SPP Southwest Power Pool

System Impact Study for Transmission Service Request from Western Resources to Ameren 1/1/01 - 1/1/02 #188155

SPP Transmission Planning

SPP IMPACT STUDY (#SPP-2000-033)
July 28, 2000

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1. Executive Summary

Western Resources Generation Services has requested a system impact study for long-term Firm Point-to-Point transmission service from Western Resources to Ameren. The period of the transaction is from 1/1/01 to 1/1/02. The request is for one reservation (#188155), totaling 50 MW.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the additional 50 MW transfer while maintaining system reliability. The analysis in this document shows that to accommodate an additional 50 MW transfer, additional capacity will be needed on the SPP to AMRN interface and the SPP Regional Tariff System.

The SPP to AMRN interface will need 50 MW of capacity through either transmission system upgrades (not determined in this study), possible withdrawal of existing reserved capacity, or existing customers not exercising right of first refusal. Tables 1-4 included in the report contain all higher priority reservations over the SPP to AMRN interface for 2001.

Upgrades on the SPP transmission systems will be required. Table 6 is a summary of the valid overloads further impacted by the 50MW transfer that have been previously assigned to higher priority reservations. The limitation of the transfer due to these overloaded facilities and assignment of the specified upgrades to request #188155 depends on the existence of future transmission service agreements.

The SPP and effected member companies shall use due diligence to coordinate the addition of necessary facilities or transmission system upgrades to provide the requested transmission service. Western Resources Generation Services is to compensate SPP for such costs pursuant to the terms of section 27 of the SPP Open Access Transmission Tariff. Expedited procedures for new facilities are available to Western Resources Generation Services per section 19.8 of the SPP Open Access Transmission Service Tariff.

Engineering and construction of any new facilities or modifications will not start until after a transmission service agreement and/or construction agreement is in place, and the effected member companies receive the appropriate authorization to proceed from the SPP after SPP receives authorization from the transmission customer.

2. Introduction

Western Resources Generation Services has requested an impact study for transmission service from WR control area with a sink of AEP.

The principal objective of this study is to identify the restraints on the SPP Regional Tariff System that may limit the transfer to less than 50 MW. This study includes two steady-state contingency analyses (PSS/E function ACCC), Available Transfer Capability (ATC) analyses, and the determination of available capacity over the SPP to AMRN interface.

The steady-state analyses considers the impact of the 50 MW transfer on transmission line loading and transmission bus voltages for outages of single and selected multiple transmission lines and transformers on the SPP system.

ATC analyses shows the amount of First Contingency Incremental Transfer Capabilities (FCITC) between the given study systems and what the limitations are, if any, for transferring up to 50 MW.

3. Study Methodology

A. Description

This study was done in three different steps. The first step was to study the steady-state analysis impact of the 50 MW transfer on the SPP system, and the second step was to study Available Transfer Capability (ATC). The final step is to ensure that available capacity exists over SPP to AMRN interface.

The steady-state analysis was done to ensure current SPP Criteria and NERC Planning Standards requirements are fulfilled. The Southwest Power Pool (SPP) conforms to the NERC Planning Standards, which provide the strictest requirements, related to thermal overloads with a contingency. It requires that all facilities be within emergency ratings after a contingency. When facilities were identified as being overloaded, the facility owners were asked to review and confirm the validity of the limit. During this review, the transmission owners would use available mitigation plans.

The ATC study portion was done using the requirements specified in the current SPP Criteria related to determination of ATC.

All confirmed and non-confirmed long-term SPP transmission requests with a POD of AMRN were included in finding the available capacity over the SPP to AMRN interface. The transactions included are confirmed long-term requests, long-term requests with right of renewal, and all long-term requests currently being studied. All of these long-term requests have a higher priority to the available capacity over the interface. Capacity is reserved for possible renewal of exiting firm service reservations per section 2.2 of the SPP Open Access Transmission Tariff.

B. Model Updates

SPP base case models were modified to reflect the most current modeling information. SPP built six models for each season representative of the system with and without the requested 50 MW transfer. Cases for year 2000/01 Winter Peak, 2001 April Minimum, 2001 Spring Peak, 2001 Summer Peak, 2001 Fall Peak, and 2001/02 Winter Peak were included. These cases were modified to reflect future firm transfers not already included in the January 2000 base case series.

C. Transfer Analysis

Using the created models and the ACCC function of PSS\E, single and select double contingency outages were analyzed. Then full AC solution was used to obtain the most accurate results possible. Any facility overloaded, using MVA ratings, in the transfer case and not overloaded in the base case was flagged. The PSS/E options chosen to conduct the Impact Study analysis can be found in Appendix A.

4. Study Results

A. SPP to AMRN Interface

The SPP to AMRN interface is contract path limited to 1,287 MW. SPP currently has 1,458 MW of higher priority yearly firm reservations over the AMRN interface for June 2001 (Table 4).

The confirmed yearly reservations over the interface total 958 MW for June (Table 1). The additional 500MW of higher priority reservations for June are dependent on the possible renewal of existing firm service (Table 2) and the outcomes of requests currently in study mode by SPP (Table 3).

SPP is reserving 200 MW for the possible renewal of the present WRGS Yearly Firm reservations (#144552,144554,155346,155348) per section 2.2 of the SPP Open Access Transmission Tariff. Tenaska Power Service Co. has 100 MW of requests in the study mode, and SPP's acceptance of theses requests depends on a Federal Energy Regulatory Commission ruling. The other outstanding 200 MW is currently being studied by SPP, which includes a WRGS 100 MW reservation (#168969,168970) and a SPSM 100MW reservation (#187568,187569). Table 4 contains a summation of all higher priority SPP reservations with a POD of AMRN for 2001. The current available capacity over the interface for January thru May is 29MW. The remaining months show the available capacity to be well below zero.

B. Study Analysis Results

Tables 4, 5, and 6 contain the analysis results of the System Impact Study. The tables identify the seasonal case in which the event occurred; the emergency rating of the overloaded circuit (Rate B), the loading percentage of circuit, the determined ATC value, any SPP identification or assignment of the event, and the solutions received from the transmission owners.

Table 4 shows that the transfer analysis found no new overload events. No new valid overloads can be directly assigned to the WR to AMRN 50MW transfer.

Table 5 contains overloads caused initially by higher priority reservations and are further overloaded by the addition of the 50MW transfer. Possible assignment of the overloads to Request #188155 depends on the future acceptance of Facility upgrade costs by Transmission Customers of higher priority reservations and will be determined in the completion of a Facility Study. The estimated engineering and construction cost of the overloads has been determined to be $4,000,000 to reconductor the CSWS Dyess to East Rogers 161kV line and $285,000 to repole the WR Exide Junction to Summit 115kV line. The assignment of these upgrade costs to Request #188155 will be determined by the existence of future service agreements and the completion of present facility studies.

Table 6 documents overloads excused by SPP Regional Tariff participants due to the existence of Operating Directives. The overloads with zero ATC were caused initially by a WR to AMRN 100MW transfer (Request #168969 & 168970 and Impact Study SPP-

2000-010). The circuits are further overloaded by the addition of the 50MW transfer. Overloads with nonzero ATC values are directly caused by the addition of the 50MW transfer.

Table 1 – SPP Confirmed Long-term Reservations with POD of AMRN for 2001

Study	Request	Type	Status	From	To	Oasis	POR	POD	Amnt	Customer	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
	171	Yearly Firm	CONFIRMED	5/1/83	1/1/14	KCPL	KACY	AMRN	20	KCPL	20	20	20	20	20	20	20	20	20	20	20	20
	109012	Yearly Firm	CONFIRMED	6/1/99	6/1/02	SPA	SPA	AMRN	11	SPA	11	11	11	11	11	11	11	11	11	11	11	11
	109080	Yearly Firm	CONFIRMED	6/1/99	6/1/03	SPA	SPA	AMRN	125	SPA	125	125	125	125	125	125	125	125	125	125	125	125
	109431	Yearly Firm	CONFIRMED	4/1/99	4/1/04	KCPL	KCPL	AMRN	200	KCPS	200	200	200	200	200	200	200	200	200	200	200	200
1999-010	119194	YEARLY FIRM	CONFIRMED	1/1/01	1/1/11	SWPP	SPS	AMRN	50	SPSM	0	0	0	0	0	50	50	50	50	50	50	50
1999-010	119196	YEARLY FIRM	CONFIRMED	1/1/01	1/1/11	SWPP	SPS	AMRN	50	SPSM	0	0	0	0	0	50	50	50	50	50	50	50
1999-010	119197	YEARLY FIRM	CONFIRMED	1/1/01	1/1/11	SWPP	SPS	AMRN	50	SPSM	0	0	0	0	0	50	50	50	50	50	50	50
1999-010	119198	YEARLY FIRM	CONFIRMED	1/1/01	1/1/11	SWPP	SPS	AMRN	50	SPSM	0	0	0	0	0	50	50	50	50	50	50	50
1999-013	121377	YEARLY FIRM	CONFIRMED	1/1/01	1/1/02	SWPP	CSWS	AMRN	400	PECO	400	400	400	400	400	400	400	400	400	400	400	400
1999-016	133602	YEARLY FIRM	CONFIRMED	1/1/02	1/1/05	SWPP	SPS	AMRN	50	SPSM												
1999-016	133608	YEARLY FIRM	CONFIRMED	1/1/02	1/1/05	SWPP	SPS	AMRN	50	SPSM												
	155346	YEARLY FIRM	CONFIRMED	5/1/00	5/1/01	SWPP	WR	AMRN	50	WRGS	50	50	50	50								
	155348	YEARLY FIRM	CONFIRMED	5/1/00	5/1/01	SWPP	WR	AMRN	50	WRGS	50	50	50	50								
	185958	YEARLY FIRM	CONFIRMED	9/1/00	6/1/02	SWPP	SPA	AMRN	2	SPA	2	2	2	2	2	2	2	2	2	2	2	2
										Total Confirmed	**858**	**858**	**858**	**858**	**758**	**958**	**958**	**958**	**958**	**958**	**958**	**958**

Table 2 – SPP Long-term Reservations with the right to renew service for 2001 per section 2.2 of Tariff

Study	Request	Type	Status	From	To	Oasis	POR	POD	Amnt	Customer	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
	144552	YEARLY FIRM	CONFIRMED	1/1/00	1/1/01	SWPP	WR	AMRN	50	WRGS	50	50	50	50	50	50	50	50	50	50	50	50
	144554	YEARLY FIRM	CONFIRMED	1/1/00	1/1/01	SWPP	WR	AMRN	50	WRGS	50	50	50	50	50	50	50	50	50	50	50	50
	155346	YEARLY FIRM	CONFIRMED	5/1/00	5/1/01	SWPP	WR	AMRN	50	WRGS					50	50	50	50	50	50	50	50
	155348	YEARLY FIRM	CONFIRMED	5/1/00	5/1/01	SWPP	WR	AMRN	50	WRGS					50	50	50	50	50	50	50	50
										Total Right of First Refusal	**100**	**100**	**100**	**100**	**200**	**200**	**200**	**200**	**200**	**200**	**200**	**200**

Table 3 – SPP Long-term Reservations being studied during 2001

Study	Request	Type	Status	From	To	Oasis	POR	POD	Amnt	Customer	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
	158863	YEARLY FIRM	STUDY	1/1/01	1/1/02	SWPP	ERCOTE	AMRN	50	TNSK	50	50	50	50	50	50	50	50	50	50	50	50
	158864	YEARLY FIRM	STUDY	1/1/01	1/1/02	SWPP	ERCOTE	AMRN	50	TNSK	50	50	50	50	50	50	50	50	50	50	50	50
	158865	YEARLY FIRM	STUDY	1/1/02	1/1/03	SWPP	ERCOTE	AMRN	50	TNSK												
	158866	YEARLY FIRM	STUDY	1/1/02	1/1/03	SWPP	ERCOTE	AMRN	50	TNSK												
	158867	YEARLY FIRM	STUDY	1/1/03	1/1/04	SWPP	ERCOTE	AMRN	50	TNSK												
	158868	YEARLY FIRM	STUDY	1/1/03	1/1/04	SWPP	ERCOTE	AMRN	50	TNSK												
2000-010	168969	YEARLY FIRM	STUDY	1/1/01	1/1/02	SWPP	WR	AMRN	50	WRGS	50	50	50	50	50	50	50	50	50	50	50	50
2000-010	168970	YEARLY FIRM	STUDY	1/1/01	1/1/02	SWPP	WR	AMRN	50	WRGS	50	50	50	50	50	50	50	50	50	50	50	50
	187568	YEARLY FIRM	STUDY	1/1/01	1/1/02	SWPP	SPS	AMRN	50	SPSM	50	50	50	50	50	50	50	50	50	50	50	50
	187569	YEARLY FIRM	STUDY	1/1/01	1/1/02	SWPP	SPS	AMRN	50	SPSM	50	50	50	50	50	50	50	50	50	50	50	50
								Total Being Studied			**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**	**300**

Table 4 – Summation of Long-term Reservations with POD of AMRN for 2001 and available interface capacity

Reservation Status	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	
Confirmed	858	858	858	858	758	958	958	958	958	958	958	958	
Possible Renewal	100	100	100	100	200	200	200	200	200	200	200	200	
Study	300	300	300	300	300	300	300	300	300	300	300	300	
	1258	**1258**	**1258**	**1258**	**1258**	**1458**	**1458**	**1458**	**1458**	**1458**	**1458**	**1458**	**Total**
	29	**29**	**29**	**29**	**29**	**-171**	**-171**	**-171**	**-171**	**-171**	**-171**	**-171**	**Available Capacity**
	50	50	50	50	50	50	50	50	50	50	50	50	**Request #188155**

Table 5 – New Overload Events Caused by WR to AMRN 50MW transfer

Study Year	Load flow case description (opened branch(es))	Overloaded lines	FROM TO	RATE B % load	Available ATC MW	Assignment/Solution
00 WP		NONE	---	---	---	
01 AP		NONE	---	---	---	
01 SR		NONE	---	---	---	
01 SP		NONE	---	---	---	
01 FA		NONE	---	---	---	
01 WP		NONE	---	---	---	

Table 6 – Previously Assigned Overload Events Further Impacted by WR to AMRN 50MW transfer

Study Year	Load flow case description (opened branch(es))	Overloaded lines	FROM TO	RATE B % load	Available ATC MW	Assignment/Solution
00 WP		NONE	---	---	---	
01 AP		NONE	---	---	---	
01 SR		NONE	---	---	---	
01 SP	**EAST CENTERTON TO GENTRYR5 161 KV** 53133 [ECNTRTN5] TO 53187 [GENTRYR5] CKT 1	**DYESS TO EAST ROGERS 161 KV** 53131 DYESS 5 TO 53135 EROGERS5 CKT 1	CESW CESW	245MVA 101.3%	**0**	SPP-2000-004/Reconductor-$4,000,000
01 FA		NONE	---	---	---	
01 WP	**EAST MCPHERSON TO SUMMIT 230 KV** 56789 [EMCPHER6] TO BUS 56795 [SUMMIT 6] CKT 1	**EXIDE JUNCTION TO SUMMIT 115 KV** 57022 EXIDE J3 57034 SUMMIT 3 CKT 1	WERE WERE	181MVA 101.1%	**0**	SPP-2000-010/New Pole Structures-$285,000

Table 7 – Overload Events with Operating Directives in place

Study Year	Load flow case description (opened branch(es))	Overloaded lines	FROM TO	RATE B % load	Available ATC MW	Assignment/Solution
		AUBURN ROAD TO INDIAN HILLS 115 KV	WERE	118MVA		SPP-2000-010/
		56881 AUBURN 3 56896 INDIANH3 CKT 1	WERE	103.1%	0	WR Operating Directive No.400
	HOYT TO JEFFREY ENERGY CENTER 345 KV	**AUBURN ROAD TO SOUTH GAGE (WEST) 115 KV**	WERE	92MVA		SPP-2000-010/
00 WP	56752 [HOYT 7] TO BUS 56753 [JEC 7] CKT 1	56881 AUBURN 3 56909 S GAGEW3 CKT 2	WERE	102.7%	0	WR Operating Directive No.400
	HOYT TO STRANGER CREEK 345 KV	**HOYT HTI SWITCHING JUNCTION TO CIRCLEVILLE 115 KV**	WERE	92MVA		SPP-2000-010/
00 WP	56752 [HOYT 7] TO BUS 56758 [STRANGR7] CKT 1	56895 HTI JCT3 56882 CIRCLVL3 CKT 1	WERE	107.1%	0	WR Operating Directive No.803
01 AP		NONE	---	---	---	
	HOYT TO JEFFREY ENERGY CENTER 345 KV	**AUBURN ROAD TO INDIAN HILLS 115 KV**	WERE	118MVA		New Overload/
01 SR	56752 [HOYT 7] TO BUS 56753 [JEC 7] CKT 1	56881 AUBURN 3 115 56896 INDIANH3 115 1	WERE	102.0%	12	WR Operating Directive No.400
	JEFFREY ENERGY CENTER TO SUMMIT 345 KV	**WEST JUNCTION CITY TO WEST JUNCTION CITY JUNCTION (WEST) 115 KV**	WERE	141MVA		SPP-2000-010/
01 SR	56753 [JEC 7] TO BUS 56759 [SUMMIT 7] CKT 1	57008 WJCCTY 3 57010 WJCCTYW3 CKT 1	WERE	102.5%	0	WR Operating Directive No.402
	SUMMIT 230/115 KV	**FORT JUNCTION SWITCHING STATION TO WEST JUNCTION CITY JUNCTION (EAST) 115 KV**	WERE	92MVA		SPP-2000-010/
01 SR	56795 [SUMMIT 6] TO BUS 57034 [SUMMIT 3] CKT 1	56995 FT JCT 3 57009 WJCCTYE3 CKT 2	WERE	100.5%	0	WR Operating Directive No.613
	SUMMIT 345 KV TO SUMMIT 345/230 KV					
	56759 [SUMMIT 7] TO BUS 56778 [SUMMIT7X] CKT 1	**WEST JUNCTION CITY TO WEST JUNCTION CITY JUNCTION (WEST) 115 KV**	WERE	141MVA		SPP-2000-010/
01 SR	**SUMMIT 345/230 KV TO SUMMIT 230 KV** 56778 [SUMMIT7X] TO BUS 56795 [SUMMIT 6] CKT 1	57008 WJCCTY 3 57010 WJCCTYW3 CKT 1	WERE	103.2%	0	WR Operating Directive No.617
		MAID TO TAHLEQUAH 161 KV	GRRD	148MVA		SPP-2000-010/ GRDA Operating Directive
01 SP	**GRDA1 TO WAGONER 161 KV** 54456 [GRDA1 5] TO 54500 [WAGNOR 5] CKT 1	54448 MAID 5 TO 54455 TAHLQH 5 CKT 1	GRRD	102.0%	0	Reduce Chouteau Generation
		MAID TO TAHLEQUAH 161 KV	GRRD	148MVA		SPP-2000-010/ GRDA Operating Directive
01 SP	**MUSKOGEE TO ROSS LAKE 161 KV** 55222 [MSKGE5] TO 55252 [ROSS 5] CKT 1	54448 MAID 5 TO 54455 TAHLQH 5 CKT 1	GRRD	102.9%	0	Reduce Chouteau Generation
		MAID TO TAHLEQUAH 161 KV	GRRD	148MVA		SPP-2000-010/ GRDA Operating Directive
01 SP	**FLINT CREEK TO GRDA 1 345 KV** 53140 [FLINTCR7] TO BUS 54450 [GRDA1 7] CKT 1	54448 MAID 5 161 54455 TAHLQH 5 161 1	GRRD	100.1%	39	Reduce Chouteau Generation
	HOYT TO JEFFREY ENERGY CENTER 345 KV	**AUBURN ROAD TO JEFFREY ENERGY CENTER 230 KV**	WERE	598MVA		SPP-2000-010/
01 SP	56752 [HOYT 7] TO BUS 56753 [JEC 7] CKT 1	56786 AUBURN 6 56790 JEC 6 CKT 1	WERE	105.7%	0	WR Operating Directive No.400
		TECUMSEH HILL TO STULL SWITCHING STATION 115 KV	WERE	92MVA		SPP-2000-010/
		56911 TECHILL3 56963 STULL T3 CKT 1	WERE	107.2%	0	WR Operating Directive No.803
	HOYT TO STRANGER CREEK 345 KV	**MOCKINGBIRD HILL SWITCHING STATION TO STULL SWITCHING STATION 115 KV**	WERE	92MVA		New Overload/
01 SP	56752 [HOYT 7] TO BUS 56758 [STRANGR7] CKT 1	56947 MOCKBRD3 115 56963 STULL T3 115 1	WERE	101.6%	28	WR Operating Directive No.803

Table 3 continued - Overload Events with Operating Directives in place

Study Year	Load flow case description (opened branch(es))	Overloaded lines	FROM TO	RATE B % load	Available ATC MW	Assignment/Solutions
		AUBURN 230/115 KV	WERE	308MVA		SPP-2000-010/
		56786 AUBURN 6 56881 AUBURN 3 CKT 1	WERE	104.2%	0	WR Operating Directive No.400
	HOYT TO JEFFREY ENERGY CENTER 345 KV	**AUBURN ROAD TO SOUTH GAGE (WEST) 115 KV**	WERE	92MVA		SPP-2000-010/
01 FA	56752 [HOYT 7] TO BUS 56753 [JEC 7] CKT 1	56881 AUBURN 3 56909 S GAGEW3 CKT 2	WERE	108.0%	0	WR Operating Directive No.400
		TECUMSEH HILL TO STULL SWITCHING STATION 115 KV	WERE	92MVA		SPP-2000-010/
		56911 TECHILL3 56963 STULL T3 CKT 1	WERE	104.6%	0	WR Operating Directive No.803
	HOYT TO STRANGER CREEK 345 KV	**MOCKINGBIRD HILL SWITCHING STATION TO STULL SWITCHING STATION 115 KV**	WERE	92MVA		New Overload/
01 FA	56752 [HOYT 7] TO BUS 56758 [STRANGR7] CKT 1	56947 MOCKBRD3 115 56963 STULL T3 115 1	WERE	100.4%	45	WR Operating Directive No.803
	MIDLAND JUNCTION 230/115 KV	**LAWRENCE HILL 230/115 KV**	WERE	308MVA		SPP-2000-010/
01 FA	56793 [MIDLAND6] TO BUS 56946 [MIDLAND3] CKT 1	56791 LAWHILL6 56945 LWRNCHL3 CKT 1	WERE	102.5%	0	WR Operating Directive No.615
	LAWRENCE HILL TO MIDLAND JUNCTION 230 KV	**LAWRENCE HILL 230/115 KV**	WERE	308MVA		SPP-2000-010/
01 FA	56791 [LAWHILL6] TO BUS 56793 [MIDLAND6] CKT 1	56791 LAWHILL6 56945 LWRNCHL3 CKT 1	WERE	102.5%	0	WR Operating Directive No.615
		AUBURN ROAD TO INDIAN HILLS 115 KV	WERE	118MVA		SPP-2000-010/
		56881 AUBURN 3 56896 INDIANH3 CKT 1	WERE	103.2%	0	WR Operating Directive No.400
	HOYT TO JEFFREY ENERGY CENTER 345 KV	**AUBURN ROAD TO SOUTH GAGE (WEST) 115 KV**	WERE	92MVA		SPP-2000-010/
01 WP	56752 [HOYT 7] TO BUS 56753 [JEC 7] CKT 1	56881 AUBURN 3 56909 S GAGEW3 CKT 2	WERE	103.5%	0	WR Operating Directive No.400
	JEFFREY ENERGY CENTER TO SUMMIT 345 KV	**FORT JUNCTION SWITCHING STATION TO WEST JUNCTION CITY JUNCTION (EAST) 115 KV**	WERE	68MVA		SPP-2000-010/
01 WP	56753 [JEC 7] TO BUS 56759 [SUMMIT 7] CKT 1	56995 FT JCT 3 57009 WJCCTYE3 CKT 1	WERE	101.2%	0	WR Operating Directive No.613
	SUMMIT 345 KV TO SUMMIT 345/230 KV 56759 [SUMMIT 7] TO BUS 56778 [SUMMIT7X] CKT 1 **SUMMIT 345/230 KV TO SUMMIT 230 KV**	**FORT JUNCTION SWITCHING STATION TO WEST JUNCTION CITY JUNCTION (EAST) 115 KV**	WERE	68MVA		SPP-2000-010/
01 WP	56778 [SUMMIT7X] TO BUS 56795 [SUMMIT 6] CKT 1	56995 FT JCT 3 57009 WJCCTYE3 CKT 1	WERE	101.0%	0	WR Operating Directive No.617
		HOYT HTI SWITCHING JUNCTION TO CIRCLEVILLE 115 KV	WERE	92MVA		SPP-2000-010/
		56895 HTI JCT3 56882 CIRCLVL3 CKT 1	WERE	107.4%	0	WR Operating Directive No.803
		HOYT TO HOYT HTI SWITCHING JUNCTION 115 KV	WERE	92MVA		SPP-2000-010/
		56893 HOYT 3 56895 HTI JCT3 CKT 1	WERE	110.4%	0	WR Operating Directive No.803
		TECUMSEH HILL TO STULL SWITCHING STATION 115 KV	WERE	92MVA		SPP-2000-010/
		56911 TECHILL3 56963 STULL T3 CKT 1	WERE	108.8%	0	WR Operating Directive No.803
	HOYT TO STRANGER CREEK 345 KV	**STULL SWITCHING STATION TO MOCKINGBIRD HILL SWITCHING STATION 115 KV**	WERE	92MVA		SPP-2000-010/
01 WP	56752 [HOYT 7] TO BUS 56758 [STRANGR7] CKT 1	56947 MOCKBRD3 56963 STULL T3 CKT 1	WERE	104.9%	0	WR Operating Directive No.803

5. Conclusion

The SPP to AMRN contract path will need at least 50 MW of available capacity for 2001 before the Southwest Power Pool accepts the WR to AMRN 50MW transfer. Currently, the capacity is fully reserved for June thru December of 2001 and is subject to change.

Although the addition of the 50MW transfer caused no new valid overloads, the WR Exide Junction to Summit 115kV line (Table 6) was impacted, by the 50MW transfer, and will need to be completed before the 50 MW transfer can take place. The CSWS Dyess to East Rogers 161kV line upgrade will not be completed before 2001 Summer. Therefore, the 50MW transfer will be cut to zero in 2001 Summer for the Dyess to East Rogers overload with the East Centerton to Gentry 161kV line contingency.

Appendix A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASES:
Solutions - Fixed slope decoupled Newton-Raphson solution (FDNS)
1. Tap adjustment – Stepping
2. Area interchange control – Tie lines only
3. Var limits – Apply automatically
4. Solution options - X Phase shift adjustment
   _ Flat start
   _ Lock DC taps
   _ Lock switched shunts

ACCC CASES:
Solutions – AC contingency checking (ACCC)
1. MW mismatch tolerance –1.0
2. Contingency case rating – Rate B
3. Percent of rating – 100
4. Output code – Summary
5. Min flow change in overload report – 1mw
6. Excld cases w/ no overloads form report – YES
7. Exclude interfaces from report – NO
8. Perform voltage limit check – YES
9. Elements in available capacity table – 60000
10. Cutoff threshold for available capacity table – 99999.0
11. Min. contng. case Vltg chng for report – 0.02
12. Sorted output – None

Newton Solution:
1. Tap adjustment – Stepping
2. Area interchange control – Tie lines only
3. Var limits - Apply automatically
4. Solution options - X Phase shift adjustment
   _ Flat start
   _ Lock DC taps
   _ Lock switched shunts