SCREENING STUDY

SPP-DPT-2016-002

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By SPP Engineering, SPP Transmission Service Studies

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
4/8/2016	SPP	Original	
5/12/2016	SPP	Revision	

CONTENTS

EXECUTIVE SUMMARY

Kansas Municipal Energy Agency has requested a screening study to determine the impacts on SPP and first-tier third party facilities due to a Delivery Point Transfer of 10 MW. Third party includes both first-tier neighboring facilities outside SPP and Transmission Owner facilities within SPP that are not under the SPP OATT. The service type requested for this screening study is Delivery Point Transfer (DPT). The period of the service requested is from 6/1/2016 to 6/1/2026.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the DPT request while maintaining system reliability. The DPT request was studied using two system scenarios. The service was modeled by a transfer from SECI to WFEC. The two scenarios were studied to capture system limitations caused or impacted by the requested service. An analysis was conducted on the planning horizon.

The requested service does not significantly impact facilities on the SPP system. Tables 1 and 2 summarize the results of the screening study analysis for the new source location for the scenarios listed in the table. Table 1 lists SPP and first-tier third party thermal transfer limitations identified. Table 2 lists SPP and first-tier third party voltage transfer limitations identified. Table 3 lists the network upgrades required to mitigate the limitations impacted by this request. Table 4 lists the potential redispatch relief pairs to prevent deferral of service, if applicable.

INTRODUCTION

Kansas Municipal Energy Agency has requested a screening study to determine the impacts on SPP and first-tier third party facilities for a Delivery Point Transfer of 10 MW. The principal objective of this study is to identify the constraints on the SPP and first-tier third party transmission systems that may limit the requested service and to determine the potential least cost solutions required to alleviate the limiting facilities.

This study includes steady-state contingency analysis (PSS/E function ACCC). The steady-state analysis considers the impact of the request on transmission line and transformer loadings, and bus voltages for outages of single transmission lines, transformers, and generating units, and selected multiple transmission lines and transformers on the SPP and first-tier third party systems.

The DPT request was studied using two system scenarios. The service was modeled by a transfer from SECI to WFEC. Two scenarios were studied to capture the system limitations caused or impacted by the requested service. Scenario 0 includes projected usage of transmission service included in the SPP 2015 Series Cases. Scenario 5 includes transmission service not already included in the SPP 2015 Series Cases.

STUDY METHODOLOGY

DESCRIPTION

The facility study analysis was conducted to determine the steady-state impact of the requested service on the SPP and first tier non-SPP control area systems. The steady-state analysis was performed consistent with current SPP Criteria and NERC Reliability Standards requirements. SPP conforms to NERC Reliability Standards, which provide strict requirements related to voltage violations and thermal overloads during normal conditions and during a contingency. NERC Standards require all facilities to be within normal operating ratings for normal system conditions and within emergency ratings after a contingency.

Normal operating ratings and emergency operating ratings monitored are Rate A and B in the SPP Model Development Working Group (MDWG) models, respectively. The upper bound and lower bound of the normal voltage range monitored is 105% and 95%. The upper bound and lower bound of the emergency voltage range monitored is 105% and 90%. Transmission Owner voltage monitoring criteria is used if more restrictive. The SPS Tuco 230 kV bus voltage is monitored at 92.5% due to pre-determined system stability limitations. The WERE Wolf Creek 345 kV bus voltage is monitored at 103.5% and 98.5% due to transmission operating procedure.

The contingency set includes all SPP control area branches and ties 69 kV and above; first tier non-SPP control area branches and ties 115 kV and above; any defined contingencies for these control areas; and generation unit outages for the control areas with SPP reserve share program redispatch. The monitored elements include all SPP control area branches, ties, and buses 69 kV and above, and all first tier non-SPP control area branches and ties 115 kV and above. Voltage monitoring was performed for SPP control area buses 69 kV and above.

A 3% transfer distribution factor (TDF) cutoff was applied to all SPP control area facilities. For first tier non-SPP control area facilities, a 3% TDF cutoff was applied to AECI, AMRN (Ameren), and ENTR (Entergy) control areas. For voltage monitoring, a 0.02 per unit change in voltage must occur due to the transfer or modeling upgrades to be considered a valid limit to the transfer.

MODEL DEVELOPMENT

SPP used five seasonal models to study the 10 MW DPT request for the requested service period. The following SPP Transmission Expansion Plan 2015 Series (2016 ITP Near Term) Cases were used to study the impact of the requested service on the transmission system:

- 2016 Summer Peak (16SP)
- 2016/17 Winter Peak (16WP)
- 2017 Summer Peak (17SP)
- 2017/18 Winter Peak (17WP)
- 2020 Summer Peak (20SP)
- 2020/21 Winter Peak (20WP)
- 2025 Summer Peak (25SP)
- 2025/26 Winter Peak (25WP)

The Summer Peak models apply to June through September and the Winter Peak models apply to December through March.

The chosen base case models were modified to reflect the current modeling information. One group of requests was developed from the aggregate to model the requested service. From the seasonal models, two system scenarios were developed. Scenario 0 includes projected usage of transmission included in the SPP 2015 Series Cases. Scenario 5 includes transmission service not already included in the SPP 2015 Series Cases.

TRANSMISSION REQUEST MODELING

NITS requests are modeled as Generation to Load transfers in addition to Generation to Generation transfers. NITS requests are modeled as Generation to Load transfers in addition to Generation to Generation because the requested NITS is a request to serve network load with the new designated network resource, and the impacts on Transmission System are determined accordingly. PTP Transmission Service requests are modeled as Generation to Generation transfers. Generation to Generation transfers are accomplished by developing a post-transfer case for comparison by dispatching the request source and redispatching the request sink.

TRANSFER ANALYSIS

Using the selected cases both with and without the requested transfers modeled, the PSS/E Activity ACCC was run on the cases and compared to determine the facility overloads caused or impacted by the transfer. TDF cutoffs (SPP and 1st-Tier) and voltage threshold (0.02 change) were applied to determine the impacted facilities. The PSS/E options chosen to conduct the analysis can be found in Appendix A.

STUDY RESULTS

STUDY ANALYSIS RESULTS

Tables 1 and 2 contain the initial steady-state analysis results of the DPT. The tables are attached to the end of this report, if applicable. The tables identify the scenario and season in which the event occurred, the transfer amount studied, the facility control area location, applicable ratings of the thermal transfer limitations and voltage transfer limitations, and the loading percentage and voltage per unit (pu).

TABLE 1

Table 1 lists the SPP and first-tier third party thermal transfer limitations caused or impacted by the 10 MW transfer for applicable scenarios. Solutions are identified for the limitations in this table.

TABLE 2

Table 2 lists the SPP and first-tier third party voltage transfer limitations caused or impacted by the 10 MW transfer for applicable scenarios. Solutions are identified for the violations in this table.

TABLE 3

Table 3 lists the network upgrades required to mitigate the limitations caused or impacted by this request. Engineering and construction costs are provided for assigned upgrades in this table.

TABLE 4

Table 4 lists the potential redispatch relief pairs to prevent deferral of service.

CONCLUSION

The results of the screening study show that limiting constraints do not exist on the SPP system for the 10 MW DPT. No new Network Upgrades are required to support the requested transfer. Redispatch is required to mitigate impacts for which Network Upgrades have been previously approved. Potential redispatch pairs are identified in Table 4. Since no additional limitations were identified, the request will be accepted. Once the request has been confirmed, SPP will issue a service agreement.

APPENDIX A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASE SETTINGS:

- Solutions: Fixed slope decoupled Newton-Raphson solution (FDNS)
- Tap adjustment: Stepping
- Area Interchange Control: Tie lines and loads
- Var limits: Apply immediately
- Solution Options:

  X Phase shift adjustment
  _ Flat start
  _ Lock DC taps
  _ Lock switched shunts

ACCC CASE SETTINGS:

- Solutions: AC contingency checking (ACCC)
- MW mismatch tolerance: 0.5
- System intact rating: Rate A
- Contingency case rating: Rate B
- Percent of rating: 100
- Output code: Summary
- Min flow change in overload report: 3mw
- Excld cases w/ no overloads from report: YES
- Exclude interfaces from report: NO
- Perform voltage limit check: YES
- Elements in available capacity table: 60000
- Cutoff threshold for available capacity table: 99999.0
- Min. contng. Case Vltg chng for report: 0.02
- Sorted output: None
- Newton Solution:
- Tap adjustment: Stepping
- Area interchange control: Tie lines and loads (Disabled for generator outages)
- Var limits: Apply immediately
- Solution options: X Phase shift adjustment
  _ Flat start
  _ Lock DC taps
  _ Lock switched shunts

Table 1 - SPP Facility Thermal Transfer Limitations

Scenario	Season	From Area	To Area	Monitored Branch Over 100% Rate B	Base Case Loading (%)	Transfer Case Loading (%)	TDF (%)	Outaged Branch Causing Overload	Upgrade Name	Solution
5	17SP	OKGE	OKGE	FPL SWITCH - WOODWARD 138KV CKT 1	101.5	104.0	39.7%	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	Build new 126 mile Woodward - Tatonga 345 kV circuit 2 and Tatonga - Matthewson - Cimarron 345 kV line.
5	20SP	OKGE	WFEC	FRANKLIN SW - MIDWEST TAP 138KV CKT 1	101.9	102.3	12.3%	CANADIAN - CEDAR LANE 138KV CKT 1	FRANKLIN SW - MIDWEST TAP 138KV CKT 1	Reconductor 1.27 mile Franklin SW - Midwest Tap to 1590AS52 conductor
5	20SP	OKGE	WFEC	FRANKLIN SW - MIDWEST TAP 138KV CKT 1	102.0	102.1	4.1%	ANADARKO - POCASSETT 138KV CKT 1	FRANKLIN SW - MIDWEST TAP 138KV CKT 1	Reconductor 1.27 mile Franklin SW - Midwest Tap to 1590AS52 conductor
5	20SP	OKGE	WFEC	FRANKLIN SW - MIDWEST TAP 138KV CKT 1	100.5	100.6	4.1%	POCASSETT - TUTTLE 138KV CKT 1	FRANKLIN SW - MIDWEST TAP 138KV CKT 1	Reconductor 1.27 mile Franklin SW - Midwest Tap to 1590AS52 conductor
5	16SP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	103.3	103.3	8.9%	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	Build new Geary County 345/115 kV substation south of Junction City where JEC-Summit and McDowell Creek-Junction City #2 ckt separate. Construct new Geary County - Chapman 115 kV line.
5	16SP	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV CKT 1	102.6	102.7	9.2%	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV CKT 1	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	Build new Geary County 345/115 kV substation south of Junction City where JEC-Summit and McDowell Creek-Junction City #2 ckt separate. Construct new Geary County - Chapman 115 kV line.

Table 2 - SPP Facility Voltage Transfer Limitations

Scenario	Season	Area	Monitored Bus with Violation	Post-transfer Voltage (PU)	Outaged Branch Causing Overload	Upgrade Name	Solution
			None				

Table 3 - Upgrade Requirements and Solutions Needed

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost	NTC
	None					

Construction Pending Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)	Estimated Engineering & Construction Cost	NTC
~~OKGE~~	~~FRANKLIN SW - MIDWEST TAP 138KV CKT 1~~	~~Reconductor 1.27 mile Franklin SW - Midwest Tap to 1590AS52 conducter~~	~~6/1/2018~~	~~6/1/2021~~	~~$700,000.00~~	

Expansion Plan Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
	None			

Reliability Projects - The requested service is contingent upon completion of the following upgrades. Cost is not assignable to the transmission customer.

Transmission Owner	Upgrade	Solution	Earliest Date Upgrade Required (DUN)	Estimated Date of Upgrade Completion (EOC)
OKGE	Multi - Woodward District EHV - Tatonga - Matthewson - Cimarron 345 kV	Build new 126 mile Woodward - Tatonga 345 kV circuit 2 and Tatonga - Matthewson - Cimarron 345 kV line.	6/1/2017	3/1/2021
WERE	Multi - Geary County 345/115 kV and Geary - Chapman 115 kV	Build new Geary County 345/115 kV substation south of Junction City where JEC-Summit and McDowell Creek-Junction City #2 ckt separate. Construct new Geary County - Chapman 115 kV line.	6/1/2016	6/1/2018

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

Upgrade: FRANKLIN SW - MIDWEST TAP 138KV CKT 1
Limiting Facility: FRANKLIN SW - MIDWEST TAP 138KV CKT 1
Direction: TO->FROM
Line Outage: CANADIAN - CEDAR LANE 138KV CKT 1
Flowgate: 2015AG2AFS31T1805520SP
Date Redispatch Needed: Starting 2020 6/1 - 10/1 Until EOC of Upgrade
Season Flowgate Identified: 2020 Summer Peak

Reservation	Relief Amount	Aggregate Relief Amount
82296525	1.2	1.2

Source Control Area	Source	Maximum Increment (MW)	GSF	Sink Control Area	Sink	Maximum Decrement (MW)	GSF	Factor	Aggregate Redispatch Amount (MW)
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.22227	5
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.21045	6
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.21174	6
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.19884	6
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.19143	6
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.20379	6
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	MUSTANG 138KV	221	0.05446	-0.16363	7
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SMITH COGEN 138KV	107	0.06386	-0.17303	7
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.16792	7
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	MUSTANG 138KV	221	0.05446	-0.15181	8
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SMITH COGEN 138KV	107	0.06386	-0.16121	8
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.1481	8
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	MUSTANG 138KV	221	0.05446	-0.1531	8
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SMITH COGEN 138KV	107	0.06386	-0.1625	8
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SMITH COGEN 138KV	107	0.06386	-0.1496	8
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	MUSTANG 138KV	221	0.05446	-0.14515	8
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SMITH COGEN 138KV	107	0.06386	-0.15455	8
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.15248	8
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.13628	9
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.13374	9
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.13369	9
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	REDBUD 345KV	1034	0.02582	-0.13499	9
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SEMINOLE 345KV	470	0.02865	-0.13782	9
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.13342	9
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.13757	9
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	MUSTANG 138KV	221	0.05446	-0.1402	9
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	MUSTANG 138KV	221	0.05446	-0.13279	9
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SMITH COGEN 138KV	107	0.06386	-0.14219	9
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.12962	9
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.12192	10
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.12187	10
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	REDBUD 345KV	1034	0.02582	-0.12317	10
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SEMINOLE 345KV	470	0.02865	-0.126	10
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.1216	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	AEC W1 34.500 115KV	3.65	0.00831	-0.11748	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.12267	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.12513	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.11846	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.11797	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.12499	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.11963	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	CITY OF BURLINGTON 69KV	3.554993	0.00846	-0.11763	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.11989	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.11707	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.11802	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.12391	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	ELK RIVER 345KV	150	0.00954	-0.11871	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.11739	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.11969	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.1214	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.1214	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.1214	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.1214	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.12011	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.11693	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.11691	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.12221	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.11639	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.1165	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	LYONS 115KV	9	0.00881	-0.11798	10
WFEC	ANADARKO 69KV	70	-0.10917	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.12277	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	OU SPIRIT 138KV	102	0.00951	-0.11868	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.11699	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	SCRANTON 115KV	4.08	0.00778	-0.11695	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.12391	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.12135	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.12391	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SOONER 138KV	535	0.01447	-0.12364	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SOONER 345KV	537	0.01518	-0.12435	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.11659	10
WFEC	ANADARKO 69KV	70	-0.10917	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.11802	10
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.11868	10
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12215	10
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12321	10
AEPW	FULTON 115KV	153	-0.01117	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12427	10
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.12321	10
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.12316	10
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	REDBUD 345KV	1034	0.02582	-0.12446	10
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SEMINOLE 345KV	470	0.02865	-0.12729	10
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.12289	10
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12309	10
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12323	10
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12237	10
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12395	10
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.12467	10
AEPW	NORTH MARSHALL 69KV	5	-0.00994	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12304	10
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	SMITH COGEN 138KV	107	0.06386	-0.11868	10
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.11726	10
OKGE	SEMINOLE 138KV	319.644	-0.00526	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11836	10
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	REDBUD 345KV	1034	0.02582	-0.11651	10
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SEMINOLE 345KV	470	0.02865	-0.11934	10
AEPW	TURK 138KV	7	-0.01295	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12605	10
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12379	10
AEPW	WILKES 345KV	4	-0.01043	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.12353	10

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.11085	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.11331	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.10664	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.11317	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.10781	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.10807	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.11209	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	ELK RIVER 345KV	150	0.00954	-0.10689	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.10787	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.10958	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.10958	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.10958	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.10958	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.10829	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.11039	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.11095	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	OU SPIRIT 138KV	102	0.00951	-0.10686	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.11209	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.10953	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.11209	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SOONER 138KV	535	0.01447	-0.11182	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SOONER 345KV	537	0.01518	-0.11253	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.10686	11
WFEC	ANADARKO 69KV	70	-0.10917	WERE	BROWN COUNTY 115KV	4.5	0.00673	-0.1159	11
WFEC	ANADARKO 69KV	70	-0.10917	SWPA	CARTHAGE 69KV	20	0.00537	-0.11454	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.11548	11
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.11426	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.10704	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	FLINT CREEK 161KV	528	0.00514	-0.11431	11
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.11403	11
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.10705	11
WFEC	ANADARKO 69KV	70	-0.10917	GRDA	GRDA1 345KV	520	0.00548	-0.11465	11
WFEC	ANADARKO 69KV	70	-0.10917	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.11466	11
WFEC	ANADARKO 69KV	70	-0.10917	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.11466	11
WFEC	ANADARKO 69KV	70	-0.10917	SWPA	KENNETT 69KV	18	0.00063	-0.1098	11
WFEC	ANADARKO 69KV	70	-0.10917	SWPA	MALDEN 69KV	6.8	0.00076	-0.10993	11
WFEC	ANADARKO 69KV	70	-0.10917	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.11599	11
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.10705	11
WFEC	ANADARKO 69KV	70	-0.10917	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.11397	11
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.11457	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.11544	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.11587	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	OEC 345KV	1000.029	0.00588	-0.11505	11
WFEC	ANADARKO 69KV	70	-0.10917	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.11038	11
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.11309	11
WFEC	ANADARKO 69KV	70	-0.10917	SWPA	SIKESTON 161KV	235	0.00105	-0.11022	11
WFEC	ANADARKO 69KV	70	-0.10917	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.11427	11
WFEC	ANADARKO 69KV	70	-0.10917	WERE	SOUTH SENECA 115KV	7.16	0.00676	-0.11593	11
AEPW	COGENTRIX 345KV	381.9058	0.00631	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10679	11
AEPW	ELKINS GENERATOR 69KV	60	0.00505	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10805	11
AEPW	FITZHUGH 161KV	21.18999	-0.00213	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11523	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.11214	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.1146	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.10793	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.10744	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.11446	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.1091	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.10936	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.10654	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.10749	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.11338	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	ELK RIVER 345KV	150	0.00954	-0.10818	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.10686	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.10916	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.11087	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.11087	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.11087	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.11087	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.10958	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.1064	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.10638	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.11168	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	LYONS 115KV	9	0.00881	-0.10745	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.11224	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	OU SPIRIT 138KV	102	0.00951	-0.10815	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.10646	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	SCRANTON 115KV	4.08	0.00778	-0.10642	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.11338	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.11082	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.11338	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SOONER 138KV	535	0.01447	-0.11311	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SOONER 345KV	537	0.01518	-0.11382	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.10749	11
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.10815	11
SWPA	KENNETT 69KV	16.3	0.00063	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11247	11
SWPA	MALDEN 69KV	7.400001	0.00076	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11234	11
WERE	MARSHGEN1 0.6900 34KV	23.8	0.00682	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10628	11
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.11031	11
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.11026	11
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	REDBUD 345KV	1034	0.02582	-0.11156	11
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SEMINOLE 345KV	470	0.02865	-0.11439	11
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.10999	11
WFEC	MORLND4 18.000 138KV	350	0.0048	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.1083	11
OKGE	MUSKOGEE 345KV	37.5	0.0054	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.1077	11
AEPW	NORTHEASTERN STATION 138KV	15.00003	0.00627	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10683	11
AEPW	NORTHEASTERN STATION 345KV	9	0.0067	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.1064	11
AEPW	OEC 345KV	209.971	0.00588	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10722	11
OMPA	OMPA-LAVERNE 69KV	4	0.00433	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10877	11
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	MUSTANG 138KV	221	0.05446	-0.10928	11
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SEMINOLE 345KV	470	0.02865	-0.10698	11
OKGE	PALDRW21 34.500 345KV	300	0.00611	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10699	11
SWPA	PARAGOULD 161KV	31	0.00041	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11269	11
SWPA	PIGGOTT 69KV	7.5	0.00067	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11243	11
SWPA	POPLAR BLUFF 161KV	11.8	0.00121	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.11189	11
AEPW	RIVERSIDE STATION 138KV	140	0.00392	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10918	11
GRDA	SALINA 161KV	129	0.00496	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10814	11
WERE	SOUTH SENECA 115KV	9.54	0.00676	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10634	11
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.10665	11
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.11526	11
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.10651	11
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.11521	11

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.11494	11
AEPW	TONTITOWN 161KV	301	0.00511	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10799	11
AEPW	TULSA POWER STATION 138KV	318	0.00477	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10833	11
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	BROWN COUNTY 115KV	4.5	0.00673	-0.10408	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	SWPA	CARTHAGE 69KV	20	0.00537	-0.10272	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.10615	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.10525	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.1062	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.10366	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.10244	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.10557	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	FLINT CREEK 161KV	528	0.00514	-0.10249	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.10221	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	GRDA	GRDA1 345KV	520	0.00548	-0.10283	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.10284	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.10284	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.10511	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.10509	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	SWPA	KENNETT 69KV	18	0.00063	-0.09798	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.10457	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.10468	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	LYONS 115KV	9	0.00881	-0.10616	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	SWPA	MALDEN 69KV	6.8	0.00076	-0.09811	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.10417	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.10215	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.10275	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.10362	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.10405	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	OEC 345KV	1000.029	0.00588	-0.10323	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.09856	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.10127	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.10517	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	SCRANTON 115KV	4.08	0.00778	-0.10513	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	SWPA	SIKESTON 161KV	235	0.00105	-0.0984	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.10245	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	SOUTH SENECA 115KV	7.16	0.00676	-0.10411	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.10477	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.1062	12
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	AES 161KV	320	-0.00351	-0.10566	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.10013	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	EASTMAN 138KV	349.7385	-0.01011	-0.09906	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	KNOXLEE 138KV	321.9849	-0.00999	-0.09918	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	LEBROCK 345KV	283.1014	-0.01013	-0.09904	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	PIRKEY GENERATION 138KV	675	-0.0101	-0.09907	12
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.10391	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	WILKES 138KV	329.2332	-0.01069	-0.09848	12
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	WILKES 345KV	348	-0.01043	-0.09874	12
GRDA	BOOMER 69KV	24	0.01349	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.09961	12
WERE	BPU - CITY OF MCPHERSON 115KV	238	0.00882	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10428	12
WERE	CC5SHAR1 12.470 69KV	10	0.0086	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.1045	12
WERE	CC6SHAR1 12.470 69KV	10	0.0086	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.1045	12
WERE	CHANUTE 69KV	37.8	0.00736	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10574	12
WERE	CITY OF AUGUSTA 69KV	18.09	0.01046	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10264	12
WERE	CITY OF BURLINGTON 69KV	8.945007	0.00846	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10464	12
WERE	CITY OF ERIE 69KV	26	0.00736	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10574	12
WERE	CITY OF IOLA 69KV	34.933	0.00736	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10574	12
WERE	CITY OF MULVANE 69KV	7.59	0.01072	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10238	12
WERE	CITY OF WELLINGTON 69KV	24	0.01154	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10156	12
WERE	CITY OF WINFIELD 69KV	36.8	0.0118	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.1013	12
WERE	CLAYGEN1 13.200 115KV	29.67	0.00818	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10492	12
GRDA	COFFGEN6_1 12.470 69KV	53	0.00694	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10616	12
WERE	EMPORIA ENERGY CENTER 345KV	354	0.00822	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10488	12
WERE	EVANS ENERGY CENTER 138KV	176	0.01052	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10258	12
WERE	EVANS ENERGY CENTER 4KV	148	0.01052	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10258	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	BROWN COUNTY 115KV	4.5	0.00673	-0.10537	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	SWPA	CARTHAGE 69KV	20	0.00537	-0.10401	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.10495	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.10373	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	FLINT CREEK 161KV	528	0.00514	-0.10378	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.1035	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	GRDA	GRDA1 345KV	520	0.00548	-0.10412	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.10413	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.10413	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	SWPA	KENNETT 69KV	18	0.00063	-0.09927	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.10586	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.10597	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	SWPA	MALDEN 69KV	6.8	0.00076	-0.0994	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.10546	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.10344	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.10404	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.10491	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.10534	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	OEC 345KV	1000.029	0.00588	-0.10452	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.09985	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.10256	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	SWPA	SIKESTON 161KV	235	0.00105	-0.09969	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.10374	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	SOUTH SENECA 115KV	7.16	0.00676	-0.1054	12
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.10606	12
WERE	GILL ENERGY CENTER 138KV	72.58154	0.01094	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10216	12
WERE	HUTCHINSON ENERGY CENTER 115KV	235	0.00916	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10394	12
WERE	HUTCHINSON ENERGY CENTER 4KV	56	0.00916	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10394	12
WERE	HUTCHINSON ENERGY CENTER 69KV	56	0.00916	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10394	12
WERE	LAWRENCE ENERGY CENTER 115KV	78.00002	0.00722	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10588	12
WERE	LAWRENCE ENERGY CENTER 230KV	33.08133	0.00733	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10577	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.09924	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.1017	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.10156	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.10048	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.09797	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.09797	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.09797	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.09797	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.09878	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.09934	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.10048	12

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.09792	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.10048	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SOONER 138KV	535	0.01447	-0.10021	12
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SOONER 345KV	537	0.01518	-0.10092	12
OKGE	MMTHPW11 34.500 345KV	200	0.01474	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.09836	12
OKGE	NBUFFRG1 34.500 345KV	200	0.01128	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10182	12
OMPA	OMCDLEC1 13.800 345KV	85.3	0.01364	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.09946	12
OMPA	OMPA-PAWHUSKA NORTHEAST 138KV	6.7	0.00885	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10425	12
OMPA	OMPA-PONCA CITY 69KV	132.5363	0.0136	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.0995	12
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.1029	12
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.10285	12
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	REDBUD 345KV	1034	0.02582	-0.10415	12
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.10258	12
WERE	OXFORD 138KV	4.5	0.01156	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10154	12
WERE	SALINA MAIN 115KV	10.18	0.00851	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10459	12
OKGE	SOONER 138KV	5	0.01447	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.09863	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.10419	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.09998	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.09949	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.10115	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.10141	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.09859	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.09954	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.10543	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	ELK RIVER 345KV	150	0.00954	-0.10023	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.09891	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.10121	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.10292	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.10292	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.10292	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.10292	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.10163	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.09845	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.09843	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.10373	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.09791	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.09802	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	LYONS 115KV	9	0.00881	-0.0995	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.10429	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	OU SPIRIT 138KV	102	0.00951	-0.1002	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.09851	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	SCRANTON 115KV	4.08	0.00778	-0.09847	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.10543	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.10287	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.10543	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SOONER 138KV	535	0.01447	-0.10516	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SOONER 345KV	537	0.01518	-0.10587	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.09811	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.09954	12
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.1002	12
WERE	TECUMSEH ENERGY CENTER 115KV	155	0.00742	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.10568	12
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SMITH COGEN 138KV	107	0.06386	-0.10324	12
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	AES 161KV	320	-0.00351	-0.09384	13
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.09522	13
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.09523	13
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.09523	13
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.09209	13
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	TURK 138KV	643	-0.01295	-0.09622	13
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	WELSH 345KV	1056	-0.01153	-0.09764	13
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	AES 161KV	320	-0.00351	-0.09513	13
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.09651	13
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.09652	13
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.09652	13
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.09338	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	BROWN COUNTY 115KV	4.5	0.00673	-0.09247	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.09503	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	SWPA	CARTHAGE 69KV	20	0.00537	-0.09111	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.09454	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.0962	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.09646	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.09364	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.09459	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.09205	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.09083	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	ELK RIVER 345KV	150	0.00954	-0.09528	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.09396	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.09626	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	FLINT CREEK 161KV	528	0.00514	-0.09088	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.0906	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.09668	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	GRDA	GRDA1 345KV	520	0.00548	-0.09122	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.09123	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.09123	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.0935	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.09348	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.09296	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.09307	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	LYONS 115KV	9	0.00881	-0.09455	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.09256	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.09054	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.09114	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.09201	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.09244	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	OEC 345KV	1000.029	0.00588	-0.09162	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	OU SPIRIT 138KV	102	0.00951	-0.09525	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.09356	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.09084	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	SOUTH SENECA 115KV	7.16	0.00676	-0.0925	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.09316	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.09459	13
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.09525	13
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.09375	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.09183	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.09429	13

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.09415	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.09307	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.09056	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.09056	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.09056	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.09056	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.09137	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.09193	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.09307	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.09307	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SOONER 138KV	535	0.01447	-0.0928	13
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SOONER 345KV	537	0.01518	-0.09351	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	BROWN COUNTY 115KV	4.5	0.00673	-0.09742	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	SWPA	CARTHAGE 69KV	20	0.00537	-0.09606	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.097	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.09578	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	FLINT CREEK 161KV	528	0.00514	-0.09583	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.09555	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	GRDA	GRDA1 345KV	520	0.00548	-0.09617	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.09618	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.09618	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	SWPA	KENNETT 69KV	18	0.00063	-0.09132	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	SWPA	MALDEN 69KV	6.8	0.00076	-0.09145	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.09751	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.09549	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.09609	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.09696	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.09739	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	OEC 345KV	1000.029	0.00588	-0.09657	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.0919	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.09461	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	SWPA	SIKESTON 161KV	235	0.00105	-0.09174	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.09579	13
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WERE	SOUTH SENECA 115KV	7.16	0.00676	-0.09745	13
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	MUSTANG 138KV	221	0.05446	-0.09384	13
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.08831	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	EASTMAN 138KV	349.7385	-0.01011	-0.08724	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	KNOXLEE 138KV	321.9849	-0.00999	-0.08736	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	LEBROCK 345KV	283.1014	-0.01013	-0.08722	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	PIRKEY GENERATION 138KV	675	-0.0101	-0.08725	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	TURK 138KV	643	-0.01295	-0.0844	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	WELSH 345KV	1056	-0.01153	-0.08582	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	WILKES 138KV	329.2332	-0.01069	-0.08666	14
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	WILKES 345KV	348	-0.01043	-0.08692	14
WFEC	ANADARKO 69KV	70	-0.10917	WFEC	HUGO 138KV	440	-0.02272	-0.08645	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.0896	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	EASTMAN 138KV	349.7385	-0.01011	-0.08853	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	KNOXLEE 138KV	321.9849	-0.00999	-0.08865	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	LEBROCK 345KV	283.1014	-0.01013	-0.08851	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	PIRKEY GENERATION 138KV	675	-0.0101	-0.08854	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	TURK 138KV	643	-0.01295	-0.08569	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	WELSH 345KV	1056	-0.01153	-0.08711	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	WILKES 138KV	329.2332	-0.01069	-0.08795	14
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	WILKES 345KV	348	-0.01043	-0.08821	14
OKGE	KNGFSR12 34.500 345KV	300	0.02457	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.08853	14
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	SWPA	KENNETT 69KV	18	0.00063	-0.08637	14
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	SWPA	MALDEN 69KV	6.8	0.00076	-0.0865	14
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.08695	14
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.08966	14
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	SWPA	SIKESTON 161KV	235	0.00105	-0.08679	14
OMPA	OMPA-KINGFISHER BOWMAN 69KV	8.592	0.02356	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.08954	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.08762	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.08713	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.08879	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.08905	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.08623	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.08718	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.08464	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	ELK RIVER 345KV	150	0.00954	-0.08787	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.08655	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.08885	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.08927	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.08609	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.08607	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.08555	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.08566	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	LYONS 115KV	9	0.00881	-0.08714	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.08515	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.0846	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.08503	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	OU SPIRIT 138KV	102	0.00951	-0.08784	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.08615	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.09051	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	SOUTH SENECA 115KV	7.16	0.00676	-0.08509	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.08575	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.08718	14
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.08784	14
OKGE	REDBUD 345KV	166	0.02582	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.08728	14
OKGE	SEMINOLE 345KV	559.6	0.02865	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.08445	14
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	AES 161KV	320	-0.00351	-0.08718	14
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.08856	14
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.08857	14
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.08857	14
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.08543	14
OKGE	SPRING CREEK UNIT 3 AND 4 345KV	36	0.02425	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.08885	14
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	BUFFCK1 34.500 230KV	99	-0.02549	-0.08368	15
WFEC	ANADARKO 69KV	70	-0.10917	WFEC	HAMMON CO SUB 138KV	114	-0.02985	-0.07932	15
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	WTH WIND 34.500 34KV	147	-0.02763	-0.08154	15
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	AES 161KV	320	-0.00351	-0.08223	15
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.08361	15
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.08362	15
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.08362	15
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.08048	15
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.07939	15
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.07934	15
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	REDBUD 345KV	1034	0.02582	-0.08064	15
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	SEMINOLE 345KV	470	0.02865	-0.08347	15
OMPA	OMPA-MANGUM 69KV	5.198	-0.05482	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.07907	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	SWPA	CARTHAGE 69KV	20	0.00537	-0.0837	15

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.08342	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	FLINT CREEK 161KV	528	0.00514	-0.08347	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.08319	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	GRDA	GRDA1 345KV	520	0.00548	-0.08381	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.08382	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.08382	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	SWPA	KENNETT 69KV	18	0.00063	-0.07896	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	SWPA	MALDEN 69KV	6.8	0.00076	-0.07909	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.08313	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.08373	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	OEC 345KV	1000.029	0.00588	-0.08421	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.07954	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.08225	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	SWPA	SIKESTON 161KV	235	0.00105	-0.07938	15
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.08343	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.08165	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	EASTMAN 138KV	349.7385	-0.01011	-0.08058	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	KNOXLEE 138KV	321.9849	-0.00999	-0.0807	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	LEBROCK 345KV	283.1014	-0.01013	-0.08056	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	PIRKEY GENERATION 138KV	675	-0.0101	-0.08059	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	WELSH 345KV	1056	-0.01153	-0.07916	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	WILKES 138KV	329.2332	-0.01069	-0.08	15
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	WILKES 345KV	348	-0.01043	-0.08026	15
WFEC	ANADARKO 138KV	240.5906	-0.09735	WFEC	HUGO 138KV	440	-0.02272	-0.07463	16
AEPW	FULTON 115KV	153	-0.01117	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07503	16
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WFEC	HUGO 138KV	440	-0.02272	-0.07592	16
OKGE	HORSESHOE LAKE 138KV	294	0.03893	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.07417	16
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07471	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.0767	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	EASTMAN 138KV	349.7385	-0.01011	-0.07563	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	KNOXLEE 138KV	321.9849	-0.00999	-0.07575	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	LEBROCK 345KV	283.1014	-0.01013	-0.07561	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	PIRKEY GENERATION 138KV	675	-0.0101	-0.07564	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	WELSH 345KV	1056	-0.01153	-0.07421	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	WILKES 138KV	329.2332	-0.01069	-0.07505	16
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	WILKES 345KV	348	-0.01043	-0.07531	16
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	AES 161KV	320	-0.00351	-0.07482	16
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.0762	16
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.07621	16
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.07621	16
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	TURK 138KV	643	-0.01295	-0.07774	16
AEPW	TURK 138KV	7	-0.01295	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07681	16
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.07831	16
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07455	16
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	BUFFCK1 34.500 230KV	99	-0.02549	-0.07186	17
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07291	17
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07397	17
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	BUFFCK1 34.500 230KV	99	-0.02549	-0.07315	17
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	WTH WIND 34.500 34KV	147	-0.02763	-0.07101	17
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07385	17
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07399	17
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	SMITH COGEN 138KV	107	0.06386	-0.07313	17
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	TURK 138KV	643	-0.01295	-0.07279	17
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.07307	17
WFEC	ANADARKO 138KV	240.5906	-0.09735	WFEC	HAMMON CO SUB 138KV	114	-0.02985	-0.0675	18
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	WTH WIND 34.500 34KV	147	-0.02763	-0.06972	18
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	WFEC	HAMMON CO SUB 138KV	114	-0.02985	-0.06879	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.06929	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	EASTMAN 138KV	349.7385	-0.01011	-0.06822	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	KNOXLEE 138KV	321.9849	-0.00999	-0.06834	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	LEBROCK 345KV	283.1014	-0.01013	-0.0682	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	PIRKEY GENERATION 138KV	675	-0.0101	-0.06823	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	WELSH 345KV	1056	-0.01153	-0.0668	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	WILKES 138KV	329.2332	-0.01069	-0.06764	18
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	WILKES 345KV	348	-0.01043	-0.0679	18
OKGE	SEMINOLE 138KV	319.644	-0.00526	OKGE	SMITH COGEN 138KV	107	0.06386	-0.06912	18
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WFEC	HUGO 138KV	440	-0.02272	-0.06797	18
AEPW	TURK 138KV	7	-0.01295	OKGE	MUSTANG 138KV	221	0.05446	-0.06741	18
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SEMINOLE 345KV	470	0.02865	-0.06803	18
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	MUSTANG 138KV	221	0.05446	-0.06351	19
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	MUSTANG 138KV	221	0.05446	-0.06457	19
AEPW	FITZHUGH 161KV	21.18999	-0.00213	OKGE	SMITH COGEN 138KV	107	0.06386	-0.06599	19
AEPW	FULTON 115KV	153	-0.01117	OKGE	MUSTANG 138KV	221	0.05446	-0.06563	19
SWPA	KENNETT 69KV	16.3	0.00063	OKGE	SMITH COGEN 138KV	107	0.06386	-0.06323	19
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	MUSTANG 138KV	221	0.05446	-0.06445	19
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	MUSTANG 138KV	221	0.05446	-0.06459	19
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	MUSTANG 138KV	221	0.05446	-0.06373	19
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	MUSTANG 138KV	221	0.05446	-0.06531	19
SWPA	MALDEN 69KV	7.400001	0.00076	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0631	19
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WFEC	HUGO 138KV	440	-0.02272	-0.06302	19
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	TURK 138KV	643	-0.01295	-0.06538	19
SWPA	PARAGOULD 161KV	31	0.00041	OKGE	SMITH COGEN 138KV	107	0.06386	-0.06345	19
SWPA	PIGGOTT 69KV	7.5	0.00067	OKGE	SMITH COGEN 138KV	107	0.06386	-0.06319	19
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	BUFFCK1 34.500 230KV	99	-0.02549	-0.0652	19
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	WTH WIND 34.500 34KV	147	-0.02763	-0.06306	19
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.06395	19
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.0639	19
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	REDBUD 345KV	1034	0.02582	-0.0652	19
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.06363	19
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	MUSTANG 138KV	221	0.05446	-0.06515	19
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	BUFFCK1 34.500 230KV	99	-0.02549	-0.06025	20
SWPA	POPLAR BLUFF 161KV	11.8	0.00121	OKGE	SMITH COGEN 138KV	107	0.06386	-0.06265	20
AEPW	RIVERSIDE STATION 138KV	140	0.00392	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05994	20
OKGE	SEMINOLE 138KV	319.644	-0.00526	OKGE	MUSTANG 138KV	221	0.05446	-0.05972	20
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	WFEC	HAMMON CO SUB 138KV	114	-0.02985	-0.06084	20
GRDA	COFFGEN6_1 12.470 69KV	53	0.00694	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05692	21
AEPW	COGENTRIX 345KV	381.9058	0.00631	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05755	21
AEPW	ELKINS GENERATOR 69KV	60	0.00505	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05881	21
WERE	MARSHGEN1 0.6900 34KV	23.8	0.00682	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05704	21
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	WTH WIND 34.500 34KV	147	-0.02763	-0.05811	21
WFEC	MORLND4 18.000 138KV	350	0.0048	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05906	21
OKGE	MUSKOGEE 345KV	37.5	0.0054	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05846	21
OKGE	MUSTANG 138KV	149.5	0.05446	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.05864	21
AEPW	NORTHEASTERN STATION 138KV	15.00003	0.00627	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05759	21
AEPW	NORTHEASTERN STATION 345KV	9	0.0067	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05716	21
AEPW	OEC 345KV	209.971	0.00588	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05798	21
OKGE	PALDRW21 34.500 345KV	300	0.00611	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05775	21
GRDA	SALINA 161KV	129	0.00496	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0589	21
WERE	SOUTH SENECA 115KV	9.54	0.00676	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0571	21
AEPW	TONTITOWN 161KV	301	0.00511	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05875	21
AEPW	TULSA POWER STATION 138KV	318	0.00477	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05909	21
WFEC	ANADARKO 69KV	70	-0.10917	OKGE	ARBWND11 34.500 138KV	100	-0.05468	-0.05449	22
WERE	BPU - CITY OF MCPHERSON 115KV	238	0.00882	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05504	22
WERE	CC5SHAR1 12.470 69KV	10	0.0086	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05526	22

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

WERE	CC6SHAR1 12.470 69KV	10	0.0086	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05526	22
WERE	CHANUTE 69KV	37.8	0.00736	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0565	22
WERE	CITY OF BURLINGTON 69KV	8.945007	0.00846	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0554	22
WERE	CITY OF ERIE 69KV	26	0.00736	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0565	22
WERE	CITY OF IOLA 69KV	34.933	0.00736	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0565	22
WERE	CLAYGEN1 13.200 115KV	29.67	0.00818	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05568	22
WERE	EMPORIA ENERGY CENTER 345KV	354	0.00822	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05564	22
AEPW	FITZHUGH 161KV	21.18999	-0.00213	OKGE	MUSTANG 138KV	221	0.05446	-0.05659	22
WERE	HUTCHINSON ENERGY CENTER 115KV	235	0.00916	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0547	22
WERE	HUTCHINSON ENERGY CENTER 4KV	56	0.00916	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0547	22
WERE	HUTCHINSON ENERGY CENTER 69KV	56	0.00916	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0547	22
WERE	LAWRENCE ENERGY CENTER 115KV	78.00002	0.00722	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05664	22
WERE	LAWRENCE ENERGY CENTER 230KV	33.08133	0.00733	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05653	22
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	WFEC	HAMMON CO SUB 138KV	114	-0.02985	-0.05589	22
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WFEC	HUGO 138KV	440	-0.02272	-0.05561	22
WERE	SALINA MAIN 115KV	10.18	0.00851	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05535	22
WERE	TECUMSEH ENERGY CENTER 115KV	155	0.00742	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05644	22
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	BRKWND11 34.500 138KV	70	0.01596	-0.05534	22
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	CHSHMVW1 34.500 345KV	202	0.01582	-0.0552	22
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SOONER 345KV	537	0.01518	-0.05456	22
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	COMANCHE 138KV	170	-0.05569	-0.05348	23
WERE	CITY OF AUGUSTA 69KV	18.09	0.01046	OKGE	SMITH COGEN 138KV	107	0.06386	-0.0534	23
WERE	CITY OF WELLINGTON 69KV	24	0.01154	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05232	23
WERE	CITY OF WINFIELD 69KV	36.8	0.0118	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05206	23
WERE	EVANS ENERGY CENTER 138KV	176	0.01052	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05334	23
WERE	EVANS ENERGY CENTER 4KV	148	0.01052	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05334	23
WERE	GILL ENERGY CENTER 138KV	72.58154	0.01094	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05292	23
SWPA	KENNETT 69KV	16.3	0.00063	OKGE	MUSTANG 138KV	221	0.05446	-0.05383	23
OKGE	NBUFFRG1 34.500 345KV	200	0.01128	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05258	23
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	BUFFCK1 34.500 230KV	99	-0.02549	-0.05284	23
SWPA	PARAGOULD 161KV	31	0.00041	OKGE	MUSTANG 138KV	221	0.05446	-0.05405	23
SWPA	POPLAR BLUFF 161KV	11.8	0.00121	OKGE	MUSTANG 138KV	221	0.05446	-0.05325	23
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	BLKWLWD1 34.500 69KV	59.8	0.0135	-0.05288	23
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	CRSRDW21 34.500 345KV	197.8	0.01474	-0.05412	23
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	KAYWND12 34.500 345KV	280	0.01304	-0.05242	23
AEPW	WELEETKA 138KV	157	-0.03938	OMPA	OMPA-PONCA CITY 69KV	8.58668	0.0136	-0.05298	23
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SILNGW21 34.500 345KV	100	0.01474	-0.05412	23
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SLINGW11 34.500 345KV	398	0.01474	-0.05412	23
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SOONER 138KV	535	0.01447	-0.05385	23
GRDA	BOOMER 69KV	24	0.01349	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05037	24
AEPW	FULTON 115KV	153	-0.01117	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.0501	24
OMPA	OMCDLEC1 13.800 345KV	85.3	0.01364	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05022	24
OMPA	OMPA-PONCA CITY 69KV	132.5363	0.0136	OKGE	SMITH COGEN 138KV	107	0.06386	-0.05026	24
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	AEPW	WTH WIND 34.500 34KV	147	-0.02763	-0.0507	24
AEPW	RIVERSIDE STATION 138KV	140	0.00392	OKGE	MUSTANG 138KV	221	0.05446	-0.05054	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	CITY OF MULVANE 69KV	8.2	0.01072	-0.0501	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	EVANS ENERGY CENTER 138KV	520	0.01052	-0.0499	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	FR2E1WF1 0.6900 34KV	112.6579	0.01223	-0.05161	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	FR2E2WF1 0.6900 34KV	112.6579	0.01223	-0.05161	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	FR2W1WF1 0.6900 34KV	117.3421	0.01223	-0.05161	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	FR2W2WF1 0.6900 34KV	117.3421	0.01223	-0.05161	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	GILL ENERGY CENTER 138KV	119.4185	0.01094	-0.05032	24
AEPW	WELEETKA 138KV	157	-0.03938	WERE	SLATEGEN1 0.6900 34KV	150	0.01218	-0.05156	24
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	RKYRDGW1-1 34.500 138KV	150	-0.06051	-0.04866	25
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04798	25
AEPW	COGENTRIX 345KV	381.9058	0.00631	OKGE	MUSTANG 138KV	221	0.05446	-0.04815	25
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04904	25
AEPW	ELKINS GENERATOR 69KV	60	0.00505	OKGE	MUSTANG 138KV	221	0.05446	-0.04941	25
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04892	25
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04906	25
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.0482	25
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04978	25
OKGE	MMTHPW11 34.500 345KV	200	0.01474	OKGE	SMITH COGEN 138KV	107	0.06386	-0.04912	25
WFEC	MORLND4 18.000 138KV	350	0.0048	OKGE	MUSTANG 138KV	221	0.05446	-0.04966	25
OKGE	MUSKOGEE 345KV	37.5	0.0054	OKGE	MUSTANG 138KV	221	0.05446	-0.04906	25
AEPW	NORTHEASTERN STATION 138KV	15.00003	0.00627	OKGE	MUSTANG 138KV	221	0.05446	-0.04819	25
AEPW	OEC 345KV	209.971	0.00588	OKGE	MUSTANG 138KV	221	0.05446	-0.04858	25
OKGE	ORIGIN21 34.500 138KV	152	-0.07833	WFEC	HAMMON CO SUB 138KV	114	-0.02985	-0.04848	25
OKGE	PALDRW21 34.500 345KV	300	0.00611	OKGE	MUSTANG 138KV	221	0.05446	-0.04835	25
GRDA	SALINA 161KV	129	0.00496	OKGE	MUSTANG 138KV	221	0.05446	-0.0495	25
OKGE	SMITH COGEN 138KV	16	0.06386	OKGE	MCCLAIN 138KV	481.5977	0.1131	-0.04924	25
AEPW	TONTITOWN 161KV	301	0.00511	OKGE	MUSTANG 138KV	221	0.05446	-0.04935	25
AEPW	TULSA POWER STATION 138KV	318	0.00477	OKGE	MUSTANG 138KV	221	0.05446	-0.04969	25
AEPW	WELEETKA 138KV	157	-0.03938	WERE	CANEYWF1 0.6900 34KV	199.8	0.00929	-0.04867	25
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	CENT 21 34.500 138KV	120	0.0088	-0.04818	25
AEPW	WELEETKA 138KV	157	-0.03938	WERE	CITY OF AUGUSTA 69KV	9.25	0.01046	-0.04984	25
AEPW	WELEETKA 138KV	157	-0.03938	WERE	COFFEY CO SUB 34KV	401	0.00885	-0.04823	25
AEPW	WELEETKA 138KV	157	-0.03938	WERE	ELK RIVER 345KV	150	0.00954	-0.04892	25
AEPW	WELEETKA 138KV	157	-0.03938	WERE	LYONS 115KV	9	0.00881	-0.04819	25
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	OU SPIRIT 138KV	102	0.00951	-0.04889	25
AEPW	WELEETKA 138KV	157	-0.03938	WERE	WAVERGEN1 0.6900 34KV	101	0.00885	-0.04823	25
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	WOODWARD CO SUB 2 138KV	151.8	0.00951	-0.04889	25
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04962	25
WERE	CHANUTE 69KV	37.8	0.00736	OKGE	MUSTANG 138KV	221	0.05446	-0.0471	26
WERE	CITY OF ERIE 69KV	26	0.00736	OKGE	MUSTANG 138KV	221	0.05446	-0.0471	26
WERE	CITY OF IOLA 69KV	34.933	0.00736	OKGE	MUSTANG 138KV	221	0.05446	-0.0471	26
WERE	CLAYGEN1 13.200 115KV	29.67	0.00818	OKGE	MUSTANG 138KV	221	0.05446	-0.04628	26
GRDA	COFFGEN6_1 12.470 69KV	53	0.00694	OKGE	MUSTANG 138KV	221	0.05446	-0.04752	26
WERE	EMPORIA ENERGY CENTER 345KV	354	0.00822	OKGE	MUSTANG 138KV	221	0.05446	-0.04624	26
WERE	LAWRENCE ENERGY CENTER 115KV	78.00002	0.00722	OKGE	MUSTANG 138KV	221	0.05446	-0.04724	26
WERE	LAWRENCE ENERGY CENTER 230KV	33.08133	0.00733	OKGE	MUSTANG 138KV	221	0.05446	-0.04713	26
WERE	MARSHGEN1 0.6900 34KV	23.8	0.00682	OKGE	MUSTANG 138KV	221	0.05446	-0.04764	26
AEPW	NORTHEASTERN STATION 345KV	9	0.0067	OKGE	MUSTANG 138KV	221	0.05446	-0.04776	26
WERE	SOUTH SENECA 115KV	9.54	0.00676	OKGE	MUSTANG 138KV	221	0.05446	-0.0477	26
WERE	TECUMSEH ENERGY CENTER 115KV	155	0.00742	OKGE	MUSTANG 138KV	221	0.05446	-0.04704	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	CITY OF OSAGE CITY 115KV	10.271	0.0079	-0.04728	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	EMPORIA ENERGY CENTER 345KV	291	0.00822	-0.0476	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	JEFFREY ENERGY CENTER 230KV	730	0.00776	-0.04714	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	JEFFREY ENERGY CENTER 345KV	1460	0.00774	-0.04712	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	LAWRENCE ENERGY CENTER 115KV	105	0.00722	-0.0466	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	LAWRENCE ENERGY CENTER 230KV	372.9187	0.00733	-0.04671	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	MARSHGEN1 0.6900 34KV	50	0.00682	-0.0462	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	S ALMA 3 115.00 115KV	11.6	0.00782	-0.0472	26
AEPW	WELEETKA 138KV	157	-0.03938	WERE	TECUMSEH ENERGY CENTER 115KV	70	0.00742	-0.0468	26
WERE	BPU - CITY OF MCPHERSON 115KV	238	0.00882	OKGE	MUSTANG 138KV	221	0.05446	-0.04564	27
WERE	CC5SHAR1 12.470 69KV	10	0.0086	OKGE	MUSTANG 138KV	221	0.05446	-0.04586	27
WERE	CC6SHAR1 12.470 69KV	10	0.0086	OKGE	MUSTANG 138KV	221	0.05446	-0.04586	27
WERE	HUTCHINSON ENERGY CENTER 115KV	235	0.00916	OKGE	MUSTANG 138KV	221	0.05446	-0.0453	27

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

WERE	HUTCHINSON ENERGY CENTER 4KV	56	0.00916	OKGE	MUSTANG 138KV	221	0.05446	-0.0453	27
WERE	HUTCHINSON ENERGY CENTER 69KV	56	0.00916	OKGE	MUSTANG 138KV	221	0.05446	-0.0453	27
WERE	SALINA MAIN 115KV	10.18	0.00851	OKGE	MUSTANG 138KV	221	0.05446	-0.04595	27
AEPW	WELEETKA 138KV	157	-0.03938	SWPA	CARTHAGE 69KV	20	0.00537	-0.04475	27
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	COGENTRIX 345KV	512.0942	0.00631	-0.04569	27
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	DEWEY CO SUB 4 138KV	130	0.00509	-0.04447	27
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	FLINT CREEK 161KV	528	0.00514	-0.04452	27
AEPW	WELEETKA 138KV	157	-0.03938	GRDA	GRDA1 345KV	520	0.00548	-0.04486	27
AEPW	WELEETKA 138KV	157	-0.03938	GRDA	GRECCTG_1 20.000 345KV	325	0.00549	-0.04487	27
AEPW	WELEETKA 138KV	157	-0.03938	GRDA	GRECSTG_1 17.500 345KV	192	0.00549	-0.04487	27
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	MUSKOGEE 345KV	1542.5	0.0054	-0.04478	27
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	NORTHEASTERN STATION 138KV	841	0.00627	-0.04565	27
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	NORTHEASTERN STATION 345KV	460	0.0067	-0.04608	27
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	OEC 345KV	1000.029	0.00588	-0.04526	27
AEPW	WELEETKA 138KV	157	-0.03938	WFEC	SLEEPING BEAR 138KV	80	0.0051	-0.04448	27
WERE	CITY OF AUGUSTA 69KV	18.09	0.01046	OKGE	MUSTANG 138KV	221	0.05446	-0.044	28
WERE	CITY OF WELLINGTON 69KV	24	0.01154	OKGE	MUSTANG 138KV	221	0.05446	-0.04292	28
WERE	EVANS ENERGY CENTER 138KV	176	0.01052	OKGE	MUSTANG 138KV	221	0.05446	-0.04394	28
WERE	EVANS ENERGY CENTER 4KV	148	0.01052	OKGE	MUSTANG 138KV	221	0.05446	-0.04394	28
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	OKGE	ARBWND11 34.500 138KV	100	-0.05468	-0.04396	28
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	COMANCHE 138KV	170	-0.05569	-0.04295	28
WERE	GILL ENERGY CENTER 138KV	72.58154	0.01094	OKGE	MUSTANG 138KV	221	0.05446	-0.04352	28
OKGE	NBUFFRG1 34.500 345KV	200	0.01128	OKGE	MUSTANG 138KV	221	0.05446	-0.04318	28
OKGE	SEMINOLE 138KV	319.644	-0.00526	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04419	28
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	FPLWND11 34.500 138KV	102	0.00486	-0.04424	28
AEPW	WELEETKA 138KV	157	-0.03938	WFEC	MORLND4 18.000 138KV	272	0.0048	-0.04418	28
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	RIVERSIDE STATION 138KV	908.0001	0.00392	-0.0433	28
WFEC	ANADARKO 138KV	240.5906	-0.09735	OKGE	ARBWND11 34.500 138KV	100	-0.05468	-0.04267	29
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	COMANCHE 138KV	170	-0.05569	-0.04166	29
WERE	CITY OF WINFIELD 69KV	36.8	0.0118	OKGE	MUSTANG 138KV	221	0.05446	-0.04266	29
WFEC	ANADARKO 69KV	70	-0.10917	AEPW	COMANCHE 69KV	71	-0.06894	-0.04023	30
GRDA	BOOMER 69KV	24	0.01349	OKGE	MUSTANG 138KV	221	0.05446	-0.04097	30
AEPW	FITZHUGH 161KV	21.18999	-0.00213	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.04106	30
OMPA	OMCDLEC1 13.800 345KV	85.3	0.01364	OKGE	MUSTANG 138KV	221	0.05446	-0.04082	30
OMPA	OMPA-PONCA CITY 69KV	132.5363	0.0136	OKGE	MUSTANG 138KV	221	0.05446	-0.04086	30
AEPW	WELEETKA 138KV	157	-0.03938	SWPA	POPLAR BLUFF 161KV	22	0.00121	-0.04059	30
AEPW	WELEETKA 138KV	157	-0.03938	SWPA	SIKESTON 161KV	235	0.00105	-0.04043	30
AEPW	FULTON 115KV	153	-0.01117	OKGE	SEMINOLE 345KV	470	0.02865	-0.03982	31
OKGE	KNGFSR12 34.500 345KV	300	0.02457	OKGE	SMITH COGEN 138KV	107	0.06386	-0.03929	31
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	SEMINOLE 345KV	470	0.02865	-0.0395	31
OKGE	MMTHPW11 34.500 345KV	200	0.01474	OKGE	MUSTANG 138KV	221	0.05446	-0.03972	31
OKGE	SPRING CREEK UNIT 3 AND 4 345KV	36	0.02425	OKGE	SMITH COGEN 138KV	107	0.06386	-0.03961	31
AEPW	WELEETKA 138KV	157	-0.03938	SWPA	KENNETT 69KV	18	0.00063	-0.04001	31
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	SEMINOLE 345KV	470	0.02865	-0.03934	31
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	SEMINOLE 345KV	470	0.02865	-0.0377	32
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	SEMINOLE 345KV	470	0.02865	-0.03876	32
AEPW	G11_050_3 0.6900 34KV	109.8	-0.09864	AEPW	RKYRDGW1-1 34.500 138KV	150	-0.06051	-0.03813	32
SWPA	KENNETT 69KV	16.3	0.00063	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.0383	32
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	SEMINOLE 345KV	470	0.02865	-0.03864	32
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	SEMINOLE 345KV	470	0.02865	-0.03878	32
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	SEMINOLE 345KV	470	0.02865	-0.03792	32
SWPA	PARAGOULD 161KV	31	0.00041	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03852	32
SWPA	POPLAR BLUFF 161KV	11.8	0.00121	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03772	32
OKGE	REDBUD 345KV	166	0.02582	OKGE	SMITH COGEN 138KV	107	0.06386	-0.03804	32
WFEC	ANADARKO 138KV	240.5906	-0.09735	AEPW	RKYRDGW1-1 34.500 138KV	150	-0.06051	-0.03684	33
AEPW	FULTON 115KV	153	-0.01117	OKGE	REDBUD 345KV	1034	0.02582	-0.03699	33
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	REDBUD 345KV	1034	0.02582	-0.03667	33
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	FITZHUGH 161KV	143.81	-0.00213	-0.03725	33
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	GRADY CO SUB 345KV	199	-0.00212	-0.03726	33
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	MNCWND31 0.6900 34KV	100	-0.00212	-0.03726	33
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	REDBUD 345KV	1034	0.02582	-0.03651	33
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	REDBUD 345KV	1034	0.02582	-0.03593	34
AEPW	FULTON 115KV	153	-0.01117	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03574	34
AEPW	FULTON 115KV	153	-0.01117	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03569	34
AEPW	FULTON 115KV	153	-0.01117	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.03542	34
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	REDBUD 345KV	1034	0.02582	-0.03581	34
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	REDBUD 345KV	1034	0.02582	-0.03595	34
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03542	34
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	OKGE	ARBWND11 34.500 138KV	100	-0.05468	-0.03601	34
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	AES 161KV	320	-0.00351	-0.03587	34
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	REDBUD 345KV	1034	0.02582	-0.03487	35
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03468	35
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03463	35
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03456	35
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03451	35
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.0347	35
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03465	35
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	REDBUD 345KV	1034	0.02582	-0.03509	35
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03537	35
AEPW	LONESTAR POWER PLANT 69KV	50	-0.01085	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.0351	35
AEPW	RIVERSIDE STATION 138KV	140	0.00392	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03501	35
OKGE	SEMINOLE 345KV	559.6	0.02865	OKGE	SMITH COGEN 138KV	107	0.06386	-0.03521	35
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	COMANCHE 138KV	170	-0.05569	-0.035	35
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03526	35
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03521	35
AEPW	WILKES 138KV	193.7668	-0.01069	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.03494	35
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03362	36
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03357	36
AEPW	EASTMAN 138KV	135.2715	-0.01011	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.03436	36
AEPW	ELKINS GENERATOR 69KV	60	0.00505	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03388	36
AEPW	KNOXLEE 138KV	147.0151	-0.00999	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.03424	36
AEPW	LEBROCK 345KV	226.8986	-0.01013	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.03438	36
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	CANDN12 34.500 345KV	298.2	0.02457	-0.03384	36
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	HORSESHOE LAKE 69KV	16	0.02452	-0.03379	36
AEPW	LIEBERMAN 138KV	242	-0.00927	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.03352	36
WFEC	MORLND4 18.000 138KV	350	0.0048	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03413	36
OKGE	MUSKOGEE 345KV	37.5	0.0054	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03353	36
GRDA	SALINA 161KV	129	0.00496	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03397	36
OKGE	SEMINOLE 138KV	319.644	-0.00526	OKGE	SEMINOLE 345KV	470	0.02865	-0.03391	36
AEPW	TONTITOWN 161KV	301	0.00511	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03382	36
AEPW	TULSA POWER STATION 138KV	318	0.00477	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03416	36
AEPW	WELEETKA 138KV	157	-0.03938	OKGE	SEMINOLE 138KV	185.3561	-0.00526	-0.03412	36
AEPW	ARSENAL HILL 69KV	110	-0.00905	OKGE	SPRING CREEK UNIT 3 AND 4 345KV	300	0.02425	-0.0333	37
AEPW	COGENTRIX 345KV	381.9058	0.00631	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03262	37
AEPW	NORTHEASTERN STATION 138KV	15.00003	0.00627	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03266	37
AEPW	OEC 345KV	209.971	0.00588	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03305	37
OKGE	PALDRW21 34.500 345KV	300	0.00611	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03282	37
GRDA	COFFGEN6_1 12.470 69KV	53	0.00694	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03199	38

Table 4 - Potential Redispatch Relief Pairs to Prevent Deferral of Service

WERE	MARSHGEN1 0.6900 34KV	23.8	0.00682	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03211	38
WERE	CHANUTE 69KV	37.8	0.00736	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03157	39
WERE	CITY OF ERIE 69KV	26	0.00736	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03157	39
WERE	CITY OF IOLA 69KV	34.933	0.00736	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03157	39
WERE	LAWRENCE ENERGY CENTER 115KV	78.00002	0.00722	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03171	39
WERE	LAWRENCE ENERGY CENTER 230KV	33.08133	0.00733	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.0316	39
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	OKGE	ARBWND11 34.500 138KV	100	-0.05468	-0.03106	39
OKGE	SEMINOLE 138KV	319.644	-0.00526	OKGE	REDBUD 345KV	1034	0.02582	-0.03108	39
WERE	TECUMSEH ENERGY CENTER 115KV	155	0.00742	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03151	39
WERE	CLAYGEN1 13.200 115KV	29.67	0.00818	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03075	40
WERE	EMPORIA ENERGY CENTER 345KV	354	0.00822	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03071	40
AEPW	FITZHUGH 161KV	21.18999	-0.00213	OKGE	SEMINOLE 345KV	470	0.02865	-0.03078	40
AEPW	SOUTHWESTERN STATION 138KV	302	-0.09069	AEPW	RKYRDGW1-1 34.500 138KV	150	-0.06051	-0.03018	40
OKGE	SPRING CREEK UNIT 3 AND 4 345KV	36	0.02425	OKGE	MUSTANG 138KV	221	0.05446	-0.03021	40
AEPW	WELEETKA 138KV	157	-0.03938	AEPW	ARSENAL HILL 138KV	509	-0.00904	-0.03034	40
WERE	BPU - CITY OF MCPHERSON 115KV	238	0.00882	OKGE	HORSESHOE LAKE 138KV	581	0.03893	-0.03011	41
WFEC	MEERS CO SUB 138KV	151.2	-0.08574	AEPW	COMANCHE 138KV	170	-0.05569	-0.03005	41

Maximum Decrement and Maximum Increment were determine from the Souce and Sink Operating Points in the study models where limiting facility was identified.

Factor = Source GSF - Sink GSF

Redispatch Amount = Relief Amount / Factor