

Feasibility Study
For
Generation Interconnection
Request
GEN-2005-017

SPP Tariff Studies (#GEN-2005-017)

Executive Summary

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 340MW of generation within the service territory of Southwestern Public Service Company (SPS) (d/b/a Xcel Energy, Inc.) in Sherman County Texas approximately 60 miles north of the Potter County Interchange. The Customer's proposed point of interconnection is in the existing Potter - Finney 345kV line at a new switching station. This 345kV line is owned by SPS. The proposed in-service date is December 30, 2007.

Power flow analysis has indicated that for the powerflow cases studied, it is possible to interconnect the 340MW of generation with transmission system reinforcements within the local transmission systems. In order to maintain acceptable bus voltages in the local area, the customer will need to install 4 switched capacitor banks, two 115kV 30MVAR and two 34.5kV 15MVAR units, plus a 34.5kV 30MVAR SVC in the Customer's generator substation for a total of 120MVAR. Dynamic Stability studies performed as part of the impact study will provide additional guidance as to whether the required reactive compensation can be static or a portion must be dynamic (such as a SVC).

The requirements for interconnection consist of adding a new 345kV switching station with 3 breakers. This 345kV addition shall be constructed and maintained by SPS. The Customer did not propose a specific 345kV line extending to serve its 345-34.5kV facilities. It is assumed that obtaining all necessary right-of-way for the substation additions in the Potter – Finney 345kV line will not be a significant expense.

The total cost for adding a new 345kV switching station, the required interconnection facility, is estimated at \$7,434,666. Other Network Constraints in the American Electric Power West (AEPW), Sunflower Electric Power Corporation (SUNC), SPS, West Plains Energy (WEPL) (d/b/a/ Aquila, Inc.) and Western Farmers Electric Cooperative (WFEC) systems that may be verified with a transmission service request and associated studies are listed in Table 3. These Network Constraints are in the local area of the new generation when this generation is sunk throughout the SPP footprint for the Energy Resource Interconnection request. With a defined source and sink in a Transmission Service Request (TSR), this list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements. This cost does not include building 345kV line from the Customer substation into the new SPS switching station. This cost does not include the Customer's 345-115-34.5kV substations.

In Table 4, a value of Available Transfer Capability (ATC) associated with each overloaded facility is included. These values may be used by the Customer for future analyses including the determination of lower generation capacity levels that may be installed. When transmission service associated with this interconnection is evaluated, the loading of the facilities listed in this table may be greater due to higher priority reservations. If the loading of a facility is higher, the level of ATC will be lower. When a facility is overloaded for more than 10 contingencies, then only the results with the 10 highest values of loading may be included in this table. Given the contingency

analyses in this area with the Customer exporting generation, steady-state solutions were not obtained for outages of SPS' eastern and northern 345kV lines. These contingency analyses will have to be re-evaluated as part of a TSR with additional transmission facilities between SPS and the remainder of SPP.

The cost and final sizing of reactors in the new interconnection facility will be determined by an Electromagnetic Transient Program (EMTP) study, at the Customer's expense, that will be conducted upon the signing of an Impact Study Agreement. The 30 MVAR size and cost could change depending on the results of the EMTP study.

There are several other proposed generation additions in the general area of the Customer's facility. It was assumed in this preliminary analysis that these other projects within the SPS service territory will be in service. Those previously queued projects that have advanced to nearly complete phases were included in this Feasibility Study. In the event that another request for a generation interconnection with a higher priority withdraws, then this request may have to be re-evaluated to determine the local Network Constraints.

Introduction

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 340MW of generation within the service territory of SPS in Sherman County Texas north of the Potter County Interchange. The existing Potter – Finney 345kV line is owned by SPS, and the proposed generation interconnection is within SPS. The Customer's proposed point of interconnection is at a new switching station in the Potter – Finney 345kV line. The proposed in-service date is December 30, 2007.

Interconnection Facilities

The primary objective of this study is to identify the system problems associated with connecting the plant to the area transmission system. The Feasibility and other subsequent Interconnection Studies are designed to identify attachment facilities, Network Upgrades and other direct assignment facilities needed to accept power into the grid at the interconnection receipt point.

The requirements for interconnection consist of adding a new 345kV switching station with 3 breakers. This 345kV addition shall be constructed and maintained by SPS. The Customer did not propose a route of its 345kV line to serve its 345-34.5kV facilities. It is assumed that obtaining all necessary right-of-way for the substation additions in the Potter – Finney 345kV line will not be a significant expense.

The total cost for adding a new 345kV switching station in the Potter – Finney 345kV line, the required interconnection facility, is estimated at \$7,434,666. Other Network Constraints in the AEPW, SPS, SUNC, WEPL and WFEC systems that were identified are listed in Table 3. These estimates will be refined during the development of the impact study based on the final designs. This cost does not include building 345kV line from the Customer substation into the new SPS switching station. The Customer is responsible for this 345kV line up to the point of interconnection. This cost does not include the Customer's 345-115-34.5kV substations and the cost estimate should be determined by the Customer.

The costs of interconnecting the facility to the SPS transmission system are listed in Table 2. These costs do not include any cost that might be associated with short circuit study results or dynamic stability study results. These costs will be determined when and if a System Impact Study is conducted.

Table 1: Direct Assignment Facilities

Facility	ESTIMATED COST (2006 DOLLARS)
Customer – 345-115-34.5kV Substation facilities including two 115kV 30MVAR and two 34.5kV 15MVAR capacitor banks, plus a 34.5kV 30MVAR SVC.	*
Customer – 345kV line between Customer substation and new SPS switching station.	*
Customer - Right-of-Way for Customer Substation & Line.	*
Total	*

Note: *Estimates of cost to be determined by Customer.

Table 2: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2006 DOLLARS)
SPS - New 345kV switching station in existing Potter - Finney 345kV line.	\$3,837,900
SPS - Right-of-way for new SPS 345kV switching station.	47,000
SPS – 2 of 345kV 30MVAR line reactors in new 345kV switching station.	3,549,766
Total	\$7,434,666

Table 3: Network Constraints

Facility
AEPW - ELK CITY - CLINTON JUNCTION 138kV, 54121 – 54148, Base Case
AEPW - ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1, Base Case
AEPW - ELK CITY - ELKCTY-6 230-()kV, 54153 - WND 2, Base Case
SPS - Grapevine Interchange - ELK CITY 230kV, 50827 - 54153, Base Case
AEPW - Grapevine Interchange - ELK CITY 230kV, 50827 - 54153, Base Case
WEPL - Greensburg - Judson Large 115kV, 58764 - 58771, Base Case
WEPL - Harper - Medicine Lodge 138kV, 58768 - 58774, Base Case
SPS - McLean Rural - SHAMROCK 115kV, 50840 - 54295, Base Case
AEPW - McLean Rural - SHAMROCK 115kV, 50840 - 54295, Base Case
SPS - MCLELLN - Kirby 115kV, 50838 - 50932, Base Case
SPS - MCLELLN - McLean Rural 115kV, 50838 - 50840, Base Case
WEPL - Medicine Lodge - Sun City 115kV, 58773 - 58797, Base Case
WEPL - Medicine Lodge 138-115kV, 58773 - 58774, Base Case
WEPL - Mullergren - Spearville 230kV, 58779 - 58795, Base Case
SPS - Randall County Interchange - PALODU 115kV, 51020 - 51082, Base Case
SUNC - BEELER - DIGHTON TAP 115kV, 56359 - 56360
SUNC - BEELER - NESS CITY 115kV, 56359 - 56456
SPS - Bowers Interchange 115-69kV, 50819 - 50820
SPS - Bushland Interchange - Deaf Smith Interchange 230kV, 50993 - 51111
SPS - Canyon West - Canyon East 115kV, 51078 - 51080
SPS - Canyon West - Dawn 115kV, 51078 - 51102
WFEC - CARTER JCT - DILL JCT 69kV, 55846 - 55876
WEPL - Cimarron River Tap - Cimarron River Plant 115kV, 58752 - 58754
WEPL - Cimarron River Tap - Cudahy 115kV, 58752 - 58759
SPS - Conway - Kirby 115kV, 50928 - 50932
SPS - Dawn - Hereford Interchange 115kV, 51102 - 51106
SUNC - DIGHTON TAP - MANNING TAP 115kV, 56360 - 56362
SPS - East Plant Interchange - Manhattan 115kV, 50956 - 50978
SPS - East Plant Interchange - Pierce Tap 115kV, 50956 - 50964

Table 3: Network Constraints

Facility
SPS - East Plant Interchange 230-115kV, 50956 - 50957
AEPW - ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148
AEPW - ELK CITY - ELKCTY-4 138-()kV, 54121 - WND 2
AEPW - ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1
AEPW - ELK CITY - ELKCTY-6 230-()kV, 54153 - WND 2
AEPW - Grapevine Interchange - ELK CITY 230kV, 50827 - 54153
SPS - Grapevine Interchange - ELK CITY 230kV, 50827 - 54153
SPS - Grapevine Interchange - Kirby 115kV, 50826 - 50932
SPS - Grapevine Interchange - Nichols Station 230kV, 50827 - 50915
SPS - Grapevine Interchange 230-115kV, 50826 - 50827
SPS - Gray County Interchange 115-69kV, 50781 - 50782
WEPL - Great Bend Tap - Seward 115kV, 58766 - 58792
WEPL - Greensburg - Judson Large 115kV, 58764 - 58771
WEPL - Greensburg - Sun City 115kV, 58764 - 58797
SPS - Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532
SPS - Happy Interchange - TULIAT 115kV, 51302 - 51310
WEPL - Harper - Medicine Lodge 138kV, 58768 - 58774
SPS - HASTNG - Van Buren 1 Tap 69kV, 50949 - 50961
AEPW - JERICHO - CLARENDON 69kV, 54277 - 54278
AEPW - JERICHO - JERIC2WT 115-()kV, 54276 - WND 2
AEPW - LAKE PAULINE - ELDORADO 69kV, 54297 - 55896
WFEC - LAKE PAULINE - ELDORADO 69kV, 54297 - 55896
SPS - LE-WAIT 115-69kV, 52350 - 52441
SPS - McCullough - Bowers Interchange 69kV, 50805 - 50819
SPS - McCullough - Kingsmill Interchange 69kV, 50805 - 50807
SPS - McLean Rural - SHAMROCK 115kV, 50840 - 54295
AEPW - McLean Rural - SHAMROCK 115kV, 50840 - 54295
SPS - MCLELLN - Kirby 115kV, 50838 - 50932
SPS - MCLELLN - McLean Rural 115kV, 50838 - 50840

Table 3: Network Constraints

Facility
WEPL - Medicine Lodge - Sun City 115kV, 58773 - 58797
WEPL - Medicine Lodge 138-115kV, 58773 - 58774
WEPL - Mullergren - Spearville 230kV, 58779 - 58795
SPS - Nichols Station - Whitaker 115kV, 50914 - 50922
SPS - Osage Switching Station - Canyon East 115kV, 51014 - 51080
SUNC - PALMER - TRIBUNE SWITCH 115kV, 56431 - 56438
SPS - PALODU - Happy Interchange 115kV, 51082 - 51302
SPS - Pierce Tap - Osage Switching Station 115kV, 50964 - 51014
SPS - Randall County Interchange - PALODU 115kV, 51020 - 51082
SPS - Randall County Interchange 230-115kV, 51020 - 51021
SPS - Roswell Interchange 115-69kV, 52093 - 52094
SPS - Seven Rivers Interchange 115-69kV, 52294 - 52295
WEPL - Seward - St John 115kV, 58792 - 58796
AEPW - SHAMROCK - SHAMRCK1 115-()kV, 54295 - WND 2
AEPW - SHAMROCK - SHAMRCK1 69-()kV, 54294 - WND 1
AEPW - SHAMROCK - SHAMRCK2 138-()kV, 54293 - WND 2
AEPW - SHAMROCK - SHAMRCK2 69-()kV, 54294 - WND 1
WEPL - Spearville - SPRV-1 7 230-()kV, 58795 - WND 1
SUNC - SPEARVILLE - SPRV-1 7 345-()kV, 56469 - WND 2
WEPL - St John - ST_JOHN 115kV, 58796 - 56624
MIDW - St John - ST_JOHN 115kV, 58796 - 56624
SPS - Swisher County Interchange 230-115kV, 51320 - 51321
SPS - Texas County Interchange PHSF - East Liberal 115kV, 50600 - 58772
WEPL - Texas County Interchange PHSF - East Liberal 115kV, 50600 - 58772
SPS - TULIAT - Kress Interchange 115kV, 51310 - 51316
SPS - Whitaker - East Plant Interchange 115kV, 50922 - 50956

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
ELK CITY - CLINTON				
JUNCTION 138kV, 54121	101475	400.0		0/4/0000
- 54148,	10WP, Base Case	103.8	258	6/1/2008
ELK CITY - CLINTON				
JUNCTION 138kV, 54121	AFCD Dags Cons	400.0	074	
- 54148	15SP, Base Case	103.3	271	
ELK CITY - CLINTON				
JUNCTION 138kV, 54121 - 54148	10SP, Base Case	101.9	299	
ELK CITY - ELKCTY-6	103F, base case	101.9	299	12/30/200
138-()kV, 54121 - WND 1,	07WP, Base Case	136.8	0	7
ELK CITY - ELKCTY-6	OTVIT, Dasc Case	100.0	0	,
138-()kV, 54121 - WND 1	10WP, Base Case	135.2	0	
ELK CITY - ELKCTY-6	, 2			
138-()kV, 54121 - WND 1	15SP, Base Case	134.6	0	
ELK CITY - ELKCTY-6	,			
138-()kV, 54121 - WND 1	10SP, Base Case	131.3	0	
ELK CITY - ELKCTY-6				
138-()kV, 54121 - WND 1	06AP, Base Case	124.6	0	
ELK CITY - ELKCTY-6				12/30/200
230-()kV, 54153 - WND 2,	07WP, Base Case	134.0	0	7
ELK CITY - ELKCTY-6				
230-()kV, 54153 - WND 2	10WP, Base Case	132.6	0	
ELK CITY - ELKCTY-6			_	
230-()kV, 54153 - WND 2	15SP, Base Case	131.6	0	
ELK CITY - ELKCTY-6	1000 0	400.0	_	
230-()kV, 54153 - WND 2	10SP, Base Case	129.2	0	
ELK CITY - ELKCTY-6	OCAD Base Cose	400.5	^	
230-()kV, 54153 - WND 2	06AP, Base Case	123.5	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Grapevine Interchange - ELK CITY 230kV, 50827 -				12/30/200
54153,	15SP, Base Case	127.6	0	/
Grapevine Interchange - ELK CITY 230kV, 50827 - 54153,	07WP, Base Case	127.5	0	12/30/200 7
Grapevine Interchange - ELK CITY 230kV, 50827 - 54153	10WP Page Cage	125.3	0	
Grapevine Interchange - ELK CITY 230kV, 50827 -	10WP, Base Case			
54153	10SP, Base Case	121.5	0	
Grapevine Interchange - ELK CITY 230kV, 50827 - 54153	06AP, Base Case	109.1	0	
Greensburg - Judson	, , , , , , , , , , , , , , , , , , , ,			
Large 115kV, 58764 - 58771,	15SP, Base Case	163.0	0	12/30/200 7
Greensburg - Judson Large 115kV, 58764 - 58771	07WP, Base Case	149.6	0	
Greensburg - Judson Large 115kV, 58764 -			0	
58771 Greensburg - Judson	10SP, Base Case	148.2	0	
Large 115kV, 58764 - 58771	10WP, Base Case	145.1	0	
Greensburg - Judson Large 115kV, 58764 - 58771	06AP, Base Case	106.6	241	
Harper - Medicine Lodge 138kV, 58768 - 58774,	15SP, Base Case	135.0	0	12/30/200 7
Harper - Medicine Lodge 138kV, 58768 - 58774	07WP, Base Case	122.3	40	
Harper - Medicine Lodge 138kV, 58768 - 58774	10WP, Base Case	116.3	157	
Harper - Medicine Lodge 138kV, 58768 - 58774 McLean Rural -	10SP, Base Case	107.5	240	
SHAMROCK 115kV, 50840 - 54295,	15SP, Base Case	103.9	245	6/1/2010
McLean Rural -	1001, Dase Oase	103.9	243	0/1/2010
SHAMROCK 115kV, 50840 - 54295,	10SP, Base Case	100.5	326	6/1/2010

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
MCLELLN - Kirby 115kV,	450D David Oak	140.0	47	0/4/0000
50838 - 50932,	15SP, Base Case	112.6	47	6/1/2008
MCLELLN - Kirby 115kV, 50838 - 50932	10SD Boss Coss	100 0	121	
MCLELLN - McLean Rural	10SP, Base Case	108.0	131	
115kV, 50838 - 50840,	15SP, Base Case	110.3	111	6/1/2008
MCLELLN - McLean Rural	133F, base case	110.5	111	0/1/2000
115kV, 50838 - 50840	10SP, Base Case	105.9	184	
Medicine Lodge - Sun City	1001 ; 2000 0000	100.0	101	12/30/200
115kV, 58773 - 58797,	15SP, Base Case	140.8	0	7
Medicine Lodge - Sun City	,			
115kV, 58773 - 58797	07WP, Base Case	134.3	0	
Medicine Lodge - Sun City				
115kV, 58773 - 58797	10WP, Base Case	129.7	0	
Medicine Lodge - Sun City				
115kV, 58773 - 58797	10SP, Base Case	126.7	0	
Medicine Lodge 138-				12/30/200
115kV, 58773 - 58774,	15SP, Base Case	137.3	0	7
Medicine Lodge 138-				
115kV, 58773 - 58774	07WP, Base Case	130.6	0	
Medicine Lodge 138-	40)A/D D	400.0		
115kV, 58773 - 58774	10WP, Base Case	123.6	0	
Medicine Lodge 138-	10CD Book Cons	440.7	^	
115kV, 58773 - 58774	10SP, Base Case	112.7	0	
Mullergren - Spearville 230kV, 58779 - 58795,	15SP, Base Case	104.6	240	6/1/2009
Mullergren - Spearville	133F, Dase Case	104.0	240	0/1/2009
230kV, 58779 - 58795	10SP, Base Case	101.0	317	
Randall County	1001 , base base	101.0	317	
Interchange - PALODU				
115kV, 51020 - 51082,	10SP, Base Case	110.9	0	6/1/2008
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Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading	ATC	Date
		(% Rate B) Or Voltage (PU)	(MW)	Required (M/D/Y)
	06AP, 50827-50915, SPS			
	SPS-OKLA - SPS SPS-			
	AMA, Grapevine Interchange -			
	Nichols Station 230kV	No solution.	0	4/1/2008
	06AP, 50827-54153, SPS			
	SPS-OKLA - AEPW			
	WESTERN , Grapevine			
	Interchange - ELK CITY 230kV	No solution.	0	4/1/2008
	06AP, 50858-56449, SPS			
	SPS-AMA - SUNC SEPC			
	, Finney Station - HOLCOMB	Nie aut Can	0	4/4/0000
	345kV	No solution.	0	4/1/2008
	06AP, 50858-99974, SPS			
	SPS-AMA - , Finney Station -	No solution.	^	4/4/2000
	2003-13 345kV	NO SOLUTION.	0	4/1/2008
	06AP, 50888-99951, SPS SPS-AMA - , Potter County			
	Interchange - 2005-17T 345kV	No solution.	0	4/1/2008
	06AP, 51534-54119, SPS	INO SOIULIOIT.	- 0	4/ 1/2006
	SPS-CNPL - AEPW			
	WESTERN , Tuco Interchange			
	- OKLAUNION 345kV	No solution.	0	4/1/2008
	06AP, 54119-54131, AEPW	140 Solution.		4/1/2000
	WESTERN, OKLAUNION -			
	LAWTON EASTSIDE 345kV	No solution.	0	4/1/2008
	06AP, 56449-56465, SUNC	140 301011011.		47 172000
	SEPC , HOLCOMB - SETAB			
	345kV	No solution.	0	4/1/2008
	06AP, 99951-99992, , 2005-	110 0010110111		., .,
	17T - 2002-08T 345kV	No solution.	0	4/1/2008
	06AP, 99974-99992, , 2003-			
	13 - 2002-08T 345kV	No solution.	0	4/1/2008
	07WP, 50858-56449, SPS		· · ·	
	SPS-AMA - SUNC SEPC			
	, Finney Station - HOLCOMB			12/30/200
	345kV	No solution.	0	7
	07WP, 50858-99974, SPS			
	SPS-AMA - , Finney Station -			12/30/200
	2003-13 345kV	No solution.	0	7
	07WP, 50888-99951, SPS			
	SPS-AMA - , Potter County			12/30/200
	Interchange - 2005-17T 345kV	No solution.	0	7
	07WP, 51534-54119, SPS			
	SPS-CNPL - AEPW			40/00/200
	WESTERN , Tuco Interchange	N1 1 0	^	12/30/200
	- OKLAUNION 345kV	No solution.	0	/
N	cion convice accesiated with		-	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or	ATC (MW)	Date Required
		Voltage (PU)	(IVIVV)	(M/D/Y)
	07WP, 54119-54131, AEPW	· · · · ·		40/00/000
	WESTERN , OKLAUNION -	No colution	0	12/30/200
	LAWTON EASTSIDE 345kV 07WP, 99951-99992, , 2005-	No solution.	- 0	12/30/200
	17T - 2002-08T 345kV	No solution.	0	7
	07WP, 99974-99992, , 2003-	140 301011011.		12/30/200
	13 - 2002-08T 345kV	No solution.	0	7
	10SP, 50858-56449, SPS			
	SPS-AMA - SUNC SEPC			
	, Finney Station - HOLCOMB 345kV	No solution.	0	6/1/2008
	10SP, 50858-99974, SPS			
	SPS-AMA - , Finney Station -			- / / /
	2003-13 345kV	No solution.	0	6/1/2008
	10SP, 50888-99951, SPS			
	SPS-AMA - , Potter County Interchange - 2005-17T 345kV	No solution.	0	6/1/2008
	10SP, 51534-54119, SPS	NO SOIGHOIL.		0/1/2000
	SPS-CNPL - AEPW			
	WESTERN , Tuco Interchange			
	- OKLAUNION 345kV	No solution.	0	6/1/2008
	10SP, 56449-56465, SUNC SEPC , HOLCOMB - SETAB			
	345kV	No solution.	0	6/1/2008
	10SP, 99951-99992, , 2005-			
	17T - 2002-08T 345kV	No solution.	0	6/1/2008
	10SP, 99974-99992, , 2003- 13 - 2002-08T 345kV	No solution.	0	6/1/2008
	10WP, 50858-56449, SPS			
	SPS-AMA - SUNC SEPC			
	, Finney Station - HOLCOMB 345kV	No solution.	0	12/1/2010
	10WP, 50858-99974, SPS			
	SPS-AMA - , Finney Station - 2003-13 345kV	No solution.	0	12/1/2010
	10WP, 50888-99951, SPS	INO SOIULIOIT.	0	12/1/2010
	SPS-AMA - , Potter County			
	Interchange - 2005-17T 345kV	No solution.	0	12/1/2010
	10WP, 51534-54119, SPS SPS-CNPL - AEPW		·	-
	WESTERN , Tuco Interchange			
	- OKLAUNION 345kV	No solution.	0	12/1/2010
Note: When transmis				

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
	10WP, 56449-56465, SUNC SEPC , HOLCOMB - SETAB			
	345kV 10WP, 99951-99992, , 2005-	No solution.	0	12/1/2010
	17T - 2002-08T 345kV	No solution.	0	12/1/2010
	10WP, 99974-99992, , 2003- 13 - 2002-08T 345kV	No solution.	0	12/1/2010
	15SP, 50858-56449, SPS SPS-AMA - SUNC SEPC , Finney Station - HOLCOMB			
	345kV 15SP, 50858-99974, SPS	No solution.	0	6/1/2015
	SPS-AMA - , Finney Station - 2003-13 345kV	No solution.	0	6/1/2015
	15SP, 50888-99951, SPS	NO SOIGHOIL	0	0/1/2013
	SPS-AMA - , Potter County Interchange - 2005-17T 345kV	No solution.	0	6/1/2015
	15SP, 51534-54119, SPS SPS-CNPL - AEPW WESTERN , Tuco Interchange - OKLAUNION 345kV	No solution.	0	6/1/2015
	15SP, 56449-56465, SUNC SEPC , HOLCOMB - SETAB 345kV	No solution.	0	6/1/2015
	15SP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	No solution.	0	6/1/2015
	15SP, 99951-99992, , 2005- 17T - 2002-08T 345kV	No solution.	0	6/1/2015
	15SP, 99974-99992, , 2003-13 - 2002-08T 345kV	No solution.	0	6/1/2015
Nata Milan turnania	aine annia anniata desith			

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
BEELER - DIGHTON TAP 115kV, 56359 - 56360,	07WP, 56469-58795-56468, SUNC SEPC - WEPL , SPEARVILLE 345-230kV	111.9	150	12/30/2007
BEELER - DIGHTON TAP 115kV, 56359 - 56360	07WP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	111.9	153	
BEELER - DIGHTON TAP 115kV, 56359 - 56360	06AP, 58779-58795, WEPL , Mullergren - Spearville 230kV	104.4	267	
BEELER - NESS CITY 115kV, 56359 - 56456,	07WP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	108.6	204	12/30/2007
BEELER - NESS CITY 115kV, 56359 - 56456	07WP, 56469-58795-56468, SUNC SEPC - WEPL , SPEARVILLE 345-230kV	108.5	202	
BEELER - NESS CITY 115kV, 56359 - 56456	06AP, 58779-58795, WEPL , Mullergren - Spearville 230kV 06AP, 50827-50915, SPS	102.4	300	
Bowers Interchange 115- 69kV, 50819 - 50820,	SPS-OKLA - SPS SPS- AMA , Grapevine Interchange - Nichols Station 230kV	101.7	301	4/1/2008
Bushland Interchange - Deaf Smith Interchange 230kV, 50993 - 51111,	15SP, 51435-51441, SPS SPS-CNPL, Tolk Interchange - Tolk 1 230-24kV	106.9	125	6/1/2011
Canyon West - Canyon East 115kV, 51078 - 51080,	10SP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	149.2	0	12/30/200 7
Canyon West - Canyon East 115kV, 51078 - 51080	06AP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	128.6	0	
Canyon West - Canyon East 115kV, 51078 - 51080	07WP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	109.7	88	
Canyon West - Canyon East 115kV, 51078 - 51080	10WP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	100.9	315	
Canyon West - Dawn 115kV, 51078 - 51102,	10SP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	126.2	0	4/1/2008
Canyon West - Dawn 115kV, 51078 - 51102	06AP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	116.2	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
CARTER JCT - DILL JCT	06AP, 54277-54278, AEPW WTU , JERICHO -	444.0		1/1/2000
69kV, 55846 - 55876,	CLARENDON 69kV 06AP, 54276-54277-54303,	111.8	0	4/1/2008
CARTER JCT - DILL JCT 69kV, 55846 - 55876	AEPW WTU , JERICHO 115-69kV	111.8	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 50932-54276, SPS SPS-AMA - AEPW WTU , Kirby - JERICHO 115kV	111.8	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 54278-54279, AEPW WTU , CLARENDON - CLARENDON REA 69kV	111.5	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 54279-54280, AEPW WTU , CLARENDON REA - HEDLEY 69kV	111.3	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 54280-54281, AEPW WTU , HEDLEY - NORTH MEMPHIS REA 69kV	111.2	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 54275-54281, AEPW WTU , NW Memphis - NORTH MEMPHIS REA 69kV	111.0	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 56386-56557, SUNC NORTON-D - MIDW REG E- IL, GRAHAM SUBSTATION - BEACH STATION 115kV	107.4	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 56373-56386, SUNC NORTON-D, RHOADES - GRAHAM SUBSTATION 115kV	107.4	0	
CARTER JCT - DILL JCT 69kV, 55846 - 55876	06AP, 56448-56447, SUNC SEPC , HOLCOMB - HOLCOMB GENERATOR 115- 22kV	101.3	0	
Cimarron River Tap - Cimarron River Plant 115kV, 58752 - 58754,	10SP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	102.0	313	6/1/2008
Cimarron River Tap - Cudahy 115kV, 58752 - 58759,	10SP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	101.6	317	
Note: When transmis		Alaia intanaanna atia		

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or	ATC (MW)	Date Required
		Voltage (PU)	(,	(M/D/Y)
	06AP, 50827-50915, SPS	r chaige (i c)		(111, 2, 1)
	SPS-OKLA - SPS SPS-			
Conway - Kirby 115kV,	AMA, Grapevine Interchange -			12/30/200
50928 - 50932,	Nichols Station 230kV	153.4	0	7
	15SP, 50805-50807, SPS			
Conway - Kirby 115kV,	SPS-OKLA, McCullough -			
50928 - 50932	Kingsmill Interchange 69kV	124.5	0	
	15SP, 50750-50782, SPS			
0	SPS-OKLA, Hutchinson Co.			
Conway - Kirby 115kV,	Interchange - Gray County	404.7	0	
50928 - 50932	Interchange 115kV	121.7	0	
Convey Kirby 115kV	15SP, 50805-50819, SPS			
Conway - Kirby 115kV, 50928 - 50932	SPS-OKLA, McCullough - Bowers Interchange 69kV	117.1	0	
30920 - 30932	15SP, 50808-50842, SPS	117.1	U	
	SPS-OKLA, Kingsmill			
Conway - Kirby 115kV,	Interchange - Steer Water			
50928 - 50932	Wind Gen 115kV	114.9	0	
00020 00002	15SP, 50807-50808, SPS	11110		
Conway - Kirby 115kV,	SPS-OKLA, Kingsmill			
50928 - 50932	Interchange 115-69kV	114.9	0	
	10SP, 50805-50807, SPS			
Conway - Kirby 115kV,	SPS-OKLA, McCullough -			
50928 - 50932	Kingsmill Interchange 69kV	113.8	0	
	15SP, 50600-58772, SPS			
	SPS-OKLA - WEPL , Texas			
Conway - Kirby 115kV,	County Interchange PHSF -			
50928 - 50932	East Liberal 115kV	110.5	0	
	15SP, 50596-50600, SPS			
	SPS-OKLA, Texas County			
Conway - Kirby 115kV,	Interchange - Texas County	440.0	•	
50928 - 50932	Interchange PHSF 115kV	110.3	0	
Communication (A451)/	15SP, 50914-50922, SPS			
Conway - Kirby 115kV,	SPS-AMA, Nichols Station -	110.1	0	
50928 - 50932	Whitaker 115kV 10SP, 50993-51111, SPS	110.1	0	
Dawn - Hereford	SPS-AMA - SPS SPS-			
Interchange 115kV, 51102	CLHF, Bushland Interchange -			
- 51106,	Deaf Smith Interchange 230kV	121.7	0	4/1/2008
31100,	06AP, 50993-51111, SPS	121.1	<u> </u>	1, 1,2000
Dawn - Hereford	SPS-AMA - SPS SPS-			
Interchange 115kV, 51102	CLHF, Bushland Interchange -			
- 51106	Deaf Smith Interchange 230kV	113.7	27	
	<u> </u>			
Nighter Miles on the region	<u> </u>			<u> </u>

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
DIGHTON TAP - MANNING TAP 115kV, 56360 - 56362,	07WP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	118.2	60	12/30/2007
DIGHTON TAP - MANNING TAP 115kV, 56360 - 56362	07WP, 56469-58795-56468, SUNC SEPC - WEPL , SPEARVILLE 345-230kV	118.1	56	
DIGHTON TAP - MANNING TAP 115kV, 56360 - 56362	06AP, 58779-58795, WEPL , Mullergren - Spearville 230kV	107.9	211	
East Plant Interchange - Manhattan 115kV, 50956 - 50978,	15SP, 50915-51041, SPS SPS-AMA , Nichols Station - Amarillo S Interchange 230kV	117.4	0	6/1/2011
East Plant Interchange - Manhattan 115kV, 50956 - 50978	15SP, 50907-51021, SPS SPS-AMA, Harrington Station - Randall County Interchange 230kV	109.8	0	
East Plant Interchange - Manhattan 115kV, 50956 - 50978	15SP, 51020-51021, SPS SPS-AMA , Randall County Interchange 230-115kV	109.8	0	
East Plant Interchange - Pierce Tap 115kV, 50956 - 50964,	15SP, 50915-51041, SPS SPS-AMA , Nichols Station - Amarillo S Interchange 230kV	123.2	0	6/1/2011
East Plant Interchange - Pierce Tap 115kV, 50956 - 50964	15SP, 51020-51021, SPS SPS-AMA , Randall County Interchange 230-115kV	110.2	0	
East Plant Interchange - Pierce Tap 115kV, 50956 - 50964	15SP, 50907-51021, SPS SPS-AMA, Harrington Station - Randall County Interchange 230kV	110.2	0	
East Plant Interchange 230-115kV, 50956 - 50957,	15SP, 50915-51041, SPS SPS-AMA , Nichols Station - Amarillo S Interchange 230kV	101.3	309	6/1/2013

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148,	10WP, 54109-54121, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - ELK CITY 138kV	127.8	0	12/30/200 7
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	10WP, 54109-54126, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - HOBART JUNCTION 138kV	126.8	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	15SP, 54109-54121, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - ELK CITY 138kV	126.8	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	10SP, 54109-54121, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - ELK CITY 138kV	125.7	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	15SP, 54109-54126, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - HOBART JUNCTION 138kV	125.0	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	10SP, 54109-54126, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - HOBART JUNCTION 138kV	124.1	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	07WP, 54121-56001, AEPW WESTERN - WFEC AEP- CS , ELK CITY - MOREWOOD SW 138kV	123.9	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	10WP, 54121-56001, AEPW WESTERN - WFEC AEP- CS , ELK CITY - MOREWOOD SW 138kV	122.7	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	07WP, 54109-54121, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - ELK CITY 138kV	119.7	0	
ELK CITY - CLINTON JUNCTION 138kV, 54121 - 54148	07WP, 54109-54126, AEPW WESTERN , CLINTO AIR FORCE BASE TAP - HOBART JUNCTION 138kV	118.7	7	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
ELK CITY - ELKCTY-4 138-()kV, 54121 - WND 2,	10SP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	102.3	0	6/1/2008
ELK CITY - ELKCTY-4 69- ()kV, 54122 - WND 1	10SP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	103.3	0	
ELK CITY - ELKCTY-4 69- ()kV, 54122 - WND 1	15SP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	100.4	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1,	07WP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	147.3	0	12/30/200 7
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	15SP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	144.9	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 54294-54295-54302, AEPW WTU , SHAMROCK 115-69kV	143.8	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 50838-50932, SPS SPS-OKLA - SPS SPS- AMA , MCLELLN - Kirby 115kV	143.8	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 50838-50840, SPS SPS-OKLA, MCLELLN - McLean Rural 115kV	143.8	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 50840-54295, SPS SPS-OKLA - AEPW WTU , McLean Rural - SHAMROCK 115kV	143.7	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 54293-54294-54301, AEPW WTU , SHAMROCK 138-69kV	143.4	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 54292-54293, AEPW WTU , WELLINGTON - SHAMROCK 138kV	143.4	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	07WP, 54291-54292, AEPW WTU , HOLLIS TAP - WELLINGTON 138kV	143.0	0	
ELK CITY - ELKCTY-6 138-()kV, 54121 - WND 1	10WP, 50838-50932, SPS SPS-OKLA - SPS SPS- AMA , MCLELLN - Kirby 115kV	142.6	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
	07WP, 54290-54296, AEPW			
ELK CITY - ELKCTY-6	WTU , CHILDRESS - LAKE PAULINE 138kV	143.0	0	12/30/200
230-()kV, 54153 - WND 2,	15SP, 54290-54296, AEPW	143.0	U	1
ELK CITY - ELKCTY-6	WTU , CHILDRESS - LAKE			
230-()kV, 54153 - WND 2	PAULINE 138kV	140.8	0	
	07WP, 54294-54295-54302,			
ELK CITY - ELKCTY-6	AEPW WTU ,			
230-()kV, 54153 - WND 2	SHAMROCK 115-69kV	139.7	0	
	07WP, 54293-54294-54301,			
ELK CITY - ELKCTY-6	AEPW WTU ,			
230-()kV, 54153 - WND 2	SHAMROCK 138-69kV	139.7	0	
	07WP, 50840-54295, SPS			
ELICOTY ELICOTY	SPS-OKLA - AEPW WTU			
ELK CITY - ELKCTY-6	, McLean Rural - SHAMROCK	400.7	0	
230-()kV, 54153 - WND 2	115kV 07WP, 50838-50932, SPS	139.7	0	
ELK CITY - ELKCTY-6	07 WP, 50636-50932, SPS SPS-OKLA - SPS			
230-()kV, 54153 - WND 2	AMA, MCLELLN - Kirby 115kV	139.7	0	
250-()KV, 54155 - WIND 2	07WP, 50838-50840, SPS	155.7	0	
ELK CITY - ELKCTY-6	SPS-OKLA, MCLELLN -			
230-()kV, 54153 - WND 2	McLean Rural 115kV	139.7	0	
	07WP, 54292-54293, AEPW			
ELK CITY - ELKCTY-6	WTU , WELLINGTON -			
230-()kV, 54153 - WND 2	SHAMROCK 138kV	139.6	0	
	07WP, 54291-54292, AEPW			
ELK CITY - ELKCTY-6	WTU , HOLLIS TAP -			
230-()kV, 54153 - WND 2	WELLINGTON 138kV	139.3	0	
	07WP, 54290-54291, AEPW			
ELK CITY - ELKCTY-6	WTU , CHILDRESS -	400.4	_	
230-()kV, 54153 - WND 2	HOLLIS TAP 138kV	139.1	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading	ATC	Date
. 3.3		(% Rate B) Or	(MW)	Required
		Voltage (PU)	(*****)	(M/D/Y)
Grapevine Interchange -	07WP, 56449-56469, SUNC			(11,12,1)
ELK CITY 230kV, 50827 -	SEPC , HOLCOMB -			12/30/200
54153,	SPEARVILLE 345kV	140.6	0	7
Grapevine Interchange -	15SP, 50838-50932, SPS			
ELK CITY 230kV, 50827 -	SPS-OKLA - SPS SPS-		_	12/30/200
54153,	AMA, MCLELLN - Kirby 115kV	140.5	0	7
Grapevine Interchange -	07WP, 56469-58795-56468,			
ELK CITY 230kV, 50827 - 54153	SUNC SEPC - WEPL , SPEARVILLE 345-230kV	139.9	0	
Grapevine Interchange -	07WP, 54290-54296, AEPW	139.9	U	
ELK CITY 230kV, 50827 -	WTU , CHILDRESS - LAKE			
54153	PAULINE 138kV	139.8	0	
Grapevine Interchange -	15SP, 54290-54296, AEPW			
ELK CITY 230kV, 50827 -	WTU , CHILDRESS - LAKE			
54153	PAULINE 138kV	138.7	0	
Grapevine Interchange -	07WP, 50838-50932, SPS			
ELK CITY 230kV, 50827 -	SPS-OKLA - SPS SPS-			
54153	AMA, MCLELLN - Kirby 115kV	138.5	0	
Grapevine Interchange -	07WP, 50838-50840, SPS			
ELK CITY 230kV, 50827 - 54153	SPS-OKLA, MCLELLN - McLean Rural 115kV	138.3	0	
54155	15SP, 50840-54295, SPS	130.3	0	
Grapevine Interchange -	SPS-OKLA - AEPW WTU			
ELK CITY 230kV, 50827 -	, McLean Rural - SHAMROCK			
54153	115kV	138.3	0	
Grapevine Interchange -	15SP, 54294-54295-54302,			
ELK CITY 230kV, 50827 -	AEPW WTU ,			
54153	SHAMROCK 115-69kV	138.2	0	
	07WP, 51041-51321, SPS			
Cranavina Interahansa	SPS-AMA - SPS SPS-			
Grapevine Interchange - ELK CITY 230kV, 50827 -	CNPL, Amarillo S Interchange - Swisher County Interchange			
54153	230kV	138.1	0	
04100	06AP, 50827-50915, SPS	100.1	0	
Grapevine Interchange -	SPS-OKLA - SPS SPS-			
Kirby 115kV, 50826 -	AMA, Grapevine Interchange -			
50932,	Nichols Station 230kV	102.9	275	4/1/2008
Grapevine Interchange -	15SP, 50928-50932, SPS			
Nichols Station 230kV,	SPS-AMA , Conway - Kirby		_	0/4/5555
50827 - 50915,	115kV	108.7	0	6/1/2008
Grapevine Interchange -	10SP, 50928-50932, SPS			
Nichols Station 230kV, 50827 - 50915	SPS-AMA , Conway - Kirby 115kV	101.7	0	
30021 - 30913	06AP, 50827-50915, SPS	101.7	U	
Grapevine Interchange	SPS-OKLA - SPS SPS-			
230-115kV, 50826 -	AMA , Grapevine Interchange -			
50827,	Nichols Station 230kV	239.1	0	4/1/2008

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
	15SP, 50928-50932, SPS			
Gray County Interchange	SPS-AMA , Conway - Kirby			- 4 - 4
115-69kV, 50781 - 50782,	115kV	102.9	250	6/1/2011
	10SP, 58779-56871, WEPL			
Great Bend Tap - Seward	- WERE WEST ,	407.0	040	0/4/0000
115kV, 58766 - 58792,	Mullergren - CIRCLE 230kV	107.9	216	6/1/2008
Greensburg - Judson	450D 50700 50700 WEDI			40/20/200
Large 115kV, 58764 - 58771,	15SP, 58792-58796, WEPL	170.1	0	12/30/200
Greensburg - Judson	, Seward - St John 115kV	179.1	0	
Large 115kV, 58764 -	15SP, 58787-58796, WEPL			
58771	, Pratt - St John 115kV	177.9	0	
Greensburg - Judson	07WP, 58794-58871, WEPL	177.9	U	
Large 115kV, 58764 -	, Spearville - North Judson			
58771	Large 115kV	176.0	0	
Greensburg - Judson	15SP, 58771-58871, WEPL	170.0	0	
Large 115kV, 58764 -	, Judson Large - North Judson			
58771	Large 115kV	175.8	0	
Greensburg - Judson	15SP, 58794-58871, WEPL			
Large 115kV, 58764 -	, Spearville - North Judson			
58771	Large 115kV	175.1	0	
Greensburg - Judson				
Large 115kV, 58764 -	07WP, 58794-58795, WEPL			
58771	, Spearville 230-115kV	174.7	0	
Greensburg - Judson				
Large 115kV, 58764 -	15SP, 58794-58795, WEPL			
58771	, Spearville 230-115kV	172.5	0	
Greensburg - Judson				
Large 115kV, 58764 -	06AP, 58779-58795, WEPL			
58771	, Mullergren - Spearville 230kV	171.7	0	
	15SP, 56362-56433, SUNC			
Greensburg - Judson	LANE-SCO - SUNC			
Large 115kV, 58764 -	WHEATLAN, MANNING TAP -			
58771	SCOTT CITY 115kV	171.2	0	
Greensburg - Judson	15SP, 58766-58778, WEPL			
Large 115kV, 58764 -	, Great Bend Tap - Mullergren	474.0	_	
Crospoburg Sup City	115kV	171.2	0	
Greensburg - Sun City	06AP, 58779-58795, WEPL	100.0	206	4/4/2009
115kV, 58764 - 58797,	, Mullergren - Spearville 230kV	102.2	306	4/1/2008
Greensburg - Sun City 115kV, 58764 - 58797	15SP, 58792-58796, WEPL , Seward - St John 115kV	100.0	202	
Note: When transmis	, Sewaru - St John Frokv	100.9	323	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532,	06AP, 51321-51533, SPS SPS-CNPL, Swisher County Interchange - Tuco Interchange 230kV	151.6	0	12/30/200 7
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532	15SP, 51321-51533, SPS SPS-CNPL, Swisher County Interchange - Tuco Interchange 230kV	132.7	0	
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532	07WP, 51321-51533, SPS SPS-CNPL, Swisher County Interchange - Tuco Interchange 230kV	123.5	1	
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532	06AP, 51435-51533, SPS SPS-CNPL, Tolk Interchange - Tuco Interchange 230kV 10SP, 51321-51533, SPS	120.2	13	
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532	SPS-CNPL, Swisher County Interchange - Tuco Interchange 230kV	116.6	0	
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532	06AP, 51419-51733, SPS SPS-CNPL, Plant X Interchange - Sundown Interchange 230kV	101.4	311	
Hale Co Interchange - Tuco Interchange 115kV, 51402 - 51532	07WP, 51435-51533, SPS SPS-CNPL, Tolk Interchange - Tuco Interchange 230kV 06AP, 51041-51321, SPS	101.1	325	
Happy Interchange - TULIAT 115kV, 51302 - 51310,	SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange - Swisher County Interchange 230kV	144.7	0	12/30/200 7
Happy Interchange - TULIAT 115kV, 51302 - 51310	07WP, 51041-51321, SPS SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange - Swisher County Interchange 230kV	115.1	27	
Happy Interchange - TULIAT 115kV, 51302 - 51310	10WP, 51041-51321, SPS SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange - Swisher County Interchange 230kV	107.0	183	
Happy Interchange - TULIAT 115kV, 51302 - 51310	06AP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	105.6	209	
Happy Interchange - TULIAT 115kV, 51302 - 51310	06AP, 51435-51441, SPS SPS-CNPL, Tolk Interchange - Tolk 1 230-24kV	104.9	212	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or	ATC (MW)	Date Required
		Voltage (PU)		(M/D/Y)
	15SP, 58796-56624, WEPL			
Harper - Medicine Lodge	- MIDW REG E-IL, St John -		_	12/30/200
138kV, 58768 - 58774,	ST_JOHN 115kV	146.1	0	7
	07WP, 58779-56871, WEPL			
Harper - Medicine Lodge	- WERE WEST ,	4440	0	
138kV, 58768 - 58774	Mullergren - CIRCLE 230kV	144.3	0	
Horner Medicine Lodge	15SP, 58760-58778, WEPL			
Harper - Medicine Lodge 138kV, 58768 - 58774	, East Hall Tap - Mullergren 115kV	143.4	0	
136KV, 36706 - 36774	15SP, 50928-50932, SPS	143.4	U	
Harper - Medicine Lodge	SPS-AMA , Conway - Kirby			
138kV, 58768 - 58774	115kV	142.0	0	
10000,00700 00774	15SP, 51321-51533, SPS	172.0	-	
	SPS-CNPL, Swisher County			
Harper - Medicine Lodge	Interchange - Tuco			
138kV, 58768 - 58774	Interchange 230kV	141.8	0	
,	15SP, 58771-58871, WEPL			
Harper - Medicine Lodge	, Judson Large - North Judson			
138kV, 58768 - 58774	Large 115kV	141.8	0	
	15SP, 50915-51041, SPS			
Harper - Medicine Lodge	SPS-AMA , Nichols Station -			
138kV, 58768 - 58774	Amarillo S Interchange 230kV	141.4	0	
	15SP, 50838-50932, SPS			
Harper - Medicine Lodge	SPS-OKLA - SPS SPS-			
138kV, 58768 - 58774	AMA, MCLELLN - Kirby 115kV	141.3	0	
	15SP, 58794-58871, WEPL			
Harper - Medicine Lodge	, Spearville - North Judson	444.0	•	
138kV, 58768 - 58774	Large 115kV	141.3	0	
Harper - Medicine Lodge	15SP, 58773-58817, WEPL	440.0	_	
138kV, 58768 - 58774	, Medicine Lodge 115-34.5kV	140.2	0	
HASTNG - Van Buren 1	15SP, 50937-50938, SPS SPS-AMA , Northwest			
Tap 69kV, 50949 - 50961,	Interchange 115-69kV	103.8	0	6/1/2011
	interchange 115-69KV			

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
JERICHO - CLARENDON 69kV, 54277 - 54278,	15SP, 50838-50932, SPS SPS-OKLA - SPS SPS- AMA , MCLELLN - Kirby 115kV	112.5	0	12/30/200 7
JERICHO - CLARENDON 69kV, 54277 - 54278	15SP, 50840-54295, SPS SPS-OKLA - AEPW WTU , McLean Rural - SHAMROCK 115kV	109.3	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	15SP, 54294-54295-54302, AEPW WTU , SHAMROCK 115-69kV	109.3	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	10SP, 50838-50932, SPS SPS-OKLA - SPS SPS- AMA , MCLELLN - Kirby 115kV	107.1	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	10SP, 50838-50840, SPS SPS-OKLA, MCLELLN - McLean Rural 115kV	106.4	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	10SP, 54294-54295-54302, AEPW WTU , SHAMROCK 115-69kV	104.7	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	10SP, 50840-54295, SPS SPS-OKLA - AEPW WTU , McLean Rural - SHAMROCK 115kV	104.7	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	15SP, 54293-54294-54301, AEPW WTU , SHAMROCK 138-69kV	104.6	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	15SP, 54292-54293, AEPW WTU , WELLINGTON - SHAMROCK 138kV	104.3	0	
JERICHO - CLARENDON 69kV, 54277 - 54278	15SP, 54291-54292, AEPW WTU , HOLLIS TAP - WELLINGTON 138kV	101.0	0	
JERICHO - JERIC2WT 115-()kV, 54276 - WND 2,	15SP, 50604-50618, SPS SPS-OKLA, TC-Cole - Perryton Interchange 115kV	100.9	0	6/1/2010
JERICHO - JERIC2WT 115-()kV, 54276 - WND 2	10SP, 58782-58837, WEPL , North Liberal Tap - North Liberal 115kV	100.0	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
LAKE BALLINE	06AP, 54111-56043, AEPW			
LAKE PAULINE -	WESTERN - WFEC AEP-			40/20/200
ELDORADO 69kV, 54297 - 55896,	KP,ALTUS JCT TAP - RUSSELL 138kV	124.5	0	12/30/200
55696,	07WP, 50600-58772, SPS	124.5	U	- /
LAKE PAULINE -	SPS-OKLA - WEPL , Texas			
ELDORADO 69kV, 54297 -	County Interchange PHSF -			12/30/200
55896,	East Liberal 115kV	106.9	0	7
LAKE PAULINE -	10WP, 58786-56551, WEPL			-
ELDORADO 69kV, 54297 -	- MIDW REG E-IL, Plainville			
55896	- SALINE RIVER 115kV	105.4	0	
LAKE PAULINE -	10WP, 56445-56448, SUNC			
ELDORADO 69kV, 54297 -	SEPC , GARDEN CITY -			
55896	HOLCOMB 115kV	105.4	0	
LAKE PAULINE -	07WP, 50614-50632, SPS			
ELDORADO 69kV, 54297 -	SPS-OKLA, Texas Farmers -			
55896	Spearman Sub 115kV	104.0	0	
LAKE PAULINE -	07WP, 50614-50618, SPS			
ELDORADO 69kV, 54297 -	SPS-OKLA, Texas Farmers -			
55896	Perryton Interchange 115kV	104.0	0	
LAKE PAULINE -	07WP, 50907-50891, SPS			
ELDORADO 69kV, 54297 -	SPS-AMA , Harrington Station	404.0	0	
55896 LAKE PAULINE -	- Harrington 1 230-24kV 07WP, 50907-50892, SPS	101.2	0	
ELDORADO 69kV, 54297 -	SPS-AMA, Harrington Station			
55896	- Harrington 2 230-24kV	101.1	0	
LAKE PAULINE -	10SP, 58782-58837, WEPL	101.1	0	
ELDORADO 69kV, 54297 -	, North Liberal Tap - North			
55896	Liberal 115kV	101.1	0	
LAKE PAULINE -	10SP, 50618-50619, SPS			
ELDORADO 69kV, 54297 -	SPS-OKLA, Perryton			
55896	Interchange 115-69kV	101.0	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
LE-WAIT 115-69kV, 52350 - 52441,	15SP, 50604-50618, SPS SPS-OKLA, TC-Cole - Perryton Interchange 115kV	124.6	0	12/30/200 7
LE-WAIT 115-69kV, 52350 - 52441	15SP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	124.6	0	
LE-WAIT 115-69kV, 52350 - 52441	15SP, 50596-99943, SPS SPS-OKLA - , Texas County Interchange - 2002-06 115kV	124.5	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 58782-58837, WEPL , North Liberal Tap - North Liberal 115kV	111.4	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 56420-56448, SUNC WHEATLAN - SUNC SEPC , FLETCHER - HOLCOMB 115kV	111.4	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 56392-56393, SUNC PIONEER , PIONEER TAP - PLYMELL 115kV	111.4	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 54290-54296, AEPW WTU , CHILDRESS - LAKE PAULINE 138kV	111.4	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 54275-54282, AEPW WTU , NW Memphis - MEMPHIS 69kV	111.4	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 50618-50619, SPS SPS-OKLA, Perryton Interchange 115-69kV	111.4	0	
LE-WAIT 115-69kV, 52350 - 52441	10SP, 50615-50619, SPS SPS-OKLA, Wade - Perryton Interchange 69kV	111.4	0	
McCullough - Bowers Interchange 69kV, 50805 - 50819,	06AP, 50827-50915, SPS SPS-OKLA - SPS SPS- AMA , Grapevine Interchange - Nichols Station 230kV	125.1	0	4/1/2008
McCullough - Kingsmill Interchange 69kV, 50805 - 50807,	06AP, 50827-50915, SPS SPS-OKLA - SPS SPS- AMA , Grapevine Interchange - Nichols Station 230kV	133.7	0	4/1/2008

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
McLean Rural -	15SP, 54279-54280, AEPW WTU , CLARENDON REA -			12/20/200
SHAMROCK 115kV, 50840 - 54295,	HEDLEY 69kV	123.6	0	12/30/200
McLean Rural -	15SP, 54280-54281, AEPW	123.0		,
SHAMROCK 115kV,	WTU , HEDLEY - NORTH			12/30/200
50840 - 54295,	MEMPHIS REA 69kV	122.6	0	7
McLean Rural -	15SP, 54275-54281, AEPW			
SHAMROCK 115kV,	WTU , NW Memphis -			
50840 - 54295	NORTH MEMPHIS REA 69kV	120.9	0	
McLean Rural -	15SP, 54275-54282, AEPW			
SHAMROCK 115kV,	WTU , NW Memphis -		_	
50840 - 54295	MEMPHIS 69kV	120.1	0	
McLean Rural -	10SP, 54279-54280, AEPW			
SHAMROCK 115kV,	WTU , CLARENDON REA -			
50840 - 54295	HEDLEY 69kV	119.8	0	
McLean Rural -	10SP, 54280-54281, AEPW			
SHAMROCK 115kV,	WTU , HEDLEY - NORTH	440.0	0	
50840 - 54295	MEMPHIS REA 69kV	119.0	0	
McLean Rural -	10SP, 54275-54281, AEPW WTU , NW Memphis -			
SHAMROCK 115kV, 50840 - 54295	NORTH MEMPHIS REA 69kV	117.4	0	
McLean Rural -	10SP, 54275-54282, AEPW	117.4	0	
SHAMROCK 115kV,	WTU , NW Memphis -			
50840 - 54295	MEMPHIS 69kV	116.6	0	
McLean Rural -	15SP, 54282-54283, AEPW	1.0.0		
SHAMROCK 115kV,	WTU , MEMPHIS - RED			
50840 - 54295	RIVER ARSENAL 69kV	116.0	0	
McLean Rural -	15SP, 54283-54284, AEPW			
SHAMROCK 115kV,	WTU , RED RIVER			
50840 - 54295	ARSENAL - ESTELENE 69kV	115.7	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
MCLELLN - Kirby 115kV, 50838 - 50932,	10SP, 54275-54282, AEPW WTU , NW Memphis - MEMPHIS 69kV	124.2	0	12/30/200 7
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	116.2	0	
MCLELLN - Kirby 115kV, 50838 - 50932	15SP, 50604-50618, SPS SPS-OKLA, TC-Cole - Perryton Interchange 115kV	112.6	0	
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 58782-58837, WEPL , North Liberal Tap - North Liberal 115kV	108.3	0	
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 50618-50619, SPS SPS-OKLA, Perryton Interchange 115-69kV	108.2	0	
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 50615-50619, SPS SPS-OKLA, Wade - Perryton Interchange 69kV	108.2	0	
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 50613-50615, SPS SPS-OKLA, Booker - Wade 69kV	108.2	0	
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 56420-56448, SUNC WHEATLAN - SUNC SEPC , FLETCHER - HOLCOMB 115kV	108.0	0	
MCLELLN - Kirby 115kV, 50838 - 50932	10SP, 56392-56393, SUNC PIONEER, PIONEER TAP - PLYMELL 115kV 06AP, 54276-54277-54303,	107.7	0	
MCLELLN - Kirby 115kV, 50838 - 50932	AEPW WTU , JERICHO 115-69kV	105.8	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
MCLELLN - McLean Rural 115kV, 50838 - 50840,	10SP, 54275-54282, AEPW WTU , NW Memphis - MEMPHIS 69kV	122.1	0	12/30/200
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 56449-56469, SUNC SEPC , HOLCOMB - SPEARVILLE 345kV	113.9	43	,
MCLELLN - McLean Rural 115kV, 50838 - 50840	15SP, 50604-50618, SPS SPS-OKLA, TC-Cole - Perryton Interchange 115kV	110.3	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 58782-58837, WEPL , North Liberal Tap - North Liberal 115kV	106.2	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 50622-50624, SPS SPS-OKLA, Sherman County 115kV	106.1	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 50618-50619, SPS SPS-OKLA, Perryton Interchange 115-69kV	106.0	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 50615-50619, SPS SPS-OKLA, Wade - Perryton Interchange 69kV	106.0	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 50613-50615, SPS SPS-OKLA, Booker - Wade 69kV	106.0	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 56420-56448, SUNC WHEATLAN - SUNC SEPC , FLETCHER - HOLCOMB 115kV	105.9	0	
MCLELLN - McLean Rural 115kV, 50838 - 50840	10SP, 56392-56393, SUNC PIONEER , PIONEER TAP - PLYMELL 115kV	105.6	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Medicine Lodge - Sun City	06AP, 58779-58795, WEPL			12/30/200
115kV, 58773 - 58797,	, Mullergren - Spearville 230kV	162.6	0	7
	07WP, 58794-58871, WEPL			
Medicine Lodge - Sun City	, Spearville - North Judson			
115kV, 58773 - 58797	Large 115kV	160.9	0	
Medicine Lodge - Sun City	07WP, 58794-58795, WEPL			
115kV, 58773 - 58797	, Spearville 230-115kV	159.6	0	
Medicine Lodge - Sun City	15SP, 58792-58796, WEPL			
115kV, 58773 - 58797	, Seward - St John 115kV	156.6	0	
	15SP, 58771-58871, WEPL			
Medicine Lodge - Sun City	, Judson Large - North Judson			
115kV, 58773 - 58797	Large 115kV	153.3	0	
	07WP, 58771-58871, WEPL			
Medicine Lodge - Sun City	, Judson Large - North Judson			
115kV, 58773 - 58797	Large 115kV	153.1	0	
	15SP, 58794-58871, WEPL			
Medicine Lodge - Sun City	, Spearville - North Judson			
115kV, 58773 - 58797	Large 115kV	152.8	0	
Medicine Lodge - Sun City	15SP, 58794-58795, WEPL			
115kV, 58773 - 58797	, Spearville 230-115kV	150.2	0	
	07WP, 58779-56871, WEPL			
Medicine Lodge - Sun City	- WERE WEST ,			
115kV, 58773 - 58797	Mullergren - CIRCLE 230kV	149.9	0	
	10WP, 58794-58871, WEPL		_	
Medicine Lodge - Sun City	, Spearville - North Judson			
115kV, 58773 - 58797	Large 115kV	149.6	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
	07WP, 58779-56871, WEPL	voltage (i o)		(101/10/11)
Medicine Lodge 138-	- WERE WEST .			12/30/200
115kV, 58773 - 58774,	Mullergren - CIRCLE 230kV	148.8	0	7
11367, 30773 30774,	07WP, 58796-56624, WEPL	140.0	0	
Medicine Lodge 138-	- MIDW REG E-IL, St John -			
115kV, 58773 - 58774	ST JOHN 115kV	144.8	0	
11000,00110 00111	15SP, 58796-56624, WEPL	11110		
Medicine Lodge 138-	- MIDW REG E-IL, St John -			
115kV, 58773 - 58774	ST JOHN 115kV	144.8	0	
Medicine Lodge 138-	15SP, 58773-58817, WEPL	-		
115kV, 58773 - 58774	, Medicine Lodge 115-34.5kV	144.2	0	
	15SP, 58760-58778, WEPL			
Medicine Lodge 138-	, East Hall Tap - Mullergren			
115kV, 58773 - 58774	115kV	144.1	0	
	10WP, 58779-56871, WEPL			
Medicine Lodge 138-	- WERE WEST ,			
115kV, 58773 - 58774	Mullergren - CIRCLE 230kV	143.5	0	
	15SP, 58771-58871, WEPL			
Medicine Lodge 138-	, Judson Large - North Judson			
115kV, 58773 - 58774	Large 115kV	142.4	0	
	07WP, 58794-58871, WEPL			
Medicine Lodge 138-	, Spearville - North Judson			
115kV, 58773 - 58774	Large 115kV	142.2	0	
	15SP, 51321-51533, SPS			
Madiaina Ladra 400	SPS-CNPL, Swisher County			
Medicine Lodge 138-	Interchange - Tuco	1400	_	
115kV, 58773 - 58774	Interchange 230kV 15SP, 58794-58871, WEPL	142.2	0	
Medicine Lodge 138-	, Spearville - North Judson			
115kV, 58773 - 58774	Large 115kV	142.2	0	
113KV, 30113 - 30114	Large Hoky	142.2	U	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or	ATC (MW)	Date Required
		Voltage (PU)	,	(M/D/Y)
	15SP, 58764-58771, WEPL	O ()		,
Mullergren - Spearville	, Greensburg - Judson Large			12/30/200
230kV, 58779 - 58795,	115kV	124.1	28	7
Mullergren - Spearville	15SP, 58764-58797, WEPL			
230kV, 58779 - 58795	, Greensburg - Sun City 115kV	122.0	52	
	15SP, 58773-58797, WEPL			
Mullergren - Spearville	, Medicine Lodge - Sun City			
230kV, 58779 - 58795	115kV	120.6	64	
	10SP, 58764-58771, WEPL			
Mullergren - Spearville	, Greensburg - Judson Large			
230kV, 58779 - 58795	115kV	117.8	89	
	15SP, 56362-56433, SUNC			
	LANE-SCO - SUNC			
Mullergren - Spearville	WHEATLAN, MANNING TAP -			
230kV, 58779 - 58795	SCOTT CITY 115kV	116.7	110	
	15SP, 56456-56607, SUNC			
Mullergren - Spearville	SEPC - MIDW REG E-IL,	440.7	405	
230kV, 58779 - 58795	NESS CITY 115kV	116.7	105	
	15SP, 56360-56362, SUNC			
Mullergren - Spearville	LANE-SCO, DIGHTON TAP -	440.0	440	
230kV, 58779 - 58795	MANNING TAP 115kV	116.0	118	
Mullergren - Spearville	10SP, 58764-58797, WEPL	445.7	445	
230kV, 58779 - 58795	, Greensburg - Sun City 115kV	115.7	115	
Moderner Changilla	10SP, 58773-58797, WEPL			
Mullergren - Spearville	, Medicine Lodge - Sun City	4447	107	
230kV, 58779 - 58795	115kV	114.7	127	
Mullergren - Spearville	15SP, 56359-56360, SUNC LANE-SCO, BEELER -			
230kV, 58779 - 58795	DIGHTON TAP 115kV	114.3	136	
230KV, 36779 - 36793	DIGHTON TAP TISKV		130	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Nichols Station - Whitaker 115kV, 50914 - 50922,	15SP, 50915-51041, SPS SPS-AMA , Nichols Station - Amarillo S Interchange 230kV	125.3	0	12/30/200 7
Nichols Station - Whitaker 115kV, 50914 - 50922	15SP, 50907-51021, SPS SPS-AMA , Harrington Station - Randall County Interchange 230kV	116.0	0	
Nichols Station - Whitaker 115kV, 50914 - 50922	15SP, 51020-51021, SPS SPS-AMA , Randall County Interchange 230-115kV	115.9	0	
Nichols Station - Whitaker 115kV, 50914 - 50922	15SP, 50928-50932, SPS SPS-AMA , Conway - Kirby 115kV 15SP, 50751-50915, SPS	112.1	0	
Nichols Station - Whitaker 115kV, 50914 - 50922	SPS-OKLA - SPS SPS- AMA , Hutchinson Co. Interchange - Nichols Station 230kV	105.8	118	
Nichols Station - Whitaker 115kV, 50914 - 50922	15SP, 50826-50932, SPS SPS-OKLA - SPS SPS- AMA , Grapevine Interchange - Kirby 115kV 15SP, 50600-58772, SPS	104.0	229	
Nichols Station - Whitaker 115kV, 50914 - 50922	SPS-OKLA - WEPL , Texas County Interchange PHSF - East Liberal 115kV 15SP, 50596-50600, SPS	101.3	295	
Nichols Station - Whitaker 115kV, 50914 - 50922	SPS-OKLA, Texas County Interchange - Texas County Interchange PHSF 115kV	101.1	301	
Nichols Station - Whitaker 115kV, 50914 - 50922	15SP, 50750-50782, SPS SPS-OKLA, Hutchinson Co. Interchange - Gray County Interchange 115kV	100.6	326	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Osage Switching Station - Canyon East 115kV, 51014 - 51080.	10SP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange -	162.8	0	12/30/200
Osage Switching Station - Canyon East 115kV, 51014 - 51080	Deaf Smith Interchange 230kV 15SP, 51435-51441, SPS SPS-CNPL, Tolk Interchange - Tolk 1 230-24kV	135.9	0	1
Osage Switching Station - Canyon East 115kV, 51014 - 51080	06AP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	135.6	0	
Osage Switching Station - Canyon East 115kV, 51014 - 51080	07WP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	117.7	0	
Osage Switching Station - Canyon East 115kV, 51014 - 51080	10WP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV	109.6	68	
Osage Switching Station - Canyon East 115kV, 51014 - 51080	06AP, 51435-51441, SPS SPS-CNPL, Tolk Interchange - Tolk 1 230-24kV	105.8	149	
PALMER - TRIBUNE SWITCH 115kV, 56431 - 56438,	10SP, 56429-56451-56452, SUNC WHEATLAN - SUNC SEPC , MINGO 345-115kV	101.7	0	6/1/2008
N				

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading	ATC	Date
		(% Rate B) Or Voltage (PU)	(MW)	Required (M/D/Y)
	10SP, 51041-51321, SPS	<u> </u>		
PALODU - Happy	SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange			
Interchange 115kV, 51082	- Swisher County Interchange			12/30/200
- 51302,	230kV	172.6	0	7
,	06AP, 51041-51321, SPS	1,7_1,0		-
	SPS-AMA - SPS SPS-			
PALODU - Happy	CNPL, Amarillo S Interchange			
Interchange 115kV, 51082	- Swisher County Interchange			
- 51302	230kV	151.7	0	
PALODU - Happy	15SP, 51435-51441, SPS			
Interchange 115kV, 51082 - 51302	SPS-CNPL, Tolk Interchange - Tolk 1 230-24kV	139.0	0	
- 51302	10SP, 50993-51111, SPS	139.0	0	
PALODU - Happy	SPS-AMA - SPS SPS-			
Interchange 115kV, 51082	CLHF, Bushland Interchange -			
- 51302	Deaf Smith Interchange 230kV	134.5	0	
PALODU - Happy	15SP, 51396-51418, SPS			
Interchange 115kV, 51082	SPS-CNPL, LC-SOL - Plant X			
- 51302	Interchange 115kV	130.2	0	
PALODU - Happy	15SP, 51388-51396, SPS			
Interchange 115kV, 51082 - 51302	SPS-CNPL, Lamton	128.3	0	
- 51302	Interchange - LC-SOL 115kV 15SP, 51111-51419, SPS	120.3	0	
PALODU - Happy	SPS-CLHF - SPS SPS-			
Interchange 115kV, 51082	CNPL, Deaf Smith Interchange			
- 51302	- Plant X Interchange 230kV	127.5	0	
	15SP, 51419-51733, SPS			
PALODU - Happy	SPS-CNPL, Plant X			
Interchange 115kV, 51082	Interchange - Sundown		_	
- 51302	Interchange 230kV	126.8	0	
DALODII Hanni	15SP, 51402-51418, SPS			
PALODU - Happy Interchange 115kV, 51082	SPS-CNPL, Hale Co Interchange - Plant X			
- 51302	Interchange 115kV	126.2	0	
01002	15SP, 51014-51080, SPS	120.2		
PALODU - Happy	SPS-AMA - SPS SPS-			
Interchange 115kV, 51082	CLHF, Osage Switching			
- 51302	Station - Canyon East 115kV	126.2	0	
PALODU - Happy	10SP, 56449-56469, SUNC			
Interchange 115kV, 51082	SEPC , HOLCOMB -		_	
- 51302	SPEARVILLE 345kV	114.2	0	
Pierce Tap - Osage Switching Station 115kV,	15SP, 50915-51041, SPS			
50964 - 51014,	SPS-AMA , Nichols Station - Amarillo S Interchange 230kV	108.5	0	6/1/2011
	sion service associated with			

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
	10SP, 51041-51321, SPS			
D 1 11 0 1	SPS-AMA - SPS SPS-			
Randall County	CNPL, Amarillo S Interchange			40/00/000
Interchange - PALODU 115kV, 51020 - 51082,	- Swisher County Interchange 230kV	175.0	0	12/30/200
113KV, 31020 - 31002,	06AP, 51041-51321, SPS	173.0	0	
	SPS-AMA - SPS SPS-			
Randall County	CNPL, Amarillo S Interchange			
Interchange - PALODU	- Swisher County Interchange			
115kV, 51020 - 51082	230kV	152.9	0	
Randall County	15SP, 51435-51441, SPS			
Interchange - PALODU	SPS-CNPL, Tolk Interchange -			
115kV, 51020 - 51082	Tolk 1 230-24kV	141.3	0	
	10SP, 50993-51111, SPS			
Randall County	SPS-AMA - SPS SPS-			
Interchange - PALODU	CLHF, Bushland Interchange -			
115kV, 51020 - 51082	Deaf Smith Interchange 230kV	136.7	0	
Randall County	15SP, 51396-51418, SPS			
Interchange - PALODU	SPS-CNPL, LC-SOL - Plant X	132.7	0	
115kV, 51020 - 51082 Randall County	Interchange 115kV 15SP, 51388-51396, SPS	132.1	U	
Interchange - PALODU	SPS-CNPL, Lamton			
115kV, 51020 - 51082	Interchange - LC-SOL 115kV	130.8	0	
11000,01020 01002	15SP, 51111-51419, SPS	100.0		
Randall County	SPS-CLHF - SPS SPS-			
Interchange - PALODU	CNPL, Deaf Smith Interchange			
115kV, 51020 - 51082	- Plant X Interchange 230kV	129.9	0	
	15SP, 51419-51733, SPS			
Randall County	SPS-CNPL, Plant X			
Interchange - PALODU	Interchange - Sundown			
115kV, 51020 - 51082	Interchange 230kV	129.3	0	
Day Jall Oa at	15SP, 51402-51418, SPS			
Randall County	SPS-CNPL, Hale Co			
Interchange - PALODU 115kV, 51020 - 51082	Interchange - Plant X	128.7	0	
113KV, 31020 - 31082	Interchange 115kV 15SP, 51014-51080, SPS	120.7	0	
Randall County	SPS-AMA - SPS SPS-			
Interchange - PALODU	CLHF, Osage Switching			
115kV, 51020 - 51082	Station - Canyon East 115kV	128.5	0	
Randall County	10SP, 50915-51041, SPS			
Interchange 230-115kV,	SPS-AMA, Nichols Station -			
51020 - 51021,	Amarillo S Interchange 230kV	114.9	0	6/1/2008
	15SP, 50604-50618, SPS		·	
Roswell Interchange 115-	SPS-OKLA, TC-Cole -			- 4
69kV, 52093 - 52094,	Perryton Interchange 115kV	104.6	0	6/1/2011
B	15SP, 50596-99943, SPS			
Roswell Interchange 115-	SPS-OKLA - , Texas County	404.0	^	
69kV, 52093 - 52094	Interchange - 2002-06 115kV	104.6	0	
Poswall Interchange 115	15SP, 54290-54296, AEPW			
Roswell Interchange 115- 69kV, 52093 - 52094	WTU , CHILDRESS - LAKE PAULINE 138kV	104.6	0	
03KV, 02030 - 02034	I AULINE IOUKV	104.0	U	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Seven Rivers Interchange 115-69kV, 52294 - 52295,	15SP, 50596-99943, SPS SPS-OKLA - , Texas County Interchange - 2002-06 115kV	116.5	0	6/1/2011
Seward - St John 115kV, 58792 - 58796,	10WP, 58779-56871, WEPL - WERE WEST , Mullergren - CIRCLE 230kV	162.5	0	12/30/200 7
Seward - St John 115kV, 58792 - 58796	07WP, 58779-56871, WEPL - WERE WEST , Mullergren - CIRCLE 230kV	148.9	0	
Seward - St John 115kV, 58792 - 58796	10WP, 58764-58771, WEPL , Greensburg - Judson Large 115kV	141.5	0	
Seward - St John 115kV, 58792 - 58796	10WP, 58764-58797, WEPL , Greensburg - Sun City 115kV 10WP, 58773-58797, WEPL	137.5	0	
Seward - St John 115kV, 58792 - 58796	, Medicine Lodge - Sun City 115kV	135.6	0	
Seward - St John 115kV, 58792 - 58796	10SP, 58779-56871, WEPL - WERE WEST , Mullergren - CIRCLE 230kV	129.7	0	
Seward - St John 115kV, 58792 - 58796	07WP, 58764-58771, WEPL , Greensburg - Judson Large 115kV	129.0	0	
Seward - St John 115kV, 58792 - 58796	07WP, 58764-58797, WEPL , Greensburg - Sun City 115kV 07WP, 58773-58797, WEPL	125.2	0	
Seward - St John 115kV, 58792 - 58796	, Medicine Lodge - Sun City 115kV	123.4	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
SHAMROCK -	07WP, 54275-54281, AEPW			
SHAMRCK1 115-()kV,	WTU , NW Memphis -			12/30/200
54295 - WND 2,	NORTH MEMPHIS REA 69kV	117.5	0	7
SHAMROCK -	06AP, 54276-54277-54303,			
SHAMRCK1 115-()kV,	AEPW WTU , JERICHO		_	
54295 - WND 2	115-69kV	116.7	0	
SHAMROCK -	06AP, 50932-54276, SPS			
SHAMRCK1 115-()kV,	SPS-AMA - AEPW WTU ,			
54295 - WND 2	Kirby - JERICHO 115kV	116.6	0	
SHAMROCK -	10WP, 54275-54282, AEPW			
SHAMRCK1 115-()kV,	WTU , NW Memphis -			
54295 - WND 2	MEMPHIS 69kV	116.6	0	
SHAMROCK -	06AP, 54277-54278, AEPW			
SHAMRCK1 115-()kV,	WTU , JERICHO -			
54295 - WND 2	CLARENDON 69kV	116.4	0	
SHAMROCK -	07WP, 54275-54282, AEPW			
SHAMRCK1 115-()kV,	WTU , NW Memphis -			
54295 - WND 2	MEMPHIS 69kV	116.3	0	
SHAMROCK -	10WP, 54282-54283, AEPW			
SHAMRCK1 115-()kV,	WTU , MEMPHIS - RED			
54295 - WND 2	RIVER ARSENAL 69kV	115.2	0	
SHAMROCK -	07WP, 54282-54283, AEPW			
SHAMRCK1 115-()kV,	WTU , MEMPHIS - RED			
54295 - WND 2	RIVER ARSENAL 69kV	115.1	0	
SHAMROCK -	07WP, 54283-54284, AEPW			
SHAMRCK1 115-()kV,	WTU , RED RIVER			
54295 - WND 2	ARSENAL - ESTELENE 69kV	115.0	0	
SHAMROCK -	10WP, 54283-54284, AEPW			
SHAMRCK1 115-()kV,	WTU , RED RIVER			
54295 - WND 2	ARSENAL - ESTELENE 69kV	115.0	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading	ATC	Date
		(% Rate B) Or	(MW)	Required
		Voltage (PU)	,	(M/D/Y)
SHAMROCK -	07WP, 54275-54281, AEPW	romago (ro)		(101,7 27 1)
SHAMRCK1 69-()kV,	WTU , NW Memphis -			12/30/200
54294 - WND 1,	NORTH MEMPHIS REA 69kV	119.9	0	7
SHAMROCK -	06AP, 54276-54277-54303,			
SHAMRCK1 69-()kV,	AEPW WTU , JERICHO			
54294 - WND 1	115-69kV	119.4	0	
SHAMROCK -	06AP, 50932-54276, SPS			
SHAMRCK1 69-()kV,	SPS-AMA - AEPW WTU ,			
54294 - WND 1	Kirby - JERICHO 115kV	119.4	0	
SHAMROCK -	06AP, 54277-54278, AEPW			
SHAMRCK1 69-()kV,	WTU , JERICHO -			
54294 - WND 1	CLARENDON 69kV	119.1	0	
SHAMROCK -	10WP, 54275-54282, AEPW			
SHAMRCK1 69-()kV,	WTU , NW Memphis -			
54294 - WND 1	MEMPHIS 69kV	118.2	0	
SHAMROCK -	07WP, 54275-54282, AEPW			
SHAMRCK1 69-()kV,	WTU , NW Memphis -			
54294 - WND 1	MEMPHIS 69kV	118.0	0	
SHAMROCK -	10WP, 54282-54283, AEPW			
SHAMRCK1 69-()kV,	WTU , MEMPHIS - RED			
54294 - WND 1	RIVER ARSENAL 69kV	117.3	0	
SHAMROCK -	07WP, 54282-54283, AEPW			
SHAMRCK1 69-()kV,	WTU , MEMPHIS - RED			
54294 - WND 1	RIVER ARSENAL 69kV	117.2	0	
SHAMROCK -	06AP, 54278-54279, AEPW			
SHAMRCK1 69-()kV,	WTU , CLARENDON -			
54294 - WND 1	CLARENDON REA 69kV	117.1	0	
SHAMROCK -	10WP, 54283-54284, AEPW			
SHAMRCK1 69-()kV,	WTU , RED RIVER			
54294 - WND 1	ARSENAL - ESTELENE 69kV	117.1	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
SHAMROCK -	06AP, 54276-54277-54303,			
SHAMRCK2 138-()kV,	AEPW WTU , JERICHO			12/30/200
54293 - WND 2,	115-69kV	115.4	0	7
SHAMROCK -	06AP, 50932-54276, SPS			
SHAMRCK2 138-()kV,	SPS-AMA - AEPW WTU ,			
54293 - WND 2	Kirby - JERICHO 115kV	115.4	0	
SHAMROCK -	06AP, 54277-54278, AEPW			
SHAMRCK2 138-()kV,	WTU , JERICHO -			
54293 - WND 2	CLARENDON 69kV	115.1	0	
SHAMROCK -	06AP, 54278-54279, AEPW			
SHAMRCK2 138-()kV,	WTU , CLARENDON -			
54293 - WND 2	CLARENDON REA 69kV	112.9	0	
SHAMROCK -	06AP, 54279-54280, AEPW			
SHAMRCK2 138-()kV,	WTU , CLARENDON REA -			
54293 - WND 2	HEDLEY 69kV	112.5	0	
SHAMROCK -	06AP, 54280-54281, AEPW			
SHAMRCK2 138-()kV,	WTU , HEDLEY - NORTH			
54293 - WND 2	MEMPHIS REA 69kV	112.3	0	
SHAMROCK -	06AP, 54275-54281, AEPW			
SHAMRCK2 138-()kV,	WTU , NW Memphis -			
54293 - WND 2	NORTH MEMPHIS REA 69kV	112.3	0	
SHAMROCK -	07WP, 54275-54281, AEPW			
SHAMRCK2 138-()kV,	WTU , NW Memphis -			
54293 - WND 2	NORTH MEMPHIS REA 69kV	111.1	0	
SHAMROCK -	06AP, 54284-54285, AEPW			
SHAMRCK2 138-()kV,	WTU , ESTELENE - CAREY			
54293 - WND 2	69kV	109.9	142	
SHAMROCK -	06AP, 54285-54286, AEPW			
SHAMRCK2 138-()kV,	WTU , CAREY - AIRPORT			
54293 - WND 2	69kV	109.8	143	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
SHAMROCK -	06AP, 54276-54277-54303,			
SHAMRCK2 69-()kV,	AEPW WTU , JERICHO			12/30/200
54294 - WND 1,	115-69kV	112.3	0	7
SHAMROCK -	06AP, 50932-54276, SPS			
SHAMRCK2 69-()kV,	SPS-AMA - AEPW WTU ,		_	
54294 - WND 1	Kirby - JERICHO 115kV	112.3	0	
SHAMROCK -	06AP, 54277-54278, AEPW			
SHAMRCK2 69-()kV,	WTU , JERICHO -			
54294 - WND 1	CLARENDON 69kV	112.0	0	
SHAMROCK -	06AP, 54278-54279, AEPW			
SHAMRCK2 69-()kV,	WTU , CLARENDON -			
54294 - WND 1	CLARENDON REA 69kV	110.0	0	
SHAMROCK -	06AP, 54279-54280, AEPW			
SHAMRCK2 69-()kV,	WTU , CLARENDON REA -			
54294 - WND 1	HEDLEY 69kV	109.7	0	
SHAMROCK -	06AP, 54280-54281, AEPW			
SHAMRCK2 69-()kV,	WTU , HEDLEY - NORTH			
54294 - WND 1	MEMPHIS REA 69kV	109.5	0	
SHAMROCK -	06AP, 54275-54281, AEPW			
SHAMRCK2 69-()kV,	WTU , NW Memphis -			
54294 - WND 1	NORTH MEMPHIS REA 69kV	109.4	0	
SHAMROCK -	06AP, 54285-54286, AEPW			
SHAMRCK2 69-()kV,	WTU , CAREY - AIRPORT			
54294 - WND 1	69kV	107.3	173	
SHAMROCK -	06AP, 54284-54285, AEPW			
SHAMRCK2 69-()kV,	WTU , ESTELENE - CAREY			
54294 - WND 1	69kV	107.3	173	
SHAMROCK -	07WP, 54275-54281, AEPW			
SHAMRCK2 69-()kV,	WTU , NW Memphis -			
54294 - WND 1	NORTH MEMPHIS REA 69kV	107.0	0	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1,	15SP, 58771-58770, WEPL , Judson Large - Judson Large Generator 115-13.8kV	113.2	17	12/30/200
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	07WP, 58771-58770, WEPL , Judson Large - Judson Large Generator 115-13.8kV	108.0	165	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	10WP, 58771-58770, WEPL , Judson Large - Judson Large Generator 115-13.8kV	108.0	152	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	15SP, 56456-56607, SUNC SEPC - MIDW REG E-IL, NESS CITY 115kV	103.7	242	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	15SP, 58752-58759, WEPL , Cimarron River Tap - Cudahy 115kV	103.3	261	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	10SP, 56456-56607, SUNC SEPC - MIDW REG E-IL, NESS CITY 115kV	102.8	276	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	15SP, 56362-56433, SUNC LANE-SCO - SUNC WHEATLAN, MANNING TAP - SCOTT CITY 115kV	102.6	269	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	15SP, 50600-58772, SPS SPS-OKLA - WEPL , Texas County Interchange PHSF - East Liberal 115kV	102.5	279	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	15SP, 50596-50600, SPS SPS-OKLA, Texas County Interchange - Texas County Interchange PHSF 115kV	102.5	279	
Spearville - SPRV-1 7 230- ()kV, 58795 - WND 1	10SP, 56362-56433, SUNC LANE-SCO - SUNC WHEATLAN, MANNING TAP - SCOTT CITY 115kV	102.3	288	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or	ATC (MW)	Date Required
		Voltage (PU)	(*****)	(M/D/Y)
	15SP, 58771-58770, WEPL	O ()		,
SPEARVILLE - SPRV-1 7	, Judson Large - Judson Large			12/30/200
345-()kV, 56469 - WND 2,	Generator 115-13.8kV	113.7	12	7
	10WP, 58771-58770, WEPL			
SPEARVILLE - SPRV-1 7	, Judson Large - Judson Large	400.4	4.47	
345-()kV, 56469 - WND 2	Generator 115-13.8kV 07WP, 58771-58770, WEPL	108.1	147	
SPEARVILLE - SPRV-1 7	, Judson Large - Judson Large			
345-()kV, 56469 - WND 2	Generator 115-13.8kV	107.9	159	
0+0 ()KV, 00+03 VVIVD 2	15SP, 56456-56607, SUNC	107.5	100	
SPEARVILLE - SPRV-1 7	SEPC - MIDW REG E-IL,			
345-()kV, 56469 - WND 2	NESS CITY 115kV	104.2	232	
, i	10SP, 56456-56607, SUNC			
SPEARVILLE - SPRV-1 7	SEPC - MIDW REG E-IL,			
345-()kV, 56469 - WND 2	NESS CITY 115kV	103.5	258	
	15SP, 58752-58759, WEPL			
SPEARVILLE - SPRV-17	, Cimarron River Tap - Cudahy	400.4	050	
345-()kV, 56469 - WND 2	115kV	103.4	259	
	15SP, 56362-56433, SUNC LANE-SCO - SUNC			
SPEARVILLE - SPRV-1 7	WHEATLAN, MANNING TAP -			
345-()kV, 56469 - WND 2	SCOTT CITY 115kV	103.1	258	
0.10 (), 00.100 11.12 2	15SP, 56360-56362, SUNC	100.1	200	
SPEARVILLE - SPRV-1 7	LANE-SCO, DIGHTON TAP -			
345-()kV, 56469 - WND 2	MANNING TAP 115kV	102.8	266	
	10SP, 56429-56451-56452,			
SPEARVILLE - SPRV-1 7	SUNC WHEATLAN - SUNC			
345-()kV, 56469 - WND 2	SEPC , MINGO 345-115kV	102.5	276	
	10SP, 56362-56433, SUNC			
SPEARVILLE - SPRV-1 7	LANE-SCO - SUNC			
345-()kV, 56469 - WND 2	WHEATLAN, MANNING TAP - SCOTT CITY 115kV	102.5	280	
343-()KV, 36469 - VIND 2	10WP, 58779-56871, WEPL	102.5	200	
St John - ST_JOHN	- WERE WEST ,			12/30/200
115kV, 58796 - 56624,	Mullergren - CIRCLE 230kV	135.6	0	7
, , , , , , , , , , , , , , , , , , , ,	07WP, 58779-56871, WEPL			-
St John - ST_JOHN	- WERE WEST ,			12/30/200
115kV, 58796 - 56624,	Mullergren - CIRCLE 230kV	119.5	58	7
	10SP, 58779-56871, WEPL			
St John - ST_JOHN	- WERE WEST ,			
115kV, 58796 - 56624	Mullergren - CIRCLE 230kV	100.5	334	
Swigh on County	10SP, 51321-51533, SPS			
Swisher County	SPS-CNPL, Swisher County			
Interchange 230-115kV, 51320 - 51321,	Interchange - Tuco Interchange 230kV	1117	0	6/1/2009
01020 - 01021,	I IIITETUTIATIYE ZOUKV	114.7	0	6/1/2008

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or	ATC (MW)	Date Required
		Voltage (PU)		(M/D/Y)
Texas County Interchange	10WP, 56449-56469, SUNC			
PHSF - East Liberal	SEPC , HOLCOMB -			12/30/200
115kV, 50600 - 58772,	SPEARVILLE 345kV	110.7	37	7
Texas County Interchange	07WP, 56449-56469, SUNC			
PHSF - East Liberal	SEPC , HOLCOMB -			12/30/200
115kV, 50600 - 58772,	SPEARVILLE 345kV	110.5	89	7
Texas County Interchange	10WP, 56469-58795-56468,			
PHSF - East Liberal	SUNC SEPC - WEPL ,			
115kV, 50600 - 58772	SPEARVILLE 345-230kV	110.5	32	
Texas County Interchange	07WP, 56469-58795-56468,			
PHSF - East Liberal	SUNC SEPC - WEPL ,			
115kV, 50600 - 58772	SPEARVILLE 345-230kV	110.4	80	
Texas County Interchange	10SP, 56449-56469, SUNC			
PHSF - East Liberal	SEPC , HOLCOMB -			
115kV, 50600 - 58772	SPEARVILLE 345kV	105.4	163	
	06AP, 56448-56447, SUNC			
Texas County Interchange	SEPC , HOLCOMB -			
PHSF - East Liberal	HOLCOMB GENERATOR			
115kV, 50600 - 58772	115-22kV	104.9	0	
	06AP, 50827-50915, SPS			
Texas County Interchange	SPS-OKLA - SPS SPS-			
PHSF - East Liberal	AMA , Grapevine Interchange -			
115kV, 50600 - 58772	Nichols Station 230kV	102.2	260	
	07WP, 51041-51321, SPS			
	SPS-AMA - SPS SPS-			
Texas County Interchange	CNPL, Amarillo S Interchange			
PHSF - East Liberal	- Swisher County Interchange			
115kV, 50600 - 58772	230kV	100.6	319	
	10WP, 51041-51321, SPS			
To so Oo at lateral soon	SPS-AMA - SPS SPS-			
Texas County Interchange	CNPL, Amarillo S Interchange			
PHSF - East Liberal	- Swisher County Interchange	400.0	040	
115kV, 50600 - 58772	230kV	100.6	319	
	10WP, 50751-50915, SPS			
Toyas County Interchange	SPS-OKLA - SPS SPS- AMA , Hutchinson Co.			
Texas County Interchange PHSF - East Liberal	Interchange - Nichols Station			
115kV, 50600 - 58772	230kV	100.3	328	
11367, 30000 - 30772	15SP, 54126-54158, AEPW	100.3	320	
TIPTON & HEADERICK -	WESTERN, HOBART			
SNYDER 69kV, 54125 -	JUNCTION - TAMARAC TAP			
54138	138kV	106.8	272	
Note: When transmis	1301/1	100.0	212	

Table 4: Contingency Analysis Results

Facility	Model & Contingency	Facility Loading (% Rate B) Or Voltage (PU)	ATC (MW)	Date Required (M/D/Y)
TULIAT - Kress Interchange 115kV, 51310 - 51316,	06AP, 51041-51321, SPS SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange - Swisher County Interchange 230kV	141.2	0	12/30/200 7
TULIAT - Kress Interchange 115kV, 51310 - 51316	07WP, 51041-51321, SPS SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange - Swisher County Interchange 230kV	112.1	89	
TULIAT - Kress Interchange 115kV, 51310 - 51316	10WP, 51041-51321, SPS SPS-AMA - SPS SPS- CNPL, Amarillo S Interchange - Swisher County Interchange 230kV	103.7	257	
TULIAT - Kress Interchange 115kV, 51310 - 51316 TULIAT - Kress	06AP, 50993-51111, SPS SPS-AMA - SPS SPS- CLHF, Bushland Interchange - Deaf Smith Interchange 230kV 06AP, 51435-51441, SPS	102.0	293	
Interchange 115kV, 51310 - 51316	SPS-CNPL, Tolk Interchange - Tolk 1 230-24kV	101.3	306	
Whitaker - East Plant Interchange 115kV, 50922 - 50956,	15SP, 50915-51041, SPS SPS-AMA, Nichols Station - Amarillo S Interchange 230kV	117.7	0	6/1/2011
Whitaker - East Plant Interchange 115kV, 50922 - 50956	15SP, 50907-51021, SPS SPS-AMA , Harrington Station - Randall County Interchange 230kV	108.6	0	
Whitaker - East Plant Interchange 115kV, 50922 - 50956	15SP, 51020-51021, SPS SPS-AMA , Randall County Interchange 230-115kV	108.5	0	
Whitaker - East Plant Interchange 115kV, 50922 - 50956	15SP, 50928-50932, SPS SPS-AMA , Conway - Kirby 115kV	104.8	189	

Powerflow Analysis

A powerflow analysis was conducted for the facility using modified versions of the 2006 April, 2007 Winter Peak, 2010 Summer and Winter Peak, and 2015 Summer Peak models. The output of the Customer's facility was offset in each model by a reduction in output of existing online SPP generation. The proposed in-service date of the generator is December 30, 2007. The available seasonal models used were through the 2015 Summer Peak of which is the end of the current SPP planning horizon.

The analysis of the Customer's project indicates that, given the requested generation level of 340MW and location, additional criteria violations will occur on the existing AEPW, SPS, SUNC, WEPL and WFEC facilities under steady state conditions in the peak seasons.

There are several other proposed generation additions in the general area of the Customer's facility. Local projects that were previously queued were assumed to be in service in this Feasibility Study. Those local projects that were previously queued and have advanced to nearly complete phases were included in this Feasibility Study.

In order to complete valid load flow solutions for various contingencies, additional reactive compensation is required in the SPS area. Without a contingency where valid solutions were obtained, 120MVAR is required on a steady state basis to achieve adequate voltage levels. This customer must install 4 switched capacitor banks in the Customer's 345-115-34.5kV Substations with two banks being 115kV and the other two 34.5kV. A 30MVAR SVC is required. Dynamic Stability studies performed as part of the impact study will provide additional guidance as to whether the reactive compensation can be static or a portion must be dynamic (such as a SVC).

Valid load flow solutions could not be achieved for all contingencies without additional transmission facilities between SPS and the remainder of SPP. When additional transmission facilities are evaluated as part of a future transmission service request, then the need for additional reactive compensation may have to be re-evaluated at that time.

Powerflow Analysis Methodology

The Southwest Power Pool (SPP) criteria states that: "The transmission system of the SPP region shall be planned and constructed so that the contingencies as set forth in the Criteria will meet the applicable *NERC Planning Standards* for System Adequacy and Security – Transmission System Table I hereafter referred to as NERC Table I) and its applicable standards and measurements".

Using the created models and the ACCC function of PSS\E, single contingencies in portions or all of the modeled control areas of American Electric Power West, Southwestern Public Service Company, Sunflower Electric Power Corporation, West Plains Energy and Western Farmers Electric Cooperative were applied and the

resulting scenarios analyzed. This satisfies the 'more probable' contingency testing criteria mandated by NERC and the SPP criteria.

Conclusion

The minimum cost of interconnecting the Customer project is estimated at \$7,434,666 for SPS' interconnection Network Upgrade facilities listed in Table 2 excluding upgrades of other transmission facilities by AEPW, SPS, SUNC, WEPL and WFEC listed in Table 3 of which are Network Constraints. At this time, the cost estimates for other Direct Assignment facilities including those in Table 1 have not been defined by the Customer. As stated earlier, local projects that were previously queued are assumed to be in service in this Feasibility Study.

In Table 4, a value of Available Transfer Capability (ATC) associated with each overloaded facility is included. These values may be used by the Customer to determine lower generation capacity levels that may be installed. When transmission service associated with this interconnection is evaluated, the loading of the facilities listed in this table may be greater due to higher priority reservations. When a facility is overloaded for more than 10 contingencies, then only the results with the 10 highest values of loading may be included in this table. Given the contingency analyses in this area with the Customer exporting generation, steady-state solutions were not obtained for outages of SPS' eastern and northern 345kV lines. These contingency analyses will have to be re-evaluated as part of a TSR with additional transmission facilities between SPS and the remainder of SPP.

The cost and final sizing of the reactors in the new interconnection facility will be determined by an Electromagnetic Transient Program (EMTP) study, at the Customer's expense, that will be conducted upon the signing of an Impact Study Agreement. The 30 MVAR size and cost could change depending on the results of the EMTP study.

These interconnection costs do not include any cost that may be associated with short circuit or transient stability analysis. These studies will be performed if the Customer signs a System Impact Study Agreement.

The required interconnection costs listed in Table 2 and other upgrades associated with Network Constraints listed in Table 3 do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer requests transmission service through Southwest Power Pool's OASIS.

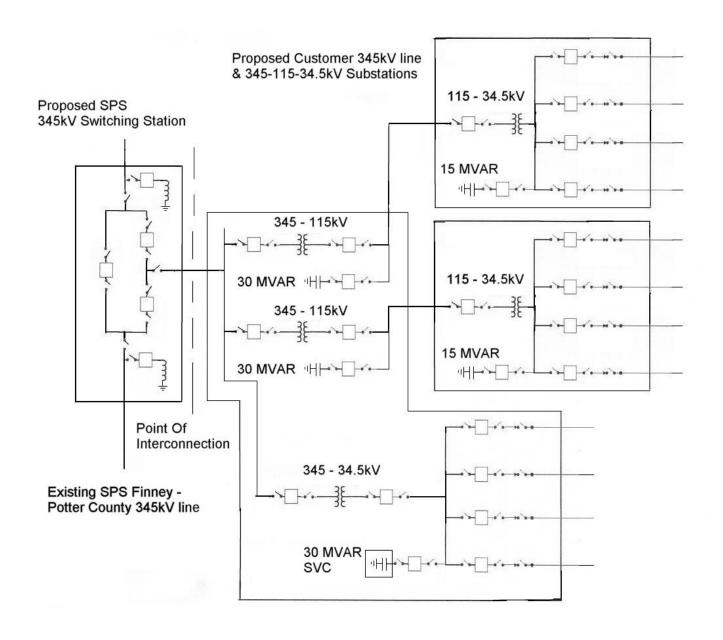


Figure 1: Proposed Interconnection (Final substation design to be determined)

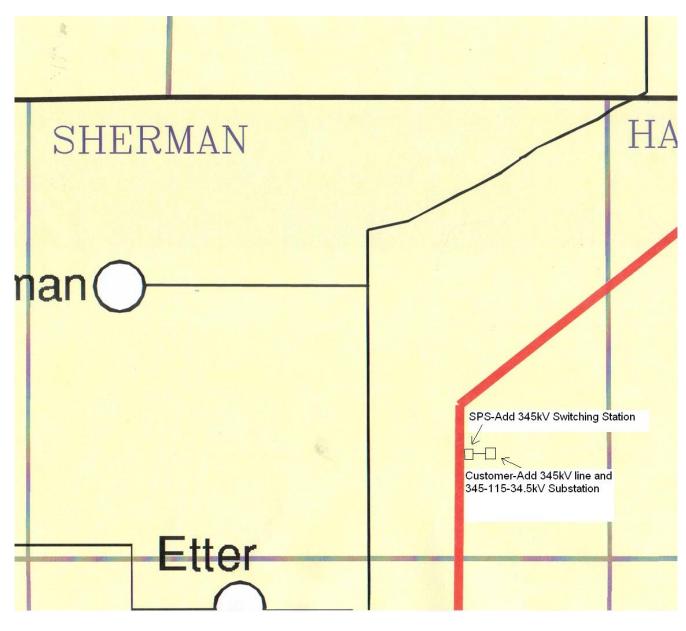


Figure 2: Map Of The Surrounding Area