revised ratings for additional transmission requests.

Given the estimated dates in which the Network Upgrades are required for requested Transmission Services to be provided, there are facility limits that will delay the start date of the service. The estimated time required to complete the engineering and construction of the first transfer-limiting facility of the summer is Thirty (30) Months after CSWS's receipt of authorization to proceed from SPP. CSWS's IPC Jefferson to Lieberman 138kV transmission line has a Thirty (30) Month construction lead time. The constraint is due to the outage of the Longwood to Wilkes 345kV line during the 2001 summer peak period. The available transfer capability (ATC) during the 2003 Summer peak, from June 1 to October 1, is 0MW due to the available transfer capability being reserved for transmission reservation 221099.

Firm Point-To-Point Transmission Service may be provided to CPS in the amount requested after the IPC Jefferson to Lieberman facility upgrade is in service. If a completed service agreement is received by SPP on or before January 1, 2001, from the transmission customers of reservation 221099 and 171555 then the requested service may be provided on approximately February 1, 2004 given no unexpected delays in design, permitting, and construction.

SPP does not accept and approve requests for firm transmission service without restrictions if the design criteria specified in the corresponding impact study is not met. However, SPP may accept a request if the Transmission Customer agrees to the reduction of allocated capacity to designated levels within specified time frames with no financial discounts. If CPS is agreeable to these terms, then SPP will accept and approve the requested service beginning after 1) a signed service agreement and letter of credit are received by SPP, and 2) all transmission owners' receipt of authorization from SPP to proceed with the Network Upgrades.

Financial Analysis

A present worth analysis is conducted based on each transmission owner's annual fixed charge rates including weighted cost of capital. 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 upgrading facilities, the Transmission Customer shall, throughout the reservation period, 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 facilities based on their respective book values.

The amortization period of Network Upgrades and Direct Assignment facilities shall be the lesser of either 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 carrying charge rate (fixed charge rates in per-unit) for each transmission owner shall be based on the sum of expenses for the previous calendar year, including weighted cost of capital, composite income tax, other tax, administrative & general, operation & maintenance, allocation of general plant, 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 those specified below. The costs allocated to the Transmission Customer over the 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.

1. Amortized engineering and construction costs associated with the new facilities.

2. Annual carrying charges, excluding depreciation, based on the product of 1) total engineering and construction costs associated with the new facilities, and 2) annual carrying 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 lesser of either 1) the respective remaining depreciation periods, or 2) the reservation period.
4. The salvage value credit of non-usable facilities.
5. Annual carrying charge credits, excluding depreciation, based on the product of 1) book values associated with all replaced facilities, and 2) annual carrying charge rate (per-unit).

The zone interfaced to the sink with the lowest rate for firm point-to-point transmission service is Southwestern Power Administration (SPA). The current base rate of SPA is \$690/MW-Month. Table 5 includes a summary of ATC values with all previously assigned and presently assigned Network Upgrades energized by the Dates Available specified in Table 4. Only one facility has an available in service date after the start date of the requested transmission service. Given these values of ATC, corresponding base rate revenues are listed on a monthly basis in Table 6. The projected base revenues from the requested service are estimated to be \$2,070,000.

The estimate of total Revenue Requirements listed in Table 7 for the required Network Upgrades throughout the requested transaction period is \$5,713,888. The estimate of monthly Revenue Requirements is \$238,079 throughout the requested transaction period. The projected base revenues from the requested service are estimated to be less than the estimated Revenue Requirements for the required Network Upgrades over the requested transaction period. Therefore, there will be costs assigned to the Transmission Customer for the Network Upgrades. The total estimated cost, including only Network Upgrade costs, throughout the transaction period is \$5,713,888.

The Southwest Power Pool and the affected transmission owners including CSWS, OKGE, and WFEC shall use due diligence to add necessary facilities or upgrade the Transmission System to provide the requested Transmission Service, provided CPS agrees to compensate SPP for such costs

pursuant to the terms of Section 27 of the SPP Open Access Transmission Tariff. Partial Interim Service is available to CPS per Section 19.7 of the SPP Open Access Transmission Service Tariff.

Engineering and construction of any new facilities or modifications will not start until after a Service Agreement is in place and the affected transmission owners receive the appropriate authorization to proceed from the SPP. In accordance with section 19.4 of the SPP Open Access Transmission Service Tariff, the Transmission Customer shall provide and maintain in effect, during the term of the transmission service agreement, an unconditional and irrevocable letter of credit to the SPP in the amount of no less than \$5,228,326 for the initial engineering and construction costs to be incurred by the transmission owners. 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 System Impact Study SPP-2000-044, 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 service. The previously assigned Network Facility Upgrade costs are assumed accepted by the previous transmission customers. 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 engineering starting when SPP provides the transmission owners approval to start on the projects. No Direct Assignment facilities are included in this study that may be required to complete the requested service. The customer is responsible for upgrading the Rayburn Country Electric Cooperative (RCEC), Jacksonville to Overton 138 kV, facility that is a third-party line and the Ameren interface up to 150 MW in the event existing customers exercise their reservation priority rights as defined in Section 2.2 of the Tariff.

Based on the results of the Impact Study SPP-2000-044, Network Upgrades that were identified as required to provide the requested transmission service are listed in Tables 1, 1A, 1B, 1C, 2 and 2A. Tables 1 thru 1C include the Network Upgrades and Costs assigned to previous transmission customers that are required to accommodate Transmission Service Requests 194668 & 194669 from Central and South West Services to Ameren. Tables 2 and 2A includes the Network Upgrades and Costs assigned to Transmission Service Requests 194668 & 194669 from Central and South West Services to Ameren that are also required to provide the requested service.

Throughout the transaction period of the requested Transmission Service, the estimate of the Revenue Requirements for the required Network Upgrades is \$5,713,888 for Transmission Service Requests 194668 & 194669. A listing of ATC values and monthly revenue requirements for the required Network Upgrades is in Table 7. The base revenues are estimated to be \$2,070,000 and the monthly revenue requirements are listed in Table 6. As the Revenue Requirements for the required Network

Upgrades are higher than base rate revenues, the revenue requirements from the Transmission Customer are those required for the Network Upgrades.

In the event that previously assigned facilities listed Table 1, 1A, 1B, and 1C are not confirmed by the previous transmission customers, the assignment of the Network Facility Upgrade Costs will need to be reevaluated.

Table 1

Estimated Network Upgrade Costs, Lead Times And Required Dates Assigned to Transmission Service Request 221099 from ERCOTE to Entergy during the Period from January 1, 2001 To January 1, 2006 that limit the requested 150MW transfer.

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Jacksonville - Pine Grove 138kV: Reset CTs By CSWS	\$1,000	Four (4) Months	4/1/01	5/1/01
IPC Jefferson - Lieberman 138kV: Replace Jumpers & Wavetrap by CSWS	10,000	Six (6) Months	6/1/01	2/1/02
IPC Jefferson - Lieberman 138kV: Reconductor 26.35 miles To 795MCM by CSWS	6,231,585	Thirty (30) Months * ATC = 0	6/1/01	2/1/04
Cherokee REC - Knox Lee 138kV: Reconductor To 1272MCM by CSWS	720,000	Twelve (12) Months	6/1/01	2/1/02
Waterworks - Arsenal Hill 69kV: Replace Three Sets of Switches by CSWS	60,000	Six (6) Months	6/1/01	2/1/02
East Centerton - Gentry REC 161kV: Replace Breaker & Switches by CSWS	167,960	Twelve (12) Months	6/1/01	2/1/02
Cherokee REC - Tatum 138kV: Reconductor To 1272MCM by CSWS	1,300,000	Eighteen (18) Months	6/1/01	2/1/03
Rock Hill - Tatum 138kV: Reconductor 0.81 miles To 1272MCM & Replace Wavetrap by CSWS	190,000	Twelve (12) Months	6/1/01	2/1/02
Tipton Ford - Monett 161kV: Reconductor To 795MCM by EDE	5,700,000	Eighteen (18) Months	6/1/01	2/1/03

Table 1 (Continued)

Estimated Network Upgrade Costs, Lead Times And Required Dates

Assigned to Transmission Service Request 221099 from ERCOTE to Entergy during the Period from January 1, 2001 To January 1, 2006 that limit the requested 150MW transfer.

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Flournoy - Longwood 138kV: Replace Jumpers by CSWS	10,000	Six (6) Months	6/1/04	6/1/04
Alumax Tap - NW Texarkana 138kV: Replace Switches by CSWS	30,000	Nine (9) Months	12/1/04	12/1/04
SUBTOTAL	\$14,420,545			

Note: * Limits start of requested 150MW transfer amount.

Note: (1) For upgrades of transmission lines and substations, if the Calculated Date Available is 1) between June 1 and September 15, or 2) between September 15 and 4.5 months thereafter, then 4.5 months are added to September 15 as these facilities will not be taken out of service during the summer peaking period for upgrading. Therefore, the projected End Of Construction is February 1 of the next year.

Table 1A
Estimated Network Upgrade Costs, Lead Times And Required Dates
Assigned To The Kansas Municipal Energy Agency For Requests 163951 & 163958
That limit the requested 150MW transfer.

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Dyess - E. Rogers 161kV Line Upgrade To 1590MCM By CSWS	\$4,000,000	Eighteen (18) Months	6/1/01	2/1/03
Flint Creek – Gentry 161kV: Replace Switch By CSWS	60,000	Six (6) Months	6/1/04	6/1/04
SUBTOTAL	\$4,060,000			

Note: (1) For upgrades of transmission lines and substations, if the Calculated Date Available is 1) between June 1 and September 15, or 2) between September 15 and 4.5 months thereafter, then 4.5 months are added to September 15 as these facilities will not be taken out of service during the summer peaking period for upgrading. Therefore, the projected End Of Construction is February 1 of the next year.

Table 1B**Estimated Network Upgrade Costs, Lead Times And Required Dates**

**Assigned to Transmission Service Request 171555 CSWS to Entergy during the
Period from April 1, 2001 To September 30, 2004 that limit the requested 150MW transfer**

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
IPC Jefferson - Lieberman 138kV: Reconductor 0.65 miles To 795MCM & Replace Lieberman Switches by CSWS	\$153,967	Thirty (30) Months * ATC = 0	6/1/01	2/1/04
Rock Hill - Tatum 138kV: Reconductor 5.76 miles To 1272MCM & Reset Rock Hill CTs by CSWS	1,090,000	Eighteen (18) Months	6/1/01	2/1/03
NW Henderson – Poynter 69kV: Replace Jumpers & Bus By CSWS	45,700	Six (6) Months	6/1/01	2/1/02
Elm Springs REC - Flint Creek 161kV: Replace Switches by CSWS	40,000	Nine (9) Months	6/1/01	2/1/02
North Marshall - Woodlawn 69kV: Replace Jumpers by CSWS	10,000	Six (6) Months	6/1/01	2/1/02
Tupelo - Tupelo Tap 138kV: Replace Wavetrap by WFEC	8,700	Eight (8) Months	12/1/01	2/1/02
Northwest Texarkana - Patterson 138kV: Replace Switches & Breaker by CSWS	150,000	Twelve (12) Months	12/1/01	2/1/02
Longwood - Noram 138kV: Reconductor To 1590MCM by CSWS	1,274,374	Fifteen (15) Months	6/1/02	6/1/02

Table 1B(Continued)

Estimated Network Upgrade Costs, Lead Times And Required Dates

**Assigned to Transmission Service Request 171555 CSWS to Entergy during the
Period from April 1, 2001 To September 30, 2004 that limit the requested 150MW transfer**

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Hope - Patmos 115kV: Reconductor To 1272MCM by CSWS	1,576,468	Eighteen (18) Months	6/1/04	6/1/04
Hawkins - Hawkins REC 69kV: Reconductor To 795MCM by CSWS	375,000	Twelve (12) Months	6/1/04	6/1/04
Beaver – Eureka Springs 161kV: Reset Relays & CTs, Replace Metering By SWPA	22,500	Eight (8) Months	6/1/04	6/1/04
Beaver – Eureka Springs 161kV Reconductor To 1590MCM By CSWS	515,000	Twelve (12) Months	6/1/04	6/1/04
SUBTOTAL	\$5,261,709			

Note: * Limits start of requested 150MW transfer amount.

Note: (1) For upgrades of transmission lines and substations, if the Calculated Date Available is 1) between June 1 and September 15, or 2) between September 15 and 4.5 months thereafter, then 4.5 months are added to September 15 as these facilities will not be taken out of service during the summer peaking period for upgrading. Therefore, the projected End Of Construction is February 1 of the next year.

Table 1C
Estimated Network Upgrade Costs, Lead Times And Required Dates
Assigned to CPS' Transmission Service Requests 194656 & 194657 CSWS To Entergy
During The Period From December 1, 2002 To December 1, 2004
That limit the requested 150MW transfer

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Forbing Tap - South Shreveport 69kV: Replace Jumpers By CSWS	\$12,000	Six (6) Months	6/1/03	6/1/03
Raines - Noram 138kV: Reconductor To 1595MCM by CSWS	1,447,081	Eighteen (18) Months	6/1/04	6/1/04
Diamond Jct. - Sarcoxie SW 69kV: Reconductor To 336.4MCM by EDE	700,000	Twelve (12) Months	6/1/04	6/1/04
SUBTOTAL	\$2,159,081			

Note: (1) For upgrades of transmission lines and substations, if the Calculated Date Available is 1) between June 1 and September 15, or 2) between September 15 and 4.5 months thereafter, then 4.5 months are added to September 15 as these facilities will not be taken out of service during the summer peaking period for upgrading. Therefore, the projected End Of Construction is February 1 of the next year.

Table 2
Estimated Network Upgrade Costs, Lead Times And Required Dates
For Transmission Service Requests 194668 & 194669
From Central and South West Services To Ameren
During The Period From December 1, 2002 To December 1, 2004

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Ellerbe Road – Forbing Tap 69kV: Replace Bus & Jumpers by CSWS	\$28,723	Six (6) Months	6/1/04	6/1/04
Hallsville – Longview Heights 69kV: Reconductor To 795MCM by CSWS	1,626,291	Eighteen (18) Months	6/1/04	6/1/04
Sabine Mining Co. – SE Marshall 138kV: Replace Switches by CSWS	194,505	Twelve (12) Months	6/1/03	6/1/03
Marshall – North Marshall 69kV: Replace Bus & Jumpers by CSWS	23,356	Nine (9) Months	6/1/03	6/1/03
Chilocco Tap – Chikaskia 69kV: Reconductor 12 Miles To 477MCM By OKGE	2,017,492	Eighteen (18) Months	6/1/04	6/1/04
Chilocco Tap – Chikaskia 69kV: Reconductor 7.56 Miles To 477MCM By WFEC	1,270,080	Eighteen (18) Months	6/1/04	6/1/04
SUBTOTAL	\$5,160,447			

Note: (1) For upgrades of transmission lines and substations, if the Calculated Date Available is 1) between June 1 and September 15, or 2) between September 15 and 4.5 months thereafter, then 4.5 months are added to September 15 as these facilities will not be taken out of service during the summer peaking period for upgrading. Therefore, the projected End Of Construction is February 1 of the next year.

Table 2A
Estimated Network Upgrade Costs, Lead Times And Required Dates
For Facilities assigned to previous Transmission Requests requiring
Additional Facility Upgrades For Transmission Service Requests 194668 & 194669

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Cherokee – Knox Lee 138kV: Replace Switches by CSWS	\$55,879	Nine (9) Months	6/1/04	6/1/04
Rock Hill – Tatum 138kV: Replace Jumpers to Breaker by CSWS	12,000	Six (6) Months	6/1/04	6/1/04
SUBTOTAL	\$67,879			

Note: (1) For upgrades of transmission lines and substations, if the Calculated Date Available is 1) between June 1 and September 15, or 2) between September 15 and 4.5 months thereafter, then 4.5 months are added to September 15 as these facilities will not be taken out of service during the summer peaking period for upgrading. Therefore, the projected End Of Construction is February 1 of the next year.

Table 3
Network Facility Upgrades Assigned To Previous Transmission Customers
Requiring An Earlier In Service Date Due To The 150MW Transfer

NETWORK SYSTEM IMPROVEMENT	ENGINEERING & CONSTRUCTION COSTS (\$ 2000)	ENGINEERING & CONSTRUCTION LEAD TIME	REQUIRED DATE (M/D/Y)	DATE IN SERVICE (M/D/Y) (1)
Raines - Noram 138kV: Reconductor To 1595MCM by CSWS	1,447,081	Eighteen (18) Months	6/1/03	6/1/03
SUBTOTAL	\$1,447,081			

Table 4
Network Elements That Limit Requested Transfer Amount
To Less Than 150MW Due To Delays In Engineering and Construction

Network System Improvement	Date Available (M/D/Y)	Prior ATC (MW)	ATC Models	Restricted Seasons/Years (M/D - M/D) (Years)
221099 & 171555 / IPC Jefferson - Lieberman 138kV: Reconductor 27.0 miles To 795MCM by CSWS	2/1/04	0	01SP,04SP	6/1 - 10/1 2003

Note: Date Available is based on items received by January 1, 2001 including 1) a signed service agreement and letter of credit received by SPP, and 2) authorization to proceed with engineering and construction received by Transmission Owners from SPP.

ATC Models

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

01SP: 6/1/01 – 10/1/01, Summer Peak

04SP: 6/1/04 – 10/1/04, Summer Peak

Table 5
Summary Of Available Transfer Capability With All Network Upgrades
Including Facilities Assigned To Previous Reservations
For Transmission Service Requests 194668, 194669
From Central And South West Services To Entergy
During The Period From December 1, 2002 Through December 1, 2004

Operating Period (Year)	Operating Period (M/D - M/D)	ATC (MW)
2002 - 2003	12/1 – 6/1	150
2003	6/1 – 10/1	0
2003	10/1 – 12/31	150
2004	1/1 – 12/1	150

Note: Values of ATC are based on items received by January 1, 2001 including 1) a signed service agreement and letter of credit received by SPP, and 2) authorization to proceed with engineering and construction received by Transmission Owners from SPP.

Table 6
Summary Of Available Transfer Capability With All Network Upgrades
And Base Rate Revenues Excluding Cost Of Network Upgrades
For Transmission Service Requests 194668, 194669
From Central And South West Services To Ameren
During The Period From December 1, 2002 Through December 1, 2004

Operating Period (Month)	2002 ATC (MW)	2002 Base Revenues (\$)	2003 ATC (MW)	2003 Base Revenues (\$)	2004 ATC (MW)	2004 Base Revenues (\$)
January	N/A	N/A	150	\$103,500	150	\$103,500
February	N/A	N/A	150	\$103,500	150	\$103,500
March	N/A	N/A	150	\$103,500	150	\$103,500
April	N/A	N/A	150	\$103,500	150	\$103,500
May	N/A	N/A	150	\$103,500	150	\$103,500
June	N/A	N/A	0	\$0	150	\$103,500
July	N/A	N/A	0	\$0	150	\$103,500
August	N/A	N/A	0	\$0	150	\$103,500
September	N/A	N/A	0	\$0	150	\$103,500
October	N/A	N/A	150	\$103,500	150	\$103,500
November	N/A	N/A	150	\$103,500	150	\$103,500
December	150	\$103,500	150	\$103,500	N/A	N/A
Subtotal		\$103,500		\$828,000		\$1,138,500
Total, All Years						\$2,070,000

Note: Values of ATC are based on items received by January 1, 2001 including 1) a signed service agreement and letter of credit received by SPP, and 2) authorization to proceed with engineering and construction received by Transmission Owners from SPP.

Table 7
Summary Of Available Transfer Capability With All Network Upgrades
And Network Upgrade Revenues, The Total Revenue Requirements,
For All Facilities Assigned To Transmission Service Requests 194668, 194669
From Central And South West Services To Ameren
During The Period From December 1, 2002 Through December 1, 2004

Operating Period (Month)	2002 ATC (MW)	2002 Network Upgrade Revenues (\$)	2003 ATC (MW)	2003 Network Upgrade Revenues (\$)	2004 ATC (MW)	2004 Network Upgrade Revenues (\$)
January	N/A	N/A	150	\$238,079	150	\$238,079
February	N/A	N/A	150	\$238,079	150	\$238,079
March	N/A	N/A	150	\$238,079	150	\$238,079
April	N/A	N/A	150	\$238,079	150	\$238,079
May	N/A	N/A	150	\$238,079	150	\$238,079
June	N/A	N/A	0	\$238,079	150	\$238,079
July	N/A	N/A	0	\$238,079	150	\$238,079
August	N/A	N/A	0	\$238,079	150	\$238,079
September	N/A	N/A	0	\$238,079	150	\$238,079
October	N/A	N/A	150	\$238,079	150	\$238,079
November	N/A	N/A	150	\$238,079	150	\$238,071
December	150	\$238,079	150	\$238,079	N/A	N/A
Subtotal		\$238,079		\$2,856,948		\$2,618,878
Total, All Years						\$5,713,888

Note: Values of ATC are based on items received by January 1, 2001 including 1) a signed service agreement and letter of credit received by SPP, and 2) authorization to proceed with engineering and construction received by Transmission Owners from SPP.