

System Impact Study SPP-2004-029-1 For The Designation of a New Network Resource Requested By Kansas Electric Power Cooperative From WERE to WERE

For a Reserved Amount Of 51 MW From 6/1/2005 To 6/1/2008

SPP Engineering, Tariff Studies

SPP IMPACT STUDY (SPP-2004-029-1) May 19, 2005 Page 1 of 9

Table of Contents

1. EXECUTIVE SUMMARY	3
2. INTRODUCTION	3
3. STUDY METHODOLOGY	5
A. DESCRIPTION	5
B. MODEL UPDATES	5
B. MODEL UPDATES C. TRANSFER ANALYSIS	6
4. STUDY RESULTS	7
A. STUDY ANALYSIS RESULTS	
5. CONCLUSION	8
APPENDIX A	9

ATTACHMENT: SPP-2004-029-1 Tables

SPP IMPACT STUDY (SPP-2004-029-1) May 19, 2005 Page 2 of 9

<u>1. Executive Summary</u>

Kansas Electric Power Cooperative requested a system impact study to designate a New Network Resource in the WERE Control Area for 51 MW to serve network load. The period of the service requested is from 6/1/2005 to 6/1/2008. The OASIS reservation number is 651874.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the additional 51 MW request while maintaining system reliability. The service was modeled by a transfer from the new designated network resource in the WERE Control Area to the Network Load in the WERE Control Area. The three scenarios were studied to capture worst case system limitations dependent on the bias of the transmission system. Analysis was conducted for the requested service period above and for the remaining planning horizon from 1/1/2010 to 10/1/2015. The additional evaluation of the planning horizon was conducted to determine any future constraints that may limit the future renewal of service.

Tables 1.1, 1.2, and 1.3 list the SPP facility overloads caused or impacted by the transfer modeled, using Scenarios 1, 2, and 3, respectively. Tables 2.1, 2.2, and 2.3 list the SPP voltage violations caused or impacted by the transfer modeled, using Scenarios 1, 2, and 3, respectively. Tables 3.1, 3.2, and 3.3 list the Non - SPP facility overloads caused or impacted by the transfer modeled, using Scenarios 1, 2, and 3, respectively. Tables 4.1, 4.2, and 4.3 list the Non - SPP voltage violations caused or impacted by the transfer modeled, using Scenarios 1, 2, and 3, respectively. Tables 4.1, 4.2, and 4.3 list the Non - SPP voltage violations caused or impacted by the transfer modeled, using Scenarios 1, 2, and 3, respectively.

The study results of the WERE to WERE 51 MW request show that limiting constraints exist. Due to the limiting constraints identified, the Transmission Service Request cannot be granted. Any solutions, upgrades, and costs provided in the System Impact Study are planning estimates only. The final ATC and upgrades required may vary from these results due to unknown facility upgrades and proposed transmission plans that will identified during the facility study process.

Facilities were identified that limit the ATC to 0MW for the requested period of service. For some facilities, implementing the upgrade is not possible to accommodate the requested term of service. SPP will review the possibility of curtailment of previously confirmed service and/or the redispatch of units as an option for relieving the additional impacts on these facilities. These options will be evaluated as part of the Facility Study. If no redispatch or curtailment of service option is identified for the facilities with an ATC of 0MW, the start date of the requested service may be delayed until the upgrade of the limiting facility is completed. Execution of a Facility Study Agreement is now required to maintain queue position. The final ATC, upgrade solutions, cost assignments, complete evaluation of renewal rights, and available redispatch and curtailment options will be determined upon the completion of the facility study.

2. Introduction

Kansas Electric Power Cooperative requested a system impact study to designate a New Network Resource in the WERE Control Area for 51 MW to serve network load. The principal objective of this study is to identify the restraints on the SPP Regional Tariff System that may limit the requested service and determine the least cost solutions required to alleviate the limiting facilities.

This study includes steady-state contingency analyses (PSS/E function ACCC) and Available Transfer Capability (ATC) analyses. The steady-state analyses consider 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 system and first tier Non - SPP systems.

The WERE to WERE 51 MW request was studied using three System Scenarios. The service was modeled from the new designated network resource in the WERE Control Area to the Network Load in the WERE Control Area. The three scenarios were studied to capture worst case system limitations dependent on the bias of the transmission system.

3. Study Methodology

A. Description

The system impact 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 done to ensure current SPP Criteria and NERC Planning Standards requirements are fulfilled. The Southwest Power Pool conforms to the NERC Planning Standards, which provide the strictest requirements, related to voltage violations and thermal overloads during normal conditions and during a contingency. It requires that all facilities 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 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 110% and 90%. The SPS Tuco 230 kV bus voltage is monitored at 92.5% due to pre-determined system stability limitations.

The contingency set includes all SPP control area branches and ties 69kV 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 SPP control areas, AECI, and ENTR with SPP reserve share program redispatch. The monitor 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 69 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, and ENTR and a 2 % TDF cutoff was applied to MEC, NPPD, and OPPD. For voltage monitoring, a 0.02 per unit change in voltage must occur due to the transfer to be considered a valid limit to the transfer.

B. Model Updates

SPP used fourteen seasonal models to study the WERE to WERE 51 MW request for the requested service period. The SPP 2005 Series Cases Update 2 2005 Summer Peak (05SP), 2005 Summer 2005 Fall Peak (05FA), 2005 Winter Peak (05WP), 2006 April Minimum (06AP), 2006 Spring Peak (06G), 2006 Summer Peak (06SP), 2006 Summer Shoulder (06SH), 2006 Fall Peak (06FA), 2006 Winter Peak (06WP), 2007 Summer Peak (07SP), 2007/08 Winter Peak (07WP), were used to study the impact of the 51 MW transfer on the system during the requested service period of 6/1/2005 to 6/1/2008. 2010 Summer Peak (10SP), 2010/11 Winter Peak (10WP), and 2015 Summer Peak (15SP) were used to evaluate renewal rights of the requested service. The Spring Peak models apply to April and May, the Summer Peak models apply to June through September, the Fall Peak models apply to October and November, and the Winter Peak models apply to December through March.

The chosen base case models were modified to reflect the most current modeling information. The cases were modified to reflect firm transfers during the requested service period that were not already included in the SPP 2005 Series Cases. From the fourteen seasonal models, three system scenarios were developed. Scenario 1 includes confirmed West to East transfers not already included in the January 2005 base case series models, SPS exporting, and the Lamar HVDC Tie flowing from SPS to Lamar, and ERCOT exporting. Scenario 2 includes confirmed East to West transfers not already included in the January 2005 base case series models, SPS

SPP IMPACT STUDY (SPP-2004-029-1) May 19, 2005 Page 5 of 9 importing, and the Lamar HVDC Tie flowing from Lamar to SPS, and ERCOT importing. Scenario 3 includes confirmed West to East transfers no already included in the January 2005 base case series models, SPS importing, the Lamar HVDC Tie flowing from Lamar to SPS, and ERCOT importing

The Network load amount for the 2005 and 2006 Summer Peaks was forecasted to be a maximum of 42 MW. The Network load amount for the 2005 and 2006 Summer Shoulders was forecasted to be a maximum of 34 MW. The Network load amount for the 2005 and 2006 Fall Peaks was forecasted to be a maximum of 26 MW. The Network load amount for the 2005, 2006, 2007, and 2010 Winter Peaks was forecasted to be a maximum of 27 MW. The Network load amount for the 2006 April Peak was forecasted to be a maximum of 13 MW. The Network load amount for the 2006 Spring Peak was forecasted to be a maximum of 31 MW. The Network load amount for the 2006 Spring Peak was forecasted to be a maximum of 31 MW. The Network load amount for the 2007 Summer Peak was forecasted to be a maximum of 43 MW. The Network load amount for the 2010 Summer Peak was forecasted to be a maximum of 44 MW. The Network load amount for the 2015 Summer Peak was forecasted to be a maximum of 44 MW.

C. Transfer Analysis

Using the selected cases both with and without the requested transfer modeled, the PSS/E Activity ACCC was run on the cases and compared to determine the facility thermal overloads and voltage violations caused or impacted by the transfer. The PSS/E options chosen to conduct the analysis can be found in Appendix A.

D. Upgrade Analysis

This system impact study does not include analysis with the assigned upgrades modeled. To determine the final cost and possible start date of the requested service, additional analysis will be performed to determine the impact of modeling the assigned upgrades for the request.

4. Study Results

A. Study Analysis Results

Tables 1 through 4 contain the initial steady-state analysis results of the System Impact Study. The Tables are in the attached workbook *SPP-2004-029-1 Tables*. The tables identify the seasonal case in which the event occurred, the facility control area location, applicable ratings of the overloaded facility, the loading percentage or voltage with and without the transfer and upgrades, the percent transfer distribution factor (TDF) if applicable, and the estimated ATC value using interpolation if calculated. Comments are provided in the tables to document any SPP or Non - SPP identification or assignment of the event, existing mitigations plans or criteria to disregard the event as a limiting constraint, upgrades and costs to mitigate a limiting constraint, or any specific study procedures associated with modeling an event.

Table 1.1 lists the SPP Facility Overloads caused or impacted by the 51 MW transfer for Scenario 1. Solutions with engineering and construction costs are provided in the tables.

Table 2.1 lists voltage violations on first tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 51 MW transfer for Scenario 1.

Table 3.1 lists overloads on first tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 51 MW transfer for Scenario 1.

Table 1.2 lists the SPP Facility Overloads caused or impacted by the 51 MW transfer for Scenario 2. Solutions with engineering and construction costs are provided in the tables.

Table 2.2 lists voltage violations on first tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 51 MW transfer for Scenario 2.

Table 3.2 lists overloads on first tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 51 MW transfer for Scenario 2.

Table 1.3 lists the SPP Facility Overloads caused or impacted by the 51 MW transfer for Scenario 3. Solutions with engineering and construction costs are provided in the tables.

Table 2.3 lists voltage violations on first tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 51 MW transfer for Scenario 3.

Table 3.3 lists overloads on first tier Non - SPP Regional Tariff participants' transmission systems caused or impacted by the 51 MW transfer for Scenario 3.

Tables 1.1a, 1.2a and 1.3a document the modeling representation of the events identified in Tables 1.1, 1.2 and 1.3 respectively to include bus numbers and bus names.

5. Conclusion

The study results of the WERE to WERE 51 MW request show that limiting constraints exist. Due to the limiting constraints identified, the Transmission Service Request cannot be granted. Any solutions, upgrades, and costs provided in the System Impact Study are planning estimates only. The final ATC and upgrades required may vary from these results due to unknown facility upgrades and proposed transmission plans that will identified during the facility study process.

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Appendix A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASES:

Solutions - Fixed slope decoupled Newton-Raphson solution (FDNS)

- 1. Tap adjustment Stepping
- 2. Area interchange control Tie lines only
- 3. Var limits Apply immediately
- 4. Solution options \underline{X} Phase shift adjustment
 - _ Flat start
 - _Lock DC taps
 - _Lock switched shunts

ACCC CASES:

Solutions – AC contingency checking (ACCC)

- 1. MW mismatch tolerance -0.5
- 2. Contingency case rating Rate B
- 3. Percent of rating -100
- 4. Output code Summary
- 5. Min flow change in overload report 1mw
- 6. Excld cases w/ no overloads form report YES
- 7. Exclude interfaces from report NO
- 8. Perform voltage limit check YES
- 9. Elements in available capacity table 60000
- 10. Cutoff threshold for available capacity table 99999.0
- 11. Min. contng. case Vltg chng for report -0.02
- 12. Sorted output None

Newton Solution:

- 1. Tap adjustment Stepping
- 2. Area interchange control Tie lines only
- 3. Var limits Apply automatically
- 4. Solution options \underline{X} Phase shift adjustment
 - _ Flat start
 - _Lock DC taps
 - _Lock switched shunts

	Transfer											
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
05SP	42	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	101.7	103.6	3.038	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	May be relieved due to Westar Operating Procedure 900 - Outage of the JEC to East Manhattan 230kV Line	
0331	42	WERE	VVLINE	AUBORIN ROAD - REEINE HISRY	00	101.7	103.0	3.030		0	Rebuild 15.50-mile line (1192.5 kcmil 45/7 ACSR, 223 MVA,	
05SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	99.4	100.9	3.3	IATAN - ST JOE 345KV	5	245 MVA), Replace CTs and Wave Trap (2000 A.)	\$5,800,000
05SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	95.4	100.3	11.5	CONCORDIA - EAST MANHATTAN 230KV	12	See Previous Upgrade Specified for Facility	
05SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	95.3	100.3	11.5	CONCORDIA 230/115KV TRANSFORMER	12	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 625 -	
05SP	42	WERE	WERE	WEST EMPORIA - EAST STREET 115KV	92	102.3	104.7	5.2	MORRIS COUNTY 230/115/13.8KV TRANSFORMER	0	Outage of the Morris County Transformer	
05SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	99.2	100.4	3.5	IATAN - ST JOE 345KV	9	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	120.1	121.7	6.0	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	112.0	113.9	6.5	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
05FA	26	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	109.9	111.8	6.5	HOYT - STRANGER CREEK 345KV		May be relieved due to Westar Operating Procedure 803 -	
USFA	20	WERE	WERE	KELLY - KING HILL N.M. COOP TISKV	92	109.9	111.0	0.0	HUTT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 803 -	
05WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	121.9	122.7	3.043	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
05WP	27	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	121.9	101.1	4.0	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.4	103.6	3.7	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	98.0	100.8	9.0	CONCORDIA - EAST MANHATTAN 230KV	9	See Previous Upgrade Specified for Facility	
06G	31		WERE		97	97.9	100.8	9.0	CONCORDIA 230/115KV TRANSFORMER	9	See Previous Upgrade Specified for Facility	
000	01	WEIKE	WEIKE		51	51.5	100.0	5.0	CONCORDIN 200/ HOR HORNER	3	May be relieved due to Westar Operating Procedure 900 -	
06SP	42	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	103.1	105.8	4.3	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
000.	12	mente	mente			100.1	100.0			ů	May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	127.1	129.4	5.3	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	109.8	111.8	4.5	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	104.3	109.6	12.2	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
000.	12	THE RE	mente		01	10 1.0	100.0	12.2			May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	112.5	115.0	5.6	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
	.=										May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	109.5	112.1	5.6	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
06FA	26	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	121.1	122.1	3.6	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
06FA	26	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	104.2	105.1	3.7	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
06FA	26	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	112.5	113.6	4.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
06FA	26	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	110.3	111.4	4.2	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 900 -	
06SH	34	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	99.5	101.4	3.8	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	3	Outage of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	125.4	127.1	4.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
06SH	34		WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	110.8	112.3	4.4	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
06SH	34		WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	108.2	112.2	11.4	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
06SH	34		WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	108.2	112.2	11.4	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	103.1	104.8	5.1	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	See Previous Upgrade Specified for Facility	
ΙΤ											May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	114.5	116.4	5.2	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
06SH	34	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	96.8	100.9	11.3	CONCORDIA - EAST MANHATTAN 230KV	10	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	96.7	100.9	11.3	CONCORDIA 230/115KV TRANSFORMER	10	Rebuild 15.15 mile line with 1192.5 kcmil ACSR.	\$3,200,000
06SH	34	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	99.2	100.8	4.2	IATAN - ST JOE 345KV	7	See Previous Upgrade Specified for Facility	
0001			WEDE			440.0	110.0	5.0			May be relieved due to Westar Operating Procedure 803 -	1
06SH	34	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	112.0	113.9	5.3	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	↓ →
OCIMIE	07	WEDE	WEDE		07	400.0	400.5	2.2		0	May be relieved due to Westar Operating Procedure 803 -	1
06WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	122.6	123.5	3.3	HOYT - STRANGER CREEK 345KV	U	Outage of the Hoyt to Stranger 345 kV line	+
OGIAUD	07	WEDE	WERE		00	115.0	117.0	27	HOVE SEDANCED ODEEK 345KU	_	May be relieved due to Westar Operating Procedure 803 -	
06WP	27	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	115.9	117.0	3.7	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	+
	27	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	114.0	115.1	3.7	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 -	1
06WP	21	WERE	VVERE	RELLT - KING HILL N.W. COUP LISKV	92	114.0	115.1	3.1	HUTI - SIKANGER UREEN JAONV	U	Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 1205 -	
0760	43	WEDE	WERE		1.41	107.7	120.9	10.0		0		1
07SP	43	WERE	VVERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	127.7	130.8	10.0	CIRCLE - DAVIS 115KV	U	Outage of the Circle to Davis 115kV line	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	111.3	114.3	10.0	HUTCHINSON ENERGY CENTER - HUTCHINSON GAS TURBINE STATION 69KV	0	May be relieved due to Westar Operating Procedure 1306 - Outage of the HEC to HEC GT 69kV Line	1
07SP	43	WERE		CIRCLE - HUTCHINSON ENERGY CENTER 115KV CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	108.0	114.3	9.8	REMOVE UNIT 1 FROM BUS 56693 [HEC U3 14.400] DISPATCH	0	Solution Undetermined	+
0100	43		WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	106.9	111.0	9.8	SEWARD - ST JOHN 115KV	0	Solution Undetermined	
0790			VVLINE	GINGLE - HOTGHINGON ENERGY GENTER TISKY	141	100.9	110.2	10.9	SEWARD - ST JOHN HORV	U		
07SP	43	mente									May be relieved due to Wester Operating Procedure 803 -	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	128.7	130.5	4.1	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	

	Transfer					1				1		
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
07SP	43	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	110.0	111.8	4.0	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	104.3	109.5	11.8	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	104.3	109.5	11.7	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
07SP	43	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	113.5	115.6	4.4	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
07SP	43	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	110.6	112.7	4.5	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
07WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	119.2	120.6	4.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
07WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	100.2	101.9	6.1	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
07WP	27	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	112.0	113.5	4.8	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
07WP	27	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	110.1	111.5	4.8	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	105.3	106.9	3.5	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 1203 -	
											Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE	WERE	COUNTY LINE - HOOK JCT 115KV	92	119.7	123.4	7.6	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	115 kV Line	
											May be relieved due to Westar Operating Procedure 1203 -	
											Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE	WERE	COUNTY LINE - TECUMSEH HILL 115KV	106	104.3	106.7	5.8	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	115 kV Line	
10SP	44	WERE		GILL ENERGY CENTER EAST - MACARTHUR 69KV	68	117.9	119.9	3.1	GILL ENERGY CENTER EAST - OATVILLE 69KV	0	Replace substation bus and jumpers at MacArthur 69 kV.	\$98,000
											Replace disconnect switches at Gill 69 kV (use 800 A.), Replace	
10SP	44	WERE	WERE	GILL ENERGY CENTER EAST - OATVILLE 69KV	72	127.0	129.2	3.6	GILL ENERGY CENTER EAST - MACARTHUR 69KV	0	line switch at Oatville 69 kV (use 800 A.).	\$45,000
10SP	44	WERE	WERE	GILL ENERGY CENTER EAST - OATVILLE 69KV	72	111.2	113.0	3.1	GILL ENERGY CENTER WEST - HAYSVILLE JUNCTION 69KV	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 1203 -	
											Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE	WERE	HOOK JCT - TECUMSEH ENERGY CENTER 115KV	160	123.1	126.8	13.7	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	115 kV Line	
											May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	112.0	114.3	12.0	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
1001		THEILE	TTEILE		200	112.0		12.0	Horr official calendary	Ů	May be relieved due to Westar Operating Procedure 632 -	
											Overload of the Tecumseh Energy Center 161/115kV	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	102.3	105.2	4.6	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	0	Tranformer	
											May be relieved due to Westar Operating Procedure 632 -	
											Overload of the Tecumseh Energy Center 161/115kV	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	102.0	104.9	4.6	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	0	Tranformer	
											May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	102.7	104.8	3.3	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
								0.0			May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	102.3	104.4	3.3	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
								0.0			May be relieved due to Westar Operating Procedure 632 -	
											Overload of the Tecumseh Energy Center 161/115kV	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	99.5	102.5	4.6	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	2	Tranformer	
											May be relieved due to Westar Operating Procedure 632 -	
											Overload of the Tecumseh Energy Center 161/115kV	
10WP	27	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.8	100.2	6.0	CONCORDIA 230/115KV TRANSFORMER	12	Tranformer	
											May be relieved due to Westar Operating Procedure 632 -	
											Overload of the Tecumseh Energy Center 161/115kV	
10WP	27	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.8	100.1	6.0	EAST MANHATTAN - CONCORDIA 230KV	12	Tranformer	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	54TH & MERIDEN - HOYT 115KV	179	110.1	111.6	6.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 401 -	
						1					Outage of the Auburn Road to Jeffrey Energy Center 345kV	
15SP	45	WERE	WERE	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	565	100.3	101.3	13.6	HOYT - STRANGER CREEK 345KV	0	Line	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	117.3	120.4	6.8	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
15SP	45			Contingency Solution Not Converged					HOYT - JEFFREY ENERGY CENTER 345KV			
15SP	45	WERE	WERE	GOODYEAR JUNCTION - NORTHLAND 115KV	175	110.4	111.7	5.2	HOYT - STRANGER CREEK 345KV	0	Rebuild 3.44-mile line	\$940,000
						1	1				May be relieved due to Westar Operating Procedure 401 -	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	111.4	113.2	43.2	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	0	Outage of the Jeffrey Energy Center - Morris County 345KV	
	-										May be relieved due to Westar Operating Procedure 401 -	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	111.2	112.7	37.2	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	0	Outage of the Jeffrey Energy Center to Hoyt 345kV Line	
15SP	45	WERE		HOYT - JEFFREY ENERGY CENTER 345KV	1076	100.4	102.0	38.3	LANG - MORRIS COUNTY 345KV	0	Solution Undetermined	
						1					May be relieved due to Westar Operating Procedure 402 -	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	100.2	101.9	39.3	JEFFREY ENERGY CENTER - SUMMIT 345KV	0	Outage of the Jeffrey Energy Center to Summit 345kV Line	
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Study	Transfer Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)		To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
											May be relieved due to Westar Operating Procedure 617 -	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	100.1	101.6	37.8	SUMMIT 345/230/14.4KV TRANSFORMER	0	Outage of the Summit 345/230kV Transformer	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	100.3	101.5	28.7	REMOVE UNIT 1 FROM BUS 57957 [IAT G1 124.000] DISPATCH	0	Solution Undetermined	
											May be relieved due to Westar Operating Procedure 900 -	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	99.5	101.4	45.1	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	3	Outage of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	123.7	124.5	4.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 401 -	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	102.5	103.3	4.2	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	0	Outage of the Jeffrey Energy Center - Morris County 345KV	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	105.4	108.6	4.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	104.5	107.7	4.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	101.0	105.0	6.1	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	0	Solution Undetermined	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	100.6	104.3	5.7	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	0	Solution Undetermined	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.9	101.4	5.4	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	8	Solution Undetermined	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.3	100.8	5.3	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	10	Solution Undetermined	
											Total Estimated Engineering and Construction Cost	\$10,083,000

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	Transfer								
Study	Amount			BC Voltage	TC Voltage		ATC		Estimated
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	(MW)	Solution	Cost
05SP	42	MIDW	56551 SALINE 3 115	0.8355	0.7906	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56551 SALINE 3 115	0.8343	0.7863	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56551 SALINE 3 115	0.8194	0.6366	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56552 GORHAM 3 115	0.8531	0.8149	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56552 GORHAM 3 115	0.8519	0.8106	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56553 S HAYS 3 115	0.8570	0.8190	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56553 S HAYS 3 115	0.8558	0.8148	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56556 HOXIE 3 115	0.8823	0.8571	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56556 HOXIE 3 115	0.8814	0.8544	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8497	0.8159	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8486	0.8124	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56558 KNOLL 6 230	0.7598	0.7189	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8237	0.7809	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8224	0.7764	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP 05SP	42 42	MIDW MIDW	56561 KNOLL 3 115 56561 KNOLL 3 115	0.8370	0.7951 0.7908	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8358	0.7908	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8300	0.7874	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 TTS CKTT OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKTT	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8340	0.7890	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8327	0.7846	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8179	0.6346	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8305	0.0340	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8292	0.7835	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8448	0.8088	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8437	0.8050	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	WERE	58776 MILAN 4 138	0.9585	0.8985	57413 CIRCLE 3115 57429 MOUNDRG3115 CKT 158775 MILANTP4138 57045 GILL W 4138 CKT 1	41		
000.			00110 III.2 1 100	0.0000	0.0000	58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115 CKT			
05SP	42	WERE	58801 RUSSELL3 115	0.9245	0.8937	158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	33		
05SH	34	MIDW	56551 SALINE 3 115	0.9333	0.8816	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	22		
05SH	34	MIDW	56590 BEMIS 3 115	0.9323	0.8805	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	21		
05FA	26	MIDW	56558 KNOLL 6 230	1.0385	0.8955	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	26	Not a Load Serving Bus	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57322 BAILEYV3 115	0.8979	0.8613	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57332 KNOB HL3 115	0.9113	0.8754	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57337 SENECA 3 115	0.8948	0.8581	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57338 SMITTYV3 115	0.9023	0.8659	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts	
05WP	27	MIDW	56558 KNOLL 6 230	1.0643	0.8963	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	26	Not a Load Serving Bus	
06AP	13		None Identified				13		
000	<u>.</u>	14/505		0.0015	0.0017		1	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57322 BAILEYV3 115	0.9045	0.8617	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts	↓
000		WEDE		0.0105	0.0700		45	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57332 KNOB HL3 115	0.9183	0.8763	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	15	Shunts	
000	24	WEDE		0.0040	0.0504			Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57337 SENECA 3 115	0.9013	0.8584	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57338 SMITTYV3 115	0.9090	0.8664	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	15	Solved Using a 2.5 WVA Mismatch and Locked Switch	
06G	42	MIDW	56551 SALINE 3 115	0.9090	0.8664	OPEN LINE FROM BUS 5/217 [KELLY 3115.00] TO BUS 5/337 [SENECA 3115.00] CK11 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	15	onunts	+
06SP	42	MIDW	56551 SALINE 3 115	0.8398	0.8048	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56567 KNOLL 3 TT3 CKTT OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKTT	0		+
06SP	42	MIDW	56551 SALINE 3 115	0.8223	0.6690	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		+
06SP	42	MIDW	56552 GORHAM 3 115	0.8586	0.8284	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		+
06SP	42	MIDW	56552 GORHAM 3 115	0.8577	0.8271	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		1
06SP	42	MIDW	56553 S HAYS 3 115	0.8624	0.8325	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56553 S HAYS 3 115	0.8616	0.8323	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56557 BEACH 3 115	0.8545	0.8288	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56557 BEACH 3 115	0.8537	0.8276	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		1

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06SP	42	MIDW	56558 KNOLL 6 230	0.7654	0.7348	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	MIDW	56560 WKNNY 3 115	0.8297	0.7959	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56560 WKNNY 3 115	0.8288	0.7944	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	MIDW	56561 KNOLL 3 115	0.8429	0.8098	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56561 KNOLL 3 115	0.8420	0.8083	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	MIDW	56562 HAYS 3 115	0.8360	0.8023	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56562 HAYS 3 115	0.8350	0.8009	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	MIDW	56590 BEMIS 3 115	0.8392	0.8032	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56590 BEMIS 3 115	0.8382	0.8017	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	MIDW	56590 BEMIS 3 115	0.8207	0.6670	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56591 VINE 3 115	0.8364	0.8028	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56591 VINE 3 115	0.8355	0.8013	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	MIDW	56605 REDLIN 3 115	0.8501	0.8224	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
06SP	42	MIDW	56605 REDLIN 3 115	0.8493	0.8211	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
06SP	42	WERE	57036 CLEARWT4 138	0.9177	0.8335	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	10	
0001	-12	WEIKE	01000 022/10014 100	0.0111	0.0000	58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115 CKT	10	
06SP	42	WERE	58801 RUSSELL3 115	0.9233	0.8950	158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	37	
06SH	34	MIDW	56551 SALINE 3 115	0.9265	0.8861	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	22	
	-							
06SH	34	MIDW	56590 BEMIS 3 115	0.9254	0.8850	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	21	
06FA	26	MIDW	56558 KNOLL 6 230	1.0550	0.8975	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	26	Not a Load Serving Bus
								Solved Using a 2.5 MVA Mismatch and Locked Switch
06FA	26	WERE	57322 BAILEYV3 115	0.8950	0.8577	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts
								Solved Using a 2.5 MVA Mismatch and Locked Switch
06FA	26	WERE	57332 KNOB HL3 115	0.9089	0.8723	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts
								Solved Using a 2.5 MVA Mismatch and Locked Switch
06FA	26	WERE	57337 SENECA 3 115	0.8919	0.8544	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts
								Solved Using a 2.5 MVA Mismatch and Locked Switch
06FA	26	WERE	57338 SMITTYV3 115	0.8996	0.8624	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts
							-	Solved Using a 2.5 MVA Mismatch and Locked Switch
06WP	27	WERE	57322 BAILEYV3 115	0.9196	0.8874	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	17	Shunts
00001	21	VVLINE	57322 BAILET VS 113	0.3130	0.0074		17	Solved Using a 2.5 MVA Mismatch and Locked Switch
06WP	27	WERE	57332 KNOB HL3 115	0.9310	0.8994	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	26	Solved Using a 2.5 MVA Mismatch and Edeked Switch
UOVVP	21	WERE	57332 KNOB HL3 115	0.9310	0.6994	OPEN LINE FROM 603 57217 [RELLT 3115.00] TO 603 57337 [SENECA 3115.00] CKT 1	26	Solved Using a 2.5 MVA Mismatch and Locked Switch
0014/5	07			0.0470	0.0040		47	÷
06WP	27	WERE	57337 SENECA 3 115	0.9170	0.8846	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	17	Shunts
								Solved Using a 2.5 MVA Mismatch and Locked Switch
06WP	27	WERE	57338 SMITTYV3 115	0.9234	0.8913	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	20	Shunts
07SP	43	MIDW	56551 SALINE 3 115	0.8769	0.8468	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56551 SALINE 3 115	0.8761	0.8456	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
07SP	43	MIDW	56551 SALINE 3 115	0.8218	0.6543	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56552 GORHAM 3 115	0.8913	0.8666	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56552 GORHAM 3 115	0.8904	0.8655	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
07SP	43	MIDW	56553 S HAYS 3 115	0.8949	0.8704	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56553 S HAYS 3 115	0.8941	0.8693	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
07SP	43	MIDW	56557 BEACH 3 115	0.9128	0.8916	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	41	
07SP	43	MIDW	56557 BEACH 3 115	0.9120	0.8906	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	40	1
07SP	43	MIDW	56558 KNOLL 6 230	0.8001	0.7749	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	43	Not a Load Serving Bus
07SP	43	MIDW	56560 WKNNY 3 115	0.8686	0.8406	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1		
07SP	43	MIDW	56560 WKNNY 3 115	0.8677	0.8394	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	<u> </u>
07SP	43	MIDW	56561 KNOLL 3 115	0.8810	0.8536	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	<u>}</u>
07SP	43	MIDW				OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 TTS CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	l
			56561 KNOLL 3 115	0.8801	0.8524		-	
07SP	43	MIDW	56562 HAYS 3 115	0.8746	0.8468	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56562 HAYS 3 115	0.8737	0.8456	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
07SP	43	MIDW	56590 BEMIS 3 115	0.8754	0.8453	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56590 BEMIS 3 115	0.8746	0.8441	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
07SP	43	MIDW	56590 BEMIS 3 115	0.8202	0.6523	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56591 VINE 3 115	0.8750	0.8473	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	
07SP	43	MIDW	56591 VINE 3 115	0.8741	0.8461	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0	
07SP	43	MIDW	56605 REDLIN 3 115	0.9035	0.8806	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	38	
07SP	43	MIDW	56605 REDLIN 3 115	0.9028	0.8797	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	37	
07SP	43	WERE	57036 CLEARWT4 138	0.9099	0.8206	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	10	
	-					58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115 CKT	1	1
07SP	43	WERE	58801 RUSSELL3 115	0.9247	0.8943	158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	35	
5. 0.				0.02.11	0.00.0		00	I I

07WP	27	т т	None Identified	r			27		
10SP	44	MIDW	56551 SALINE 3 115	0.8717	0.8391	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56551 SALINE 3 115	0.8709	0.8380	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56551 SALINE 3 115	0.7551	0.5864	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56552 GORHAM 3 115	0.8926	0.8658	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56552 GORHAM 3 115	0.8918	0.8648	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56553 S HAYS 3 115	0.8964	0.8698	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
	44	MIDW	56553 S HAYS 3 115	0.8964	0.8688	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	~		
10SP							0		
10SP	44	MIDW	56557 BEACH 3 115	0.9130	0.8900	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	38		
10SP	44	MIDW	56557 BEACH 3 115	0.9124	0.8892	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	38		
10SP	44	MIDW	56558 KNOLL 6 230	0.7980	0.7707	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56560 WKNNY 3 115	0.8652	0.8348	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56560 WKNNY 3 115	0.8645	0.8338	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56561 KNOLL 3 115	0.8785	0.8488	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56561 KNOLL 3 115	0.8778	0.8477	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56562 HAYS 3 115	0.8715	0.8413	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56562 HAYS 3 115	0.8707	0.8402	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.8701	0.8374	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.8694	0.8364	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.7532	0.5841	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56591 VINE 3 115	0.8720	0.8418	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56591 VINE 3 115	0.8712	0.8407	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56605 REDLIN 3 115	0.9030	0.8781	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	35		
10SP	44	MIDW	56605 REDLIN 3 115	0.9024	0.8773	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	35		
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115 CKT			
10SP	44	WERE	58801 RUSSELL3 115	0.9195	0.8877	158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	28		
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
10WP	27	WERE	57322 BAILEYV3 115	0.9272	0.8941	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	22	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
10WP	27	WERE	57337 SENECA 3 115	0.9244	0.8912	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	20	Shunts	
		1						Solved Using a 2.5 MVA Mismatch and Locked Switch	
10WP	27	WERE	57338 SMITTYV3 115	0.9312	0.8983	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	26	Shunts	
15SP	45	MIDW	56551 SALINE 3 115	0.8428	0.8016	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56551 SALINE 3 115	0.8415	0.7980	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56551 SALINE 3 115	0.7149	0.5449	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56552 GORHAM 3 115	0.8670	0.8324	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56552 GORHAM 3 115	0.8658	0.8288	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56553 S HAYS 3 115	0.8712	0.8368	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56553 S HAYS 3 115	0.8701	0.8334	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56556 HOXIE 3 115	0.9132	0.8908	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	40		
15SP	45	MIDW	56556 HOXIE 3 115	0.9124	0.8887	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	38		
15SP	45	MIDW	56557 BEACH 3 115	0.8830	0.8525	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56557 BEACH 3 115	0.8819	0.8323	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56558 KNOLL 6 230	0.8819	0.8497	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56673 SUMMIT 6 230 CK11 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CK11	0		<u> </u>
155P	45	MIDW	56560 WKNNY 3 115	0.7709	0.7339	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		<u> </u>
155P	45	MIDW	56560 WKNNY 3 115	0.8346	0.7953	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 TTS CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
155P	45	MIDW		0.8333	0.7916		-		
	45	MIDW	56561 KNOLL 3 115 56561 KNOLL 3 115			OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	-			0.8479	0.8073	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56562 HAYS 3 115	0.8413	0.8023	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56562 HAYS 3 115	0.8400	0.7987	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.8411	0.7998	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.8398	0.7962	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.7128	0.5425	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56591 VINE 3 115	0.8418	0.8029	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56591 VINE 3 115	0.8405	0.7992	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56605 REDLIN 3 115	0.8728	0.8402	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56605 REDLIN 3 115	0.8717	0.8371	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
								Total Estimated Engineering and Construction Cost	\$0

SPP-2004-029-1 Table 3.1 - Non-SPP Facility Overloads Caused or Impacted by Transfer Using Scenario 1

	Transfer									
Study	Amount	From			Rate	BC %	TC %			
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	Comments
05SP	42			NONE IDENTIFIED						
05SH	34			NONE IDENTIFIED						
05FA	26			NONE IDENTIFIED						
05WP	27			NONE IDENTIFIED						
06AP	13			NONE IDENTIFIED						
06FA	31			NONE IDENTIFIED						
06G	42			NONE IDENTIFIED						
06SH	34			NONE IDENTIFIED						
06SP	26			NONE IDENTIFIED						
06WP	27			NONE IDENTIFIED						
07SP	43			NONE IDENTIFIED						
07WP	27			NONE IDENTIFIED						
10SP	44			NONE IDENTIFIED						
10WP	27			NONE IDENTIFIED						
15SP	45			NONE IDENTIFIED						

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
05SP	42	SUNC	56364 ATWODSW3 115	0.8830	0.8573	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56364 ATWODSW3 115	0.8821	0.8546	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56366 CNORTON3 115	0.8512	0.8187	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56366 CNORTON3 115	0.8501	0.8153	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56367 HERNDON3 115	0.8738	0.8465	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56367 HERNDON3 115	0.8729	0.8437	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56369 NATWOOD3 115	0.8829	0.8573	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56369 NATWOOD3 115	0.8821	0.8546	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56371 JOHNSON3 115	0.8652	0.8364	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56371 JOHNSON3 115	0.8642	0.8334	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56372 NORCATR3 115	0.8573	0.8265	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56372 NORCATR3 115	0.8563	0.8233	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56373 RHOADES3 115	0.8512	0.8187	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56373 RHOADES3 115	0.8501	0.8153	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56386 GRHMSUB3 115	0.8492	0.8156	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56386 GRHMSUB3 115	0.8482	0.8121	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56387 HILLCTY3 115	0.8492	0.8156	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56387 HILLCTY3 115	0.8482	0.8121	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56457 OBER T 3 115	0.8636	0.8346	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56457 OBER T 3 115	0.8627	0.8315	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56458 OBERLIN3 115	0.8632	0.8341	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56458 OBERLIN3 115	0.8622	0.8310	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58750 BELOIT 3 115	0.9658	0.8987	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58750 BELOIT 3 115	0.9261	0.8928	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
05SP	42	WEPL	58760 EHALLTP3 115	0.8769	0.7443	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58762 ELLSWTH3 115	0.8782	0.7311	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58763 GLENELD3 115	0.9534	0.8749	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58775 MILANTP4 138	0.9588	0.8994	OPEN LINE FROM BUS 57045 GILL W 4 138 TO BUS 58775 MILANTP4 138 CKT1	
05SP	42	WEPL	58776 MILAN 4 138	0.9579	0.8975	OPEN LINE FROM BUS 57045 GILL W 4 138 TO BUS 58775 MILANTP4 138 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.9217	0.8547	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8671	0.8200	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8660	0.8162	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8601	0.7138	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.9053	0.8274	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8374	0.7902	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8361	0.7858	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8229	0.6411	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9571	0.8923	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9267	0.8856	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9258	0.8827	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9262	0.8295	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9346	0.8964	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9336	0.8934	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9420	0.8759	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.8963	0.7815	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	1
05SP	42	WEPL	58801 RUSSELL3 115	0.9492	0.8953	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	1
05SP	42	WEPL	58801 RUSSELL3 115	0.9244	0.8943	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	1
05SP	42	WEPL	58801 RUSSELL3 115	0.8784	0.7496	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	

Transfer BC Voltage TC Voltage C Voltage V Voltage V Voltage <	
Case (MW) AREA Monitored Bus with Violation (PU) OUtlaged Branch Causing Voltage Violation (1) 05SH 34 WEPL 58762 ELLSWTHALTP3 115 0.9444 0 0.8732 OPEN LINE FROM BUS 58760 EHALTP3 115 TO BUS 58776 MULGREN3 115 CKT1 05SH 34 WEPL 58786 PLAINV3 115 0.9364 0.8836 OPEN LINE FROM BUS 56570 EHALTP3 115 TO BUS 58778 MULGREN3 115 CKT1 05SH 34 WEPL 58786 PLAINV3 115 0.9364 0.8892 OPEN LINE FROM BUS 56750 EHALTP3 115 TO BUS 58778 MULGREN3 115 CKT1 05SH 34 WEPL 58980 RUSSEL13 115 0.9449 0.8815 OPEN LINE FROM BUS 56550 EHALTP3 115 TO BUS 58778 MULGREN3 115 CKT1 05GA 1 None Identified 0.8557 0.8311 0.8557 0.8311 OPEN LINE FROM BUS 56568 KNOLL 6 230 TO BUS 56676 KNOLL 73115 CKT1 05SP 42 SUNC 56367 KNOLL3 115 CKT1 0.8587 0.8587 0.981116 0.8776 0.821116 0.801116 0.8776 0.821116 0.801116 0.201 CBLS 56761 KNOLL 3 115 CKT1 06SP 42 SUNC 56367 HENDON31115 0.8776 0.8246558 KNOLL 6	
OSSH 34 WEPL 68760 EHALLTP3 115 0.9444 0.8763 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CK11 05SH 34 WEPL 58760 EHALLTP3 115 0.9396 0.8782 OPEN LINE FROM BUS 58676 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CK11 05SH 34 WEPL 58780 PLAINVL3 115 0.9344 0.8815 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CK11 05SH 34 WEPL 58970 RULGREN3 115 CK11 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CK11 06SP 13 None Identified 0 OPEN LINE FROM BUS 58588 KNOLL 6 230 TO BUS 58671 KNOLL 3 115 CK11 06SP 42 SUNC 56366 CNORTON3 115 0.8557 O 8511 OPEN LINE FROM BUS 56586 KNOLL 6 230 TO BUS 56673 SUMMIT 6 230 CK11 06SP 42 SUNC 56367 HERNDON3 115 0.8577 O 8540 OPEN LINE FROM BUS 56558 KNOLL 6	Comments
05SH 34 WEPL 58782 LISW FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 05SH 34 WEPL 58786 MAINU23 115 0.9363 0.8892 OPEN LINE FROM BUS 56651 SALLTP3 115 TO BUS 56778 MULGREN3 115 CKT1 05SH 34 WEPL 58786 WALDO 3 115 0.9449 0.8815 OPEN LINE FROM BUS 56760 EHALLTP3 115 TO BUS 56778 MULGREN3 115 CKT1 06AP 13 None Identified 0	Johnnento
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Jossh J4 WEPL 58789 WALDO 3 115 0.9663 0.8892 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 JOSSH J4 WEPL 58801 RUSSELL3 115 0.9449 0.8815 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 JOGSP J13 None Identified VIENT	
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06SP 42 SUNC 56457 OBER T 3 115 0.8675 0.8453 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 SUNC 56458 OBERLIN3 115 0.8676 0.8459 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 SUNC 56458 OBERLIN3 115 0.8670 0.8448 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58750 BELOIT 3 115 0.9285 0.8955 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 58757 CONCORD3 115 CKT1 06SP 42 WEPL 58760 EHALLTP3 115 0.8780 0.7566 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58762 ELLSWTH3 115 0.8794 0.7446 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56761 KNOLL 3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9262 0.8464 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP<	
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06SP 42 SUNC 56458 OBERLIN3 115 0.8670 0.8448 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58750 BELOIT 3 115 0.9285 0.8955 OPEN LINE FROM BUS 56750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1 06SP 42 WEPL 58760 EHALLTP3 115 0.8780 0.7566 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58762 ELLSWTH3 115 0.8794 0.7446 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56661 KNOLL 3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 0	
06SP 42 WEPL 58750 BELOIT 3 115 0.9285 0.8955 OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1 06SP 42 WEPL 58760 EHALLTP3 115 0.8780 0.7566 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58760 EHALLTP3 115 0.8794 0.7446 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58768 HARPER 4 138 0.9262 0.8464 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58760 EHALLTP3 115 0.8780 0.7566 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58762 ELLSWTH3 115 0.8794 0.7446 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58768 HARPER 4 138 0.9262 0.8464 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58762 ELLSWTH3 115 0.8794 0.7446 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58768 HARPER 4 138 0.9262 0.8464 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58763 GLENELD3 115 0.9541 0.8889 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58768 HARPER 4 138 0.9262 0.8464 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58768 HARPER 4 138 0.9262 0.8464 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58773 MED-LDG3 115 0.9403 0.8877 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58774 MED-LDG4 138 0.9429 0.8821 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58775 MILANTP4 138 0.9205 0.8367 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
1.06SP 42 WEPL 58776 MILAN 4 138 0 0 9195 0 8339 0 OPEN LINE FROM BUS 57036 CLEARWITA 138 TO BUS 57045 CULLW 4 138 CKT1	
06SP 42 WEPL 58785 PHLBURG3 115 0.9233 0.8579 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
06SP 42 WEPL 58785 PHLBURG3 115 0.8692 0.8301 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58785 PHLBURG3 115 0.8683 0.8286 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP 42 WEPL 58785 PHLBURG3 115 0.8624 0.7396 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58786 PLAINVL3 115 0.9071 0.8311 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
06SP 42 WEPL 58786 PLAINVL3 115 0.8419 0.8037 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58786 PLAINVL3 115 0.8409 0.8022 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP 42 WEPL 58786 PLAINVL3 115 0.8257 0.6733 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58787 PRATT 3 115 0.9391 0.8985 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9573 0.8986 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9277 0.8923 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9268 0.8911 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9276 0.8464 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58798 WALDO 3 115 0.9445 0.8877 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
06SP	42	WEPL	58798 WALDO 3 115	0.8972	0.7922	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP	42	WEPL	58801 RUSSELL3 115	0.9233	0.8945	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
06SP	42	WEPL	58801 RUSSELL3 115	0.8795	0.7615	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58760 EHALLTP3 115	0.9414	0.8671	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58762 ELLSWTH3 115	0.9467	0.8657	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58786 PLAINVL3 115	0.9286	0.8884	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SH	34	WEPL	58798 WALDO 3 115	0.9532	0.8875	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58801 RUSSELL3 115	0.9419	0.8694	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06WP	27		None Identified				
07SP	43	SUNC	56386 GRHMSUB3 115	0.9156	0.8945	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	SUNC	56386 GRHMSUB3 115	0.9149	0.8936	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	SUNC	56387 HILLCTY3 115	0.9156	0.8945	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	SUNC	56387 HILLCTY3 115	0.9149	0.8936	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	WEPL	58750 BELOIT 3 115	0.9284	0.8944	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	Ĩ
07SP	43	WEPL	58760 EHALLTP3 115	0.8787	0.7511	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58762 ELLSWTH3 115	0.8802	0.7384	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58763 GLENELD3 115	0.9549	0.8848	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	Ĩ
07SP	43	WEPL	58768 HARPER 4 138	0.9192	0.8346	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58773 MED-LDG3 115	0.9353	0.8793	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58774 MED-LDG4 138	0.9373	0.8727	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58775 MILANTP4 138	0.9584	0.8985	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
07SP	43	WEPL	58775 MILANTP4 138	0.9130	0.8240	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58776 MILAN 4 138	0.9575	0.8966	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
07SP	43	WEPL	58776 MILAN 4 138	0.9118	0.8211	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8938	0.8598	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8931	0.8586	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.9234	0.8560	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8622	0.7287	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.8763	0.8440	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.8754	0.8428	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.9070	0.8287	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.8252	0.6587	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58787 PRATT 3 115	0.9346	0.8916	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58793 SMITH-C3 115	0.9583	0.8969	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58793 SMITH-C3 115	0.9280	0.8404	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58798 WALDO 3 115	0.9444	0.8835	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58798 WALDO 3 115	0.8980	0.7878	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58801 RUSSELL3 115	0.9241	0.8932	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
07SP	43	WEPL	58801 RUSSELL3 115	0.8803	0.7563	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07WP	27		None Identified				
10SP	44	SUNC	56386 GRHMSUB3 115	0.9159	0.8930	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	SUNC	56386 GRHMSUB3 115	0.9153	0.8922	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	SUNC	56387 HILLCTY3 115	0.9159	0.8930	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	SUNC	56387 HILLCTY3 115	0.9153	0.8922	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	Ĩ
10SP	44	WEPL	58750 BELOIT 3 115	0.9521	0.8911	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58750 BELOIT 3 115	0.9250	0.8903	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
10SP	44	WEPL	58760 EHALLTP3 115	0.8699	0.7289	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	Ĩ
10SP	44	WEPL	58762 ELLSWTH3 115	0.8709	0.7140	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
10SP	44	WEPL	58763 GLENELD3 115	0.9372	0.8649	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58769 JEWELL 3 115	0.9524	0.8930	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8907	0.8537	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8901	0.8528	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8927	0.8186	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8167	0.6803	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8689	0.8340	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8681	0.8329	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8602	0.7739	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.7591	0.5914	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9467	0.8927	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9528	0.8859	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9035	0.8135	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.9316	0.8994	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.9322	0.8698	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.8900	0.7685	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.9443	0.8932	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.9192	0.8865	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.8716	0.7346	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10WP	27		None Identified				
15SP	45	SUNC	56366 CNORTON3 115	0.9073	0.8782	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56366 CNORTON3 115	0.9063	0.8755	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56367 HERNDON3 115	0.9216	0.8973	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56367 HERNDON3 115	0.9207	0.8950	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56371 JOHNSON3 115	0.9146	0.8890	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56371 JOHNSON3 115	0.9137	0.8866	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56372 NORCATR3 115	0.9101	0.8826	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56372 NORCATR3 115	0.9091	0.8800	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56373 RHOADES3 115	0.9073	0.8782	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56373 RHOADES3 115	0.9063	0.8755	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56386 GRHMSUB3 115	0.8855	0.8552	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56386 GRHMSUB3 115	0.8845	0.8524	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56387 HILLCTY3 115	0.8855	0.8552	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56387 HILLCTY3 115	0.8845	0.8524	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56457 OBER T 3 115	0.9135	0.8875	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56457 OBER T 3 115	0.9126	0.8851	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56458 OBERLIN3 115	0.9129	0.8870	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56458 OBERLIN3 115	0.9120	0.8846	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58750 BELOIT 3 115	0.9184	0.8792	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
15SP	45	WEPL	58750 BELOIT 3 115	0.9367	0.8718	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.9414	0.8924	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.8590	0.6718	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9424	0.8980	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9445	0.8877	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.8595	0.6503	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9648	0.8935	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9310	0.8926	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	1
15SP	45	WEPL	58763 GLENELD3 115	0.9201	0.8435	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	1

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
15SP	45	WEPL	58769 JEWELL 3 115	0.9375	0.8745	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.9474	0.8806	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8683	0.8242	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8670	0.8209	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8790	0.8017	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.7847	0.6451	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8408	0.7973	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8395	0.7937	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8447	0.7539	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.7194	0.5502	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9249	0.8858	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9239	0.8832	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9365	0.8807	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9455	0.8576	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.8827	0.7889	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9308	0.8933	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9249	0.8906	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9300	0.8905	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9180	0.8532	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.8800	0.7192	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9347	0.8991	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9340	0.8962	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9326	0.8795	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9122	0.8773	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.8608	0.6790	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762	
15SP	45	WEPL	58798 WALDO 3 115	0.9253	0.8910	ELLSWTH3115 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762	
15SP	45	WEPL	58801 RUSSELL3 115	0.9127	0.8778	ELLSWTH3115 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	

	Transfer		1		1					1 1		
Study	Amount	From	То		Rate	BC %	TC %			ATC		
Case	(MW)	Area	Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Estimated Cost
											May be relieved due to Westar Operating Procedure 900 -	
05SP	42	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	106.9	111.0	6.7	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
			WERE								May be relieved due to Westar Operating Procedure 1209 -	
05SP	42	WERE	WERE	EAST STREET - WEST EMPORIA 115KV	92	109.0	110.3	3.0	MORRIS COUNTY - WEST EMPORIA 115KV	0	Outage of the Morris to West Emporia 115kV Line May be relieved due to Westar Operating Procedure 900 -	
05SP	42	WERE	WERE	KEENE - SOUTH ALMA 115KV	68	99.0	103.0	6.5	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	2	Outage of the JEC to East Manhattan 230kV Line	
033F	42	WERE	WERE	REENE - SOUTH ALWA TISKV	00	35.0	103.0	0.5	EAST MANHAITAN - JEFFRET ENERGT GENTER 230RV	3	May be relieved due to Westar Operating Procedure 625 -	
05SP	42	WERE	WERE	WEST EMPORIA - EAST STREET 115KV	92	105.8	108.3	5.4	MORRIS COUNTY 230/115/13.8KV TRANSFORMER	0	Outage of the Morris County Transformer	
000.	12	mente	mente		02	100.0	100.0	0.1		Ŭ	May be relieved due to Westar Operating Procedure 900 -	
05SH	34	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	102.0	104.0	4.0	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
05SH	34		WERE	NORTH AMERICAN PHILIPS - NORTH AMERICAN PHILIPS JUNCTION (SOUTH) 115KV	160	109.1	111.3	10.5	EAST MCPHERSON - SUMMIT 230KV	0	Rebuild 0.88 miles and reconductor with 1192.5 ACSR.	\$417,200
05SH	34	WERE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV	68	117.7	120.1	4.8	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility	
05SH	34	WERE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV CKT 2	92	102.7	104.8	5.7	EAST MCPHERSON - SUMMIT 230KV	0	Tear down double circuit, build single circuit with 1192.5 ACSR.	\$7,800,000
05FA	26	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	110.9	112.3	5.1	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	
USFA	20	WERE	WERE	CIRCLEVILLE - HOTT HIT SWITCHING JUNCTION TISKV	97	110.9	112.3	5.1	HUTT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	102.5	103.9	5.2	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
00171	20	mente			02	102.0	100.0	0.2	North Ontwikele one Enterior	Ŭ	May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	100.4	101.8	5.2	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
05WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	113.3	114.1	3.0	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 900 -	
06G	31	WERE		AUBURN ROAD - KEENE 115KV	68	102.2	104.7	5.6	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
06G	31		WERE	NORTH AMERICAN PHILIPS - NORTH AMERICAN PHILIPS JUNCTION (SOUTH) 115KV	160	102.7	104.5	9.7	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV	68	110.8	112.9	4.5	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	109.6	112.2	4.2	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV		May be relieved due to Westar Operating Procedure 900 - Outage of the JEC to East Manhattan 230kV Line	
003P	42	WERE	WERE	AUBURN ROAD - REENE TISKV	60	109.6	112.2	4.Z	EAST MANHATTAN - JEFFRET EINERGT GENTER 230KV	0	May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	119.2	121.2	4.8	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
000.	12	mente			0,	110.2	121.2	1.0	North Ontwikele one Enterior	Ŭ	Rebuild 15.50-mile line (1192.5 kcmil 45/7 ACSR, 223 MVA,	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.5	107.8	12.0	CONCORDIA - EAST MANHATTAN 230KV	0	245 MVA), Replace CTs and Wave Trap (2000 A.)	\$5.800.000
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.5	107.7	12.0	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	+0,000,000
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	104.1	106.0		IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	101.3	103.9	5.9	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	104.3	106.4	4.7	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 900 -	
06SP	42	WERE	WERE	KEENE - SOUTH ALMA 115KV	68	101.3	103.8	4.0	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
06SP	42	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	101.3	103.5	4.7	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 -	
065P	42	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	101.3	103.5	4.7	HUYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 900 -	
06SH	34	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	106.7	108.6	3.7	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
00011	01	mente		NOBONITIONS INCLUE TION	00	100.1	100.0	0.1	Endrink with that deriver energy deriver zook	Ŭ	May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	117.6	119.0	4.2	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
06SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	106.8	110.7	11.0	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
06SH	34		WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	106.8	110.6	11.0	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	105.0	106.5	4.3	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	101.2	103.0	5.2	COOPER 345/161KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE		92	106.4	107.9	4.1			May be relieved due to Westar Operating Procedure 803 -	
065H	34	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	106.4	107.9	4.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 900 -	
06SH	34	WERE	WERE	KEENE - SOUTH ALMA 115KV	68	100.0	101.8	3.6	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
00011				REERE COOTTALWATTORY	- 50			5.0	ENDT MARKEN AN VETTIET ENERGT GENTER 2000V	, v	May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	103.9	105.4	4.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
06SH	34		WERE	KELLY - SOUTH SENECA 115KV	92	94.0	104.7	29.0	CONCORDIA - EAST MANHATTAN 230KV	7	Solution Undetermined	
06SH	34	WERE	WERE	KELLY - SOUTH SENECA 115KV	92	93.9	104.6	29.1	CONCORDIA 230/115KV TRANSFORMER	7	Solution Undetermined	
											May be relieved due to Westar Operating Procedure 900 -	
06FA	26	WERE		AUBURN ROAD - KEENE 115KV	68	100.9	103.1	5.9	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	Outage of the JEC to East Manhattan 230kV Line	
06FA	26		WERE	NORTH AMERICAN PHILIPS - NORTH AMERICAN PHILIPS JUNCTION (SOUTH) 115KV	160	101.3	102.7	8.7	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility	
06FA	26	THEILE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV	68	109.3	110.8	4.0	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility	
06WP	27	WERE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV	68	104.4	106.0	4.2	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility May be relieved due to Westar Operating Procedure 1205 -	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	132.5	135.6	10.1	CIRCLE - DAVIS 115KV	0	Outage of the Circle to Davis 115kV Line	
57.51		TTEILE	TEILE			102.0	133.0	10.1	OINOLE - DAVID FISHV		May be relieved due to Westar Operating Procedure 1306 -	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	116.1	119.2	10.1	HUTCHINSON ENERGY CENTER - HUTCHINSON GAS TURBINE STATION 69KV	0	Outage of the HEC to HEC GT 69kV Line	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	113.9	118.3	14.5	CIRCLE - MULLERGREN 230KV	0	Solution Undetermined	
07SP	43	WERE		CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	112.8	115.8	9.8	REMOVE UNIT 1 FROM BUS 56693 [HEC U3 14.400] DISPATCH	0	Solution Undetermined	
					l l			I			May be relieved due to Westar Operating Procedure 803 -	
07SP	43	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	119.8	121.5	3.7	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
07SP	43		WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	101.8	107.0	11.6	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	101.8	106.9	11.6	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
07SP 07SP	43 43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97 97	102.9 101.3	104.7 103.3	4.0 4.6	IATAN - ST JOE 345KV COOPER 345/161KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
0/52	43	WERE	WERE	URGLEVILLE - NOT FITT SWITCHING JUNCTION 115KV	91	101.3	103.3	4.0	COUPER 343/101KV TRANSFURMER	0	See Previous Upgrade Specified for Facility May be relieved due to Westar Operating Procedure 803 -	
		WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	104.4	106.1	3.6	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line	
07SP	43											

										1	May be relieved due to Wester Operating Breadure 802
07SP	43	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	101.5	103.2	3.6	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line
07WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	110.8	112.2	5.0	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line
											May be relieved due to Westar Operating Procedure 803 -
07WP	27	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	103.3	104.7	4.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 803 -
07WP	27	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	101.4	102.8	4.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line
07WP	27	WERE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV	68	105.6	107.7	5.4	EAST MCPHERSON - SUMMIT 230KV	0	See Previous Upgrade Specified for Facility
10SP	44	WERE	WERE	COUNTY LINE - HOOK JCT 115KV	92	119.3	123.0	7.6	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	May be relieved due to Westar Operating Procedure 1203 - Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line
10SP	44	WERE	WERE	COUNTY LINE - TECUMSEH HILL 115KV	106	108.5	110.9	5.8	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	May be relieved due to Westar Operating Procedure 1203 - Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line
10SP			WERE	GILL ENERGY CENTER EAST - MACARTHUR 69KV	68	115.9	117.9	3.1	GILL ENERGY CENTER EAST - OATVILLE 69KV	Ő	See Previous Upgrade Specified for Facility
10SP	44		WERE	GILL ENERGY CENTER EAST - OATVILLE 69KV	72	124.8	127.0	3.6	GILL ENERGY CENTER EAST - MACARTHUR 69KV	0	See Previous Upgrade Specified for Facility
10SP	44		WERE	GILL ENERGY CENTER EAST - OATVILLE 69KV	72	109.2	111.1	3.1	GILL ENERGY CENTER WEST - HAYSVILLE JUNCTION 69KV	0	See Previous Upgrade Specified for Facility
											May be relieved due to Westar Operating Procedure 1203 - Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill
10SP	44	WERE	WERE	HOOK JCT - TECUMSEH ENERGY CENTER 115KV	160	122.7	126.4	13.7	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	115 kV Line May be relieved due to Westar Operating Procedure 803 -
10SP	44	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	110.3	112.5	12.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line
10SP	44		WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	98.9	101.8	4.6	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	5	May be relieved due to Westar Operating Procedure 632 - Overload of the Tecumseh Energy Center 161/115kV Tranformer
10WP	27	WERE	WERE	NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV	68	99.0	100.5	3.8	EAST MCPHERSON - SUMMIT 230KV	8	See Previous Upgrade Specified for Facility
											May be relieved due to Westar Operating Procedure 632 - Overload of the Tecumseh Energy Center 161/115kV
10WP	27	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	98.0	100.4	6.3	CONCORDIA 230/115KV TRANSFORMER	11	Tranformer May be relieved due to Westar Operating Procedure 632 -
											Overload of the Tecumseh Energy Center 161/115kV
10WP	27	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.9	100.4	6.3	EAST MANHATTAN - CONCORDIA 230KV	11	Tranformer
15SP	45	WERE	WERE	54TH & MERIDEN - HOYT 115KV	179	106.7	108.7	7.8	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line
15SP	45	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	106.9	110.4	7.6	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line
15SP	45			Contingency Solution Not Converged					HOYT - JEFFREY ENERGY CENTER 345KV		
15SP	45	WERE	WERE	COUNTY LINE - TECUMSEH HILL 115KV	106	114.9	116.3	3.2	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	May be relieved due to Westar Operating Procedure 1203 - Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line
15SP	45	WERE	WERE	GOODYEAR JUNCTION - NORTHLAND 115KV	175	107.8	109.5	6.9	HOVE STRANGED OREFY 245/0	0	May be relieved due to Westar Operating Procedure 803 -
									HOYT - STRANGER CREEK 345KV		Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 401 -
15SP	45		WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	106.7	108.6	46.9	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	0	Outage of the Jeffrey Energy Center - Morris County 345kV Line May be relieved due to Westar Operating Procedure 400 -
15SP	45	WÉRE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	105.0	106.7	40.4	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	0	Outage of the Jeffrey Energy Center to Hoyt 345kV Line May be relieved due to Westar Operating Procedure 803 -
15SP	45	WERE	WERE	MOCKINGBIRD HILL SWITCHING STATION - STULL SWITCHING STATION 115KV	92	114.6	116.1	3.1	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line
15SP	45	WERE	WERE	STULL SWITCHING STATION - TECUMSEH HILL 115KV	92	121.9	123.4	3.0	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 803 -
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	121.9	123.3	6.9	HOYT - STRANGER CREEK 345KV	0	Outage of the Hoyt to Stranger 345 kV line
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	104.8	105.8	4.9	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	0	May be relieved due to Westar Operating Procedure 401 - Outage of the Jeffrey Energy Center - Morris County 345kV Line May be relieved due to Westar Operating Procedure 401 -
15SP 15SP	45 45		WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	103.2	103.9 101.1	3.6 3.4	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV COUNTY LINE - GOODYEAR JUNCTION 115KV	0	May be releved due to westar Operating Procedure 401 - Outage of the Auburn Road to Jeffrey Energy Center 345kV Line Solution Undetermined
15SP 15SP	45		WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	99.9	101.1	3.4	REMOVE UNIT 1 FROM BUS 56663 [LEC U5 24.000] DISPATCH	0	Solution Undetermined Solution Undetermined
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	99.8	100.4	3.1	CRAIG - STRANGER CREEK 345KV	4	May be relieved due to Westar Operating Procedure 401 - Outage of the Stranger Creek - Craig 345kV Line
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	100.1	100.7	3.3	COUNTY LINE 115/69/34.5KV TRANSFORMER	0	Solution Undetermined
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	100.5	103.9	5.2	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 632 -
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.5	101.1	5.6	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	9	Overload of the Tecumseh Energy Center 161/115kV Tranformer
	10					07.0	101.1	0.0			Total Estimated Engineering and Construction Cost \$14,017,2

	Transfer			1	T				
Study	Amount			BC Voltage	TC Voltage		ATC		Estimated
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	(MW)	Solution	Cost
05SP	42	MIDW	56551 SALINE 3 115	0.8261	0.7769	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	Solution	0031
05SP	42	MIDW	56551 SALINE 3 115	0.8261	0.7769	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56551 SALINE 3 115	0.8220	0.7745	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56551 SALINE 3 115	0.8220	0.6280	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56551 SALINE 3 115	0.8150	0.6280	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
							0		
05SP	42	MIDW	56552 GORHAM 3 115	0.8474	0.8053	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	-		
05SP	42	MIDW	56552 GORHAM 3 115	0.8474	0.8053	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56552 GORHAM 3 115	0.8434	0.8032	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56553 S HAYS 3 115	0.8514	0.8096	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56553 S HAYS 3 115	0.8514	0.8096	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56553 S HAYS 3 115	0.8474	0.8074	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56556 HOXIE 3 115	0.8773	0.8495	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56556 HOXIE 3 115	0.8748	0.8481	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8437	0.8067	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8437	0.8067	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8405	0.8049	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56558 KNOLL 6 230	0.7506	0.7104	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8163	0.7692	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8163	0.7692	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8121	0.7669	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56561 KNOLL 3 115	0.8298	0.7838	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56561 KNOLL 3 115	0.8298	0.7838	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56561 KNOLL 3 115	0.8257	0.7815	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8226	0.7759	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8226	0.7759	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8185	0.7736	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8245	0.7752	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8245	0.7752	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8204	0.7728	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8134	0.6260	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8134	0.6260	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8231	0.7764	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8231	0.7764	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8190	0.7741	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8387	0.7992	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8387	0.7992	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8352	0.7972	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SH	34	MIDW	56551 SALINE 3 115	0.9299	0.8769	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	19		
05SH	34	MIDW	56590 BEMIS 3 115	0.9289	0.8758	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	19		
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57322 BAILEYV3 115	0.8944	0.8570	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57332 KNOB HL3 115	0.9079	0.8713	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts	
							I	Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57337 SENECA 3 115	0.8914	0.8538	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
							I	Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	57338 SMITTYV3 115	0.8989	0.8617	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
					1			Solved Using a 2.5 MVA Mismatch and Locked Switch	
05FA	26	WERE	58765 GRNLEAF3 115	0.9344	0.8993	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	25	Shunts	
05WP	27		None Identified				27		
06AP	13		None Identified		1		13		
					1			Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57322 BAILEYV3 115	0.9172	0.8735	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts	
	-						I	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57332 KNOB HL3 115	0.9307	0.8879	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	22	Shunts	
							-		

		1		1			r	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57337 SENECA 3 115	0.9141	0.8703	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	, and the second s	
000	31	WERE	57357 SENECA 3 115	0.9141	0.8703	OPEN LINE FROM BUS 57217 [RELLT 5115.00] TO BUS 57337 [SENECA 3115.00] CKT T	14	Shunts Solved Using a 2.5 MVA Mismatch and Locked Switch	
06G	31	WERE	57338 SMITTYV3 115	0.9216	0.8782	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	15	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SP	42	MIDW	56551 SALINE 3 115	0.9216	0.8782	OPEN LINE FROM BUS 5/217 [RELET 3115.00] TO BUS 5/357 [SENECA 3115.00] CKT1	0	Siluits	
06SP	42	MIDW	56551 SALINE 3 115	0.8326	0.7920	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56551 SALINE 3 115	0.8183	0.6437	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56552 GORHAM 3 115	0.8547	0.8200	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56552 GORHAM 3 115	0.8537	0.8191	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56553 S HAYS 3 115	0.8586	0.8242	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56553 S HAYS 3 115	0.8576	0.8233	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56556 HOXIE 3 115	0.8850	0.8635	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56556 HOXIE 3 115	0.8843	0.8629	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56557 BEACH 3 115	0.8510	0.8217	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56557 BEACH 3 115	0.8502	0.8209	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56558 KNOLL 6 230	0.7607	0.7264	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56560 WKNNY 3 115	0.8245	0.7858	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56560 WKNNY 3 115	0.8234	0.7849	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56561 KNOLL 3 115	0.8378	0.8000	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56561 KNOLL 3 115	0.8367	0.7990	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56562 HAYS 3 115	0.8307	0.7924	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56562 HAYS 3 115	0.8297	0.7914	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56590 BEMIS 3 115	0.8321	0.7913	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56590 BEMIS 3 115	0.8310	0.7903	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56590 BEMIS 3 115	0.8167	0.6417	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56591 VINE 3 115	0.8312	0.7929	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56591 VINE 3 115	0.8302	0.7919	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56605 REDLIN 3 115	0.8463	0.8146	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56605 REDLIN 3 115	0.8454	0.8138	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	WERE	57036 CLEARWT4 138	0.9136	0.8301	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	10		
06SH	34	MIDW	56551 SALINE 3 115	0.9239	0.8701	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	15		
06SH	34	MIDW	56590 BEMIS 3 115	0.9239	0.8690	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	13		
0030	34	IVIIDVV	20290 BEIVIIS 3 1 15	0.9226	0.6690	OPEN LINE FROM DUS 30331 SALINE 3 115 TO DUS 30301 KNULL 3 115 CKTT	14	Solved Lising a 2.5 MV/A Mismatch and Lasked Switch	
00011	0.4	WEDE		0.8565	0.7980		0	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SH	34	WERE	57322 BAILEYV3 115	0.8565	0.7980	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
00011	0.4	WEDE		0.074	0.0470		0	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SH	34	WERE	57332 KNOB HL3 115	0.874	0.8172	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SH	34	WERE	57337 SENECA 3 115	0.8526	0.7938	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SH	34	WERE	57338 SMITTYV3 115	0.8621	0.8041	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SH	34	WERE	58756 CLIFTON3 115	0.9377	0.8896	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	27	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
06SH	34	WERE	58765 GRNLEAF3 115	0.9088	0.8554	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	13	Shunts	
06FA	26	MIDW	56558 KNOLL 6 230	1.0508	0.8940	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	25		
		1					I	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06FA	26	WERE	57322 BAILEYV3 115	0.8914	0.8536	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
06FA	26	WERE	57332 KNOB HL3 115	0.9054	0.8683	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	14	Shunts	
							1	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06FA	26	WERE	57337 SENECA 3 115	0.8883	0.8503	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
	_•						Ť	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06FA	26	WERE	57338 SMITTYV3 115	0.896	0.8584	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	0	Shunts	
00171	20			0.000	0.0004		Ť	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06FA	26	WERE	58765 GRNLEAF3 115	0.9328	0.8974	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	24	Solved Using a 2.5 WVA Mismatch and Eucked Switch	
	20	VVLINE	SOTOS GIVINELAI S TIS	0.3320	0.0374		24	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06WP	27	WERE	57322 BAILEYV3 115	0.9164	0.8840	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	17		
UUWP	21	WERE	31322 DAILET V3 113	0.9104	0.0040	OF EN LINE FROM DUS 37217 [RELET 3113.00] TO DUS 37337 [SENECA 3115.00] CK1 1	17	Shunts	

—		-					r	Solved Lleing o 2.5 MV/A Mismetch and Leoked Switch	
06WP	27	WERE	57332 KNOB HL3 115	0.9278	0.8960	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	24	Solved Using a 2.5 MVA Mismatch and Locked Switch Shunts	
UOVVF	21	WERE	37332 KNOB HL3 115	0.9276	0.6900	OPEN LINE FROM B03 57217 [RELLT 3115.00] TO B03 57337 [SENECA 3115.00] CRT 1	24	Solved Using a 2.5 MVA Mismatch and Locked Switch	
	27	WERE	57227 SENECA 2 115	0.0128	0.0010		17	-	
06WP	27	WERE	57337 SENECA 3 115	0.9138	0.8813	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	17	Shunts	
0014/15	07	WEDE					4-	Solved Using a 2.5 MVA Mismatch and Locked Switch	
06WP	27	WERE	57338 SMITTYV3 115	0.9202	0.8880	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	17	Shunts	
07SP	43	MIDW	56551 SALINE 3 115	0.8709	0.8371	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56551 SALINE 3 115	0.8697	0.8359	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56551 SALINE 3 115	0.8185	0.6338	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56552 GORHAM 3 115	0.8882	0.8599	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56552 GORHAM 3 115	0.8871	0.8588	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56553 S HAYS 3 115	0.8919	0.8637	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56553 S HAYS 3 115	0.8908	0.8627	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56557 BEACH 3 115	0.9103	0.8860	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	35		
07SP	43	MIDW	56557 BEACH 3 115	0.9093	0.8852	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	36		
07SP	43	MIDW	56558 KNOLL 6 230	0.7960	0.7678	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56560 WKNNY 3 115	0.8643	0.8326	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56560 WKNNY 3 115	0.8631	0.8314	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56561 KNOLL 3 115	0.8768	0.8457	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56561 KNOLL 3 115	0.8756	0.8446	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56562 HAYS 3 115	0.8703	0.8388	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56562 HAYS 3 115	0.8691	0.8377	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56590 BEMIS 3 115	0.8694	0.8355	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56590 BEMIS 3 115	0.8682	0.8344	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56590 BEMIS 3 115	0.8169	0.6318	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56591 VINE 3 115	0.8707	0.8392	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56591 VINE 3 115	0.8695	0.8381	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56605 REDLIN 3 115	0.9006	0.8746	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	33		
07SP	43	MIDW	56605 REDLIN 3 115	0.8996	0.8736	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	WERE	57036 CLEARWT4 138	0.9060	0.8145	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	9		
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
07WP	27	WERE	57322 BAILEYV3 115	0.9314	0.8995	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	27	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
07WP	27	WERE	57337 SENECA 3 115	0.9288	0.8967	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	24	Shunts	
10SP	44	MIDW	56551 SALINE 3 115	0.8632	0.8270	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	onano	
10SP	44	MIDW	56551 SALINE 3 115	0.8616	0.8258	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56551 SALINE 3 115	0.7526	0.5746	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56552 GORHAM 3 115	0.8866	0.8564	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56552 GORHAM 3 115	0.8851	0.8553	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
100F	44	MIDW	56553 S HAYS 3 115	0.8904	0.8605	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56553 S HAYS 3 115	0.8890	0.8594	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56573 SUMMIT 6 230 CKT1	0		
100F	44	MIDW	56557 BEACH 3 115	0.9068	0.8812	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	34		
103F	44	MIDW	56557 BEACH 3 115	0.9068	0.8803	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 TH CKTT OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	35		
10SP	44	MIDW	56558 KNOLL 6 230	0.7908	0.8803	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56673 SUMMIT 6 230 CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56560 WKNNY 3 115	0.7908	0.8240	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56560 WKNNY 3 115	0.8564	0.8228	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 TIS CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56561 KNOLL 3 115	0.8564	0.8382	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56561 KNOLL 3 115	0.8699	0.8370	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56562 HAYS 3 115	0.8643	0.8306	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56562 HAYS 3 115	0.8643	0.8306	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CK11 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
	44	MIDW		0.8628	0.8293		0		
10SP			56590 BEMIS 3 115			OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1			
10SP	44	MIDW	56590 BEMIS 3 115	0.8600	0.8241	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.7507	0.5724	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56591 VINE 3 115	0.8648	0.8311	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56591 VINE 3 115	0.8632	0.8298	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56605 REDLIN 3 115	0.8966	0.8689	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56605 REDLIN 3 115	0.8953	0.8679	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		

T		<u>т т</u>					r	Solved Using a 2.5 MVA Mismatch and Locked Switch	
10WP	27	WERE	57322 BAILEYV3 115	0.9278	0.8947	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	23	Shunts	
				010210	0.001			Solved Using a 2.5 MVA Mismatch and Locked Switch	
10WP	27	WERE	57337 SENECA 3 115	0.925	0.8918	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	20	Shunts	
								Solved Using a 2.5 MVA Mismatch and Locked Switch	
10WP	27	WERE	57338 SMITTYV3 115	0.9318	0.8989	OPEN LINE FROM BUS 57217 [KELLY 3115.00] TO BUS 57337 [SENECA 3115.00] CKT 1	26	Shunts	
15SP	45	MIDW	56551 SALINE 3 115	0.8326	0.7872	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56551 SALINE 3 115	0.8318	0.7858	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56551 SALINE 3 115	0.7123	0.5434	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56552 GORHAM 3 115	0.8594	0.8210	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56552 GORHAM 3 115	0.8586	0.8197	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56553 S HAYS 3 115	0.8637	0.8256	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56553 S HAYS 3 115	0.8629	0.8243	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56556 HOXIE 3 115	0.9072	0.8824	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	36		
15SP	45	MIDW	56556 HOXIE 3 115	0.9067	0.8816	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	36		
15SP	45	MIDW	56557 BEACH 3 115	0.8757	0.8421	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56557 BEACH 3 115	0.8750	0.8410	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56558 KNOLL 6 230	0.7633	0.7243	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56560 WKNNY 3 115	0.8256	0.7822	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56560 WKNNY 3 115	0.8248	0.7809	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56561 KNOLL 3 115	0.8404	0.7981	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56561 KNOLL 3 115	0.8396	0.7968	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56562 HAYS 3 115	0.8324	0.7894	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56562 HAYS 3 115	0.8315	0.7880	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.8309	0.7854	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.8300	0.7840	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.7103	0.5411	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56591 VINE 3 115	0.8329	0.7899	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56591 VINE 3 115	0.8321	0.7886	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56605 REDLIN 3 115	0.8652	0.8292	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56605 REDLIN 3 115	0.8645	0.8280	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
								Total Estimated Engineering and Construction Cost	\$0

SPP-2004-029-1 Table 3.2 - Non-SPP Facility Overloads Caused or Impacted by Transfer Using Scenario 2

Study	Transfer Amount				BC %	TC %			
Case			To Area	Monitored Branch Overload		Loading		Outaged Branch Causing Overload	Comments
		Alea	TO Alea		LUauing	LUauing	70 I DF	Outaged Branch Causing Ovendau	Comments
05SH				NONE IDENTIFIED					
05SP	34			NONE IDENTIFIED					
05FA	26			NONE IDENTIFIED					
05WP	27			NONE IDENTIFIED					
06AP	13			NONE IDENTIFIED					
06G	31			NONE IDENTIFIED					
06SP	42			NONE IDENTIFIED					
06SH	34			NONE IDENTIFIED					
06FA	26			NONE IDENTIFIED					
06WP	27			NONE IDENTIFIED					
07SP				NONE IDENTIFIED					
07WP				NONE IDENTIFIED					
10SP	44			NONE IDENTIFIED					
10WP	27			NONE IDENTIFIED					
15SP	45			NONE IDENTIFIED					

	Transfer	1					
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
05SP	42	SUNC	56364 ATWODSW3 115	0.8750	0.8479	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56364 ATWODSW3 115	0.8775	0.8494	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56366 CNORTON3 115	0.8421	0.8078	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56366 CNORTON3 115	0.8453	0.8096	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56367 HERNDON3 115	0.8656	0.8368	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56367 HERNDON3 115	0.8683	0.8384	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56369 NATWOOD3 115	0.8750	0.8479	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56369 NATWOOD3 115	0.8775	0.8494	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56371 JOHNSON3 115	0.8568	0.8264	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56371 JOHNSON3 115	0.8596	0.8280	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56372 NORCATR3 115	0.8486	0.8161	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56372 NORCATR3 115	0.8516	0.8178	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56373 RHOADES3 115	0.8421	0.8078	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56373 RHOADES3 115	0.8453	0.8096	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56386 GRHMSUB3 115	0.8400	0.8046	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56386 GRHMSUB3 115	0.8433	0.8064	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56387 HILLCTY3 115	0.8400	0.8046	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56387 HILLCTY3 115	0.8433	0.8064	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56457 OBER T 3 115	0.8552	0.8245	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56457 OBER T 3 115	0.8580	0.8262	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56458 OBERLIN3 115	0.8547	0.8240	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56458 OBERLIN3 115	0.8575	0.8257	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58750 BELOIT 3 115	0.9205	0.8832	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
05SP	42	WEPL	58750 BELOIT 3 115	0.9623	0.8937	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58750 BELOIT 3 115	0.9623	0.8937	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58760 EHALLTP3 115	0.8705	0.7249	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58760 EHALLTP3 115	0.9356	0.8991	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58762 ELLSWTH3 115	0.8716	0.7100	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58762 ELLSWTH3 115	0.9388	0.8954	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58762 ELLSWTH3 115	0.9418	0.8973	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58762 ELLSWTH3 115	0.9418	0.8973	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58763 GLENELD3 115	0.9494	0.8691	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58763 GLENELD3 115	0.9494	0.8691	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58763 GLENELD3 115	0.9327	0.8960	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
05SP	42	WEPL	58768 HARPER 4 138	0.9575	0.8980	OPEN LINE FROM BUS 57045 GILL W 4 138 TO BUS 58775 MILANTP4 138 CKT1	
05SP	42	WEPL	58769 JEWELL 3 115	0.9620	0.8949	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58769 JEWELL 3 115	0.9620	0.8949	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58775 MILANTP4 138	0.9572	0.8957	OPEN LINE FROM BUS 57045 GILL W 4 138 TO BUS 58775 MILANTP4 138 CKT1	
05SP	42	WEPL	58776 MILAN 4 138	0.9564	0.8938	OPEN LINE FROM BUS 57045 GILL W 4 138 TO BUS 58775 MILANTP4 138 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8562	0.7066	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8562	0.7066	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8483	0.7981	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8519	0.8003	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8519	0.8003	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.9188	0.8511	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.9188	0.8511	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.9539	0.8998	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8185	0.6326	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
05SP	42	WEPL	58786 PLAINVL3 115	0.8185	0.6326	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8219	0.7719	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8260	0.7743	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8260	0.7743	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.9022	0.8234	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.9022	0.8234	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9230	0.8243	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9230	0.8243	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9120	0.8681	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9148	0.8699	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9148	0.8699	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9521	0.8806	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.8903	0.7642	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9415	0.8748	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9415	0.8748	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9242	0.8841	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9271	0.8859	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9271	0.8859	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.8721	0.7306	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9178	0.8887	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9299	0.8924	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9329	0.8943	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9329	0.8943	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9494	0.8953	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9494	0.8953	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58768 HARPER 4 138	0.9581	0.8995	57413 CIRCLE 3115 57429 MOUNDRG3115 CKT 158775 MILANTP4138 57045 GILL W 4138 CKT 1	
05SP	42	WEPL	58775 MILANTP4 138	0.9579	0.8972	57413 CIRCLE 3115 57429 MOUNDRG3115 CKT 158775 MILANTP4138 57045 GILL W 4138 CKT 1	
05SP	42	WEPL	58776 MILAN 4 138	0.9571	0.8953	57413 CIRCLE 3115 57429 MOUNDRG3115 CKT 158775 MILANTP4138 57045 GILL W 4138 CKT 1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
05SP	42	WEPL	58801 RUSSELL3 115	0.9182	0.8882	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
05SH	34	WEPL	58760 EHALLTP3 115	0.9395	0.8729	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58760 EHALLTP3 115	0.9395	0.8729	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58762 ELLSWTH3 115	0.9447	0.8716	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58762 ELLSWTH3 115	0.9447	0.8716	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58786 PLAINVL3 115	0.9320	0.8792	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SH	34	WEPL	58786 PLAINVL3 115	0.9320	0.8792	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SH	34	WEPL	58798 WALDO 3 115	0.9515	0.8932	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58798 WALDO 3 115	0.9515	0.8932	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58801 RUSSELL3 115	0.9400	0.8752	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58801 RUSSELL3 115	0.9400	0.8752	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05FA	26		None Identified				
05WP	27		None Identified				
06AP	13		None Identified				
06G	31		None Identified				
06SP	42	SUNC	56364 ATWODSW3 115	0.8839	0.8622	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	

SPP-2004-029-1 Table 4.2 - Non-SPP Voltage Violations Caused or Impacted by Transfer Using Scenario 2

	Transfer				Г		
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
06SP	42	SUNC	56364 ATWODSW3 115	0.8846	0.8628	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56366 CNORTON3 115	0.8516	0.8236	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56366 CNORTON3 115	0.8524	0.8244	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56367 HERNDON3 115	0.8747	0.8515	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56367 HERNDON3 115	0.8755	0.8522	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56369 NATWOOD3 115	0.8839	0.8622	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56369 NATWOOD3 115	0.8846	0.8628	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56371 JOHNSON3 115	0.8660	0.8415	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56371 JOHNSON3 115	0.8668	0.8421	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56372 NORCATR3 115	0.8580	0.8316	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56372 NORCATR3 115	0.8588	0.8323	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56373 RHOADES3 115	0.8516	0.8236	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56373 RHOADES3 115	0.8524	0.8244	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56386 GRHMSUB3 115	0.8495	0.8203	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56386 GRHMSUB3 115	0.8504	0.8211	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56387 HILLCTY3 115	0.8495	0.8203	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56387 HILLCTY3 115	0.8504	0.8211	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56457 OBER T 3 115	0.8645	0.8397	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56457 OBER T 3 115	0.8653	0.8404	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	SUNC	56458 OBERLIN3 115	0.8640	0.8392	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	SUNC	56458 OBERLIN3 115	0.8648	0.8398	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58750 BELOIT 3 115	0.9230	0.8902	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
06SP	42	WEPL	58750 BELOIT 3 115	0.9630	0.8985	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58760 EHALLTP3 115	0.8709	0.7458	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP	42	WEPL	58762 ELLSWTH3 115	0.8720	0.7330	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP	42	WEPL	58763 GLENELD3 115	0.9506	0.8752	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58768 HARPER 4 138	0.9222	0.8431	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP	42	WEPL	58769 JEWELL 3 115	0.9626	0.8996	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58773 MED-LDG3 115	0.9369	0.8845	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP	42	WEPL	58774 MED-LDG4 138	0.9394	0.8788	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP	42	WEPL	58775 MILANTP4 138	0.9165	0.8333	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP	42	WEPL	58776 MILAN 4 138	0.9154	0.8305	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP	42	WEPL	58776 MILAN 4 138	0.9574	0.8991	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
06SP	42	WEPL	58785 PHLBURG3 115	0.8589	0.7190	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58785 PHLBURG3 115	0.8558	0.8122	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	WEPL	58785 PHLBURG3 115	0.8568	0.8131	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58785 PHLBURG3 115	0.9204	0.8548	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
06SP	42	WEPL	58786 PLAINVL3 115	0.8218	0.6482	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58786 PLAINVL3 115	0.8320	0.7891	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	WEPL	58786 PLAINVL3 115	0.8331	0.7901	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58786 PLAINVL3 115	0.9040	0.8278	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
06SP	42	WEPL	58787 PRATT 3 115	0.9347	0.8939	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP	42	WEPL	58793 SMITH-C3 115	0.9247	0.8320	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58793 SMITH-C3 115	0.9170	0.8781	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	WEPL	58793 SMITH-C3 115	0.9179	0.8788	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	_
06SP	42	WEPL	58793 SMITH-C3 115	0.9516	0.8917	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP	42	WEPL	58798 WALDO 3 115	0.8904	0.7825	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP	42	WEPL	58798 WALDO 3 115	0.9436	0.8807	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	

SPP-2004-029-1 Table 4.2 - Non-SPP Voltage Violations Caused or Impacted by Transfer Using Scenario 2

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
06SP	42	WEPL	58798 WALDO 3 115	0.9305	0.8945	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP	42	WEPL	58798 WALDO 3 115	0.9312	0.8952	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP	42	WEPL	58801 RUSSELL3 115	0.8725	0.7510	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP	42	WEPL	58801 RUSSELL3 115	0.9188	0.8899	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
06SP	42	WEPL	58801 RUSSELL3 115	0.9184	0.8901	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
06SH	34	WEPL	58760 EHALLTP3 115	0.9360	0.8704	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58762 ELLSWTH3 115	0.9413	0.8691	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58785 PHLBURG3 115	0.9436	0.8975	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SH	34	WEPL	58786 PLAINVL3 115	0.9260	0.8724	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SH	34	WEPL	58798 WALDO 3 115	0.9479	0.8906	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58801 RUSSELL3 115	0.9365	0.8727	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06FA	26		None Identified				
06WP	27		None Identified				
07SP	43	SUNC	56386 GRHMSUB3 115	0.9122	0.8882	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	SUNC	56386 GRHMSUB3 115	0.9131	0.8890	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	SUNC	56387 HILLCTY3 115	0.9122	0.8882	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	SUNC	56387 HILLCTY3 115	0.9131	0.8890	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58750 BELOIT 3 115	0.9219	0.8882	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
07SP	43	WEPL	58750 BELOIT 3 115	0.9645	0.8968	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58760 EHALLTP3 115	0.8735	0.7380	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58762 ELLSWTH3 115	0.8747	0.7242	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58763 GLENELD3 115	0.9519	0.8727	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58768 HARPER 4 138	0.9154	0.8288	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58768 HARPER 4 138	0.9564	0.8969	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
07SP	43	WEPL	58769 JEWELL 3 115	0.9642	0.8981	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58773 MED-LDG3 115	0.9320	0.8747	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58774 MED-LDG4 138	0.9339	0.8677	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58775 MILANTP4 138	0.9090	0.8179	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58775 MILANTP4 138	0.9562	0.8944	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
07SP	43	WEPL	58776 MILAN 4 138	0.9078	0.8148	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58776 MILAN 4 138	0.9554	0.8925	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8593	0.7116	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8815	0.8439	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	ļ
07SP	43	WEPL	58785 PHLBURG3 115	0.8825	0.8451	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	ļ
07SP	43	WEPL	58785 PHLBURG3 115	0.9208	0.8530	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	ļ
07SP	43	WEPL	58786 PLAINVL3 115	0.8219	0.6384	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	ļ
07SP	43	WEPL	58786 PLAINVL3 115	0.9042	0.8253	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	ļ
07SP	43	WEPL	58786 PLAINVL3 115	0.8674	0.8314	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	ļ
07SP	43	WEPL	58786 PLAINVL3 115	0.8686	0.8326	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	ļ
07SP	43	WEPL	58787 PRATT 3 115	0.9304	0.8861	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	↓
07SP	43	WEPL	58793 SMITH-C3 115	0.9256	0.8281	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58793 SMITH-C3 115	0.9541	0.8888	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	ļ
07SP	43	WEPL	58793 SMITH-C3 115	0.9325	0.8979	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	↓
07SP	43	WEPL	58793 SMITH-C3 115	0.9332	0.8989	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	ļ
07SP	43	WEPL	58797 SUNCITY3 115	0.9474	0.8998	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	ļ
07SP	43	WEPL	58798 WALDO 3 115	0.8930	0.7760	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	↓
07SP	43	WEPL	58798 WALDO 3 115	0.9439	0.8778	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	

SPP-2004-029-1 Table 4.2 - Non-SPP Voltage Violations Caused or Impacted by Transfer Using Scenario 2

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	
07SP	43	WEPL	58801 RUSSELL3 115	0.8750	0.7434	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58801 RUSSELL3 115	0.9208	0.8897	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
07SP	43	WEPL	58801 RUSSELL3 115	0.9517	0.8979	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
07SP	43	WEPL	58801 RUSSELL3 115	0.9207	0.8889	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
07WP	27		None Identified				
10SP	44	SUNC	56386 GRHMSUB3 115	0.9085	0.8833	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	SUNC	56386 GRHMSUB3 115	0.9097	0.8842	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	SUNC	56387 HILLCTY3 115	0.9085	0.8833	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	SUNC	56387 HILLCTY3 115	0.9097	0.8842	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58750 BELOIT 3 115	0.9499	0.8827	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58750 BELOIT 3 115	0.9205	0.8846	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
10SP	44	WEPL	58760 EHALLTP3 115	0.8654	0.7112	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58762 ELLSWTH3 115	0.8662	0.6944	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58762 ELLSWTH3 115	0.9556	0.8996	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58763 GLENELD3 115	0.9348	0.8559	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58763 GLENELD3 115	0.9329	0.8977	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
10SP	44	WEPL	58769 JEWELL 3 115	0.9500	0.8847	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8145	0.6698	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8909	0.8164	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8771	0.8368	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8785	0.8380	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.9497	0.8972	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.7566	0.5797	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8583	0.7715	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8576	0.8193	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8591	0.8206	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9018	0.8054	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9492	0.8761	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9451	0.8909	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9302	0.8930	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9314	0.8941	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.8857	0.7530	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.9323	0.8669	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.9278	0.8962	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.8671	0.7173	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.9153	0.8833	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.9446	0.8914	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
10SP	44	WEPL	58798 WALDO 3 115	0.9282	0.8956	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
10SP	44	WEPL	58801 RUSSELL3 115	0.9157	0.8827	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
10WP	27		None Identified				
15SP	45	SUNC	56364 ATWODSW3 115	0.9223	0.8968	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56364 ATWODSW3 115	0.9227	0.8976	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56366 CNORTON3 115	0.8995	0.8669	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56366 CNORTON3 115	0.9001	0.8679	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56367 HERNDON3 115	0.9145	0.8873	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
15SP	45	SUNC	56367 HERNDON3 115	0.9150	0.8882	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56369 NATWOOD3 115	0.9222	0.8968	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56369 NATWOOD3 115	0.9227	0.8975	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56371 JOHNSON3 115	0.9074	0.8787	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56371 JOHNSON3 115	0.9079	0.8795	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56372 NORCATR3 115	0.9026	0.8718	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56372 NORCATR3 115	0.9031	0.8727	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56373 RHOADES3 115	0.8995	0.8669	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56373 RHOADES3 115	0.9001	0.8679	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56386 GRHMSUB3 115	0.8776	0.8437	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56386 GRHMSUB3 115	0.8782	0.8447	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56387 HILLCTY3 115	0.8776	0.8437	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56387 HILLCTY3 115	0.8782	0.8447	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56457 OBER T 3 115	0.9062	0.8772	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56457 OBER T 3 115	0.9067	0.8781	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56458 OBERLIN3 115	0.9056	0.8766	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56458 OBERLIN3 115	0.9062	0.8775	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58750 BELOIT 3 115	0.9345	0.8698	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58750 BELOIT 3 115	0.9145	0.8727	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.8525	0.6511	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.9428	0.8944	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.9339	0.8960	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.9345	0.8970	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.8528	0.6271	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9460	0.8897	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9371	0.8914	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9376	0.8924	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9176	0.8412	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9600	0.8838	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9272	0.8862	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
15SP	45	WEPL	58769 JEWELL 3 115	0.9351	0.8724	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.7826	0.6439	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8775	0.8000	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8536	0.8049	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8544	0.8062	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.9426	0.8713	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.7169	0.5488	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8431	0.7521	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8284	0.7801	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8292	0.7815	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.8812	0.7879	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9405	0.8465	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9137	0.8709	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9144	0.8720	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9352	0.8794	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.8739	0.7011	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9191	0.8549	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9233	0.8824	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
15SP	45	WEPL	58798 WALDO 3 115	0.9240	0.8835	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9203	0.8864	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.8544	0.6588	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9075	0.8730	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9340	0.8815	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9283	0.8895	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9290	0.8905	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
15SP	45	WEPL	58798 WALDO 3 115	0.9207	0.8858	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
15SP	45	WEPL	58801 RUSSELL3 115	0.9080	0.8725	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	

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	Transfer											
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
											May be relieved due to Westar Operating Procedure 625 - Outage of the	
05SP	42	WERE	WERE	WEST EMPORIA - EAST STREET 115KV	92	100.3	102.7	5.2	MORRIS COUNTY 230/115/13.8KV TRANSFORMER	0	Morris County Transformer	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
05FA	26	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	115.0	116.4	5.0	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
05FA	26	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	106.8	108.2	5.0	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
										_	May be relieved due to Westar Operating Procedure 803 - Outage of the	
05FA	26	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	104.7	106.1	5.0	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
06SH	34	WERE	WERE		68	100.7	102.6	3.8		0	May be relieved due to Westar Operating Procedure 900 - Outage of the	
06SH	34	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	100.7	102.6	3.8	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	JEC to East Manhattan 230kV Line May be relieved due to Westar Operating Procedure 803 - Outage of the	
06SH	34	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	121.4	122.9	4.3	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
06SH	34	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	106.3	110.3		CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	106.3	110.3		CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	107.2	108.7	4.3	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
										-	May be relieved due to Westar Operating Procedure 803 - Outage of the	
06SH	34	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	110.3	111.9	4.2	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
										1	May be relieved due to Westar Operating Procedure 803 - Outage of the	
06SH	34	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	107.8	109.4	4.2	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 400 - Outage of the	
06SP	42	WERE	WERE	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	565	106.4	107.0	8.1	HOYT - JEFFREY ENERGY CENTER 345KV	0	Jeffrey Energy Center to Hoyt 345kV Line	
											May be relieved due to Westar Operating Procedure 900 - Outage of the	
06SP	42	WERE	WERE	AUBURN ROAD - KEENE 115KV	68	104.4	107.0	4.2	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	123.6	125.6	4.8	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											Rebuild 15.50-mile line (1192.5 kcmil 45/7 ACSR, 223 MVA, 245 MVA),	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	107.1	109.1	4.5	IATAN - ST JOE 345KV	0	Replace CTs and Wave Trap (2000 A.)	\$5,800,000
06SP	42	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.8	108.0	12.0	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE		CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.8	108.0	12.0	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	101.8	104.8	7.1	EAST MANHATTAN - JEFFREY ENERGY CENTER 230KV	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	108.8	111.0	4.7	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	
003F	42	WERE	WEILE	CIRCLE VIELE - RING THEE N.W. COOF TISKV	32	100.0	111.0	4.7	HOTT - STRANGER CREEK 545RV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the	
06SP	42	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	105.9	108.0	4.7	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
000.	12	TERE	mente		02	100.0	100.0		North Ontwide Ronce Ronald		May be relieved due to Westar Operating Procedure 803 - Outage of the	
06WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	119.1	120.0	3.1	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
06WP	27	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	112.3	113.4	3.7	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
06WP	27	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	110.3	111.4	3.8	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 1205 - Outage of the	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	128.5	131.5	10.0	CIRCLE - DAVIS 115KV	0	Circle to Davis 115kV Line	
											May be relieved due to Westar Operating Procedure 1306 - Outage of the	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	112.0	115.1	9.9	HUTCHINSON ENERGY CENTER - HUTCHINSON GAS TURBINE STATION 69KV	0	HEC to HEC GT 69kV Line	
07SP	43	WERE		CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	108.8	111.9	10.2	REMOVE UNIT 1 FROM BUS 56693 [HEC U3 14.400] DISPATCH	0	Solution Undetermined	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	108.5	111.7	10.8	SEWARD - ST JOHN 115KV	0	Solution Undetermined	
07SP	43	WERE	WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	101.7	104.7	9.9	HUTCHINSON ENERGY CENTER 115/69/34.5KV TRANSFORMER	0	May be relieved due to Westar Operating Procedure 626 - Outage of the HUTCHINSON ENERGY CENTER TRANSFORMER	
07SP	43	WERE		CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	98.1	104.7	9.9	CIRCLE 230/115/13.8KV TRANSFORMER	6	Solution Undetermined	
07SP	43	WERE		CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	99.0	102.0	9.7	SPEARVILLE 345/230/13.8KV TRANSFORMER	4	Solution Undetermined	
07SP	43		WERE	CIRCLE - HUTCHINSON ENERGY CENTER 115KV	141	97.5	102.0	9.8	GILL ENERGY CENTER 138/69/14.4KV TRANSFORMER	11	Solution Undetermined	
	-									1	May be relieved due to Westar Operating Procedure 803 - Outage of the	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	124.5	126.2	3.7	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	106.2	107.9	3.9	IATAN - ST JOE 345KV	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.2	107.4	11.6	CONCORDIA - EAST MANHATTAN 230KV	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	102.2	107.3	11.6	CONCORDIA 230/115KV TRANSFORMER	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
07SP	43	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	109.3	111.0	3.6	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
0707						10	407 -			l .	May be relieved due to Westar Operating Procedure 803 - Outage of the	
07SP	43	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	106.3	108.0	3.6	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
0714/5			WEDE								May be relieved due to Westar Operating Procedure 803 - Outage of the	
07WP	27	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	115.7	117.0	4.7	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
0714/5	07	WEDE	WEDE			400.0	400 7	47			May be relieved due to Westar Operating Procedure 803 - Outage of the	
07WP	27	WERE	WERE	CIRCLEVILLE - KING HILL N.M. COOP 115KV	92	108.3	109.7	4.7	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
07WP	27	WERE	WERE	KELLY - KING HILL N.M. COOP 115KV	92	106.4	107.7	4.7	HOYT - STRANGER CREEK 345KV	0	May be relieved due to Westar Operating Procedure 803 - Outage of the	
UTWP	21	WERE	WERE	NELLT - NING FILL N.M. GOUP TISKV	92	100.4	107.7	4./	HUTT - STRANGER UKEEN 343NV	U	Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 803 - Outage of the	
10SP	44	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	99.5	101.1	3.5	HOYT - STRANGER CREEK 345KV	4	Hoyt to Stranger 345 kV line	
TUOP	-14	TTEINE	TTEILE	SINGLE VIELE - HOT FITT GAVITOLING JUNCTION TISKY	51	53.5	101.1	0.0	HOTT - OTTAHOLIN UNLER 040RV	. 4	noyeto orangel 343 KV line	t

10SP	44	WERE	WEDE		92	119.6	123.2	7.6		0	May be relieved due to Westar Operating Procedure 1203 - Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line	
10SP	44	WERE	WERE	COUNTY LINE - HOOK JCT 115KV	92	119.6	123.2	7.6	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	May be relieved due to Westar Operating Procedure 1203 - Outage of the	
											Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP		WERE		COUNTY LINE - TECUMSEH HILL 115KV	106	107.3	109.7	5.8	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	115 kV Line	
10SP	44	WERE	WERE	GILL ENERGY CENTER EAST - MACARTHUR 69KV	68	117.0	119.0	3.1	GILL ENERGY CENTER EAST - OATVILLE 69KV	0	Replace substation bus and jumpers at MacArthur 69 kV.	\$98,000
											Replace disconnect switches at Gill 69 kV (use 800 A.), Replace line	
10SP	44	WERE		GILL ENERGY CENTER EAST - OATVILLE 69KV	72	126.0	128.2	3.6	GILL ENERGY CENTER EAST - MACARTHUR 69KV	0	switch at Oatville 69 kV (use 800 A.).	\$45,000
10SP	44	WERE	WERE	GILL ENERGY CENTER EAST - OATVILLE 69KV	72	110.3	112.2	3.1	GILL ENERGY CENTER WEST - HAYSVILLE JUNCTION 69KV	0	See Previous Upgrade Specified for Facility	
10SP	44	WERE	WERE	GILL ENERGY CENTER EAST - OATVILLE 69KV	72	102.3	104.2	3.1	HAYSVILLE JUNCTION - MIDLAND 69KV	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 1203 - Outage of the	
10SP	44	WERE	WERE	HOOK JCT - TECUMSEH ENERGY CENTER 115KV	160	122.9	126.7	13.7	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	0	Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
10SP	44	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	111.9	114.1	12.0	HOYT - STRANGER CREEK 345KV	0	Hovt to Stranger 345 kV line	
										-	May be relieved due to Westar Operating Procedure 632 - Overload of the	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	100.4	103.4	4.6	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	0	Tecumseh Energy Center 161/115kV Tranformer	
1001		WEILE	WEIKE		05	100.4	100.4	4.0		Ŭ	May be relieved due to Westar Operating Procedure 632 - Overload of the	
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	100.9	103.0	3.3	HOYT - STRANGER CREEK 345KV	0	Tecumseh Energy Center 161/115kV Tranformer	
103P	44	WERE	WERE	TECOMSEN HILL 101/113/13.0KV TRANSFORMER	09	100.9	103.0	3.3	HUTT - STRANGER GREEK 345KV	0	May be relieved due to Westar Operating Procedure 632 - Overload of the	
4000	44	WERE	WERE		69	97.6	100.5	4.6		11		
10SP	44	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	97.6	100.5	4.6	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	11	Tecumseh Energy Center 161/115kV Tranformer	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
15SP	45	WERE	WERE	54TH & MERIDEN - HOYT 115KV	179	109.7	111.2	6.1	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
15SP	45	WERE	WERE	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	565	99.7	100.8	13.5	HOYT - STRANGER CREEK 345KV	3	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
15SP	45	WERE	WERE	CIRCLEVILLE - HOYT HTI SWITCHING JUNCTION 115KV	97	111.5	114.6	6.7	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of the	
15SP	45	WERE	WERE	GOODYEAR JUNCTION - NORTHLAND 115KV	175	110.2	111.5	5.1	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 401 - Outage of the	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	110.1	112.0	46.6	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	0	Jeffrev Energy Center - Morris County 345kV	
15SP	45		WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	108.4	110.9	59.8	LAWRENCE HILL - LAWRENCE ENERGY CENTER UNIT 5 230 KV	0	Solution Undetermined	
										-	May be relieved due to Westar Operating Procedure 401 - Outage of the	
15SP	45	WERE	WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	109.0	110.7	39.3	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	0	Jeffrey Energy Center to Hoyt 345kV Line	
15SP	45		WERE	HOYT - JEFFREY ENERGY CENTER 345KV	1076	99.1	100.8	38.8	LANG - MORRIS COUNTY 345KV	7	Solution Undetermined	
1001	45	WEILE	WEIKE	HOTT SETTINET ENERGY GENTER SASKY	1070	55.1	100.0	00.0		,	May be relieved due to Westar Operating Procedure 803 - Outage of the	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	123.7	124.5	4.1	HOYT - STRANGER CREEK 345KV	0	Hoyt to Stranger 345 kV line	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	123.7	124.5	6.3	LAWRENCE HILL - LAWRENCE ENERGY CENTER UNIT 5 230 KV	0	Solution Undetermined	
155P	45	WERE	WERE	TECOMSER ENERGY CENTER - TECOMSER HILL TISKY	230	106.2	107.4	0.3	LAWRENCE HILL - LAWRENCE ENERGY CENTER UNIT 5 230 KV	0		
											May be relieved due to Westar Operating Procedure 401 - Outage of	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	104.4	105.3	4.7	JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	0	the JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	
							1				May be relieved due to Westar Operating Procedure 401 - Outage of the	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	103.2	103.8	3.3	AUBURN ROAD - JEFFREY ENERGY CENTER 230KV	0	Jeffrey Energy Center to Hoyt 345kV Line	
15SP	45		WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	100.1	100.7	3.2	COUNTY LINE - GOODYEAR JUNCTION 115KV	0	Solution Undetermined	
15SP	45	WERE	WERE	TECUMSEH ENERGY CENTER - TECUMSEH HILL 115KV	236	100.0	100.6	3.2	COUNTY LINE 115/69/34.5KV TRANSFORMER	1	Solution Undetermined	
											May be relieved due to Westar Operating Procedure 632 - Overload of the	
15SP	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	103.7	106.8	4.9	HOYT - STRANGER CREEK 345KV	0	Tecumseh Energy Center 161/115kV Tranformer	
155P											May be relieved due to Westar Operating Procedure 632 - Overload of the	
155P												
155P	45	WERE	WERE	TECUMSEH HILL 161/115/13.8KV TRANSFORMER	69	99.1	103.0	6.1	HOYT - HOYT HTI SWITCHING JUNCTION 115KV	3	Tecumseh Energy Center 161/115kV Tranformer	

	Transfer								
Study	Amount			BC Voltage	TC Voltage		ATC		Estimated
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	(MW)	Solution	Cost
05SP	42	MIDW	56551 SALINE 3 115	0.8403	0.7977	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0	Condition	0000
05SP	42	MIDW	56551 SALINE 3 115	0.8390	0.7955	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56551 SALINE 3 115	0.8204	0.6414	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56552 GORHAM 3 115	0.8584	0.8222	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56552 GORHAM 3 115	0.8572	0.8222	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56553 S HAYS 3 115	0.8622	0.8263	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
							-		
05SP	42	MIDW	56553 S HAYS 3 115	0.8610	0.8244	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56556 HOXIE 3 115	0.8874	0.8639	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56556 HOXIE 3 115	0.8867	0.8623	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8552	0.8235	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56557 BEACH 3 115	0.8542	0.8216	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56558 KNOLL 6 230	0.7645	0.7277	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8290	0.7885	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56560 WKNNY 3 115	0.8277	0.7863	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56561 KNOLL 3 115	0.8422	0.8026	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56561 KNOLL 3 115	0.8410	0.8005	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8353	0.7950	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56562 HAYS 3 115	0.8340	0.7929	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8387	0.7960	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8374	0.7939	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56590 BEMIS 3 115	0.8188	0.6394	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8357	0.7955	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56591 VINE 3 115	0.8344	0.7934	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8503	0.8164	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
05SP	42	MIDW	56605 REDLIN 3 115	0.8492	0.8144	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	Ő		
05SH	34	MIDW	56551 SALINE 3 115	0.9343	0.8819	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	22		
05SH	34	MIDW	56590 BEMIS 3 115	0.9333	0.8808	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	22		
05FA	26	MIDW	56558 KNOLL 6 230	1.0378	0.8948	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	26	Not a Load Serving Bus	
05WP	27	MIDW	56558 KNOLL 6 230	1.0637	0.8957	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	20	Not a Load Serving Bus	
06AP	13	WIDW	NONE IDENTIFIED	1.0037	0.0957	OF EN EINE TROM BOS 50550 RNOLE 0 250 TO BOS 50075 SOMMIT 0 250 CRT1	13	Not a Load Octving Das	
06G	31		NONE IDENTIFIED				31		
06SP	42	MIDW	56551 SALINE 3 115	0.8458	0.8133	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
							-		
06SP	42	MIDW	56551 SALINE 3 115	0.8448	0.8098	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56551 SALINE 3 115	0.8231	0.6501	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56552 GORHAM 3 115	0.8639	0.8371	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56552 GORHAM 3 115	0.8630	0.8337	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56553 S HAYS 3 115	0.8677	0.8412	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56553 S HAYS 3 115	0.8668	0.8377	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56557 BEACH 3 115	0.8601	0.8370	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56557 BEACH 3 115	0.8593	0.8342	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56558 KNOLL 6 230	0.7703	0.7410	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56560 WKNNY 3115	0.8351	0.8049	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56560 WKNNY 3115	0.8342	0.8013	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56561 KNOLL 3 115	0.8482	0.8186	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56561 KNOLL 3 115	0.8473	0.8151	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56562 HAYS 3 115	0.8413	0.8113	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56562 HAYS 3 115	0.8404	0.8077	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56590 BEMIS 3 115	0.8442	0.8117	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56590 BEMIS 3 115	0.8433	0.8082	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56590 BEMIS 3 115	0.8215	0.6481	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56591 VINE 3 115	0.8418	0.8118	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56591 VINE 3 115	0.8408	0.8082	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
06SP	42	MIDW	56605 REDLIN 3 115	0.8556	0.8308	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
06SP	42	MIDW	56605 REDLIN 3 115	0.8548	0.8308	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
0005	44		50005 NEDLIN 5 115	0.0040	0.0210	G EN ENTE FROM DOS 30336 NIVOLE 0 230 TO DOS 30073 3000001 0 230 CKT	U		

06SP	40	WERE	57036 CLEARWT4 138	0.9211	0.8383	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	11		
06SP	42	MIDW		0.9211			18		
	34		56551 SALINE 3 115		0.8746	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1			
06SH 06FA	34	MIDW	56590 BEMIS 3 115	0.9271	0.8735	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	17	Net a Load Camina Dua	
	26	MIDW	56558 KNOLL 6 230	1.0556	0.8980	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	26	Not a Load Serving Bus	
06WP	27		NONE IDENTIFIED				27		
07SP	43	MIDW	56551 SALINE 3 115	0.8814	0.8526	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56551 SALINE 3 115	0.8810	0.8518	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56551 SALINE 3 115	0.8228	0.6555	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56552 GORHAM 3 115	0.8960	0.8725	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56552 GORHAM 3 115	0.8956	0.8717	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56553 S HAYS 3 115	0.8996	0.8763	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56553 S HAYS 3 115	0.8992	0.8755	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56557 BEACH 3 115	0.9178	0.8976	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	43		
07SP	43	MIDW	56557 BEACH 3 115	0.9176	0.8970	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	42		
07SP	43	MIDW	56558 KNOLL 6 230	0.8048	0.7807	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56560 WKNNY 3 115	0.8734	0.8467	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56560 WKNNY 3 115	0.8730	0.8459	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56561 KNOLL 3 115	0.8857	0.8596	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56561 KNOLL 3 115	0.8853	0.8587	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56562 HAYS 3 115	0.8794	0.8528	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56562 HAYS 3 115	0.8790	0.8520	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56590 BEMIS 3 115	0.8800	0.8511	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56590 BEMIS 3 115	0.8795	0.8502	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56590 BEMIS 3 115	0.8213	0.6535	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56591 VINE 3 115	0.8798	0.8533	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
07SP	43	MIDW	56591 VINE 3 115	0.8794	0.8525	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
07SP	43	MIDW	56605 REDLIN 3 115	0.9085	0.8867	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	39		
07SP	43	MIDW	56605 REDLIN 3 115	0.9082	0.8860	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	39		
07SP	43	WERE	57036 CLEARWT4 138	0.9120	0.8233	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	10		
10SP	44	MIDW	56551 SALINE 3 115	0.8688	0.8356	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56551 SALINE 3 115	0.8679	0.8347	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
100F	44	MIDW	56551 SALINE 3 115	0.7535	0.5763	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56552 GORHAM 3 115	0.8902	0.8628	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56552 GORHAM 3 115	0.8893	0.8620	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW		0.8893	0.8669	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
			56553 S HAYS 3 115						
10SP	44	MIDW	56553 S HAYS 3 115	0.8932	0.8661	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56557 BEACH 3 115	0.9094	0.8858	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	37		
10SP	44	MIDW	56557 BEACH 3 115	0.9087	0.8852	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	37		
10SP	44	MIDW	56558 KNOLL 6 230	0.7953	0.7677	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56560 WKNNY 3 115	0.8623	0.8313	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56560 WKNNY 3 115	0.8614	0.8304	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56561 KNOLL 3 115	0.8757	0.8453	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56561 KNOLL 3 115	0.8748	0.8444	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56562 HAYS 3 115	0.8686	0.8378	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56562 HAYS 3 115	0.8677	0.8369	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.8673	0.8339	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.8664	0.8331	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56590 BEMIS 3 115	0.7517	0.5741	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56591 VINE 3 115	0.8691	0.8383	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56591 VINE 3 115	0.8682	0.8374	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10SP	44	MIDW	56605 REDLIN 3 115	0.8995	0.8741	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
10SP	44	MIDW	56605 REDLIN 3 115	0.8988	0.8734	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
10WP	27		NONE IDENTIFIED				27		
15SP	45	MIDW	56551 SALINE 3 115	0.8381	0.7958	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56551 SALINE 3 115	0.8370	0.7942	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56551 SALINE 3 115	0.7138	0.5436	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56552 GORHAM 3 115	0.8626	0.8271	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
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15SP	45	MIDW	56552 GORHAM 3 115	0.8616	0.8257	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56553 S HAYS 3 115	0.8669	0.8316	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56553 S HAYS 3 115	0.8659	0.8302	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56556 HOXIE 3 115	0.9085	0.8853	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	39		
15SP	45	MIDW	56556 HOXIE 3 115	0.9079	0.8845	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	39		
15SP	45	MIDW	56557 BEACH 3 115	0.8777	0.8463	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56557 BEACH 3 115	0.8769	0.8451	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56558 KNOLL 6 230	0.7666	0.7304	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	45	Not a Load Serving Bus	
15SP	45	MIDW	56560 WKNNY 3 115	0.8296	0.7893	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56560 WKNNY 3 115	0.8285	0.7877	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56561 KNOLL 3 115	0.8443	0.8050	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56561 KNOLL 3 115	0.8433	0.8035	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56562 HAYS 3 115	0.8364	0.7963	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56562 HAYS 3 115	0.8353	0.7948	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.8364	0.7940	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.8353	0.7924	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56590 BEMIS 3 115	0.7118	0.5412	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56591 VINE 3 115	0.8369	0.7969	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56591 VINE 3 115	0.8358	0.7954	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
15SP	45	MIDW	56605 REDLIN 3 115	0.8676	0.8340	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	0		
15SP	45	MIDW	56605 REDLIN 3 115	0.8667	0.8327	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	0		
B		-		•				Total Estimated Engineering and Construction Cost	\$0

nated Engineering and Construction Cost ъu

SPP-2004-029-1 Table 3.3 - Non-SPP Facility Overloads Caused or Impacted by Transfer Using Scenario 3

Study		From			BC %	TC %			
Case	(MW)	Area	To Area	Monitored Branch Overload	Loading	Loading	%TDF	Outaged Branch Causing Overload	Comments
05SP	42			NONE IDENTIFIED					
05SH	34			NONE IDENTIFIED					
05FA	26			NONE IDENTIFIED					
05WP	27			NONE IDENTIFIED					
06AP	13			NONE IDENTIFIED					
06G	31			NONE IDENTIFIED					
06SP	42			NONE IDENTIFIED					
06SH	34			NONE IDENTIFIED					
06FA	26			NONE IDENTIFIED					
06WP	27			NONE IDENTIFIED					
07SP	43			NONE IDENTIFIED					
07WP	27			NONE IDENTIFIED					
10SP	44			NONE IDENTIFIED					
10WP	27			NONE IDENTIFIED					
15SP	45			NONE IDENTIFIED					
15SP	45			NONE IDENTIFIED					
15SP	45			NONE IDENTIFIED					

SPP-2004-029-1 Table 3.3 - Non-SPP Facility Overloads Caused or Impacted by Transfer Using Scenario 3

	Transfer									
Study	Amount	From			Rate	BC %	TC %			
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	Comments
05SP	42			NONE IDENTIFIED						
05SH	34			NONE IDENTIFIED						
05FA	26			NONE IDENTIFIED						
05WP	27			NONE IDENTIFIED						
06AP	13			NONE IDENTIFIED						
06G	31			NONE IDENTIFIED						
06SP	42			NONE IDENTIFIED						
06SH	34			NONE IDENTIFIED						
06FA	26			NONE IDENTIFIED						
06WP	27			NONE IDENTIFIED						
07SP	43			NONE IDENTIFIED						
07WP	27			NONE IDENTIFIED						
10SP	44			NONE IDENTIFIED						
10WP	27			NONE IDENTIFIED						
15SP	45			NONE IDENTIFIED						
15SP	45			NONE IDENTIFIED						
15SP	45			NONE IDENTIFIED						

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
05SP	42	SUNC	56364 ATWODSW3 115	0.8875	0.8628	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56364 ATWODSW3 115	0.8883	0.8645	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56366 CNORTON3 115	0.8559	0.8245	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56366 CNORTON3 115	0.8569	0.8265	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56367 HERNDON3 115	0.8784	0.8521	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56367 HERNDON3 115	0.8792	0.8538	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56369 NATWOOD3 115	0.8875	0.8628	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56369 NATWOOD3 115	0.8883	0.8644	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56371 JOHNSON3 115	0.8698	0.8421	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56371 JOHNSON3 115	0.8707	0.8439	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56372 NORCATR3 115	0.8620	0.8323	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56372 NORCATR3 115	0.8629	0.8342	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56373 RHOADES3 115	0.8559	0.8245	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56373 RHOADES3 115	0.8569	0.8265	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56386 GRHMSUB3 115	0.8538	0.8213	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56386 GRHMSUB3 115	0.8548	0.8232	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56387 HILLCTY3 115	0.8538	0.8213	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56387 HILLCTY3 115	0.8548	0.8232	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56457 OBER T 3 115	0.8683	0.8403	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56457 OBER T 3 115	0.8692	0.8421	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	SUNC	56458 OBERLIN3 115	0.8679	0.8398	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	SUNC	56458 OBERLIN3 115	0.8687	0.8416	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58750 BELOIT 3 115	0.9273	0.8922	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
05SP	42	WEPL	58760 EHALLTP3 115	0.8755	0.7462	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42 42	WEPL WEPL	58762 ELLSWTH3 115	0.8767	0.7333	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP 05SP	42	WEPL	58763 GLENELD3 115 58785 PHLBURG3 115	0.9537	0.8764	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115 58785 PHLBURG3 115	0.8610 0.8683	0.7175	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115 58785 PHLBURG3 115	0.8696	0.8226	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58785 PHLBURG3 115	0.8696	0.8558	OPEN LINE FROM BUS 36558 KNOLL 8 230 TO BUS 36561 KNOLL 3 115 CK11 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CK11	
05SP	42	WEPL	58786 PLAINVL3 115	0.9224	0.6358	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8403	0.7946	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.8416	0.7940	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58786 PLAINVL3 115	0.9060	0.8285	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56566 PLAINVL3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9269	0.8318	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9271	0.8870	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9282	0.8885	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58793 SMITH-C3 115	0.9560	0.8931	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.8950	0.7831	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9434	0.8784	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
05SP	42	WEPL	58798 WALDO 3 115	0.9358	0.8988	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.8771	0.7514	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9233	0.8931	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
05SP	42	WEPL	58801 RUSSELL3 115	0.9507	0.8977	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
05SP	42	WEPL	58801 RUSSELL3 115	0.9235	0.8938	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
05SH	34	WEPL	58760 EHALLTP3 115	0.9439	0.8789	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
05SH	34	WEPL	58762 ELLSWTH3 115	0.9491	0.8778	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	

Study Monoral Market BC: Voltage TC: Voltage TC: Voltage Market Comments 065H 34 WEPL SBTRE PLANKU3.151 0.9584 0.8842 OPEN LINE FROM BUSS 9655 AUXLLS 3115 OF USS 5657 MALLS 3115 OF USS 5677 MALLS 3115		Transfer			1			
Case (MV) AREA Monitored Bas with Volation (PU) (PU) Contaget Barray Comments 085H 34 WFPL BSRR PLANNA 115 0.9584 0.9584 OPEN LINE FROM BUS Statis Charles 1115 Ch11 085H 34 WFPL BSRR PLANNA 115 0.9584 0.9584 OPEN LINE FROM BUS Statis Charles 1115 Ch11 085H 34 WFPL BSRR PLANNA 115 0.9584 0.9581 OPEN LINE FROM BUS Statis Charles 1115 Ch11 085H 27 NONE DENTIFIED P	Study				BC Voltage	TC Voltage		
665H 34 WEPL 58726 FLANUAL 3115 0.8984 0.8984 OPEN LINE FROM BUS 6870 EHALLTS 115 TO BUS 58776 MULGENS 115 CKT1 055H 34 WEPL 5878 MULGENS 115 0.9444 0.8911 OPEN LINE FROM BUS 58706 EHALLTPS 115 TO BUS 58776 MULGENS 115 CKT1 055H 34 WEPL 5880 MULGENS 115 0.9444 0.8911 OPEN LINE FROM BUS 5676 EHALLTPS 115 TO BUS 58776 MULGENS 115 CKT1 056H 31 NONE DENTIFIED			ARFA	Monitored Bus with Violation	Ŭ	U U	Outaged Branch Causing Voltage Violation	Comments
065H 34 WEPL 58778 WALCO 3 115 0.6368 0.6888 OPEN LINE FROM BUS SATOR UNLUTPS 115 TO BUS SAT78 MULGREN3 115 CKT1 067A 28 NONE DORTIFIED 0.811 OPEN LINE FROM BUS SAT70 HULLTPS 115 TO BUS SAT78 MULGREN3 115 CKT1 067A 27 NONE DORTIFIED 0.811 OPEN LINE FROM BUS SAT70 HULLTPS 115 TO BUS SAT78 MULGREN3 115 CKT1 067B 21 NONE DORTIFIED 0.811 OPEN LINE FROM BUS SAT78 MULGREN3 115 CKT1 067B 22 SUNC 55836 CNORTONS 115 0.8696 0.8388 068F 42 SUNC 55836 CNORTONS 115 0.8716 0.8386 068F 42 SUNC 55837 NORCART8 116 0.8686 0.6443 068F 42 SUNC 56377 NORCART8 116 0.8686 0.6443 068F 42 SUNC 5637 RHOUDES 116 0.8686 0.6463 058F 42 SUNC 5637 RHOUDES 116 0.8697 0.8391 058F 42 SUNC 5637 RHOUDES 116 0.8493 0.3893 068F								
94 WEPL 68801 RUSSEL13115 0.9444 0.8811 OPEN LINE FROM BUS 56700 EHALLTP3 115 TO BUS 56776 MULGREN3 115 CKT1 05874 26 NONE DENTIFIED								
06FA 26 NONE IDENTIFIED 1 06AP 13 NONE IDENTIFIED 1 06AP 13 NONE IDENTIFIED 1 06AP 13 NONE IDENTIFIED 1 06AP 21 NONE IDENTIFIED 1 06AP 22 SUNC 0.0000 0.8388 OPEN LINE FROM BUS 56668 KNOLL 6 230 TO BUS 56673 SUMMT 6 230 CKT1 06SP 42 SUNC 6537 2 NORCATR3 115 0.8676 0.8586 OPEN LINE FROM BUS 56668 KNOLL 6 230 TO BUS 56673 SUMMT 6 230 CKT1 06SP 42 SUNC 6537 2 NORCATR3 115 0.8676 0.8488 OPEN LINE FROM BUS 56568 KNOLL 6 230 TO BUS 56673 SUMMT 6 230 CKT1 06SP 42 SUNC 6537 8 HOADES3 115 0.8661 0.8388 OPEN LINE FROM BUS 56568 KNOLL 6 230 TO BUS 56673 SUMMT 6 230 CKT1 06SP 42 SUNC 5637 8 HOADES3 115 0.8664 0.8384 OPEN LINE FROM BUS 56568 KNOLL 6 230 TO BUS 56673 SUMMT 6 230 CKT1 06SP 42 SUNC 5637 HLOCYS 115 0.8384 OPEN LINE FROM BUS 56568 KNOLL 6 230 TO BUS 56673 SUMMT 6 230 CKT1 06SP								
09MP 27 NONE IDENTIFIED Provide 06G 31 NONE IDENTIFIED Provide 06G 31 NONE IDENTIFIED Provide 06G 42 SUNC 6586 CONCITONS 115 0.8068 0.8368 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 5661 KNOLL 3 115 CKT 06SP 42 SUNC 6536 CONCITONS 115 0.8016 0.8368 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 5661 KNOLL 3 115 CKT 06SP 42 SUNC 5637 APHOADES3 115 0.8616 0.8448 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56661 KNOLL 3 115 CKT 06SP 42 SUNC 5637 RHOADES3 115 0.8616 0.8388 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56661 KNOLL 3 115 CKT 06SP 42 SUNC 5537 RHOADES3 115 0.8816 0.8386 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56661 KNOLL 3 115 CKT 06SP 42 SUNC 5537 RHOADES3 115 0.8816 0.8386 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56671 SMILL 3 115 CKT 06SP 42 SUNC 55437 RHLCTYS 115 0.8370 OPEN LINE FROM BUS 567658 KNOLL 6 230 TO BUS 5673 S								
06AP 13 NONE IDENTIFIED Image: constraint of the second secon								
ORG 31 NONE IDENTIFIED P 068P 42 SUNC 56356 CNORTON3 115 0.8015 0.5336 OPEN LINE FROM BUS 56558 KNOLL 6.230 TO BUS 56673 SLIMMIT 6 230 CKT1 068P 42 SUNC 56356 CNORTON3 115 0.8746 0.8336 OPEN LINE FROM BUS 56558 KNOLL 623 TO BUS 56671 SNOLL 7 200 CKT1 068P 42 SUNC 56372 NORCATR3 115 0.8676 0.8443 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56671 SNOLL 7 200 CKT1 068P 42 SUNC 56373 RHADES3 115 0.8676 0.8463 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56671 KNOLL 3116 CKT1 068P 42 SUNC 56373 RHADES3 115 0.8661 0.8366 OPEN LINE FROM BUS 56658 KNOLL 6 230 TO BUS 56671 KNOLL 3116 CKT1 068P 42 SUNC 56397 HILCTY3 115 0.8597 0.8597 0.05971 HILCTY3 116 0.8596 OPEN LINE FROM BUS 5658 KNOLL 6 230 TO BUS 56671 SNULL 3116 CKT1 068P 42 SUNC 56397 HILCTY3 115 0.8597 0.65971 MULCTY3 115 0.8596 0.6591 KNUL 6 230 TO BUS 56671 KNUL 3116 CKT1 068P 42 SUNC								
068F 42 SUNC 56366 CNORTON 115 0.8806 0.0291 0.0210 56366 CNORTON 115 0.8816 0.6837 068F 42 SUNC 56366 CNORTON 115 0.8816 0.6833 0.0PEN LINE FROM BUS 56585 KNOLL 6.203 TO BUS 56675 KNOLT 230 CKT1 068F 42 SUNC 56371 JOHNSON3 115 0.8868 0.6843 0.0PEN LINE FROM BUS 56565 KNOLL 6.203 TO BUS 56675 KNOLT 230 CKT1 068F 42 SUNC 56372 NORCATR3 115 0.8806 0.8848 0.0PEN LINE FROM BUS 56565 KNOLL 6.203 TO BUS 56671 SNUNT 230 CKT1 068F 42 SUNC 56373 RHOADES3 115 0.8807 0.8816 0.0PEN LINE FROM BUS 56565 KNOLL 6.203 TO BUS 56671 SNUNT 200 CKT1 068F 42 SUNC 56365 GHNAUBES1 15 0.8876 0.8836 0.0PEN LINE FROM BUS 56565 KNOLL 6.203 TO BUS 56671 SNUNT 200 CKT1 068F 42 SUNC 56387 HILLCTV3 115 0.8876 0.8836 0.0PEN LINE FROM BUS 56565 KNOLL 6.203 TO BUS 56673 SNUNL 3.2116 CKT1 068F 42 SUNC 56387 HILLCTV3 115 0.8876 0.68761 0.2017 11 0.2017 11 0.2017 11 0.2017 11 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
068P 42 SUNC 56386 CNORTON3 115 0.8895 OPEN LINE FROM BUS 56558 KNOLL 2 310 TO BUS 56571 KNOLL 3 115 CKT1 068P 42 SUNC 56371 NORCATRS 115 0.8669 0.8443 OPEN LINE FROM BUS 56558 KNOLL 6 200 TO BUS 56673 SUMMIT 6 230 CKT1 068P 42 SUNC 56372 NORCATRS 115 0.8666 0.8443 OPEN LINE FROM BUS 56558 KNOLL 6 200 TO BUS 56673 SUMMIT 6 230 CKT1 068P 42 SUNC 56372 NORCATRS 115 0.8666 0.8480 OPEN LINE FROM BUS 56558 KNOLL 6 200 TO BUS 56673 KUNL 13 115 CKT1 068P 42 SUNC 56386 GRHMSUB3 115 0.5697 0.8377 OPEN LINE FROM BUS 56558 KNOLL 6 200 TO BUS 56673 KUNL 3115 CKT1 068P 42 SUNC 56386 GRHMSUB3 115 0.5694 0.8367 0.9284 KNOLL 6 200 TO BUS 56673 KUNL 3115 CKT1 068P 42 SUNC 56487 OBERT 3115 0.8772 0.8814 0.9761 LINE FROM BUS 56558 KNOLL 6 200 TO BUS 56753 KUML 7 210 CKT1 068P 42 SUNC 56487 OBERT 3115 0.8772 0.8814 0.9761 LINE FROM BUS 56756 KNOLL 2 3115 CMT1 068P 42 SUNC 56487 OBELT 3115 <td></td> <td></td> <td>SUNC</td> <td></td> <td>0.8608</td> <td>0.8368</td> <td>OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1</td> <td></td>			SUNC		0.8608	0.8368	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
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06SP 42 WEPL 58775 MILANTP4 138 0.9239 0.8415 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58776 MILAN 4 138 0.9229 0.8389 OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.8631 0.7244 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.8777 0.8365 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.8777 0.8365 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9242 0.8892 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8085 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
06SP 42 WEPL 58785 PHLBURG3 115 0.8631 0.7244 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.8716 0.8335 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56573 SUMMIT 6 230 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.8727 0.8365 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 FAILUL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6545 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6545 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9282 0.9282 0.9281 0.9282 0.9281 0.9282 0.9581 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58783 SMITH-C3 115 0.9282 0.9284 OPEN LINE FROM BUS 56551 SALINE 3						0.8415		
06SP 42 WEPL 58785 PHLBURG3 115 0.8716 0.8335 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.8727 0.8365 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56861 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9242 0.8592 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 5676 PLAINVL3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6645 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56876 PLAINVL3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9467 0.8120 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 5676 PLAINVL3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 5676 SI KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 568751 KNOLL 3 115 CKT1 06SP<	06SP	42	WEPL	58776 MILAN 4 138	0.9229	0.8389	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
06SP 42 WEPL 58785 PHLBURG3 115 0.8727 0.8365 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58785 PHLBURG3 115 0.9242 0.8592 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6545 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56651 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMIIT 6 230 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9081 0.8326 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56861 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMIIT 6 230 CKT1 06SP <td>06SP</td> <td>42</td> <td>WEPL</td> <td>58785 PHLBURG3 115</td> <td>0.8631</td> <td>0.7244</td> <td>OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1</td> <td></td>	06SP	42	WEPL	58785 PHLBURG3 115	0.8631	0.7244	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58785 PHLBURG3 115 0.9242 0.8592 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6545 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8085 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56651 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9081 0.8262 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 5873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8967 OPEN LINE FROM BUS 56576 EMALL 783 115 TO BUS 5671 SMULG REN3 115 CKT1 06S	06SP	42	WEPL	58785 PHLBURG3 115	0.8716	0.8335	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6545 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8457 0.8085 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9081 0.8326 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9265 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.8365</td> <td></td> <td></td>						0.8365		
06SP 42 WEPL 58786 PLAINVL3 115 0.8266 0.6545 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8457 0.8085 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9081 0.8326 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9265 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP <td></td> <td></td> <td></td> <td></td> <td>0.9242</td> <td>0.8592</td> <td></td> <td></td>					0.9242	0.8592		
06SP 42 WEPL 58786 PLAINVL3 115 0.8467 0.8120 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58786 PLAINVL3 115 0.9081 0.8326 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56661 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 5661 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9665 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58661 KNOLL 3 115 CKT1 06SP	06SP	42	WEPL	58786 PLAINVL3 115	0.8266	0.6545	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58786 PLAINVL3 115 0.9081 0.8326 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9565 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.8786 0.7581 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP<	06SP	42	WEPL	58786 PLAINVL3 115	0.8457	0.8085	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9282 0.8362 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9965 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9956 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP <td>06SP</td> <td>42</td> <td>WEPL</td> <td>58786 PLAINVL3 115</td> <td>0.8467</td> <td>0.8120</td> <td>OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1</td> <td></td>	06SP	42	WEPL	58786 PLAINVL3 115	0.8467	0.8120	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9565 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9565 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9455 0.8823 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9299 0.8986 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8986 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSEL3 115 CKT1 06SP<	06SP	42	WEPL		0.9081	0.8326	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9289 0.8944 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9299 0.8967 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58793 SMITH-C3 115 0.9565 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9565 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9455 0.8823 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9299 0.8986 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8986 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSEL3 115 CKT1 06SP<	06SP	42	WEPL	58793 SMITH-C3 115	0.9282	0.8362	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58793 SMITH-C3 115 0.9565 0.8969 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.8963 0.7892 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58561 KNOLL 3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9455 0.8823 OPEN LINE FROM BUS 56561 EHALLTP3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9784 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 5878 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 58760 EHALLTP3 115 58762 ELLSWTH3115 06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 CKT 158760 EHALLTP3 115 58761 EHALLTP3 115 58776 ELLSWTH3115	06SP	42	WEPL		0.9289	0.8944	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
06SP 42 WEPL 58798 WALDO 3 115 0.8963 0.7892 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.8786 0.7581 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8942 CKT 158760 EHALLTP3 115 58762 ELLSWTH3115 06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	06SP	42		58793 SMITH-C3 115	0.9299	0.8967	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58798 WALDO 3 115 0.9455 0.8823 OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.8786 0.7581 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9228 0.8942 CKT 158760 EHALLTP3115 58762 ELLSWTH3115 06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	06SP	42		58793 SMITH-C3 115	0.9565	0.8969	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP 42 WEPL 58801 RUSSELL3 115 0.8786 0.7581 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1 06SP 42 WEPL 58801 RUSSELL3 115 0.9228 0.8942 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1 06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1		42	WEPL	58798 WALDO 3 115	0.8963	0.7892	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP 42 WEPL 58801 RUSSELL3 115 0.9229 0.8936 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT 1 06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	06SP	42	WEPL	58798 WALDO 3 115	0.9455	0.8823	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 58760 EHALLTP3115 58776 MULGREN3115 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	06SP	42	WEPL	58801 RUSSELL3 115	0.8786	0.7581	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SP 42 WEPL 58801 RUSSELL3 115 0.9238 0.8942 CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	06SP	42	WEPL	58801 RUSSELL3 115	0.9229	0.8936		
							58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
06SH 34 WEPL 58760 EHALLTP3 115 0.9417 0.8673 OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	06SP	42	WEPL	58801 RUSSELL3 115	0.9238	0.8942	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
	06SH	34	WEPL	58760 EHALLTP3 115	0.9417	0.8673	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	

	Transfer			1			
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
06SH	34	WEPL	58762 ELLSWTH3 115	0.9470	0.8658	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58786 PLAINVL3 115	0.9302	0.8768	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
06SH	34	WEPL	58798 WALDO 3 115	0.9534	0.8877	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06SH	34	WEPL	58801 RUSSELL3 115	0.9422	0.8696	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
06FA	26		NONE IDENTIFIED				
06WP	27		NONE IDENTIFIED				
07SP	43	WEPL	58750 BELOIT 3 115	0.9280	0.8954	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
07SP	43	WEPL	58760 EHALLTP3 115	0.8791	0.7494	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58762 ELLSWTH3 115	0.8806	0.7366	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58763 GLENELD3 115	0.9554	0.8855	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58768 HARPER 4 138	0.9212	0.8372	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58773 MED-LDG3 115	0.9370	0.8813	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58774 MED-LDG4 138	0.9392	0.8749	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58775 MILANTP4 138	0.9150	0.8267	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58776 MILAN 4 138	0.9138	0.8238	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58776 MILAN 4 138	0.9593	0.8992	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 58775 MILANTP4 138 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8632	0.7298	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.9242	0.8571	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8966	0.8632	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	WEPL	58785 PHLBURG3 115	0.8970	0.8641	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.8263	0.6599	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.9079	0.8299	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.8801	0.8487	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
07SP	43	WEPL	58786 PLAINVL3 115	0.8805	0.8496	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58787 PRATT 3 115	0.9361	0.8931	OPEN LINE FROM BUS 57036 CLEARWT4 138 TO BUS 57045 GILL W 4 138 CKT1	
07SP	43	WEPL	58793 SMITH-C3 115	0.9288	0.8413	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58793 SMITH-C3 115	0.9586	0.8959	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58798 WALDO 3 115	0.8983	0.7863	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58798 WALDO 3 115	0.9455	0.8847	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
07SP	43	WEPL	58801 RUSSELL3 115	0.8806	0.7546	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
07SP	43	WEPL	58801 RUSSELL3 115	0.9239	0.8944	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
	-					58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
07SP	43	WEPL	58801 RUSSELL3 115	0.9249	0.8936	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
0714/5	07			0.0400	0.0000		Solved Using a 2.5 MVA Mismatch
07WP	27	WEPL	58750 BELOIT 3 115	0.9420	0.8920	OPEN LINE FROM BUS 56861 [EMANHAT6230.00] TO BUS 58758 [CONCORD6230.00] CKT 1	and Locked Switch Shunts
							Only of University of CANVA Miner state
0714/0	07			0.0405	0.0047		Solved Using a 2.5 MVA Mismatch
07WP	27	WEPL	58757 CONCORD3 115	0.9425	0.8917	OPEN LINE FROM BUS 56861 [EMANHAT6230.00] TO BUS 58758 [CONCORD6230.00] CKT 1	and Locked Switch Shunts
				1			
0714/5	07			0.0405	0.0047		Solved Using a 2.5 MVA Mismatch
07WP	27	WEPL	58758 CONCORD6 230	0.9425	0.8917	OPEN LINE FROM BUS 56861 [EMANHAT6230.00] TO BUS 58758 [CONCORD6230.00] CKT 1	and Locked Switch Shunts
				1			Solved Using a 2.5 MVA Mismatch
07WP	27	WEPL	59762 CI ENEL D2 115	0.9438	0.8949		
0799	21	VVEPL	58763 GLENELD3 115	0.9438	0.0949	OPEN LINE FROM BUS 56861 [EMANHAT6230.00] TO BUS 58758 [CONCORD6230.00] CKT 1	and Locked Switch Shunts
				1			Solved Using a 2.5 MVA Mismatch
07WP	27	WEPL	58769 JEWELL 3 115	0.9452	0.8963	OPEN LINE FROM BUS 56861 [EMANHAT6230.00] TO BUS 58758 [CONCORD6230.00] CKT 1	and Locked Switch Shunts
07 991	<u> </u>		JUI US VENILLE D I ID	0.0402	0.0300		and Looked Owner Onumis

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
07WP	27		NONE IDENTIFIED	(* = /	()		
10SP	44	SUNC	56386 GRHMSUB3 115	0.9115	0.8881	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	SUNC	56386 GRHMSUB3 115	0.9122	0.8887	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	SUNC	56387 HILLCTY3 115	0.9115	0.8881	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	SUNC	56387 HILLCTY3 115	0.9122	0.8887	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58750 BELOIT 3 115	0.9512	0.8844	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58750 BELOIT 3 115	0.9247	0.8888	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
10SP	44	WEPL	58760 EHALLTP3 115	0.8686	0.7262	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58762 ELLSWTH3 115	0.8695	0.7110	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58762 ELLSWTH3 115	0.9544	0.8980	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58763 GLENELD3 115	0.9362	0.8579	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58769 JEWELL 3 115	0.9515	0.8865	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8154	0.6713	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8921	0.8177	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8875	0.8500	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58785 PHLBURG3 115	0.8883	0.8507	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.7576	0.5814	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8596	0.7728	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8651	0.8297	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
10SP	44	WEPL	58786 PLAINVL3 115	0.8660	0.8305	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9025	0.8065	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9517	0.8842	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58793 SMITH-C3 115	0.9462	0.8919	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.8887	0.7661	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58798 WALDO 3 115	0.9313	0.8656	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.8702	0.7319	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.9179	0.8874	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
10SP	44	WEPL	58801 RUSSELL3 115	0.9434	0.8899	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
10SP	44	WEPL	58798 WALDO 3 115	0.9309	0.9006	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
10SP	44	WEPL	58801 RUSSELL3 115	0.9185	0.8877	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
10WP	27	011110	NONE IDENTIFIED	0.0046	0.0700		
15SP	45	SUNC	56366 CNORTON3 115	0.9012	0.8708	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56366 CNORTON3 115	0.9019	0.8719	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56367 HERNDON3 115	0.9159	0.8906	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56367 HERNDON3 115	0.9166	0.8915	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56371 JOHNSON3 115	0.9088	0.8820	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56371 JOHNSON3 115	0.9095	0.8830	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP 15SP	45 45	SUNC SUNC	56372 NORCATR3 115 56372 NORCATR3 115	0.9041 0.9048	0.8754 0.8764	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP 15SP	45 45	SUNC	56373 RHOADES3 115	0.9048	0.8764	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CK11 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
155P	45 45	SUNC	56373 RHOADES3 115 56373 RHOADES3 115	0.9012	0.8708	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56673 SUMMIT 6 230 CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP 15SP	45 45	SUNC	56386 GRHMSUB3 115	0.9019	0.8719	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CK11 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
155P	45 45	SUNC	56386 GRHMSUB3 115	0.8794	0.8478	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56673 SUMMIT 6 230 CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
155P	45 45	SUNC	56387 HILLCTY3 115	0.8802	0.8489	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CK11 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CK11	
155P	45 45	SUNC	56387 HILLCTY3 115	0.8794	0.8478	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56673 SUMMIT 6 230 CKT1 OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56457 OBER T 3 115	0.8802	0.8806	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 565673 SUMMIT 6 230 CKT1	
1005	40	JUNC	30437 ODEN 13 113	0.3011	0.0000		

	Transfer						
Study	Amount			BC Voltage	TC Voltage		
Case	(MW)	AREA	Monitored Bus with Violation	(PU)	(PU)	Outaged Branch Causing Voltage Violation	Comments
15SP	45	SUNC	56457 OBER T 3 115	0.9083	0.8815	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	SUNC	56458 OBERLIN3 115	0.9071	0.8800	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	SUNC	56458 OBERLIN3 115	0.9078	0.8810	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58750 BELOIT 3 115	0.9361	0.8710	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58750 BELOIT 3 115	0.9182	0.8778	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.8576	0.6637	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58760 EHALLTP3 115	0.9409	0.8913	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.8581	0.6411	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9440	0.8865	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9395	0.8964	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58762 ELLSWTH3 115	0.9404	0.8976	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9195	0.8426	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9639	0.8905	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58763 GLENELD3 115	0.9308	0.8911	OPEN LINE FROM BUS 58750 BELOIT 3 115 TO BUS 58757 CONCORD3 115 CKT1	
15SP	45	WEPL	58769 JEWELL 3 115	0.9368	0.8737	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.7838	0.6440	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8783	0.8004	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8635	0.8179	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.8645	0.8194	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58785 PHLBURG3 115	0.9463	0.8773	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.7183	0.5490	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8439	0.7525	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8351	0.7900	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58786 PLAINVL3 115	0.8362	0.7916	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.8820	0.7879	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9445	0.8538	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9359	0.8798	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 58786 PLAINVL3 115 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9213	0.8812	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58793 SMITH-C3 115	0.9223	0.8824	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.8787	0.7123	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9176	0.8522	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9273	0.8888	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9281	0.8899	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58798 WALDO 3 115	0.9243	0.8905	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.8594	0.6712	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58778 MULGREN3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9116	0.8772	OPEN LINE FROM BUS 58760 EHALLTP3 115 TO BUS 58801 RUSSELL3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9322	0.8785	OPEN LINE FROM BUS 56551 SALINE 3 115 TO BUS 56561 KNOLL 3 115 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9311	0.8947	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56873 SUMMIT 6 230 CKT1	
15SP	45	WEPL	58801 RUSSELL3 115	0.9320	0.8958	OPEN LINE FROM BUS 56558 KNOLL 6 230 TO BUS 56561 KNOLL 3 115 CKT1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
15SP	45	WEPL	58798 WALDO 3 115	0.9245	0.8912	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	
						58760 EHALLTP3115 58778 MULGREN3115 CKT 158760 EHALLTP3115 58762 ELLSWTH3115	
15SP	45	WEPL	58801 RUSSELL3 115	0.9118	0.8779	CKT 158760 EHALLTP3115 58801 RUSSELL3115 CKT 1	

SPP-2004-029-1 Table 1.1a - Modeling Representation for Table 1.1 Includes Bus Numbers and Bus Names

	Transfer	1								1		
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
0500	40	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	<u></u>	101 7	103.6	3.038	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	May be relieved due to Westar Operating Procedure 900 - Outage of the JEC to East Manhattan 230kV Line	
05SP	42	WERE	WERE	5/151 AUBURN 3 115 10 5/16/ REENE 3 115 CK1 1	68	101.7	103.6	3.030	56652 JEC 6 230 10 56661 EMANHA16 230 CKT 1	0	Rebuild 15.50-mile line (1192.5 kcmil 45/7 ACSR, 223 MVA, 245	
05SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	99.4	100.9	3.3	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	5	MVA), Replace CTs and Wave Trap (2000 A.)	\$5,800,000
05SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	95.4	100.3	11.5	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	12	See Previous Upgrade Specified for Facility	φ0,000,000
05SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	95.3	100.3	11.5	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	12	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 625 -	
05SP	42	WERE	WERE	57309 WEMPORI3 115 to 57301 EAST ST3 115 CKT 1	92	102.3	104.7	5.2	56863 MORRIS 6 230 to 57305 MORRIS 3 115 to 56890 MORRIS 113.8 CKT 1	0	Outage of the Morris County Transformer	
05SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	99.2	100.4	3.5	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	9	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	120.1	121.7	6.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	112.0	113.9	6.5	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
0554	20	WERE	WERE		92	100.0	444.0	6.5		0	May be relieved due to Westar Operating Procedure 803 -	
05FA	26	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	109.9	111.8	6.5	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line May be relieved due to Westar Operating Procedure 803 -	
05WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	121.9	122.7	3.043	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
05WP	27	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	100.0	101.1	4.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	102.4	103.6	3.7	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	Ő	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	98.0	100.8	9.0	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	9	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	97.9	100.8	9.0	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	9	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 900 -	
06SP	42	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	103.1	105.8	4.3	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	Outage of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	127.1	129.4	5.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
06SP	42	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	109.8	111.8	4.5	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	104.3	109.6	12.2	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
	10										May be relieved due to Westar Operating Procedure 803 -	
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	112.5	115.0	5.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
06SP	42	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	109.5	112.1	5.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	
003F	42	WERE	WERE	57217 RELET 3 115 to 57331 RING HE3 115 CRT 1	92	109.5	112.1	5.0	50705 HOTT 7 345 to 50772 STRANGR7 345 CRT 1	0	May be relieved due to Westar Operating Procedure 803 -	
06FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	121.1	122.1	3.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
06FA	26	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	104.2	105.1	3.7	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	Ő	See Previous Upgrade Specified for Facility	
00.71	20	TERE			01	10112	100.1	0.1		Ŭ	May be relieved due to Westar Operating Procedure 803 -	
06FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	112.5	113.6	4.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
06FA	26	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	110.3	111.4	4.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 900 -	
06SH	34	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	99.5	101.4	3.8	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	3	Outage of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	125.4	127.1	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
06SH 06SH	34 34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97 97	110.8 108.2	112.3 112.2	4.4	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1 56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	108.2	112.2	11.4	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	103.1	104.8	5.1	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
00011		ALINE			51	100.1	104.0	0.1	55552 JEC 0 250 10 50001 EIVIAINIATO 250 OKT 1	U	May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	114.5	116.4	5.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	96.8	100.9	11.3	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	10	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	96.7	100.9	11.3	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	10	Rebuild 15.15 mile line with 1192.5 kcmil ACSR.	\$3,200,000
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	99.2	100.8	4.2	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	7	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
06SH	34	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	112.0	113.9	5.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
							100 5				May be relieved due to Westar Operating Procedure 803 -	
06WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	122.6	123.5	3.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
06WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	115.9	117.0	3.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	
UOVVP	21	WERE	VENE	57 152 OINOLVES 115 10 57 551 KING FILS 115 CKT 1	92	110.9	117.0	3.1	30703 FUTT / 343 10 30772 STRANGR/ 343 UKT 1	U	May be relieved due to Westar Operating Procedure 803 -	
06WP	27	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	114.0	115.1	3.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
00001	21	TTERE	TTERE	S.E., ALLET O HOLO OF SOT KING HED HO OKT I	54	114.0	110.1	0.1		Ū	May be relieved due to Westar Operating Procedure 1205 -	
07SP	43	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	127.7	130.8	10.0	57413 CIRCLE 3 115 to 57415 DAVIS 3 115 CKT 1	0	Outage of the Circle to Davis 115kV line	
											May be relieved due to Westar Operating Procedure 1306 -	
07SP	43	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	111.3	114.3	10.0	57513 HEC 2 69 to 57514 HEC GT 2 69 CKT 1	0	Outage of the HEC to HEC GT 69kV Line	
07SP	43	WERE		57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	108.0	111.0	9.8	REMOVE UNIT 1 FROM BUS 56693 [HEC U3 14.400] DISPATCH	0	Solution Undetermined	
07SP	43	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	106.9	110.2	10.9	58792 SEWARD 3 115 to 58796 ST-JOHN3 115 CKT 1	0	Solution Undetermined	

SPP-2004-029-1 Table 1.1a - Modeling Representation for Table 1.1 Includes Bus Numbers and Bus Names

	Transfer							l –				
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
						_			· · ·		May be relieved due to Westar Operating Procedure 803 -	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	128.7	130.5	4.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
07SP	43	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	110.0	111.8	4.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	104.3	109.5	11.8	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	104.3	109.5	11.7	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	113.5	115.6	4.4	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
07SP	43	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	110.6	112.7	4.5	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
07WP	27	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	119.2	120.6	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
07WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	100.2	101.9	6.1	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 -	
07WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	112.0	113.5	4.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
07WP	27	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	110.1	111.5	4.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	105.3	106.9	3.5	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 1203 -	
								= 0			Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE	WERE	57153 COLINE 3 115 to 57192 HOOKJCT3 115 CKT 1	92	119.7	123.4	7.6	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	115 kV Line	
											May be relieved due to Westar Operating Procedure 1203 -	
								= 0			Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44			57153 COLINE 3 115 to 57182 TECHILE3 115 CKT 1	106	104.3	106.7	5.8	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	115 kV Line	\$ 00.000
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57813 MACARTH2 69 CKT 1	68	117.9	119.9	3.1	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	0	Replace substation bus and jumpers at MacArthur 69 kV.	\$98,000
					=0						Replace disconnect switches at Gill 69 kV (use 800 A.), Replace	A / F A A A
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	127.0	129.2	3.6	57795 GILL E 2 69 to 57813 MACARTH2 69 CKT 1	0	line switch at Oatville 69 kV (use 800 A.).	\$45,000
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	111.2	113.0	3.1	57796 GILL W 2 69 to 57804 HAYSVLJ2 69 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 1203 -	
1000		WEDE	WEDE		400	100.1	400.0	40.7			Outage of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE	WERE	57180 TEC E 3 115 to 57192 HOOKJCT3 115 CKT 1	160	123.1	126.8	13.7	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	115 kV Line	
4000		WEDE	WEDE		000	110.0	444.0	40.0		0	May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	112.0	114.3	12.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 632 -	
1000		WEDE	WEDE		<u>co</u>	102.2	105.0	4.0		0	Overload of the Tecumseh Energy Center 161/115kV	
10SP	44	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	102.3	105.2	4.6	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	0	Tranformer	
											May be relieved due to Westar Operating Procedure 632 -	
10SP	44	WERE	WERE	57182 TECHILE3 115 WND 2 1	69	102.0	104.9	4.6		0	Overload of the Tecumseh Energy Center 161/115kV	
105P	44	WERE	WERE	57182 TECHILE3 115 WND 2 1	69	102.0	104.9	4.0	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	0	Tranformer May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	102.7	104.8	3.3		0	Outage of the Hoyt to Stranger 345 kV line	
105P	44	WERE	WERE	50920 TECHILLS 161 WIND 1	69	102.7	104.6	3.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	May be relieved due to Westar Operating Procedure 803 -	
10SP	44	WEDE	WERE	57182 TECHILE3 115 WND 2 1	69	102.3	104.4	3.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
103F	44	WERE	WERE	STIEZ TECHILES TIS WIND Z I	09	102.5	104.4	3.3	30703 HOTT 7 343 10 30772 3TRANGR7 343 CRT 1	0	May be relieved due to Westar Operating Procedure 632 -	
											Overload of the Tecumseh Energy Center 161/115kV	
10SP	44	WEDE	WERE	56920 TECHILL5 161 WND 1 1	69	99.5	102.5	4.6	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	2	Tranformer	
1031	44	WEILE	WEILE	S0320 TECHIELS TOT WIND T	03	33.5	102.5	4.0	57152 CIRCEVES 11510 57105 HTT 3015 115 CRT 1	2	May be relieved due to Westar Operating Procedure 632 -	
		1									Overload of the Tecumseh Energy Center 161/115kV	
10WP	27	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	97.8	100.2	6.0	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	12	Tranformer	
10771	<u> </u>	TTEINE	TTEILE			57.0	100.2	0.0		14	May be relieved due to Westar Operating Procedure 632 -	
		1					1				Overload of the Tecumseh Energy Center 161/115kV	
10WP	27	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	97.8	100.1	6.0	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	12	Tranformer	
10001	21	WEIKE	VVLINE	30920 TECHIELS TOT WIND T	03	31.0	100.1	0.0	30001 EMANITATO 230 10 30730 CONCOLDO 230 CKT 1	12	May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	57156 54&MERI3 115 to 57163 HOYT 3 115 CKT 1	179	110.1	111.6	6.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
1551	43	WEILE	WEILE	37130 3400 EKIS 113 10 3710 STIETT 3 113 EKT 1	173	110.1	111.0	0.1	30703 HOTT 7 343 to 30772 3 HANOK7 343 CKT 1	0	Outage of the hoyt to Stranger 545 kV line	
											May be relieved due to Westar Operating Procedure 401 -	
15SP	45	WERE	WERE	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	565	100.3	101.3	13.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Auburn Road to Jeffrey Energy Center 345kV Line	
					000						May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERF	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	117.3	120.4	6.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
15SP	45			Contingency Solution Not Converged	0.		120.1	0.0	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	Ť		
15SP	45	WERF	WERE	57162 GOODYR 3 115 to 57169 NTHLAND3 115 CKT 1	175	110.4	111.7	5.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Rebuild 3.44-mile line	\$940.000
										Ť	May be relieved due to Westar Operating Procedure 401 -	÷=,000
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	111.4	113.2	43.2	56766 JEC N 7 345 to 56770 MORRIS 7 345 CKT 1	0	Outage of the Jeffrey Energy Center - Morris County 345KV	
		1									May be relieved due to Westar Operating Procedure 401 -	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	111.2	112.7	37.2	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	0	Outage of the Jeffrey Energy Center to Hoyt 345kV Line	
15SP	45		WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	100.4	102.0	38.3	56769 LANG 7 345 to 56770 MORRIS 7 345 CKT 1	0	Solution Undetermined	
								00.0		, v	Condition Chaotominica	

SPP-2004-029-1 Table 1.1a - Modeling Representation for Table 1.1 Includes Bus Numbers and Bus Names

	Transfer											
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)	Area	To Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
											May be relieved due to Westar Operating Procedure 402 -	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	100.2	101.9	39.3	56766 JEC N 7 345 to 56773 SUMMIT 7 345 CKT 1	0	Outage of the Jeffrey Energy Center to Summit 345kV Line	
											May be relieved due to Westar Operating Procedure 617 -	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	100.1	101.6	37.8	56773 SUMMIT 7 345 to 56873 SUMMIT 6 230 to 56813 SUMMIT 114.4 CKT 1	0	Outage of the Summit 345/230kV Transformer	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	100.3	101.5	28.7	REMOVE UNIT 1 FROM BUS 57957 [IAT G1 124.000] DISPATCH	0	Solution Undetermined	
											May be relieved due to Westar Operating Procedure 900 -	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	99.5	101.4	45.1	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	3	Outage of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	123.7	124.5	4.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 401 -	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	102.5	103.3	4.2	56766 JEC N 7 345 to 56770 MORRIS 7 345 CKT 1	0	Outage of the Jeffrey Energy Center - Morris County 345KV	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	105.4	108.6	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 -	
15SP	45	WERE	WERE	57182 TECHILE3 115 WND 2 1	69	104.5	107.7	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	Outage of the Hoyt to Stranger 345 kV line	
15SP	45		WERE	56920 TECHILL5 161 WND 1 1	69	101.0	105.0	6.1	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	0	Solution Undetermined	
15SP	45	WERE	WERE	57182 TECHILE3 115 WND 2 1	69	100.6	104.3	5.7	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	0	Solution Undetermined	
15SP	45	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	97.9	101.4	5.4	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	8	Solution Undetermined	
15SP	45	WERE	WERE	57182 TECHILE3 115 WND 2 1	69	97.3	100.8	5.3	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	10	Solution Undetermined	
											Total Estimated Engineering and Construction Cost	\$10,083,000

SPP-2004-029-1 Table 1.2a - Modeling Representation for Table 1.2 Includes Bus Numbers and Bus Names

<u> </u>	Transfer	r	1 1							1		1
Study	Amount	From	То		Rate	BC %	TC %			ATC		
Case	(MW)	Area	Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Estimated Cost
	\ /						J			· /	May be relieved due to Westar Operating Procedure 900 - Outage	
05SP	42	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	106.9	111.0	6.7	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 1209 - Outage	
05SP	42	WERE	WERE	57301 EAST ST3 115 to 57309 WEMPORI3 115 CKT 1	92	109.0	110.3	3.0	57305 MORRIS 3 115 to 57309 WEMPORI3 115 CKT 1	0	of the Morris to West Emporia 115kV Line	
											May be relieved due to Westar Operating Procedure 900 - Outage	
05SP	42	WERE	WERE	57167 KEENE 3 115 to 57339 S ALMA 3 115 CKT 1	68	99.0	103.0	6.5	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	3	of the JEC to East Manhattan 230kV Line	
											May be relieved due to Westar Operating Procedure 625 - Outage	
05SP	42	WERE	WERE	57309 WEMPORI3 115 to 57301 EAST ST3 115 CKT 1	92	105.8	108.3	5.4	56863 MORRIS 6 230 to 57305 MORRIS 3 115 to 56890 MORRIS 113.8 CKT 1	0	of the Morris County Transformer	
05011	34	WERE	WERE		68	400.0	101.0	4.0		0	May be relieved due to Westar Operating Procedure 900 - Outage	
05SH 05SH	34 34	WERE		57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1 57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1	68 160	102.0 109.1	104.0 111.3	4.0	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	\$417,200
05SH	34 34	WERE		57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1	68	117.7	120.1	4.8	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	Rebuild 0.88 miles and reconductor with 1192.5 ACSR. See Previous Upgrade Specified for Facility	\$417,200
05SH	34	WERE		57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 2	92	102.7	104.8	5.7	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	Tear down double circuit, build single circuit with 1192.5 ACSR.	\$7,800,000
					*=					-	May be relieved due to Westar Operating Procedure 803 - Outage	.
05FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	110.9	112.3	5.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
05FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	102.5	103.9	5.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
05FA	26	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	100.4	101.8	5.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
05WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	113.3	114.1	3.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 900 - Outage	
06G	31	WERE		57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	102.2	104.7	5.6	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	
06G 06G	31 31	WERE	WERE	57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1 57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1	160 68	102.7	104.5 112.9	9.7 4.5	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1 56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06G	31	WERE	WERE	57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CK1 1	68	110.8	112.9	4.5	56872 ENICPHER6 230 t0 56873 SUMMIT 6 230 CKT 1	0	See Previous Upgrade Specified for Facility May be relieved due to Westar Operating Procedure 900 - Outage	
06SP	42	WEDE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	109.6	112.2	4.2	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	
0031	42	VVLINE	VVLINE	STIST ADDORN'S TIS IO STIOT REENE STIS ORT I	00	103.0	112.2	4.2	30032 3EC 0 230 10 30001 EMANIATO 230 CNT 1	0	May be relieved due to Westar Operating Procedure 803 - Outage	
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	119.2	121.2	4.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
000.		TTETTE	THEIRE		01	110.2	12112			Ű	Rebuild 15.50-mile line (1192.5 kcmil 45/7 ACSR, 223 MVA, 245	
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	102.5	107.8	12.0	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	MVA), Replace CTs and Wave Trap (2000 A.)	\$5,800,000
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	102.5	107.7	12.0	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	104.1	106.0	4.5	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	101.3	103.9	5.9	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 - Outage	
06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	104.3	106.4	4.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 900 - Outage	
06SP	42	WERE	WERE	57167 KEENE 3 115 to 57339 S ALMA 3 115 CKT 1	68	101.3	103.8	4.0	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	
06SP	42	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	101.3	103.5	4.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	
003F	42	WERE	WERE	57217 KELLT 3 115 to 57331 KING HE3 115 CKT 1	92	101.5	103.5	4.7	56765 HUTT / 545 10 56772 5TRANGR7 545 CRT 1	0	May be relieved due to Westar Operating Procedure 900 - Outage	
06SH	34	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	106.7	108.6	3.7	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	
00011	54	WEILE	WEILE	SHOT KODOKING TIG IO SHOT KEENE O TIG OKT T	00	100.7	100.0	0.1	30002 0E0 0 200 10 30001 EMPANITATO 200 OKT 1	0	May be relieved due to Westar Operating Procedure 803 - Outage	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	117.6	119.0	4.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	106.8	110.7	11.0	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	106.8	110.6	11.0	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	105.0	106.5	4.3	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	101.2	103.0	5.2	64787 COOPER 5 161 to 65024 COOPER Y 345 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 - Outage	
06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	106.4	107.9	4.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	1
06SH	34	WEDE	WERE	57167 KEENE 3 115 to 57339 S ALMA 3 115 CKT 1	68	100.0	101.8	3.6	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	May be relieved due to Westar Operating Procedure 900 - Outage of the JEC to East Manhattan 230kV Line	
0001	34	WERE	WERE	31101 NEENE 3 113 10 57339 5 ALMA 3 115 UKT 1	00	100.0	101.8	3.0	30032 JEC 0 230 10 30001 EMANHA10 230 UK1 1	U	May be relieved due to Westar Operating Procedure 803 - Outage	
06SH	34	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	103.9	105.4	4.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
06SH	34	WERE	WERE	57217 KELLY 3 115 to 57337 SENECA 3 115 CKT 1	92	94.0	103.4	29.0	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	7	Solution Undetermined	1
06SH	34	WERE		57217 KELLY 3 115 to 57337 SENECA 3 115 CKT 1	92	93.9	104.6	29.1	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	7	Solution Undetermined	
	-	1	1							1	May be relieved due to Westar Operating Procedure 900 - Outage	
06FA	26	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	100.9	103.1	5.9	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0	of the JEC to East Manhattan 230kV Line	
06FA	26	WERE	WERE	57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1	160	101.3	102.7	8.7	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06FA	26	WERE	WERE	57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1	68	109.3	110.8	4.0	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
06WP	27	WERE	WERE	57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1	68	104.4	106.0	4.2	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
0705	10		WEDE			100 5	105.6				May be relieved due to Westar Operating Procedure 1205 - Outage	1
07SP	43	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	132.5	135.6	10.1	57413 CIRCLE 3 115 to 57415 DAVIS 3 115 CKT 1	0	of the Circle to Davis 115kV Line	
07SP	43	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	116.1	119.2	10.1	57513 HEC 2 69 to 57514 HEC GT 2 69 CKT 1	0	May be relieved due to Westar Operating Procedure 1306 - Outage of the HEC to HEC GT 69kV Line	
07SP 07SP	43 43	WERE		57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141 141	116.1	119.2 118.3	10.1 14.5	57513 HEC 2 69 to 57514 HEC GT 2 69 CKT 1 56871 CIRCLE 6 230 to 58779 MULGREN6 230 CKT 1	0	of the HEC to HEC G1 69kV Line Solution Undetermined	
07SP	43 43		WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	112.9	115.3	9.8	REMOVE UNIT 1 FROM BUS 56693 [HEC U3 14.400] DISPATCH	0	Solution Undetermined	1
0131	40	WLINE	VILINE	01410 0100EE 0 110 10 01410 11EC 0 110 CKT 1	141	112.0	113.0	3.0		0	May be relieved due to Westar Operating Procedure 803 - Outage	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	119.8	121.5	3.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
07SP	43			57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	101.8	107.0	11.6	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	101.8	106.9	11.6	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	102.9	104.7	4.0	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0	See Previous Upgrade Specified for Facility	

SPP-2004-029-1 Table 1.2a - Modeling Representation for Table 1.2 Includes Bus Numbers and Bus Names

r r	Transfer	1					1	1		1		
Study	Amount	From	То		Rate	BC %	TC %			ATC		
Case	(MW)	Area	Area	Monitored Branch Overload	<mva></mva>	Loading	Loading	%TDF	Outaged Branch Causing Overload	(MW)	Solution	Estimated Cost
07SP	43	WERE	WERE		97	101.3		4.6	64787 COOPER 5 161 to 65024 COOPER Y 345 CKT 1) O	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 803 - Outage	
07SP	43	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	104.4	106.1	3.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
07SP	43	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	101.5	103.2	3.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
07WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	110.8	112.2	5.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
07WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	103.3	104.7	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
07WP	27	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	101.4	102.8	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
07WP	27	WERE	WERE	57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1	68	105.6	107.7	5.4	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 1203 - Outage	
											of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV	
10SP	44	WERE	WERE	57153 COLINE 3 115 to 57192 HOOKJCT3 115 CKT 1	92	119.3	123.0	7.6	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	Line	
											May be relieved due to Westar Operating Procedure 1203 - Outage	
											of the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE			106	108.5	110.9	5.8	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	115 kV Line	
10SP	44	WERE		57795 GILL E 2 69 to 57813 MACARTH2 69 CKT 1	68	115.9	117.9	3.1	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	0	See Previous Upgrade Specified for Facility	
10SP	44	WERE		57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	124.8	127.0	3.6	57795 GILL E 2 69 to 57813 MACARTH2 69 CKT 1	0	See Previous Upgrade Specified for Facility	
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	109.2	111.1	3.1	57796 GILL W 2 69 to 57804 HAYSVLJ2 69 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 1203 - Outage	
											of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV	
10SP	44	WERE	WERE	57180 TEC E 3 115 to 57192 HOOKJCT3 115 CKT 1	160	122.7	126.4	13.7	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	Line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
10SP	44	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	110.3	112.5	12.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 632 - Overload	
10SP	44	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	98.9	101.8	4.6	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	5	of the Tecumseh Energy Center 161/115kV Tranformer	
10WP	27	WERE	WERE	57374 SPHILPJ3 115 to 57438 WMCPHER3 115 CKT 1	68	99.0	100.5	3.8	56872 EMCPHER6 230 to 56873 SUMMIT 6 230 CKT 1	8	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 632 - Overload	
10WP	27	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	98.0	100.4	6.3	58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1	11	of the Tecumseh Energy Center 161/115kV Tranformer	
											May be relieved due to Westar Operating Procedure 632 - Overload	
10WP	27	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	97.9	100.4	6.3	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	11	of the Tecumseh Energy Center 161/115kV Tranformer	
											May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	57156 54&MERI3 115 to 57163 HOYT 3 115 CKT 1	179	106.7	108.7	7.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	106.9	110.4	7.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
15SP	45			Contingency Solution Not Converged					56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1			
											May be relieved due to Westar Operating Procedure 1203 - Outage	
											of the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV	
15SP	45	WERE	WERE	57153 COLINE 3 115 to 57182 TECHILE3 115 CKT 1	106	114.9	116.3	3.2	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	Line	
											May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	57162 GOODYR 3 115 to 57169 NTHLAND3 115 CKT 1	175	107.8	109.5	6.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 401 - Outage	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	106.7	108.6	46.9	56766 JEC N 7 345 to 56770 MORRIS 7 345 CKT 1	0	of the Jeffrey Energy Center - Morris County 345kV Line	
											May be relieved due to Westar Operating Procedure 400 - Outage	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	105.0	106.7	40.4	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	0	of the Jeffrey Energy Center to Hoyt 345kV Line	
4500	4-	WEDE	WEDE	57050 MOOKPERS 445 to 57070 OTHER TO 445 OVER	00	44.4.0	440.4			_	May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	57253 MOCKBRD3 115 to 57270 STULL T3 115 CKT 1	92	114.6	116.1	3.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
4505		WEDE	WEDE			101.5	400.1				May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	57182 TECHILE3 115 to 57270 STULL T3 115 CKT 1	92	121.9	123.4	3.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
4500	4-	WEDE	WEDE		000	404.0	400.0			0	May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	121.9	123.3	6.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
		1									May be relieved due to Westar Operating Procedure 401 - Outage	
15SP	45	WEDE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	104.8	105.8	4.9	56766 JEC N 7 345 to 56770 MORRIS 7 345 CKT 1	0		
1995	40	WERE	WERE	57100 TEC E 3 115 10 57182 TECHILE3 115 CKT 1	230	104.8	105.8	4.9	30/00 JEC N / 343 10 30//U MURKIS / 343 UKI 1	U	of the Jeffrey Energy Center - Morris County 345kV Line	
		1									May be relieved due to Westar Operating Procedure 401 - Outage	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	103.2	103.9	3.6	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	0	of the Auburn Road to Jeffrey Energy Center 345kV Line	
15SP 15SP	45	WERE			236	103.2	103.9	3.6	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1 57153 COLINE 3 115 to 57162 GOODYR 3 115 CKT 1	0	of the Auburn Road to Jeffrey Energy Center 345kV Line Solution Undetermined	
155P 155P	45	WERE			236	99.9	101.1	3.4	REMOVE UNIT 1 FROM BUS 56663 [LEC U5 24.000] DISPATCH	2	Solution Undetermined	
1000	40	WERE	WERE	37100 TEGE 3 113 10 37102 TEGHILE3 113 GKT 1	230	99.9	100.5	3.1	NEWOVE ONLET FROM DUS 30003 [LEC US 24.000] DISPATCH	2	May be relieved due to Westar Operating Procedure 401 - Outage	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	99.8	100.4	3.1	56772 STRANGR7 345 to 57977 CRAIG 7 345 CKT 1	4	of the Stranger Creek - Craig 345kV Line	
15SP 15SP	45 45	WERE		57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1 57182 TECHILE3 115 to 57180 TEC E 3 115 CKT 1	236	99.8 100.1	100.4	3.1	56772 STRANGR7 345 to 57977 CRAIG 7 345 CKT 1 57153 COLINE 3 115 to 57456 COLINE 269.0 to 57443 COLINE 134.5 CKT 1	4	Solution Undetermined	
1000	40	WERE	WERE	57 162 TECHILES 115 10 57 180 TEC E 3 115 CKT 1	230	100.1	100.7	3.3	57155 COLINE 5 115 t0 57456 COLINE 269.0 t0 57443 COLINE 134.5 CKT 1	U	May be relieved due to Westar Operating Procedure 803 - Outage	
15SP	45	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	100.5	103.9	5.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	of the Hoyt to Stranger 345 kV line	
1000	40	WERE	WERE	JUJZU LECHIELO IOT WIND I	09	100.5	103.9	0.Z	30103 FUTT / 343 10 30772 STRANGR/ 343 URT 1	U	May be relieved due to Westar Operating Procedure 632 - Overload	
15SP	45	WEDE	WERE	56920 TECHILL5 161 WND 1 1	69	97.5	101.1	5.6	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	9	of the Tecumseh Energy Center 161/115kV Tranformer	
1005	40	VVERE	WERE	JUSZU LECHILLS TOT WIND I	09	91.0	101.1	0.0	3/103 HUTL 3 113 10 3/103 HITJG13 113 UKL1	9	Total Estimated Engineering and Construction Cost	\$14,017,200
											Total Estimated Engineering and Construction Cost	

Inst. Num. Num. <t< th=""><th></th><th>Transfer</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>		Transfer											
Str. Horse	Study		From			Rate	BC %	TC %			ATC		Estimated
Open A Web R Pack R Straw Marken bit is account of the straw Mark			Area	To Area	Monitored Branch Overload				%TDF	Outaged Branch Causing Overload			
EXX B UPPE UPP	0500	40	WEDE	WEDE		00	100.0	400.7	5.0		0		
Op/L No. VIEW PROVE STRUCTURE AND INSTRUCT OF THE STRUCTURE AND TAKES AND TO AND TAKES AND T	05SP	42	WERE	WERE	57309 WEMPORI3 115 to 57301 EAST ST3 115 CKT 1	92	100.3	102.7	5.2	56863 MURRIS 6 230 to 57305 MURRIS 3 115 to 56890 MURRIS 113.8 UKT 1	0		
Op/A Op/A Verse V	05FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	115.0	116.4	5.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
Bash Act Network Desc STOT NELLY 31 So ST31 KNG LL3 15 COT1 G Stot Network Stot Network <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>													
OPEA S VIEW UNIT UNIT UNI	05FA	26	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CK1 1	92	106.8	108.2	5.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
Mark Mark Prist AURANNA 115 by 5767 KERL 5115 CUT Mor Total Auge More Mark Mark <td>05FA</td> <td>26</td> <td>WERE</td> <td>WERE</td> <td>57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1</td> <td>92</td> <td>104.7</td> <td>106.1</td> <td>5.0</td> <td>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1</td> <td>0</td> <td></td> <td></td>	05FA	26	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	104.7	106.1	5.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
Mark Mark <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>May be relieved due to Westar Operating Procedure 900 - Outage of</td><td></td></th<>												May be relieved due to Westar Operating Procedure 900 - Outage of	
etch WIRE WIRE <th< td=""><td>06SH</td><td>34</td><td>WERE</td><td>WERE</td><td>57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1</td><td>68</td><td>100.7</td><td>102.6</td><td>3.8</td><td>56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1</td><td>0</td><td></td><td></td></th<>	06SH	34	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	100.7	102.6	3.8	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0		
Const. Wite: Wite: <t< td=""><td>06SH</td><td>34</td><td>WERE</td><td>WERE</td><td>57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1</td><td>97</td><td>121.4</td><td>122.9</td><td>4.3</td><td>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1</td><td>0</td><td></td><td></td></t<>	06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	121.4	122.9	4.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
Size Verify Verify <td></td> <td>34</td> <td>WERE</td> <td></td> <td>57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1</td> <td></td> <td></td> <td>110.3</td> <td>11.4</td> <td>56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1</td> <td>0</td> <td>See Previous Upgrade Specified for Facility</td> <td></td>		34	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1			110.3	11.4	56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1	0	See Previous Upgrade Specified for Facility	
No. VERE WERE VERE WERE OFFEE VERE STE2 CRCUL 3116 b 2731 KNR H 3116 CrT 22 This 4.1 6676 HOYT 7 45 b 6772 STEAMORT 34C CrT 0 May be inclose due to Value of Longer Differ Longer Differ Long													
Open WERE WERE VERE VERE <th< td=""><td>06SH</td><td>34</td><td>WERE</td><td>WERE</td><td>5/152 CIRCLVL3 115 to 5/165 HTT JCT3 115 CKT 1</td><td>97</td><td>107.2</td><td>108.7</td><td>4.3</td><td>57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1</td><td>0</td><td></td><td></td></th<>	06SH	34	WERE	WERE	5/152 CIRCLVL3 115 to 5/165 HTT JCT3 115 CKT 1	97	107.2	108.7	4.3	57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1	0		
desk 4. VRER V	06SH	34	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	110.3	111.9	4.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
Construct Construct May be releved at the Water Opening Process 400 - Charge of the Julty Energy 400 - Chare													
068F 42 WRER VERE STAS LABURA 2200 56822 LC 6 200 CKT 66 104. 1070 8.1 0670 FWT 7 340 56706 LC 7 340 CKT 0 No.	06SH	34	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	107.8	109.4	4.2	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
des 4. WERE WERE STESTALBURRN 3115 b. 57187 KEENE 3115 D.CT1 68 10.4 107 4.2 SEES JEC & 2.00 b.6865 FLEXANHATE 20.0CT1 0 May be mislended due to Waiter Operating Producting Sector Uniting Producting Sector Unit Sector Sector Un	06SP	42	WERE	WERE	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	565	106.4	107.0	8.1	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	0		
Cosp 4. WRR WRR WRR Description Total Tot													
Inspect 4 VERE VERE <th< td=""><td>06SP</td><td>42</td><td>WERE</td><td>WERE</td><td>57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1</td><td>68</td><td>104.4</td><td>107.0</td><td>4.2</td><td>56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1</td><td>0</td><td></td><td></td></th<>	06SP	42	WERE	WERE	57151 AUBURN 3 115 to 57167 KEENE 3 115 CKT 1	68	104.4	107.0	4.2	56852 JEC 6 230 to 56861 EMANHAT6 230 CKT 1	0		
cs/ verse wrese wrese strate of the strate s	0650	12	WEDE	WEDE	57152 CIRCI VI 3 115 to 57165 HTL ICT3 115 CKT 1	07	123.6	125.6	18	56765 HOVE 7 345 to 56772 STRANGR7 345 CKT 1	0		
dssp 42 WERE WERE WERE WERE WERE WERE WERE Stack 2000 A <	0031	42	WEIKE	WEIKE	37132 CIRCEVES 113 to 37103 111 3013 113 CR1 1	31	123.0	123.0	4.0	30703 HOTT 7 343 to 30772 STRANGR7 343 CRT 1	0		
OBSP 42 WERE VERE WERE VERE WERE VERE WERE VERE WERE W		12	WERE		57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	01	107.1	109.1			0		\$5,800,000
OBSP 42 WERE 67152 CRECUL3 115 to 5716 HTL X73 115 GXT1 97 1018 1048 7.1 56882 LEC 6230 to 6881 EMANHAR 230 CKT1 0 See Previous Upgrand Design/produce Biol Opgrand 058P 42 WERE 57152 CIRCUL3 115 to 5731 KING HL3 115 CKT1 92 1068 1110 4.7 66766 HOYT 7.345 to 56772 STRANGR 7.345 CKT 1 0 May be relieved due to Weatar Operating Procedue Bi3 - Outage di 06WP 22 WERE 57152 CIRCUL3 115 to 5766 HTL X73 115 CKT 1 92 105.9 108.0 4.7 56766 HOYT 7.345 to 55772 STRANGR 7.345 CKT 1 0 May be relieved due to Weatar Operating Procedue Bi3 - Outage di 06WP 27 WERE S7152 CIRCUL3 115 to 5731 KING HL3 115 CKT 1 92 112.3 113.4 3.7 56765 HOYT 7.345 to 55772 STRANGR 7.345 CKT 1 0 May be relieved due to Weatar Operating Procedue Bi3 - Outage di 06WP 27 WERE WERE 57152 CIRCUL3 115 to 5731 KING HL3 115 CKT 1 92 112.3 113.4 3.7 56755 HOYT 7.345 to 55772 STRANGR 7.345 CKT 1 0 May be relieved due to Weatar Operating Procedue Bi3 - Outage di 07WP													
cs were Sriss CircLVL3 115 to 5731 KNG HJ3 115 CKT1 2 108.8 11.0 4.7 Ströb HOYT 7.345 to 5772 STRANGR 7.36 CKT 1 0 May be releved due to Wester Operating Procedure 830 - Outage d 06WP 27 WERE WERE ST12 CIRCLVL3 115 to 5731 KNG HJ3 115 CKT 1 97 119.1 120.0 3.1 56765 HOYT 7.345 to 56772 STRANGR 7.36 CKT 1 0 May be releved due to Wester Operating Procedure 830 - Outage d 06WP 27 WERE WERE 57152 CIRCLVL3 115 to 5731 KNG HJ3 115 CKT 1 97 119.1 120.0 3.1 56765 HOYT 7.345 to 56772 STRANGR 7.36 CKT 1 0 May be releved due to Wester Operating Procedure 830 - Outage d 06WP 27 WERE WERE 57152 CIRCLVL3 115 to 5731 KNG HJ3 115 CKT 1 92 112.3 13.4 3.7 59765 HOYT 7.345 to 56772 STRANGR 7.36 CKT 1 0 May be releved due to Wester Operating Procedure 830 - Outage d 06WP 27 WERE WERE 5714 SCRL2 3115 to 5714 HEC 3115 CKT 1 92 10.3 11.4 3.8 56765 HOYT 7.345 to 56775 STRANGR 7.36 CKT 1 0 May be releved due to Wester Operating Procedure 830 - Outage d 116 YKT 1											-		
685P 42 WERE 67152 CIRCUV.3115 to 57331 KING H.3 115 CKT 1 92 108.8 11.0 4.7 56766 HOYT 7 345 to 5772 STRANGR 7.36 CKT 1 0 the Hoy to Stranger 345 V line 068P 42 WERE WERE 57152 CIRCUV.3 115 to 5733 KING H.3 115 CKT 1 92 108.0 4.7 56766 HOYT 7.345 to 5772 STRANGR 7.36 CKT 1 0 the Hoy to Stranger 345 V line 06WP 27 WERE WERE 57152 CIRCUV.3 115 to 5733 KING H.3 115 CKT 1 92 112.3 113.4 3.7 56766 HOYT 7.345 to 56772 STRANGR 7.36 CKT 1 0 May be releved due to Weath 7 opening Procedure 803 - Oktage d 06WP 27 WERE WERE 57152 CIRCUV.3 115 to 5733 KING H.3 115 CKT 1 92 112.3 113.4 3.7 56766 HOYT 7.345 to 55772 STRANGR 7.36 CKT 1 0 May be releved due to Weath 7 opening Procedure 803 - Oktage d 0FWP 27 WERE WERE 5713 CIRCLE 3.115 to 5714 HE 11.1 3.8 56776 HOYT 7.345 to 55772 STRANGR 7.36 CKT 1 0 May be releved due to Weath 7 opening Procedure 803 - Oktage d 075P 43 WERE WERE 5713 CIRCLE 3.115 to 5714 HE </td <td>0001</td> <td>42</td> <td>WEIKE</td> <td>WEIKE</td> <td>57152 CIRCEVES 11510 57105 111 3013 115 CR1 1</td> <td>31</td> <td>101.0</td> <td>104.0</td> <td>7.1</td> <td>30032 3EC 0 230 10 3000 T EMANITATO 230 CNT T</td> <td>0</td> <td></td> <td></td>	0001	42	WEIKE	WEIKE	57152 CIRCEVES 11510 57105 111 3013 115 CR1 1	31	101.0	104.0	7.1	30032 3EC 0 230 10 3000 T EMANITATO 230 CNT T	0		
OBSP 42 WERE WERE S7217 KELV 3115 Ib 57331 KING HL3 115 CKT 1 92 105.9 106.0 4.7 S6766 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be releved due to Wester Operating Procedure 80 - Outage of the Hoyt to Stranger 345 KV line 06WP 27 WERE WERE S7152 CIRCLV.3 115 to 57331 KING HL3 115 CKT 1 92 112.3 113.4 3.7 S6765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be releved due to Wester Operating Procedure 80 - Outage of the Hoyt to Stranger 345 KV line 06WP 27 WERE WERE S7152 CIRCLV.3 115 to 5731 KING HL3 115 CKT 1 92 112.3 113.4 3.7 S6765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be releved due to Wester Operating Procedure 803 - Outage of the Hoyt to Stranger 345 KV line 06WP 27 WERE S7413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 141 128 113.5 10 S7413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 41 128 113.5 10.0 S7413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 41 128 113.5 110.0 S7413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 41 128 45713 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 41 <td>06SP</td> <td>42</td> <td>WERE</td> <td>WERE</td> <td>57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1</td> <td>92</td> <td>108.8</td> <td>111.0</td> <td>4.7</td> <td>56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1</td> <td>0</td> <td></td> <td></td>	06SP	42	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	108.8	111.0	4.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
OP/OP Z WERE WERE ST4S CIRCLUS 115 to 57165 HTI JCT3 115 CKT1 97 111 1200 3.1 56766 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be releved due to Westar Operating Procedure 803- to 100 How Procedure 803- 000 How Procedure 803- 100 How Procedure 803-100 How Procedure 804-100 How													
OWNP 27 WERE WERE General Stringer and Strin	06SP	42	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	105.9	108.0	4.7	56765 HOY1 7 345 to 56772 STRANGR7 345 CKT 1	0		
OW/P 27 WERE WERE S7152 CIRCLUL3 115 to 57331 KING HL3 115 CKT1 92 112.3 13.4 3.7 56766 HOYT 7 345 to 5672 STRANGR7 346 CKT1 0 May be relieved due to Westa Coperating Proceeding 00 mage of the Hoyt to Stranger 70 06WP 27 WERE WERE 57152 CIRCLU.3 115 to 57331 KING HL3 115 CKT1 92 110.3 111.4 3.8 56766 HOYT 7 345 to 5672 STRANGR7 346 CKT1 0 May be relieved due to Westa Coperating Proceeding 00 0.01dge of the Hoyt to Stranger 70.0 KING HL3 115 CKT1 141 12.8 131.5 10.0 57413 CIRCLE 3 115 to 5714 HEC GT 2 G CKT 1 0 May be relieved due to Westa Coperating Proceeding 00 0.01dge of the Hoyt to Stranger 70.0 KING HL3 115 CKT 1 141 112.8 113.1 10.0 57413 EIC 2.69 to 57514 HEC GT 2 G CKT 1 0 May be relieved due to Westa Coperating Proceeding 00 0.01dge of the HCC to EO Cortanger 70.0 KING HL3 115 CKT 1 141 108.8 111.7 10.8 57513 HEC 2.69 to 57514 HEC GT 2 G CKT 1 0 May be relieved due to Westa Coperating Proceeding 00 0.01dge of the HCC to EO Cortanger 70.0 KING HL3 115 CKT 1 0 May be relieved due to Westa Coperating Proceeding 00 0.01dge 00 0.000 0.000 SPAT 0.01K	06WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	119.1	120.0	3.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
OWP 27 WERE WERE F7217 KELLY 3 115 to 5733 KING HL3 115 CKT 1 92 110.3 111.4 3.8 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Circle to Davis 115k V line 075P 43 WERE WERE S7413 CIRCLE 3 115 to 57419 HEC 3 115 to 574												May be relieved due to Westar Operating Procedure 803 - Outage of	
Operative 27 WERE VERE	06WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	112.3	113.4	3.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
orgs 43 WERE S7413 CIRCLE 3 115 to 57419 HEC 3 115 cK 1 141 128.5 131.5 10.0 57413 CIRCLE 3 115 to 57419 LEC 3 115 cK 1 0 0728 43 WERE WERE S7413 CIRCLE 3 115 to 57419 HEC 3 115 cK 1 141 112.5 131.5 115 to 57119 LEC 9 0 57513 HEC 2 9 0 57513 HEC 3 115 to 57513 FEC 0 May be releved due to Westar Operating Procedure 1205 - Outage of the HEC to HEC of 16 0 Walls 0759 43 WERE S7413 CIRCLE 3 115 to 57419 HEC 3 115 cK 11 141 108.5 111.7 10.8 58792 SWARD 3 115 to 57313 FEC 2 8 0 to 5743 HEC 134 5 CK 1 0 Solution Undetermined 0759 43 WERE 57419 HEC 3 115 to 5713 CIRCLE 3 115 to 5713 CIRCLE 3 115 CK 11 141 102.5 14.4 58871 CIRCLE 2 310 5 0713 CIRCLE 3 10 5 CK 11 6 86872 CIRCLVE 3 115 to 5713 CIRCLE 3 10 5 CK 11 4 Solution Undetermined 0759 43 WERE WERE	06WP	27	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	110.3	111.4	3.8	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
orsps 43 WERE WERE 57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 111 112.0 115.1 9.9 57513 HEC 2.69 to 57514 HEC GT 2.69 CKT 1 0 May be relieved due to Westar Operating Procedure 1306 - Outage of the HEC to HEC GT 564V Line 075P 43 WERE 57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 141 108.8 111.9 10.2 REMOVE UNIT 1 FROM BUS 56833 (HEC U3 14.400 DISPATCH 0 Solution Undetermined 075P 43 WERE 57413 CIRCLE 3 115 to 57413 HEC 3 115 to 57413 CIRCLE 3 115 CKT 1 141 101.7 10.8 58792 SEWARD 3 115 to 57413 FC XT 1 0 May be relieved due to Westar Operating Procedure 626 - Outage of the HEC TABEROY CENTER 075P 43 WERE WERE 57419 HEC 3 115 to 57413 CIRCLE 3 115 CKT 1 141 90.1 102.5 14.4 66871 CIRCLE 6 230 to 56485 SPERTER113.8 CKT 1 4 Solution Undetermined 075P 43 WERE 57419 HEC 3 115 to 5713 HEC 3115 CKT 1 97 10.5 8.8 5704 GILL 4 138 to S773 GEU L3 13.8 CKT 1 4 Solution Undetermined 075P 43 WERE WERE 5713 CIRCLE 3 115 CKT 1 <td>00111</td> <td>21</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Ŭ</td> <td></td> <td></td>	00111	21									Ŭ		
orsp 43 WERE 57413 CIRCLE 3115 to 57419 HEC 3115 CKT 1 141 112.0 115.1 9.9 57513 HEC 269 to 57514 HEC 0 the HEC to HEC GT 68kV Line 075P 43 WERE WERE 57413 CIRCLE 3115 to 57419 HEC 3115 CKT 1 141 108.5 111.7 10.8 88792 SEWARD 3115 to 57419 HEC 3115 CKT 1 0 Solution Undetermined 075P 43 WERE WERE 57413 CIRCLE 3 115 to 57413 CIRCLE 3 115 CKT 1 141 108.5 111.7 10.8 88792 SEWARD 3 115 to 57413 CIRCLE 1315 CKT 1 0 Methestar Operating Procedure 626 - Outage of 075P 43 WERE 57419 HEC 3115 to 5713 HEC 289 to 5743 CIRCLE 3 115 to CKT 1 0 Methestar Operating Procedure 626 - Outage of 075P 43 WERE KERE 57419 HEC 3115 to 5713 HEC 289 to 5726 GIL 23 115 cKT 1 0 Methestar Operating Procedure 626 - Outage of 075P 43 WERE KERE 57419 HEC 3115 to 5713 HEC 280 to 5773 GIL 2315 cKT 1 4 Solution Undetermined 075P<	07SP	43	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	128.5	131.5	10.0	57413 CIRCLE 3 115 to 57415 DAVIS 3 115 CKT 1	0		
OTSP 43 WERE 57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 141 108.8 111.7 10.8 68792 SEWARD 3 115 to 5713 HEC 3 115 CKT 1 0 Solution Undetermined 07SP 43 WERE 57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1 141 108.5 111.7 10.8 68792 SEWARD 3 115 to 5713 HEC 3 115 CKT 1 0 Solution Undetermined 07SP 43 WERE 57419 HEC 3 115 to 5713 CIRCLE 3 115 CKT 1 141 108.5 111.7 104.7 9.9 57419 HEC 3 115 to 5713 CIRCLE 3 115 CKT 1 0 May be relieved due to Westar Operating Procedure 626 - Outage of the HUTCHINSON BLERCG VENTER TRANSFORMER 07SP 43 WERE 57419 HEC 3 115 to 5713 CIRCLE 3 115 CKT 1 141 99.0 102.0 9.7 56469 SPERVIL 23 0 to 56743 CIRCLE 133 CKT 1 4 Solution Undetermined 07SP 43 WERE 57419 HEC 3 115 to 5713 CIRCLE 3 115 CKT 1 141 99.0 102.0 9.7 56469 SPERVIL 23 0 to 56733 CERCLE 133 CKT 1 4 Solution Undetermined 07SP 43 <td>075P</td> <td>13</td> <td>WERE</td> <td>WERE</td> <td>57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1</td> <td>141</td> <td>112.0</td> <td>115.1</td> <td>99</td> <td>57513 HEC 2 60 to 57514 HEC GT 2 60 CKT 1</td> <td>0</td> <td></td> <td></td>	075P	13	WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	112.0	115.1	99	57513 HEC 2 60 to 57514 HEC GT 2 60 CKT 1	0		
07SP 43 WERE WERE 57413 CIRCLE 3 115 to 57419 HEC 3 115 to 57413 CIRCLE 3 115 CKT 1 108.5 111.7 10.8 58792 SEWARD 3 115 to 5876 ST-JOHN3 115 CKT 1 0 May be relieved due to Westar Operating Procedure 62 - Outage of the HUTCHINSON ENERGY CENTER TRANSFORMER 07SP 43 WERE WERE 57419 HEC 3 115 to 57413 CIRCLE 3 115 CKT 1 141 101.7 104.4 58871 CIRCLE 3 15 CKT 1 0 May be relieved due to Westar Operating Procedure 62 - Outage of the HUTCHINSON ENERGY CENTER TRANSFORMER 07SP 43 WERE 57419 HEC 3 115 to 57413 CIRCLE 3 115 CKT 1 141 98.1 102.5 14.4 56871 CIRCLE 3 115 CKT 1 4 Solution Undetermined 07SP 43 WERE WERE 57419 HEC 3 115 to 57413 CIRCLE 3 115 CKT 1 141 98.0 102.0 9.7 56469 SPERVIL7 345 to 5873 GEU 3 14.4 CKT 1 11 Solution Undetermined 07SP 43 WERE 57152 CIRCLVL3 115 to 57163 HTL CT3 115 CKT 1 97 102.2 107.4 11.6 56469 SPERVIT 7 345 to 5772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoty											0		
OTSP 43 WERE WERE S7419 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 101.7 104.7 9.9 57419 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 101.7 104.7 9.9 57419 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 98.1 102.5 14.4 56871 CIRCLE 3 115 to 57413 CIRCLE 3 115 CKT 1 141 98.1 102.0 9.7 56469 SPERVIL 7345 to 56795 SPEAVLE 13.8 CKT 1 4 Solution Undetermined 07SP 43 WERE 57419 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 99.0 102.0 9.7 56469 SPERVIL 7345 to 56795 SPEAVLE 20 to 56486 SPERVIE 13.8 CKT 1 4 Solution Undetermined 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 126.2 126.2 3.7 56766 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHAT6 200 to 56736 CKT 1 0 See Previous Upgrade Specified for Facility			WERE	WERE	57413 CIRCLE 3 115 to 57419 HEC 3 115 CKT 1	141	108.5	111.7	10.8				
OTSP 43 WERE WERE 57419 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 98.1 102.5 14.4 56871 CIRCLE 6 230 to 57413 CIRCLE 3 115 to 57413 CIRCLE 3 115 CKT 1 6 Solution Undetermined 07SP 43 WERE WERE 57419 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 99.0 102.0 9.7 56469 SPERVIL7 345 to 56795 SPEARVL6 230 to 56468 SPEATER113.8 CKT 1 4 Solution Undetermined 07SP 43 WERE WERE 57149 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 97.5 124.5 126.2 3.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHATG 230 to 58738 CONCORD 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE VERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 97 102.2 107.4 <	0700	10		WEDE			101 7	1017			•		
OTSP 43 WERE WERE 57149 HEC 3115 to 57413 CIRCLE 3 115 CKT 1 141 99.0 102.0 9.7 56469 SPERVL2 345 to 58795 SPEARVL6 230 to 56488 SPERTER113.8 CKT 1 4 Solution Undetermined 07SP 43 WERE WERE 571413 CIRCLE 3 115 to 57413 CIRCLE 3 115 CKT 1 141 99.0 102.0 9.7 56469 SPERVL7 345 to 58795 SPEARVL6 230 to 56488 SPERTER113.8 CKT 1 1 Solution Undetermined 07SP 43 WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 124.5 126.2 3.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 kV line 07SP 43 WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE 57152 CIRCLVL3 115 to 57135 KIN 1 97 102.2 107.4 11.6 56875 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>													
OTSP 43 WERE 57119 HEC 3115 to 57131 CIRCLE 3 115 CKT 1 141 97.5 100.5 9.8 57044 GILL E 4 138 to 57796 GILL W 269.0 to 56733 GEC U3 14.4 CKT 1 11 Solution Undetermined 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 126.2 3.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 KV line 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 106.2 107.9 3.9 57382 IATAN 7 345 to 58199 ST JOE 3 345 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHATE 230 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 97 102.2 107.4 11.6 58675 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP </td <td></td>													
OTSP 43 WERE WERE WERE WERE ST152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 124.5 126.2 3.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 the Hoy to Stranger 345 kV line 07SP 43 WERE WERE ST152 CIRCLVL3 115 to 57166 HTI JCT3 115 CKT 1 97 102.2 107.4 10.6 5686 HOYT 7 345 to 56979 STJQE 3 345 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE ST152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHATE 230 to 58758 CONCORDE 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE ST152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 97 102.2 107.3 11.6 58757 CONCORD2 315 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 109.3 111.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt t	07SP	43	WERE	WERE		141	97.5	100.5	9.8	57044 GILL E 4 138 to 57796 GILL W 269.0 to 56733 GEC U3 14.4 CKT 1	11	Solution Undetermined	
OTSP 43 WERE S7152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 106.2 107.9 3.9 57982 IATAN 7 345 to 59199 ST JOE 3 345 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57166 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57166 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57311 KING HL3 115 CKT 1 97 102.2 107.4 11.6 58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoty to Stranger 345 kV line 07SP 43 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 106.3 108.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoty to Stranger 345 k	0700	40 T	WEDE	WEDE		07	404.5	400.0	0.7		_		
OTSP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57166 HTI JCT3 115 CKT 1 97 102.2 107.4 11.6 56861 EMANHAT6 230 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 97 102.2 107.3 11.6 58757 CONCORD3 115 to 58758 CONCORD6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 109.3 111.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved to to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 5731 KING HL3 115 CKT 1 97 115.7 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy													
OTSP 43 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 102.2 107.3 11.6 58757 CONCORD3 115 to 58758 CONCORD 6 230 CKT 1 0 See Previous Upgrade Specified for Facility 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 109.3 111.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 kV line 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 106.3 108.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 92 105.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 108.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0						97							1
O7SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 109.3 111.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 the Hoy to Stranger 345 KV line 07SP 43 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 106.3 108.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 KV line 07WP 27 WERE WERE 57152 CIRCLVL3 115 to 5731 KING HL3 115 CKT 1 97 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 KV line 07WP 27 WERE 57152 CIRCLVL3 115 to 5731 KING HL3 115 CKT 1 97 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 5731 KING HL3 115 CKT 1 97 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoy to St	07SP	43										See Previous Upgrade Specified for Facility	
OTSP 43 WERE WERE 57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1 92 106.3 108.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 97 115.7 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 108.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 07WP 27 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 108.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 0 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 108.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May b	0760	42	WEDE	WEDE		02	100.2	111.0	26	FRAGE HOVE 7 345 to FRAZO STRANCRA 345 OVE 4	0		
OTSP 43 WERE WERE 57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1 92 106.3 108.0 3.6 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 the Hoyt to Stranger 345 kV line 07WP 27 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 07WP 27 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 07WP 27 WERE WERE 57152 CIRCLVL3 115 to 5731 KING HL3 115 CKT 1 92 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	0/3P	43	VERE	VERE	57 152 GINGEVES 115 10 57 551 KING HE3 115 CKT 1	32	109.3	111.0	3.0	30/03 HUTT / 343 10 30/72 3TRANGR / 343 CKT I	0		
07WP 27 WERE WERE 57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1 97 115.7 117.0 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 the Hoyt to Stranger 345 kV line 07WP 27 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 07WP 27 WERE WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	07SP	43	WERE	WERE	57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	106.3	108.0	3.6	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	
OTWP 27 WERE S7152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 108.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line 0 May be relieved due to Westar Operating Procedure 803 - Outage of the Hoyt to Stranger 345 kV line	071115		14/535			07		447.5	4-				
07WP 27 WERE 57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1 92 108.3 109.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 the Hoyt to Stranger 345 kV line	07WP	27	WERE	WERE	5/152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	115.7	117.0	4.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
May be relieved due to Westar Operating Procedure 803 - Outage of	07WP	27	WERE	WERE	57152 CIRCLVL3 115 to 57331 KING HL3 115 CKT 1	92	108.3	109.7	4.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0		
07WP 27 WERE WERE 57217 KELLY 3 115 to 57331 KING HL3 115 CKT 1 92 106.4 107.7 4.7 56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1 0 the Hoyt to Stranger 345 kV line												May be relieved due to Westar Operating Procedure 803 - Outage of	
	07WP	27	WERE	WERE	5/21/ KELLY 3 115 to 57331 KING HL3 115 CKT 1	92	106.4	107.7	4.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	

	Transfer											
Study	Amount	From			Rate	BC %	TC %			ATC		Estimated
Case	(MW)		To Area	Monitored Branch Overload	<mva></mva>	Loading		%TDF	Outaged Branch Causing Overload	(MW)	Solution	Cost
Case	(10100)	Alea	TU Alea	Monitored Branch Ovenbad		LUAUING	Luauing	76101	Odlaged Branch Cadsing Ovenbad	(10100)	May be relieved due to Westar Operating Procedure 803 - Outage of	CUSI
10SP	44	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	99.5	101.1	3.5	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	4	the Hoyt to Stranger 345 kV line	
1001		WEIKE	WEIKE		51	33.0	101.1	0.0		-	May be relieved due to Westar Operating Procedure 1203 - Outage of	
10SP	44	WERE	WERE	57153 COLINE 3 115 to 57192 HOOKJCT3 115 CKT 1	92	119.6	123.2	7.6	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line	
1001		TTEILE	THEILE		02	110.0	120.2	7.0		Ů	May be relieved due to Westar Operating Procedure 1203 - Outage of	
											the Tecumseh Energy Center (TEC) to Tecumseh Hill	
10SP	44	WERE	WERE	57153 COLINE 3 115 to 57182 TECHILE3 115 CKT 1	106	107.3	109.7	5.8	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	115 kV Line	
10SP	44		WERE	57795 GILL E 2 69 to 57813 MACARTH2 69 CKT 1	68	117.0	119.0		57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	0	Replace substation bus and jumpers at MacArthur 69 kV.	\$98.000
											Replace disconnect switches at Gill 69 kV (use 800 A.), Replace line	
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	126.0	128.2	3.6	57795 GILL E 2 69 to 57813 MACARTH2 69 CKT 1	0	switch at Oatville 69 kV (use 800 A.).	\$45,000
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	110.3	112.2	3.1	57796 GILL W 2 69 to 57804 HAYSVLJ2 69 CKT 1	0	See Previous Upgrade Specified for Facility	
10SP	44	WERE	WERE	57795 GILL E 2 69 to 57825 OATVILL2 69 CKT 1	72	102.3	104.2	3.1	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	0	See Previous Upgrade Specified for Facility	
											May be relieved due to Westar Operating Procedure 1203 - Outage of	
10SP	44	WERE	WERE	57180 TEC E 3 115 to 57192 HOOKJCT3 115 CKT 1	160	122.9	126.7	13.7	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	0	the Tecumseh Energy Center (TEC) to Tecumseh Hill 115 kV Line	
											May be relieved due to Westar Operating Procedure 803 - Outage of	
10SP	44	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	111.9	114.1	12.0	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 632 - Overload of	
10SP	44	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	100.4	103.4	4.6	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	0	the Tecumseh Energy Center 161/115kV Tranformer	
											May be relieved due to Westar Operating Procedure 632 - Overload of	
10SP	44	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	100.9	103.0	3.3	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Tecumseh Energy Center 161/115kV Tranformer	
											May be relieved due to Westar Operating Procedure 632 - Overload of	
10SP	44	WERE	WERE	56920 TECHILL5 161 WND 1 1	69	97.6	100.5	4.6	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	11	the Tecumseh Energy Center 161/115kV Tranformer	
											May be relieved due to Westar Operating Procedure 803 - Outage of	
15SP	45	WERE	WERE	57156 54&MERI3 115 to 57163 HOYT 3 115 CKT 1	179	109.7	111.2	6.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of	
15SP	45	WERE	WERE	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	565	99.7	100.8	13.5	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	3	the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of	
15SP	45	WERE	WERE	57152 CIRCLVL3 115 to 57165 HTI JCT3 115 CKT 1	97	111.5	114.6	6.7	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 803 - Outage of	
15SP	45	WERE	WERE	57162 GOODYR 3 115 to 57169 NTHLAND3 115 CKT 1	175	110.2	111.5	5.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	
											May be relieved due to Westar Operating Procedure 401 - Outage of	
15SP	45		WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	110.1	112.0	46.6	56766 JEC N 7 345 to 56770 MORRIS 7 345 CKT 1	0	the Jeffrey Energy Center - Morris County 345kV	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	108.4	110.9	59.8	56853 LAWHILL6230 to 56854 LEC U5 6230 CKT 1	0	Solution Undetermined	
											May be relieved due to Westar Operating Procedure 401 - Outage of	
15SP	45			56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	109.0	110.7	39.3	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1	0	the Jeffrey Energy Center to Hoyt 345kV Line	
15SP	45	WERE	WERE	56765 HOYT 7 345 to 56766 JEC N 7 345 CKT 1	1076	99.1	100.8	38.8	56769 LANG 7 345 to 56770 MORRIS 7 345 CKT 1	7	Solution Undetermined	
											May be relieved due to Westar Operating Procedure 803 - Outage of	
15SP	45		WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	123.7	124.5	4.1	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Hoyt to Stranger 345 kV line	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	106.2	107.4	6.3	56853 LAWHILL6230 to 56854 LEC U5 6230 CKT 1	0	Solution Undetermined	
4500	45	WERE	WEDE		000	404.4	405.0	4.7		0	May be relieved due to Westar Operating Procedure 401 - Outage of	
15SP	45	WERE	WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	104.4	105.3	4.7	56766 JEC N 7 345 to 56770 MORRIS 7 345 CKT 1	0	the JEFFREY ENERGY CENTER - MORRIS COUNTY 345KV	
4500	45	WERE	WERE		236	103.2	103.8	3.3		0	May be relieved due to Westar Operating Procedure 401 - Outage of	
15SP 15SP	45		WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1 57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1	236	103.2	103.8	3.3	56851 AUBURN 6 230 to 56852 JEC 6 230 CKT 1 57153 COLINE 3 115 to 57162 GOODYR 3 115 CKT 1	0	the Jeffrey Energy Center to Hoyt 345kV Line Solution Undetermined	
15SP 15SP	45		WERE	57180 TEC E 3 115 to 57182 TECHILE3 115 CKT 1 57182 TECHILE3 115 to 57180 TEC E 3 115 CKT 1	236	100.1	100.7	3.2	57153 COLINE 3 115 to 57456 COLINE 269.0 to 57443 COLINE 134.5 CKT 1	1	Solution Undetermined Solution Undetermined	
155P	40	WERE	WERE	37102 TECHILES 113 10 37100 TEC E 3 113 CKT 1	230	100.0	100.6	3.Z	57 155 COLINE 5 115 (0 57450 COLINE 209.0 (0 57443 COLINE 134.5 CKT 1		May be relieved due to Westar Operating Procedure 632 - Overload of	
15SP	45	WEDE	WERE	56920 TECHILL5 161 WND 1 1	69	103.7	106.8	4.9	56765 HOYT 7 345 to 56772 STRANGR7 345 CKT 1	0	the Tecumseh Energy Center 161/115kV Tranformer	
105P	40	WERE	WERE	30920 TECHILLS 161 WIND 1 1	09	103.7	100.8	4.9	30703 HUTT 7 343 10 30772 STRANGR7 343 URT 1	0	May be relieved due to Westar Operating Procedure 632 - Overload of	
15SP	45	WEDE	WERE	56920 TECHILL5 161 WND 1 1	69	99.1	103.0	6.1	57163 HOYT 3 115 to 57165 HTI JCT3 115 CKT 1	3	the Tecumseh Energy Center 161/115kV Tranformer	
1007	40	VERE	WERE	JUJZU TECHILLIJ TOT WIND T	09	99.1	103.0	0.1		3	Total Estimated Engineering and Construction Cost	\$5,943,000
											Total Estimated Engineering and Construction Cost	\$3,3 4 3,000