D.4 – South Minneapolis Interconnection Study

South Minneapolis Interconnection Study

Xcel Energy Services Inc.; Transmission System Planning and Reliability Assessment.

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1.0: Overview

This study was undertaken in response to an interconnection request from the Distribution Planning Department ("Distribution Planning") in Summer 2007. This study evaluated the impact on the larger transmission system of distribution source alternatives proposed to meet local load serving needs in an approximate 22-square mile area in south Minneapolis ("Focused Study Area").

The result of this analysis is a finding that two new distribution substations and two new 115 kV, looped lines to connect the new distribution substations are needed to serve the projected load growth in the Midtown area within the Focused Study Area. The initial installation of these facilities and other future additions identified by Distribution Planning are expected to provide necessary capacity to the year 2028 based on the given load growth for the area and are expected to have an installed cost of approximately $55.9 million. A map of the south Minneapolis area is shown in Figure 1. The Focused Study Area is shown in Figure 2.

Figure 1: South Minneapolis Area

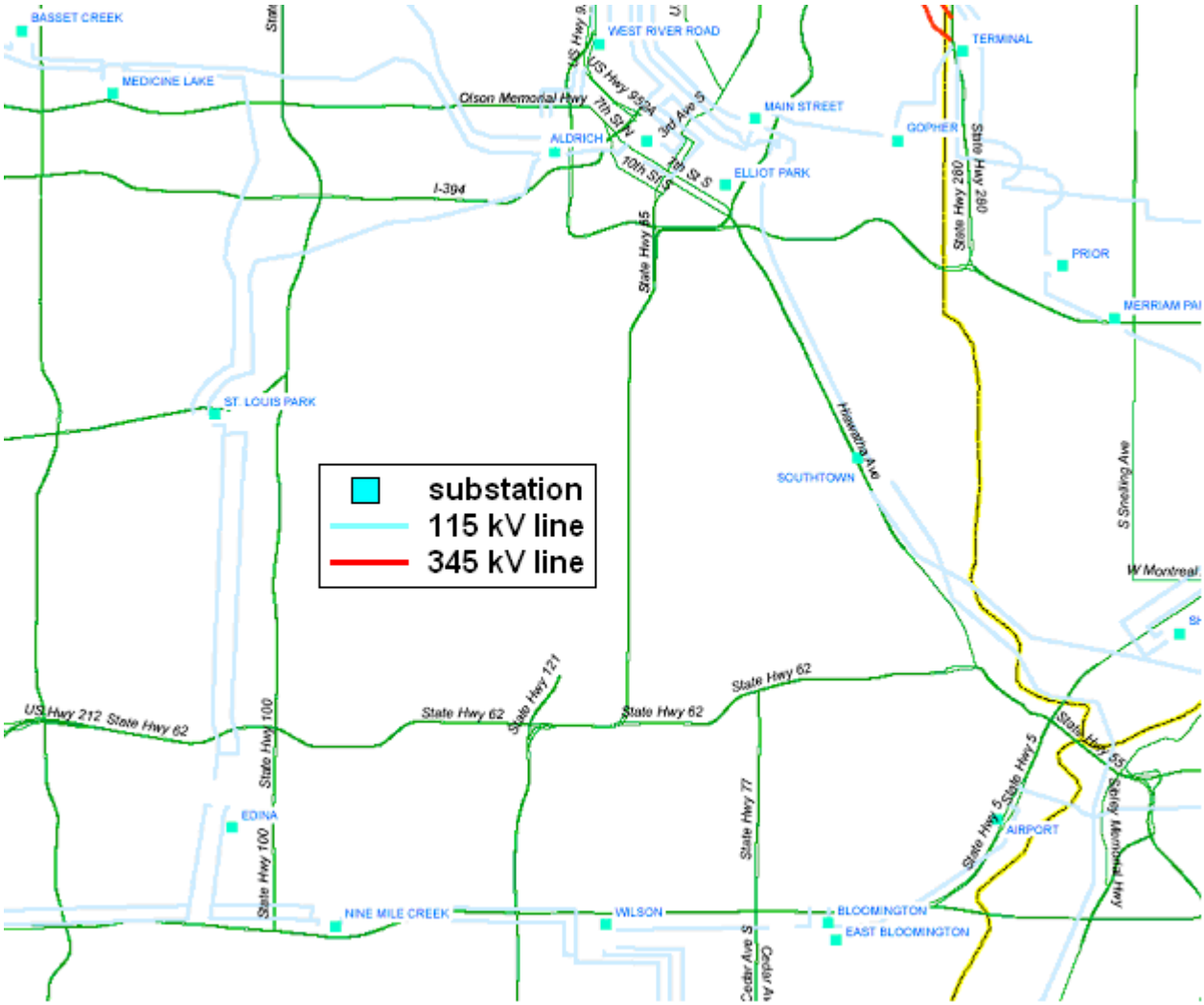
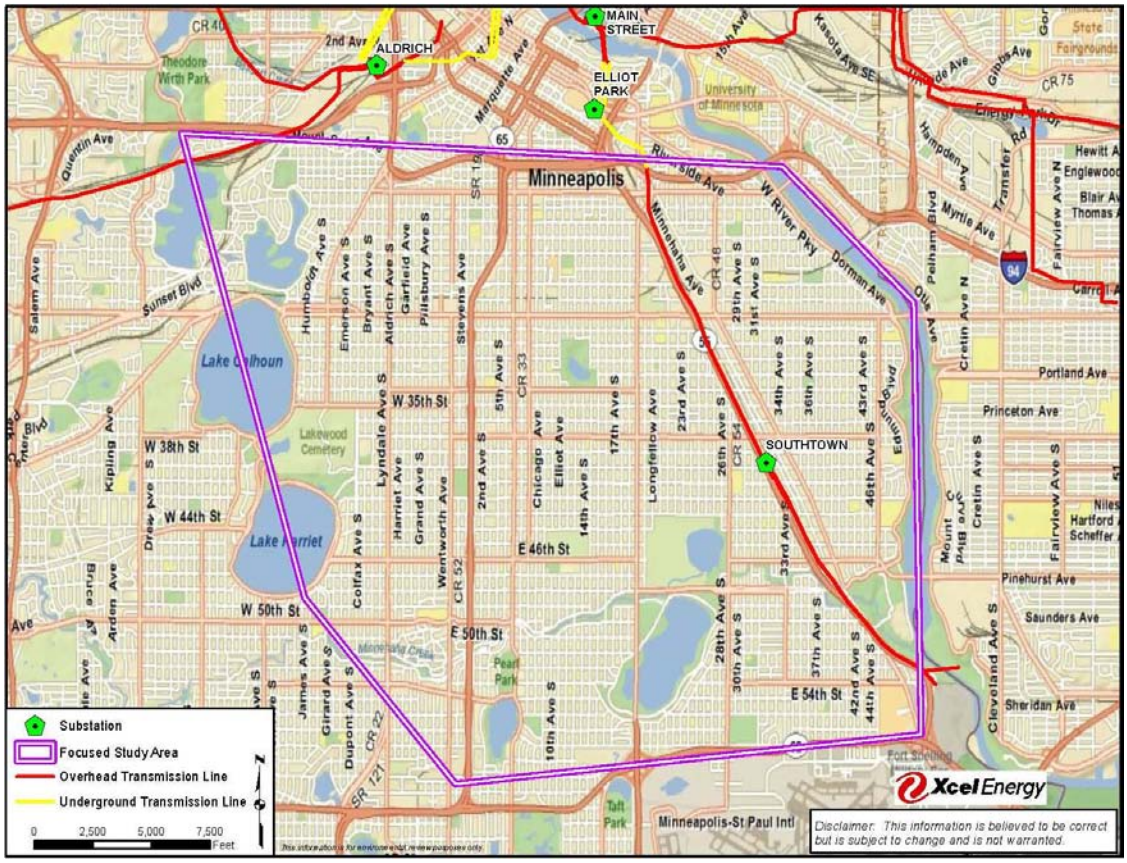


Figure 2: Focused Study Area



2.0: Conclusion & Recommended Plan

The Preferred Plan is the A1 "Hiawatha and Midtown Distribution Sites" Option, which adds the following facilities at initial installation:

- A new Hiawatha 115 kV distribution substation tapping the existing Elliot Park-Southtown 115 kV line
- A new Midtown 115 kV substation tapping the existing Elliot Park – Southtown 115 kV line
- A new double-circuit 115 kV line, or two 115 kV single circuit lines between the Midtown and Hiawatha substations.

This option provides for subsequent incremental installation of distribution improvements, as needed, to meet future demand for electricity.

This option appears to offer the best overall results with respect to:

- Power system performance (system intact & contingent loadings & voltages)
- Practicality (logistics of construction and operation)
- Price (cumulative present worth cost)

- Distribution system losses
- Ability to serve existing and anticipated distribution load in the Midtown area

3.0: Study History & Participants

Xcel Energy technical staff performed the powerflow simulations, economic analyses, and tabulation of results. These results were presented and reviewed at meetings of the study group comprised of Distribution Planning engineers, Transmission Planning engineers, project management and substation and transmission engineering. Comments, conclusions, and recommendations were developed at study group meetings to guide each successive stage of analysis.

4.0: Scope of Study

The purpose of this study is to examine the impact that the distribution alternatives will have on the transmission system. Steady-state powerflow cases are run to determine if the transmission system is capable of handling the subsequent load associated with the new interconnection request during normal and contingent system operation. Dynamic simulations are run to determine how the interconnections and upgrades impact the transmission systems dynamic performance under contingencies.

5.0: System Description

The Twin Cities metropolitan area is served by a 115 kV transmission system within the 345 kV double circuit loop that surrounds the Twin Cities. Most of the Twin Cities generation is connected to this 345 kV loop except the High Bridge and Riverside combustion turbines. For this analysis, before the year 2018 all Twin Cities generation was assumed on during system peak. The post 2018 cases were developed to accommodate a 30% wind penetration on the system. This is to meet the state mandated Renewable Energy Standard for Xcel Energy. In order to accommodate this, local Twin Cities generation was turned down, which will put extra strain on the existing 345/115 kV transformers along the 345 kV loop.

Based on load projections, Distribution Planning has determined a need for additional load serving support in the south Minneapolis Metro area to meet the expected load growth in the Midtown area in the Focused Study Area. The expected load growth in the South Minneapolis Metro area along with the continued load growth for the entire metro area will increase the burden on the existing transmission system, causing several transmission overloads under contingency.

6.0: Transmission Planning Criteria

6.1: Steady-State Criteria

A summary of Xcel Energy's steady state planning criteria is shown in Table 1.

Table 1 – Steady-State Planning Criteria

Limits	System Intact Condition	Post-Contingency Condition
Transmission Line Loading	100% of Rating	110% of rating for single contingency. Sag limit of line for double contingency.
Transformer Loading	100% of Rating	115% post-contingency if pre-contingency loading is below 90%
Generator Bus Voltage	0.95 to 1.10 per unit	0.95 to 1.10 per unit
Load Bus Voltage	Twin Cities metro 0.92 to 1.10 per unit. Outside TC Metro 0.90 to 1.10 per unit.	Twin Cities Metro 0.92 to 1.10 per unit. Outside TC Metro 0.90 to 1.10 per unit.

In addition to adhering to these planning criteria, all the guidelines outlined for the transmission planning standards as defined by North American Electric Reliability Corporation ("NERC") are met.

6.2: Dynamic Criteria

A summary of Xcel Energy's dynamic planning criteria is shown in Table 2.

Table 2 – Dynamic Stability Criteria

NERC Categories	Transient Voltage Deviation Limits	Rotor Angle Oscillation Damping Ratio Limits
A	Nothing in addition to NERC Requirements	
B	Minimum 0.70 per unit at any bus	Not to be less than 0.0081633 for disturbances with faults or less than 0.0167660 for line trips.
C	Minimum 0.70 per unit at any bus	Not to be less than 0.0081633 for disturbances with faults or less than 0.0167660 for line trips.
D	Nothing in addition to NERC Requirements	

7.0: Models and Conditions

7.1: Models Employed

7.1.1: Steady State Models

The powerflow models employed were developed by the Midwest Reliability Organization ("MRO") model building group. The models are based on the most current 2007 Series MRO models, years 2012 summer peak and a modified 2017 summer peak models were updated:

- to reflect system changes by appropriate study year.
- to reflect the Post CAPX2020 Group 1 facilities by appropriate study year (2018).[1]
- to reflect 30% wind penetration for a specific 2018 case.
- the 2017 model was increased in load by 1.5% to represent 2018

The 2012 model year was chosen to reflect the approximate need date of 2010 as identified by Distribution Planning. The 2018 model year was chosen to determine the effects of the renewable energy standard and the CAPX Group 1 projects would have on the study options. Significant model updates are in Appendix C.

7.1.2: Dynamics models

There were no dynamic stability runs done with this study. The options that are being studied will have a negligible effect on the bulk transmission system.

7.2: Conditions Studied

7.2.1: Steady State Modeling Assumptions

The technical analysis was performed based upon year 2012 and 2018 summer peak cases from the 2007 MRO series powerflow models. The base models were adjusted to represent the latest available forecast data at the time for summer season peak (100%) load conditions. The 2018 30% wind penetration case simulates 30% renewable generation transferred to the Twin Cities.

Table 3 - Export and Base Generation Levels

						Net generation, MW			
Condition	load level	NDEX[1]	MHEX[2]	MWEX[3]	Wind	Blue Lake	Black Dog	High Bridge	River Side
Peak	100 %	497.0	555.7	399.0	1014	497	588	610	563
30% Case	100 %	1044.6	472.8	535.2	3600	0	352	610	314
NMORWG Limit:		2080	2175	1480					

Notes
1) NDEX = sum of flows on the 18 lines comprising the "North Dakota Export" Boundary;
2) MHEX = sum of flows on the 4 Manitoba Hydro-U.S. 230 & 500 kV tie lines;
3) MWEX = sum of flows on Minnesota-Wisconsin Export (King- Eau Claire 345 kV, phase shifter on Arrowhead-Weston 345 kV). This interface was in the process of being reevaluated to include the Arrowhead-Weston 345 kV line during this study.

7.2.2: Performance Evaluation Methods

Power system performance simulation was performed with the aid of the Managing and Utilizing System Transmission ("MUST") digital computer powerflow program (Version 8.3) as supplied

[1] The CapX2020 Group 1 projects include four projects: 1) Bemidji – Grand Rapids 230 kV line; 2) Twin Cities-Fargo Project; (3) Twin Cities-Brookings County 345 kV Project and (4) Twin Cities-La Crosse 345 kV Project. Certificate of need applications are pending for all four projects in two separate dockets. The Bemidji – Grand Rapids 230 kV Project is pending in Docket No. E017, E015, ET-6/CN-07-1222. The other three projects are pending in Docket No. E002/CN-06-1115.

by Power Technologies, Inc. System intact and first-contingency analysis was performed primarily using Power System Simulation ("PSS")-MUST (Version 8.3) activities AC Contingency Computation ("ACCC") and Transfer Limit Table Generator ("TLTG"). TLTG performs automated contingency analysis while progressively incrementing power transfer between a defined "source" and "sink" location.

For both the ACCC and the TLTG analysis, the following apply:

Monitored facilities:
All transmission lines and transformers 69 kV and above in the model areas:
NSP (Xcel) GRE

Study area (facilities subject to outage):
All transmission lines and transformers 69 kV and above in the model zones:
NSP (Xcel) GRE

Activity TLTG achieves computational efficiency by extensive use of Power Transfer Distribution Factors ("PTDFs") and Line Outage Distribution Factors ("LODFs"), concepts applicable to linear, time-invariant systems. These methods are appropriate for power system analysis, provided it is recognized their accuracy is constrained by their inherent limitations arising from non-linear effects such as exhaustion of reactive power supply and Load Tap Changer ("LTC") transformer range limits. Consequently, the resulting reported transfer limits from TLTG are approximate.

Facilities identified in the TLTG outputs are considered valid limiters if they have a PTDF of 5.0% or greater (system intact) or have an Outage Transfer Distribution Factor ("OTDF") of 3.0% or greater (outage condition).

This 5.0% criterion was selected in accordance with the Midwest Independent System Operator ("MISO") cutoff level for system impact analyses. Very large reductions in generation (over 50:1) are required in order to achieve a perceptible amount of loading relief. Consequently, PTDFs/OTDFs lower than 5% strongly indicate that other power system adjustments are likely to be much more effective in producing the desired ameliorative effect than would generation adjustments in the study area.

7.2.3: Steady State Contingencies modeled

For this study Transmission Planning included all N-1 and tie line contingencies for the NSP (Xcel Energy) and GRE areas. In addition, Transmission Planning ran all the Category C contingencies listed in the UPDATE-2-7 w stk bkrs.con file. The full contingency list is located in Appendix D.

Key area system deficiencies and contingencies:

Base Case Issue	Contingency	Year
Goose Lake-Vadnais Hgts 115 kV	Apache Tp-Arden Hills 115 kV	2012-2014
Lexington-Vadnais Hgts 115 kV	Apache Tp-Arden Hills 115 kV	2012-2014
Apache Tp-Arden Hills 115 kV	Goose Lake Dbl Ckt	2012-2014

Coon Creek 345/115 xfmrs	Eden Prairie STK breaker	2018
Cedervale-Southtown 115 kV	Coon Creek STK breaker	2020
High Bridge-Sheppard 115 kV	Elliot Park STK breaker	2021
Terminal 345/115 xfmrs	Elliot Park STK breaker	2021
Elliot Park-Mainstreet 115 kV	Shepard-Southtown DBL Ckt	2022
Elliot Park-Hiawatha 115 kV	Shepard-Southtown DBL Ckt	2020
Parkers Lk-Basset Creek 115 kV	Terminal STK breaker	2022

8.0: Options (Plans) Evaluated

Transmission Planning evaluated the following options Distribution Planning identified to address the distribution system capacity deficiencies. Each option consists of incremental installation plans from initial installation through the option's full design capacity. Specifically, with respect to each distribution option, Transmission Planning evaluated power system performance (system intact, contingent loadings and voltages), associated losses on the transmission system, costs, practicality (logistics of construction and operation), and ability to address the distribution capacity deficiency.

A1 "Hiawatha and Midtown Distribution Sites"

This option has the Hiawatha substation and the new Midtown substation tapping the existing 115 kV line from Elliot Park-Southtown. Adding 2-115 kV lines from Hiawatha to the new Midtown substation located west of Chicago Avenue and east of I-35W.

A2 "Hiawatha and West Midtown Distribution Sites"

This option has the Hiawatha substation and the new Midtown substation tapping the existing 115 kV line from Elliot Park-Southtown. Adding 2-115 kV lines from Hiawatha to the new Midtown substation located west of I-35W.

A3 "30-Feeder Hiawatha"

This option has the Hiawatha substation tapping the existing 115 kV line from Elliot Park-Southtown. There is no Midtown substation assumed for this option. Instead six 115/13.8 kV transformers at Hiawatha will serve 30 feeder lines.

A4 "Hiawatha-Midtown 34.5 kV"

This option has the Hiawatha substation tapping the existing 115 kV line from Elliot Park-Southtown. Adding 34.5 kV lines from Hiawatha to three new Midtown substations located west of Chicago Avenue.

These options all address the immediate load serving needs of the Focused Study Area.. Illustrations of these options are in Appendix A.

In addition to the four alternatives provided by Distribution Planning, Transmission Planning evaluated three other transmission options, but rejected them because of significant routing complications and associated costs. These three options entail bringing a new 115 kV

transmission line to a new substation in the Midtown area from the Elliot Park Substation, the St. Louis Park Substation or the Wilson Substation. Transmission Planning determined that bringing a new 115 kV transmission line from any of these three substations to a new Midtown substation would require a new transmission line that would cross a long distance and would be difficult to route across Interstate highways and other infrastructure and natural obstacles. Transmission Planning ultimately concluded that it would be more feasible to tap into the existing Elliot Park – Southtown 115 kV transmission line at a new Hiawatha Substation, which is closest to the area where the additional capacity is needed.

9.0: Results of Detailed Analysis

9.1: Losses: Technical and Economic Evaluation

Losses are power that dissipates in electric conductors due to a materials resistance. The amount of loss is greatly reduced by lowering the current flowing through a line. For this study, losses were evaluated for each option to show the potential system benefits. The cost of purchasing generation at marginal prices for capacity and energy were evaluated. This savings was factored into the economic analysis.

To develop the savings associated with reducing losses an evaluation technique was developed. A sampling of ten transformers was studied throughout the Twin Cities metro area. Transformer load was taken at peak conditions and then an average loading was gathered. This information was used to develop a load duration curve. The MRO models use a 10% coincidence factor, which means loads appear 10% less than their transformer peak. This coincidence factor is shown in the calculations. Table 4 shows the calculations used to create a loading factor. Equation 9.1 details how the Load Factor (LF_1) was calculated.

Equation 9.1: $$LF = \frac{TRavg}{0.9 * TR\max}$$

Table 4 – Load Factor Development

Twin Cities Metro Transformer Sampling	TR avg	TR Max	Load factor
TR#1	22	44	0.56
TR#2	30.56	51.73	0.66
TR#3	8.44	20.08	0.47
TR#4	11.33	21.04	0.6
TR#5	33.65	63.39	0.59
TR#6	8.85	20.24	0.49
TR#7	21.35	41.83	0.57
TR#8	6.33	19.77	0.36
TR#9	21.4	45.39	0.52
TR#10	30.22	56.11	0.6
		Average Load Factor	0.54

To calculate the Loss Factor (LF_2) the following equations detail the methodology. Equation 6.3 details the correlation between load and current. As the load increases the loading on the transmission lines will increase in equal proportions. Due to this relationship equation 6.4 can be applied to get the loss factor. This development comes from the standard loss formula 6.2.

Equation 9.2 Power Loss Formula: $Losses = I^2 R$

Equation 9.3 Correlation between load and current: $Load \propto I$

Equation 9.4 Loss Factor (LF_2) development: $LF_2 = \sqrt{LF_1}$

The loss factor was calculated to 0.298. This relates the amount of losses in the peak case to the expect amount of losses at an average level throughout the year. These values were used to calculate energy use. Marginal energy cost was supplied by Xcel Energy's resource planning department. Capacity cost was also supplied at $20,000 per MW.

The total yearly savings was calculated by equation 9.5. This equation includes the cost of energy and capacity. For the economic analysis, this formula was applied each year.

Equation 9.5 Savings calculation:

$$\$Savings = MWreduction_{peak} * 8760 * (\$/MWH) + MWreduction_{peak} * \$20{,}000$$

9.2: Economic Analysis

9.2.1: Total Installed Cost

The total installed costs were based off of indicative estimates and may change with estimate refinement. The estimated years are estimates based on a 1.5% load growth that was provided from Distribution Planning for the study area at the time this Study was performed. These are subject to change based on the actual load growth experienced in the area. This will not change the overall need for the project and may only affect the in-service date requirement.

<u>A1: Hiawatha and Midtown Distribution Sites Plan</u> –

- 115/13.8 kV stations at Midtown and Hiawatha. Midtown is located at Oakland site west of Chicago Avenue and east of I-35W.
- Staging for costs
  - 2010
    - Hiawatha 115 kV substation - $14,300,000
    - Midtown 115 kV substation - $11,120,000
    - Double circuit 115 kV line between Hiawatha-Midtown - $3,310,000
    - Distribution duct and feeder circuits - $4,650,000
  - 2016
    - 2nd substation transformer added at Midtown - $6,570,000
    - Distribution duct and feeder circuits - $1,950,000

- 2017
  - 2nd substation transformer added at Hiawatha - $5,175,000
  - Distribution duct and feeder circuits - $3,150,000
- 2023
  - 3rd substation transformer added at Hiawatha - $3,930,000
  - Distribution duct and feeder circuits - $1,700,000

Total Cost - $55,855,000

A2: Hiawatha and West Midtown Distribution Sites Plan –

- 115/13.8 kV stations at Midtown and Hiawatha. Midtown is located at west of I-35W
- Staging for costs
  - 2010
    - Hiawatha 115 kV substation - $14,300,000
    - Midtown 115 kV Substation - $17,130,000
    - Double Circuit 115 kV line between Hiawatha-Midtown - $6,320,000
    - Distribution duct and feeder circuits - $4,650,000
  - 2016
    - 2nd substation transformer added at Midtown - $2,000,000
    - Distribution duct and feeder circuits - $2,250,000
  - 2017
    - 2nd substation transformer added at Hiawatha - $5,175,000
    - Distribution duct and feeder circuits - $3,150,000
  - 2023
    - 3rd substation transformer added at Hiawatha - $3,930,000
    - Distribution duct and feeder circuits - $1,700,000

Total Cost - $60,605,000

A3: 30-Feeder Hiawatha Plan –

- 115/13.8 kV stations at Hiawatha. All 30 feeders are brought out from the new Hiawatha substation.
- Staging for costs
  - 2010
    - Hiawatha 115 kV substation - $15,160,000
    - Distribution duct and feeder circuits - $6,650,000
  - 2016
    - 3rd substation transformer added at Hiawatha - $5,210,000
    - Distribution duct and feeder circuits - $8,000,000
  - 2017
    - 4th substation transformer added at Hiawatha - $4,530,000
    - Distribution duct and feeder circuits - $10,400,000

- 2023
  - 5th substation transformer added at Hiawatha - $7,900,000
  - Distribution duct and feeder circuits - $2,200,000

Total Cost - $60,050,000

A4: Hiawatha-Midtown 34.5 kV Plan –

- 115/34.5 kV station at Hiawatha and 34.5/13.8 kV stations in Midtown. Midtown substations are located at a site east of the old Sears building.
- Staging for costs
  - 2010
    - Hiawatha 115 kV substation - $25,125,000
    - Oakland 34.5 kV substation - $13,490,000
    - Distribution duct and feeder circuits - $22,500,000
  - 2016
    - 4th substation transformer added at Hiawatha - $9,250,000
    - Garfield 34.5 kV substation - $7,965,000
    - Distribution duct and feeder circuits - $4,950,000
  - 2017
    - 5th substation transformer added at Hiawatha - $7,470,000
    - Nicollet 34.5 kV substation - $11,435,000
      Distribution duct and feeder circuits - $8,400,000
  - 2023
    - 6th substation transformer added at Hiawatha - $9,715,000
    - Distribution duct and feeder circuits – $1,700,000

Total Cost - $122,000,000

9.2.2: Evaluated Costs (with losses)

Evaluated costs take into account present worth value and overall system loss savings. An economic analysis of the cost savings associated with transmission system loss reduction is discussed in section 9.1. The detailed Present Worth Analysis spreadsheets are listed in Appendix B.

Hiawatha and Midtown Distribution Sites Plan –

Total Installed Cost - $55,855,000
Present Worth Cost - $53,018,647

Hiawatha and West Midtown Distribution Sites Plan -

Total Installed Cost - $60,605,000
Present Worth Cost - $61,834,721

30-Feeder Hiawatha Plan -

Total Installed Cost - $60,050,000
Present Worth Cost - $54,418,071

Hiawatha-Midtown 34.5 kV Plan -

Total Installed Cost - $122,000,000
Present Worth Cost - $113,401,696

9.3: Relevant Concerns

9.3.1: Load Serving Issues

Several load-serving issues exist or are imminent in southern Minneapolis and in the greater Twin Cities metro areas. These are summarized below and described in the following paragraphs.

Load center	Critical Contingencies
Southtown Substation	Loss of any of the 115/13.8 kV distribution transformers
Distribution Feeders	System intact overloads, several N-1 overloads
Minneapolis Metro Transformers (Parkers Lake, Eden Prairie, Red Rock)	Loss of one of the 345/115 kV transformers currently feeding the inner 115 kV system

The Southtown Substation located in south Minneapolis is currently served at the 115 kV level. There are presently a total of approximately 54 MW of load at risk if the Southtown Substation experienced a loss of one of its three existing 115/13.8 kV distribution transformers. Adding another distribution transformer to relieve this risk at the existing Southtown Substation is not possible because there is no existing space or room for expansion to accommodate a new transformer. The current Southtown site is in a densely populated and congested area making expansion difficult.

The Minneapolis/St. Paul metro 115 kV area is primarily fed through the double circuited 345 kV loop that feeds the 115 kV system through large 345/115 kV transformers. Currently, there are 16 distribution feeders within the south Minneapolis area that are experiencing normal (base case) overloads totaling about 24 MVA. There are an additional 39 feeders that have contingency overloads (N-1) totaling about 225 MVA. These feeders currently do not have adequate N-1 backup to serve the entire load. Load would have to be curtailed in some cases to prevent severe loading on the existing distribution system.

For this study, load growth was assumed at a conservative 1.5% based on the 7-year historical averages for the study area. This is considered low for a major metropolitan area. Such continued load growth on the 115 kV system could push the bulk 345/115 kV transformers beyond their acceptable 115% emergency under certain contingencies. This will cause the need for replacing existing transformers to larger transformers or to add additional transformer

capacity on the 345 kV system. Substation site limitations make adding larger transformers unlikely and even with transformers replaced, load growth is still expected to outstrip the capacity of the 345/115 kV transmission system in the future.

In contrast, a new Hiawatha Substation, which is proposed under A1 and A2, could be expanded in the future to address future load growth and accommodate a new 345 kV connection if demands on the transmission system require the addition of a 345 kV transmission line.

9.3.2: Constructability & Schedule Considerations

The distribution options under evaluation differ significantly with respect to the number and type of construction activities required. These differences have ramifications with respect to the lead times involved in implementing the series of improvements required. Simpler options are easier to build.

Options that require large amounts of reconductoring and rebuilding require disproportionately more time to construct. This arises because power system reliability considerations limit the number of circuits within a geographical sub-area that can be simultaneously out of service for upgrade or replacement, since many of the circuits involved are to some degree electrically in parallel. This dictates that construction cannot be undertaken simultaneously on more than a few existing circuits per season; rather, sequential construction is required. In contrast, options that rely less heavily on reconductors and rebuilds encounter fewer construction outage constraints.

Table 5 summarizes the types of transmission line work involved and gives an estimated duration of work; based on an October 2010 start date.

Table 5 -
Constructability & Schedule Considerations
For the South Minneapolis Electric Reliability Project

		miles of transmission					
Option	Description	New	Recond	Rebuild	Total	Capacitors	Years
A1	Hiawatha and Midtown Distribution Sites	1.25	0	0	1.25	0	1
A2	Hiawatha and West Midtown Distribution Sites	1.5	0	0	1.5	0	1
A3	30-Feeder Hiawatha	0	0	0	0	0	1
A4	Hiawatha-Midtown 34.5 kV	0	0	0	0	0	1

9.3.3: Double-Circuit Line Considerations

The conclusion is that in the case of the Preferred Plan A1 Hiawatha and Midtown Distribution Sites Plan, it is appropriate to put the 115 kV transmission lines on the same structures. Loss of these two lines will only affect the distribution load located at the new Midtown Substation. In the event that the double circuit 115 kV is lost, Capacity Planning will have switching plans in place to restore the Midtown load on the distribution side.

10.0: Detailed Listing of Recommended and System Alternative Plans' Facilities

The Recommended Plan is A1 "Hiawatha and Midtown Distribution Sites Plan" configuration.

		Circuit miles	conductor kcm
Lines--new			
Two Hiawatha-Midtown 115 kV transmission lines		2 x 1.25	1 x 795 ACSS
	Total	2.5	
Lines--reconductor or rebuild			
None	Reconductor	0	
	Total	0	
Distribution Transformers MVA			
Hiawatha 115/13.8 kV		1 x 50	
Midtown 115/13.8 kV		1 x 70	
	Total Increase	120	
Reactive (voltage control) facilities			
Shunt Capacitors		MVAR	
None identified			
	Total Increase	0	
Shunt Reactors		MVAR	
None identified			
	Total Increase	0	

Substations--new
Hiawatha 345/115 kV Substation (~1 mi North of Southtown substation)
Midtown 115 kV Substation (~2 mi South of downtown Minneapolis)

Substations--modified
none

Loss analysis and present worth analysis were used to determine the best location of the Midtown substation.

Alternative 1 is A2 "Hiawatha and West Midtown Distribution Site Plan" configuration.

	miles	conductor kcm
Lines--new		
Two Hiawatha-Midtown 115 kV transmission lines	2 x 1.5	1 x 795 ACSS

	Total	3

Lines--reconductor or rebuild

none	reconductor	0
	Total	0

Transformers	MVA
Hiawatha 115/13.8 kV	1 x 50
Midtown 115/13.8 kV	1 x 70
Total Increase	120

Reactive (voltage control) facilities

Shunt Capacitors	MVAR
None identified	
Total Increase	0

Shunt Reactors	MVAR
None identified	
Total Increase	0

Substations--new

Hiawatha 115 kV Substation (~1 mi North of Southtown substation)
Midtown 115 kV Substation (West of I-35W)

Substations--modified

none

Alternative 2 is A3 "30-Feeder Hiawatha Plan" configuration.

		miles	conductor kcm
Lines--new			
none		0	
	Total	0	

Lines--reconductor or rebuild

none	reconductor	0
	Total	0

Transformers	MVA
Hiawatha 115/13.8 kV	2 x 50
Total Increase	100

Reactive (voltage control) facilities

Shunt Capacitors	MVAR
None identified	
Total Increase	0

Shunt Reactors	MVAR
None identified	

	Total Increase	0

Substations--new
Hiawatha 115 kV Substation (~1 mi North of Southtown substation)

Substations--modified
none

Alternative 3 is A4 "Hiawatha-Midtown 34.5 kV Plan" configuration.

		miles	conductor kcm
Lines--new			
Hiawatha-Midtown 34.5 kV		4 x 3.5	Unknown
	Total	14	
Lines--reconductor or rebuild			
none	reconductor	0	
	Total	0	
Transformers		MVA	
Hiawatha 115/13.8 kV		1 x 50	
115/34.5 kV		2 x 70*	
	Total Increase	120	
Reactive (voltage control) facilities			
Shunt Capacitors		MVAR	
None identified			
	Total Increase	0	
Shunt Reactors		MVAR	
None identified			
	Total Increase	0	

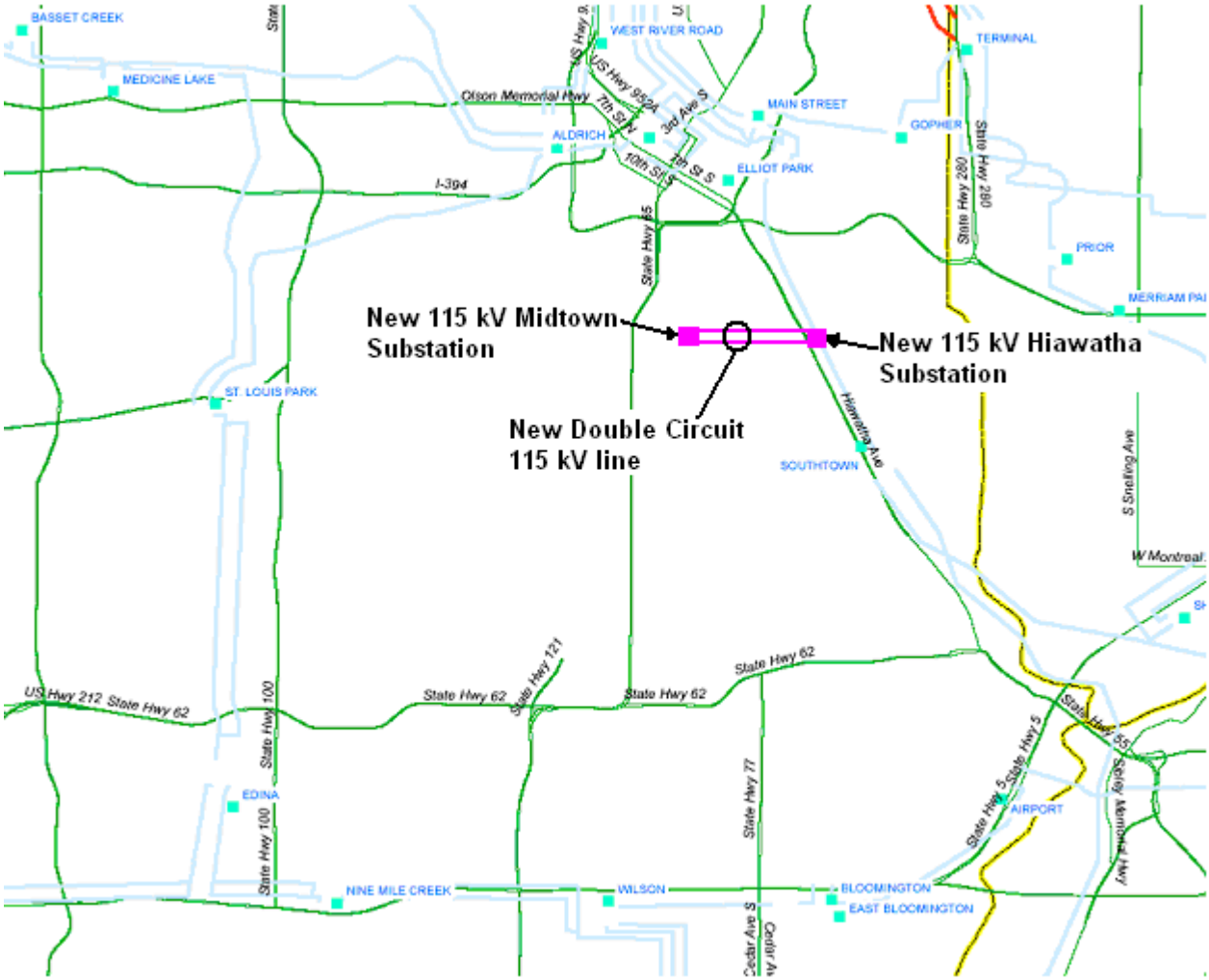
Substations--new
Hiawatha 115 kV Substation (~1 mi North of Southtown substation)
Two Midtown 34.5 kV Substations (~2 mi South of downtown Minneapolis)

Substations--modified
none

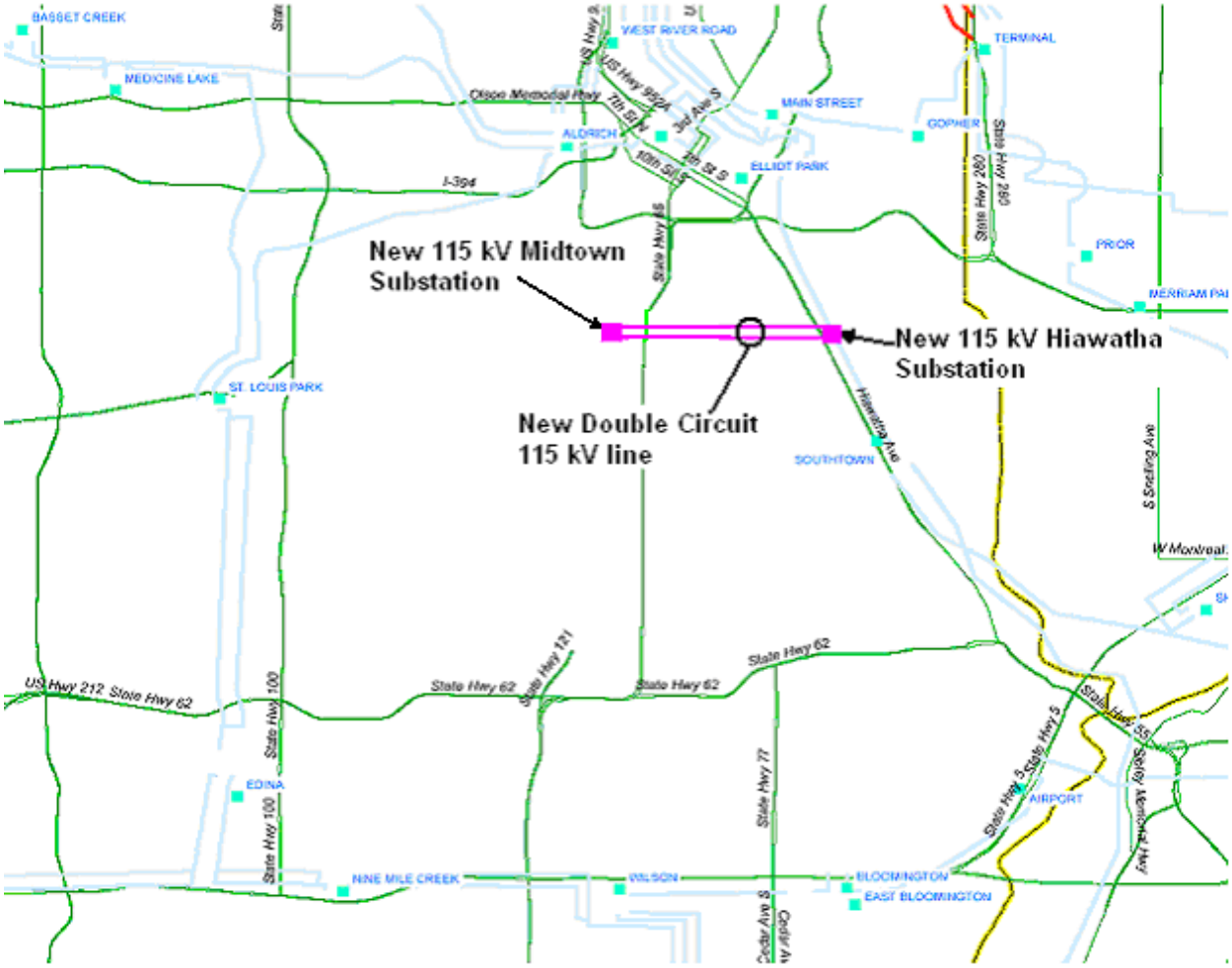
*Second 70 MVA transformer is solely for back-up of the first 70 MVA transformer due to introducing new 34.5 kV voltage in the area; therefore, total MVA increase remains at 120 MVA.

Appendix A: Maps and Drawings (Base Plan & System Alternatives)

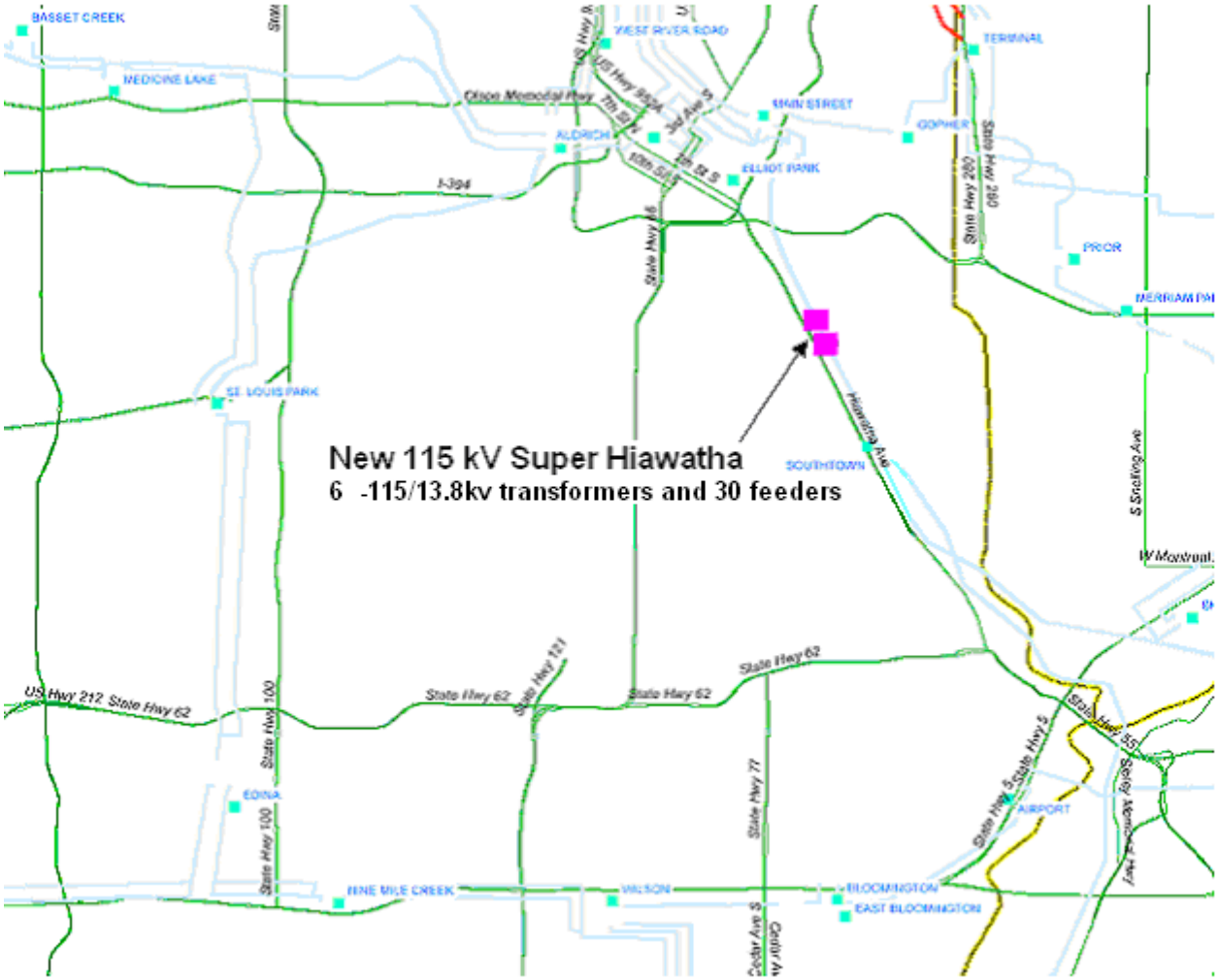
"Hiawatha and Midtown Distribution Sites Plan"



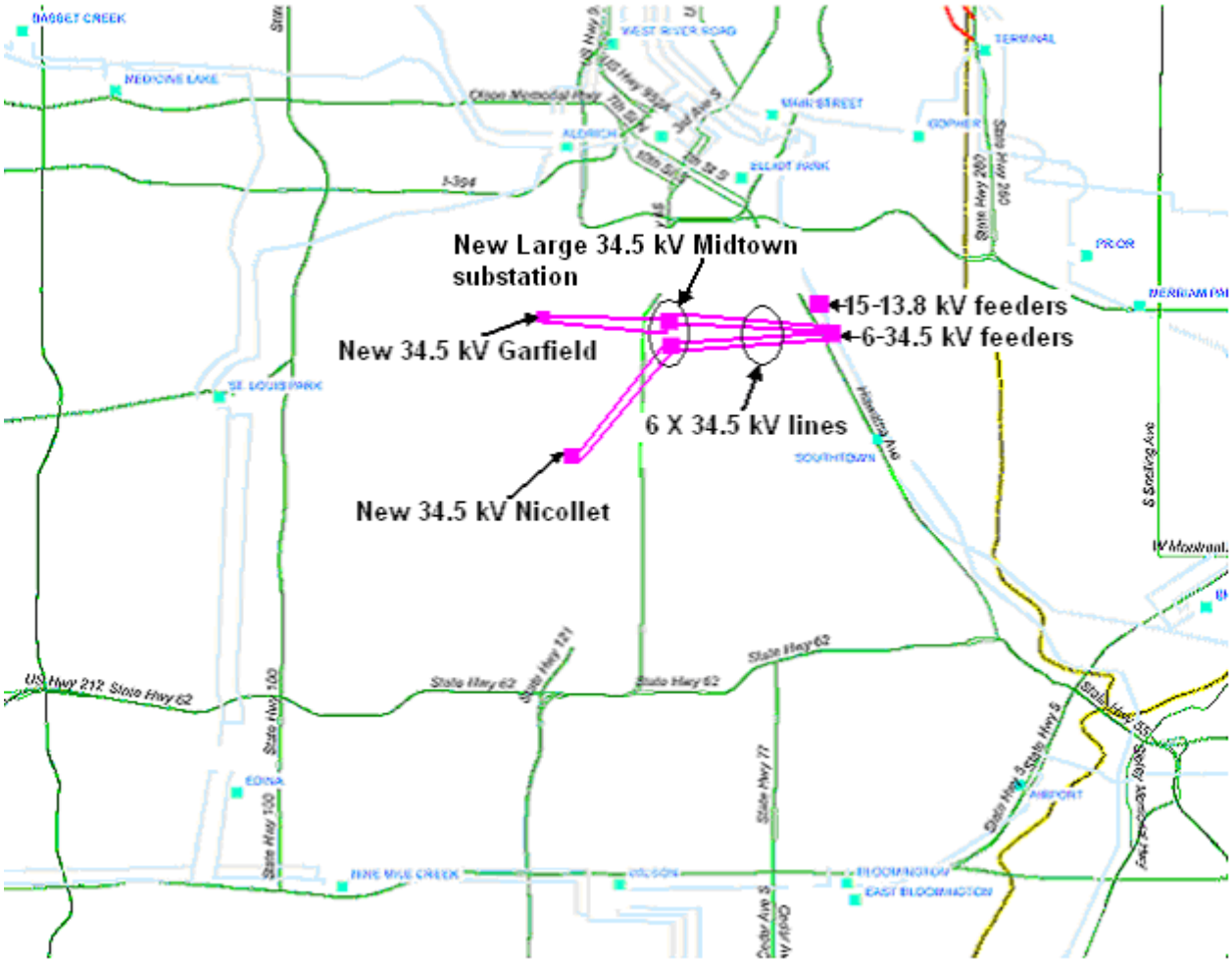
"Hiawatha and West Midtown Distribution Sites Plan"



"30-Feeder Hiawatha Plan"



"Hiawatha-Midtown 34.5 kV Plan"



Appendix B: Present Worth Analysis

A1: Hiawatha and Midtown Distribution Sites

Title: Hiawatha and Midtown 115 kV substations, Midtown East

Interest Rate	7.42%	Starting year for study	2007	
*Carrying Charge Rate	10.84%	Investments/Expenses	2007	
Investment Escalation	1.88%	Ending Year	2042	35
Expense Escalation	1.88%	*The 35 year totals below were calculated using the rates above.		

Year	Cumulative Present Worth	Total Investment		Levelized Annual Cost
2042	53,018,647	62,987,077		4,241,873

Year	New Investments 2007 dollars	Expenses 2007 dollars	Escalated New Investments	Escalated Expenses	Investment Revenue Requirement	Revenue Requirements	Present Worth of Revenue Requirements	Cumulative Present Worth 2007 dollars	Cumulative Investment
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	33,380,000	0	35,298,247	0	3,825,977	3,825,977	2,873,438	2,873,438	35,298,247
2011	0	0	0	0	3,825,977	3,825,977	2,674,956	5,548,393	35,298,247
2012	0	0	0	0	3,825,977	3,825,977	2,490,184	8,038,578	35,298,247
2013	0	0	0	0	3,825,977	3,825,977	2,318,176	10,356,753	35,298,247
2014	0	0	0	0	3,825,977	3,825,977	2,158,048	12,514,802	35,298,247
2015	0	0	0	0	3,825,977	3,825,977	2,008,982	14,523,783	35,298,247
2016	8,520,000	0	10,074,883	0	4,917,994	4,917,994	2,404,011	16,927,795	45,373,131
2017	8,325,000	0	10,029,369	0	6,005,077	6,005,077	2,732,637	19,660,432	55,402,499
2018	0	0	0	0	6,005,077	6,005,077	2,543,881	22,204,313	55,402,499
2019	0	0	0	0	6,005,077	6,005,077	2,368,163	24,572,476	55,402,499
2020	0	0	0	0	6,005,077	6,005,077	2,204,583	26,777,059	55,402,499
2021	0	0	0	0	6,005,077	6,005,077	2,052,302	28,829,362	55,402,499
2022	0	0	0	0	6,005,077	6,005,077	1,910,540	30,739,902	55,402,499
2023	5,630,000	0	7,584,577	0	6,827,169	6,827,169	2,022,056	32,761,958	62,987,077
2024	0	0	0	0	6,827,169	6,827,169	1,882,383	34,644,341	62,987,077
2025	0	0	0	0	6,827,169	6,827,169	1,752,358	36,396,699	62,987,077
2026	0	0	0	0	6,827,169	6,827,169	1,631,315	38,028,013	62,987,077
2027	0	0	0	0	6,827,169	6,827,169	1,518,632	39,546,645	62,987,077
2028	0	0	0	0	6,827,169	6,827,169	1,413,733	40,960,379	62,987,077
2029	0	0	0	0	6,827,169	6,827,169	1,316,080	42,276,458	62,987,077
2030	0	0	0	0	6,827,169	6,827,169	1,225,172	43,501,631	62,987,077
2031	0	0	0	0	6,827,169	6,827,169	1,140,544	44,642,174	62,987,077
2032	0	0	0	0	6,827,169	6,827,169	1,061,761	45,703,936	62,987,077
2033	0	0	0	0	6,827,169	6,827,169	988,420	46,692,356	62,987,077
2034	0	0	0	0	6,827,169	6,827,169	920,146	47,612,501	62,987,077
2035	0	0	0	0	6,827,169	6,827,169	856,587	48,469,088	62,987,077
2036	0	0	0	0	6,827,169	6,827,169	797,418	49,266,507	62,987,077
2037	0	0	0	0	6,827,169	6,827,169	742,337	50,008,843	62,987,077
2038	0	0	0	0	6,827,169	6,827,169	691,060	50,699,904	62,987,077
2039	0	0	0	0	6,827,169	6,827,169	643,326	51,343,229	62,987,077
2040	0	0	0	0	6,827,169	6,827,169	598,888	51,942,117	62,987,077
2041	0	0	0	0	6,827,169	6,827,169	557,520	52,499,637	62,987,077
2042	0	0	0	0	6,827,169	6,827,169	519,010	53,018,647	62,987,077

*Carrying Charge Rate = (Return Requirement+Depreciation Requirement+Income Tax Requirement)
*Book Life is 35 years.

A2: Hiawatha and West Midtown Distribution Site

Title: Hiawatha and Midtown 115 kV substations, Midtown West

Interest Rate	7.42%	Starting year for study	2007	
*Carrying Charge Rate	10.84%	Investments/Expenses	2007	
Investment Escalation	1.88%	Ending Year	2042	35
Expense Escalation	1.88%	*The 35 year totals below were calculated using the rates above.		

Year	Cumulative Present Worth	Total Investment		Levelized Annual Cost
2042	61,834,721	67,476,162		4,951,206

Year	New Investments 2007 dollars	Expenses 2007 dollars	Escalated New Investments	Escalated Expenses	Investment Revenue Requirement	Revenue Requirements	Present Worth of Revenue Requirements	Cumulative Present Worth 2007 dollars	Cumulative Investment
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	42,400,000	70,000	44,836,599	74,023	4,859,839	4,933,862	3,705,496	3,705,496	44,836,599
2011	0	80,000	0	86,188	4,859,839	4,946,027	3,458,046	7,163,542	44,836,599
2012	0	94,300	0	103,504	4,859,839	4,963,343	3,230,453	10,393,995	44,836,599
2013	0	101,400	0	113,389	4,859,839	4,973,228	3,013,300	13,407,294	44,836,599
2014	0	116,500	0	132,724	4,859,839	4,992,563	2,816,063	16,223,357	44,836,599
2015	0	145,800	0	169,227	4,859,839	5,029,066	2,640,712	18,864,069	44,836,599
2016	4,250,000	180,800	5,025,617	213,796	5,404,566	5,618,361	2,746,365	21,610,433	49,862,216
2017	8,325,000	218,950	10,029,369	263,775	6,491,649	6,755,424	3,074,086	24,684,519	59,891,585
2018	0	226,650	0	278,185	6,491,649	6,769,834	2,867,849	27,552,368	59,891,585
2019	0	247,950	0	310,050	6,491,649	6,801,699	2,682,319	30,234,687	59,891,585
2020	0	266,950	0	340,084	6,491,649	6,831,733	2,508,065	32,742,752	59,891,585
2021	0	294,900	0	382,754	6,491,649	6,874,403	2,349,404	35,092,157	59,891,585
2022	0	310,750	0	410,909	6,491,649	6,902,557	2,196,077	37,288,234	59,891,585
2023	5,630,000	334,750	7,584,577	450,966	7,313,741	7,764,707	2,299,734	39,587,968	67,476,162
2024	0	357,800	0	491,080	7,313,741	7,804,821	2,151,941	41,739,909	67,476,162
2025	0	375,300	0	524,783	7,313,741	7,838,524	2,011,947	43,751,855	67,476,162
2026	0	399,050	0	568,483	7,313,741	7,882,224	1,883,414	45,635,269	67,476,162
2027	0	435,000	0	631,347	7,313,741	7,945,088	1,767,301	47,402,571	67,476,162
2028	0	0	0	0	7,313,741	7,313,741	1,514,490	48,917,060	67,476,162
2029	0	0	0	0	7,313,741	7,313,741	1,409,877	50,326,937	67,476,162
2030	0	0	0	0	7,313,741	7,313,741	1,312,490	51,639,427	67,476,162
2031	0	0	0	0	7,313,741	7,313,741	1,221,830	52,861,258	67,476,162
2032	0	0	0	0	7,313,741	7,313,741	1,137,433	53,998,690	67,476,162
2033	0	0	0	0	7,313,741	7,313,741	1,058,865	55,057,555	67,476,162
2034	0	0	0	0	7,313,741	7,313,741	985,724	56,043,280	67,476,162
2035	0	0	0	0	7,313,741	7,313,741	917,636	56,960,915	67,476,162
2036	0	0	0	0	7,313,741	7,313,741	854,250	57,815,166	67,476,162
2037	0	0	0	0	7,313,741	7,313,741	795,243	58,610,409	67,476,162
2038	0	0	0	0	7,313,741	7,313,741	740,312	59,350,721	67,476,162
2039	0	0	0	0	7,313,741	7,313,741	689,175	60,039,896	67,476,162
2040	0	0	0	0	7,313,741	7,313,741	641,571	60,681,467	67,476,162
2041	0	0	0	0	7,313,741	7,313,741	597,254	61,278,722	67,476,162
2042	0	0	0	0	7,313,741	7,313,741	555,999	61,834,721	67,476,162

*Carrying Charge Rate = (Return Requirement+Depreciation Requirement+Income Tax Requirement)

*Book Life is 35 years.

A3: 30-Feeder Hiawatha

Title: Hiawatha Express Feeders 13.8 kV

Interest Rate	7.42%	Starting year for study	2007	
*Carrying Charge Rate	10.84%	Investments/Expenses	2007	
Investment Escalation	1.88%	Ending Year	2042	35
Expense Escalation	1.88%	*The 35 year totals below were calculated using the rates above.		

Year	Cumulative Present Worth	Total Investment		Levelized Annual Cost
2042	54,418,071	70,277,192		4,350,090

Year	New Investments 2007 dollars	Expenses 2007 dollars	Escalated New Investments	Escalated Expenses	Investment Revenue Requirement	Revenue Requirements	Present Worth of Revenue Requirements	Cumulative Present Worth 2007 dollars	Cumulative Investment
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	21,810,000	140,000	23,063,354	148,045	2,499,837	2,647,882	1,988,649	1,988,649	23,063,354
2011	0	160,000	0	172,376	2,499,837	2,672,213	1,868,294	3,856,943	23,063,354
2012	0	188,600	0	207,008	2,499,837	2,706,845	1,761,783	5,618,726	23,063,354
2013	0	202,800	0	226,778	2,499,837	2,726,615	1,652,068	7,270,794	23,063,354
2014	0	233,000	0	265,447	2,499,837	2,765,284	1,559,763	8,830,557	23,063,354
2015	0	291,600	0	338,454	2,499,837	2,838,290	1,490,358	10,320,914	23,063,354
2016	13,210,000	361,600	15,620,799	427,591	4,192,975	4,620,567	2,258,623	12,579,538	38,684,154
2017	14,930,000	437,900	17,986,604	527,551	6,142,543	6,670,094	3,035,256	15,614,794	56,670,757
2018	0	453,300	0	556,370	6,142,543	6,698,914	2,837,805	18,452,599	56,670,757
2019	0	495,900	0	620,099	6,142,543	6,762,643	2,666,917	21,119,516	56,670,757
2020	0	533,900	0	680,168	6,142,543	6,822,711	2,504,753	23,624,269	56,670,757
2021	0	589,800	0	765,508	6,142,543	6,908,052	2,360,904	25,985,173	56,670,757
2022	0	621,500	0	821,817	6,142,543	6,964,361	2,215,740	28,200,914	56,670,757
2023	10,100,000	669,500	13,606,435	901,932	7,617,345	8,519,276	2,523,220	30,724,134	70,277,192
2024	0	715,600	0	982,160	7,617,345	8,599,505	2,371,050	33,095,185	70,277,192
2025	0	750,600	0	1,049,565	7,617,345	8,666,910	2,224,572	35,319,757	70,277,192
2026	0	798,100	0	1,136,965	7,617,345	8,754,310	2,091,794	37,411,551	70,277,192
2027	0	870,000	0	1,262,694	7,617,345	8,880,038	1,975,271	39,386,822	70,277,192
2028	0	0	0	0	7,617,345	7,617,345	1,577,358	40,964,181	70,277,192
2029	0	0	0	0	7,617,345	7,617,345	1,468,403	42,432,583	70,277,192
2030	0	0	0	0	7,617,345	7,617,345	1,366,973	43,799,557	70,277,192
2031	0	0	0	0	7,617,345	7,617,345	1,272,550	45,072,107	70,277,192
2032	0	0	0	0	7,617,345	7,617,345	1,184,649	46,256,756	70,277,192
2033	0	0	0	0	7,617,345	7,617,345	1,102,820	47,359,576	70,277,192
2034	0	0	0	0	7,617,345	7,617,345	1,026,643	48,386,219	70,277,192
2035	0	0	0	0	7,617,345	7,617,345	955,728	49,341,947	70,277,192
2036	0	0	0	0	7,617,345	7,617,345	889,711	50,231,659	70,277,192
2037	0	0	0	0	7,617,345	7,617,345	828,255	51,059,914	70,277,192
2038	0	0	0	0	7,617,345	7,617,345	771,044	51,830,957	70,277,192
2039	0	0	0	0	7,617,345	7,617,345	717,784	52,548,741	70,277,192
2040	0	0	0	0	7,617,345	7,617,345	668,203	53,216,944	70,277,192
2041	0	0	0	0	7,617,345	7,617,345	622,047	53,838,992	70,277,192
2042	0	0	0	0	7,617,345	7,617,345	579,080	54,418,071	70,277,192

*Carrying Charge Rate = (Return Requirement+Depreciation Requirement+Income Tax Requirement)
*Book Life is 35 years.

A4: Hiawatha-Midtown 34.5 kV

Title: Hiawatha @ 34.5 kV, Oakland, Garfield, Nicollet @ 34.5/13.8 kV

Interest Rate	7.42%	Starting year for study	2007	
*Carrying Charge Rate	10.84%	Investments/Expenses	2007	
Investment Escalation	1.88%	Ending Year	2042	35
Expense Escalation	1.88%	*The 35 year totals below were calculated using the rates above.		

Year	Cumulative Present Worth	Total Investment		Levelized Annual Cost
2042	113,401,696	139,110,254		9,070,030

Year	New Investments 2007 dollars	Expenses 2007 dollars	Escalated New Investments	Escalated Expenses	Investment Revenue Requirement	Revenue Requirements	Present Worth of Revenue Requirements	Cumulative Present Worth 2007 dollars	Cumulative Investment
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010	61,115,000	70,000	64,627,094	74,023	7,004,931	7,078,953	5,316,532	5,316,532	64,627,094
2011	0	80,000	0	86,188	7,004,931	7,091,118	4,957,800	10,274,332	64,627,094
2012	0	94,300	0	103,504	7,004,931	7,108,434	4,626,612	14,900,944	64,627,094
2013	0	101,400	0	113,389	7,004,931	7,118,320	4,313,020	19,213,964	64,627,094
2014	0	116,500	0	132,724	7,004,931	7,137,654	4,026,005	23,239,969	64,627,094
2015	0	145,800	0	169,227	7,004,931	7,174,157	3,767,078	27,007,047	64,627,094
2016	22,165,000	180,800	26,210,069	213,796	9,845,840	10,059,636	4,917,346	31,924,393	90,837,162
2017	27,305,000	218,950	32,895,125	263,775	13,411,343	13,675,118	6,222,923	38,147,316	123,732,288
2018	0	226,650	0	278,185	13,411,343	13,689,528	5,799,181	43,946,498	123,732,288
2019	0	247,950	0	310,050	13,411,343	13,721,392	5,411,171	49,357,669	123,732,288
2020	0	266,950	0	340,084	13,411,343	13,751,427	5,048,422	54,406,091	123,732,288
2021	0	294,900	0	382,754	13,411,343	13,794,097	4,714,287	59,120,379	123,732,288
2022	0	310,750	0	410,909	13,411,343	13,822,251	4,397,607	63,517,985	123,732,288
2023	11,415,000	334,750	15,377,966	450,966	15,078,160	15,529,126	4,599,382	68,117,368	139,110,254
2024	0	357,800	0	491,080	15,078,160	15,569,240	4,292,742	72,410,109	139,110,254
2025	0	375,300	0	524,783	15,078,160	15,602,943	4,004,873	76,414,982	139,110,254
2026	0	399,050	0	568,483	15,078,160	15,646,643	3,738,679	80,153,661	139,110,254
2027	0	435,000	0	631,347	15,078,160	15,709,507	3,494,415	83,648,076	139,110,254
2028	0	0	0	0	15,078,160	15,078,160	3,122,303	86,770,380	139,110,254
2029	0	0	0	0	15,078,160	15,078,160	2,906,631	89,677,011	139,110,254
2030	0	0	0	0	15,078,160	15,078,160	2,705,857	92,382,868	139,110,254
2031	0	0	0	0	15,078,160	15,078,160	2,518,951	94,901,818	139,110,254
2032	0	0	0	0	15,078,160	15,078,160	2,344,955	97,246,773	139,110,254
2033	0	0	0	0	15,078,160	15,078,160	2,182,978	99,429,751	139,110,254
2034	0	0	0	0	15,078,160	15,078,160	2,032,190	101,461,941	139,110,254
2035	0	0	0	0	15,078,160	15,078,160	1,891,817	103,353,758	139,110,254
2036	0	0	0	0	15,078,160	15,078,160	1,761,140	105,114,898	139,110,254
2037	0	0	0	0	15,078,160	15,078,160	1,639,490	106,754,388	139,110,254
2038	0	0	0	0	15,078,160	15,078,160	1,526,243	108,280,630	139,110,254
2039	0	0	0	0	15,078,160	15,078,160	1,420,818	109,701,449	139,110,254
2040	0	0	0	0	15,078,160	15,078,160	1,322,676	111,024,124	139,110,254
2041	0	0	0	0	15,078,160	15,078,160	1,231,312	112,255,436	139,110,254
2042	0	0	0	0	15,078,160	15,078,160	1,146,260	113,401,696	139,110,254

*Carrying Charge Rate = (Return Requirement+Depreciation Requirement+Income Tax Requirement)

*Book Life is 35 years.

Appendix C: Modeling Changes

IDEV/Change Preformed	2012 Change	2018 Change	2018 With CapX	30 % Wind Penetration Peak
North Mankato Plan				
Outer Metro 115 kV development	1)115 kV line from scott co to westgate 2) 115 kV line from Scott Co to West Waconia 3) 115 kV line form West Waconia to Glenco	1)115 kV line from scott co to westgate 2) 115 kV line from Scott Co to West Waconia 3) 115 kV line form West Waconia to Glenco		
10 MW load at Crooks	B0 load of sugar beet plant is not in the model. Added 13 MW 2.62 MVAR load to at crooks to represent. ID = "SB"	13.5 mw		
Kegan Lake to Lebenon Nills	47 MVA	47 MVA		
Fischer-Will Pipe- Apple Valley	191 MVA conductor ratings used	191 MVA conductor ratings used		
Place A tap at the Wilson Bus	Split Wilson Bus to model breaker	Split Wilson Bus to model breaker		
Blue Lake Generation	Changed id numbers on xfmrs and machines	Changed id numbers on xfmrs and machines		
Carver County		Second transformer was missing		
Troy load	Added current normally open	Added current normally open		
Added Baisin load projection	Added load near renville based on information from Jim Edwards	Added load near renville based on information from Jim Edwards		
Rogers Lake Caps	fixed rogers lake caps to 82 mvar	fixed rogers lake caps to 82 mvar		
Panther xfmr bandwidth	new 1.0-1.04	new 1.0-1.04		
Fixed Yankee Doodle Project	moved yankee doodle-inver grove to yankee doodle - pilot knob	moved yankee doodle-inver grove to yankee doodle - pilot knob		
PARKERS LAKE REACTOR	MOVE REACTORS FROM XFMR 10 TO 9 AND ADD A SECOND 15 MVAR REACTOR	MOVE REACTORS FROM XFMR 10 TO 9 AND ADD A SECOND 15 MVAR REACTOR		
BLUE LAKE 230/115 KV XFMR	SWITCHED TAP SIDE OF XFMR	SWITCHED TAPED SIDE OF XFMR		
Douglas Co. Transformer #2	added xfmr at douglas co	added xfmr at douglas co		
Lawrance Transformer (60122) #2	added second transformer	added second transformer		
Bay front-pilson-ino pump	113 MVA ratings	114 MVA ratings		
Hydro Lane xfmr upgrade	copied ft. ridgley xfmr	copied ft. ridgley xfmr		
Park Falls Xfmr upgrades	copied ironwood xfmrs	copied ironwood xfmrs		
Paynsville xfmr upgrade	copied linconco xfmr	copied linconco xfmr		
Iron wood 2nd transformer	copied first transformer	already existed		
Osakis-sauk center	replaced conductor to 477	replaced conductor to 477		
Fenton Interconnect	Fenton 115/69 kV xfmr (not LTC) and in/out at chandler to fenton	Fenton 115/69 kV xfmr (not LTC) and in/out at chandler to fenton		
Stone Lake upgrade	161 kV from Stone Lake - Cuderay	161 kV from Stone Lake - Cuderay		
Split buses for cap banks	Split many buses for cap bank category c contingency modeling	Split many buses for cap bank category c contingency modeling		
West Gate Normally Open between transformers	opened line between xfmrs on 69 kV bus	opened line between xfmrs on 69 kV bus		
Arden Hills Load Increase	Added 50 MW of load at Arden hills 115 kV for TCAAP development	Added 50 MW of load at Arden hills 115 kV for TCAAP development		
Ratings Changes	Apache - Arden Hills 280 MVA	Apache - Arden Hills 280 MVA		
Ratings Changes	Apache - Terminal 398 MVA	Apache - Terminal 398 MVA		

	rating	rating		
Impedance and rating change Troy Switching Station	T2 4/0 between troy and troy switching East river ratings on troy-henry line	T2 4/0 between troy and troy switching East river ratings on troy-henry line	T2 4/0 between troy and troy switching East river ratings on troy-henry line	not needed
Cap X addition	n/a	n/a	Used 2017 Models with previous corrections and added all CAPX facilities	
St. Thomas - Helena 115 kV			CAPX idev deleted this line replaced.	CAPX idev deleted this line replaced.
Outer Loop 345 kV				Cerated 345 Outer Loop. See IDEV
Wind Addition				Added Wind Generators to model All 560 MVA base with no reactive capability.
Transformer unloading at wind generation				Added transformers to wind step up. Wind modeled for penetration study to keep var consumption from being a problem. Xfrmrs added at fenton, yankee, steven co, lincoln co. Mapel River ok.
hazelton-salem				
manitoba 1250 hydro expansion				
2% load increase to have 2018 models		Scaled zones 601-605 up 2% for load. Scaled 2.12% gen for owner 600&605 to max the rest on swing bus	Scaled zones 601-605 up 2% for load. Scaled 2.12% gen for owner 600&605 to max the rest on swing bus	Scaled zones 601-605 up 2% for load. Generation dispatched to match 2018 projections.
Sauk river - wait park - st cloud conductor upgrade	795 SAC conductor added	795 SAC conductor added	795 SAC conductor added	795 SAC conductor added
parkfalls rating change	47 MVA park falls	47 MVA park falls	47 MVA park falls	47 MVA park falls
rating change union - sauk	Union - sauk rating 84 mVA	Union - sauk rating 84 mVA	Union - sauk rating 84 mVA	Union - sauk rating 84 mVA
transformer move t corners - hydro	tcorners to hydro xfmr move	tcorners to hydro xfmr move	tcorners to hydro xfmr move	tcorners to hydro xfmr move
Prescott and Monroe Co. Caps	10 MVAR bank at Prescott, Split Monroe CO. into 2-30 MVAR banks	10 MVAR bank at Prescott, Split Monroe CO. into 2-30 MVAR banks	10 MVAR bank at Prescott, Split Monroe CO. into 2-30 MVAR banks	10 MVAR bank at Prescott, Split Monroe CO. into 2-30 MVAR banks
Edina - Eden Prairie	Changed impedance and ratings see idev	Changed impedance and ratings see idev	Changed impedance and ratings see idev	Changed impedance and ratings see idev
~~Main St - Gopher - Terminal~~	~~changed resistance by 1 decimal place~~	~~changed resistance by 1 decimal place~~	~~changed resistance by 1 decimal place~~	~~changed resistance by 1 decimal place~~
Prior Lake - Terminal	changed rating to 310 MVA	changed rating to 310 MVA	changed rating to 310 MVA	changed rating to 310 MVA
Parkers Lake Area 115 kV lines	Parkers Lake - Basset Creek - Medicine Lake - Aldrich ratings changed	Parkers Lake - Basset Creek - Medicine Lake - Aldrich ratings changed	Parkers Lake - Basset Creek - Medicine Lake - Aldrich ratings changed	Parkers Lake - Basset Creek - Medicine Lake - Aldrich ratings changed
Long Lake - Tanners Lake	Rating Change	Rating Change	Rating Change	Rating Change
Chemolite - Linde	Rating Drop	Rating Drop	Rating Drop	Rating Drop
Nine Mile - Edina - Wilson	Rating Change	Rating Change	Rating Change	Rating Change
Coon Creek Ratings	updated every line from coon creek with summer 2312 line ratings	updated every line from coon creek with summer 2312 line ratings	updated every line from coon creek with summer 2312 line ratings	updated every line from coon creek with summer 2312 line ratings
Riverside - Moore Lake	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings
Inver Hills - Rich Valley	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings
Terminal - Apache	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings
Kohlman lake - Ramsey ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings	Updated to 2312 summer line ratings
Deleted 60103-60104 from Jason E.	Deleted 60103-60104 from Jason E.	Deleted 60103-60104 from Jason E.	Deleted 60103-60104 from Jason E.	Deleted 60103-60104 from Jason E.
Gen Shift Fenton To Adams				Moved 200 MW of Gen form fenton to Adams 60045
Changed V scheduled at Fenton to 1.025				Changed V scheduled at Fenton to 1.025

Added Switched shunts to compensate for XFMR var consumption at Lincoln CO and Stevens co				90 MVAR of caps (3 30's at lincoln and stevens)
Creation of Sherco outage model				
Adjusted Maple River Taps				Adjusted Maple River Taps 345/230
Yankee Gen V Schedule set to 1.025				Yankee Gen V Schedule set to 1.025
Removed Sherco Corridor				
Added "SVC's" to calculate reactive needs				
Lake Marion Transformer Upgraded			Replaced Lake Marion 345/115 kV transformer with one of 672 rating	Replaced Lake Marion 345/115 kV transformer with one of 672 rating
West Waconia 2nd transformer added				added second West Waconia transformer for high wind
Added Non-Coincident Loads to Eden Prairie Area				
Created 2018 High Wind Offpeak				
Srinivas Model Change near scott co	Ran idev from srinivas "Chaska correction"	Ran idev from srinivas "Chaska correction"	Ran idev from srinivas "Chaska correction"	Ran idev from srinivas "Chaska correction"
30 MW addition at Gopher		30 MW addition at Gopher	30 MW addition at Gopher	30 MW addition at Gopher
Stinson Phase Shifter correction MP	Phase shifter modeled correctly	Phase shifter modeled correctly	Phase shifter modeled correctly	Phase shifter modeled correctly
~~Aldrich N.O.~~	~~Opened bus tie breakers at Aldrich~~	~~Opened bus tie breakers at Aldrich~~	~~Opened bus tie breakers at Aldrich~~	~~Opened bus tie breakers at Aldrich~~

Appendix D: Full Contingency List

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SINGLE BRANCH IN SUBSYSTEM NSP_AREA
SINGLE TIE FROM SYSTEM NSP_AREA

COM Updated on 8/24/2007
COM per TAS update by David Kempf-GRE based on MP,
OTP, XCEL, DPC and GRE responses
COM ' START MINNESOTA AREA CONTINGENCIES'
COM ' '
COM ' '
COM ----------
------
COM  Multi-Circuit (C.3) and Tower Outage (C.5) and
Breaker Failure (C.2,6-9)
COM                    Total: 199
COM ----------
------
COM ' 001 Defined as multi-terminal, with DC reduction'
COM 'A 66757-60175 MORANVI4-ROSEAU 4 CKT 1
OPENS  B'
COM 'B 60175-67576 ROSEAU 4-RICHER 4 CKT 1
OPENS  A'
COM '----------'
CONTINGENCY '001     '
COM 'Reduce 100% measured at 67576'
COM 'TRIP LINE FROM BUS 66757 TO BUS 60175 CKT 1
DCRED'
TRIP LINE FROM BUS 66757 TO BUS 60175 CKT 1
TRIP LINE FROM BUS 60175 TO BUS 67576 CKT 1
CHANGE BUS 67503 SHUNT BY  94.0 MW
CHANGE BUS 60002 GENERATION BY  94.0 MW
COM 'CHANGE BUS 60001 GENERATION BY  0.0 MW'
COM 'CHANGE BUS 60002 GENERATION BY  0.0 MW'
COM 'CHANGE BUS 60008 GENERATION BY  0.0 MW'
END
COM ' 003 Defined as multi-terminal, with DC reduction'
COM 'A 66757-66793 MORANVI4-MORANV2T CKT 1
OPENS  B C D E F'
COM 'B 66719-66793 MORANVI7-MORANV2T CKT 1
OPENS  A C D E F'
COM 'C 66769-66793 MORANV29-MORANV2T CKT 1
OPENS  A B D E F'
COM 'D 66753-66757 RUNNING4-MORANVI4 CKT 1
VLD SGL DCRED'
COM 'E 66757-60175 MORANVI4-ROSEAU 4 CKT 1   Will
not open Moranville Tr.'
COM 'F 60175-67576 ROSEAU 4-RICHER 4 CKT 1   Will
not open Moranville Tr.'
COM '----------'
COM 'NSP  Defined as DBL CKT'
COM 'A 60244-60367  SCOTTCO7-EXCELSR7   OPENS  B
DBL CKT'
COM 'B 60244-60892  GOOSELK7-MNRIVER7   OPENS
A DBL CKT'
COM '----------'
CONTINGENCY 'SCOTT CO DBL CKT'
TRIP LINE FROM BUS 60222 TO BUS 60367 CKT 1
TRIP LINE FROM BUS 60212 TO BUS 60892 CKT 1
END
CONTINGENCY '003     '
COM 'Reduce 100% measured at 67576'
COM 'TRIP LINE FROM BUS 66757 TO BUS 66793 CKT 1
DCRED'
TRIP LINE FROM BUS 66757 TO BUS 66793 CKT 1
TRIP LINE FROM BUS 66719 TO BUS 66793 CKT 1
TRIP LINE FROM BUS 66769 TO BUS 66793 CKT 1
TRIP LINE FROM BUS 66753 TO BUS 66757 CKT 1
TRIP LINE FROM BUS 66757 TO BUS 60175 CKT 1
TRIP LINE FROM BUS 60175 TO BUS 67576 CKT 1
CHANGE BUS 67503 SHUNT BY 94.0 MW
CHANGE BUS 60002 GENERATION BY 94.0 MW
COM 'CHANGE BUS 60001 GENERATION BY  0.0 MW'
COM 'CHANGE BUS 60002 GENERATION BY  0.0 MW'
COM 'CHANGE BUS 60008 GENERATION BY  0.0 MW'
END
COM 'NSP  Defined as multi-terminal'
COM 'A 60222-60212  KOLMNLK7-GOOSELK7   OPENS
B MTL'
COM 'B 60212-60358  GOOSELK7-MNPIP  7 '
COM '----------'
CONTINGENCY 'Goose LK DBL CKT'
TRIP LINE FROM BUS 60222 TO BUS 60212 CKT 1
TRIP LINE FROM BUS 60212 TO BUS 60358 CKT 1
END
COM 'NSP  Defined as DBL CKT'
COM 'A 60244-60367  SCOTTCO7-EXCELSR7   OPENS  B
DBL CKT'
COM 'B 60244-60892  GOOSELK7-MNRIVER7   OPENS
A DBL CKT'
COM '----------'
CONTINGENCY 'SCOTT CO DBL CKT'
TRIP LINE FROM BUS 60222 TO BUS 60367 CKT 1
TRIP LINE FROM BUS 60212 TO BUS 60892 CKT 1
END
COM ' 007 Defined as multi-terminal, north transformer
outage'
COM 'A 66753-66778 RUNNING4-RUNNINNT CKT 1
OPENS  B C D E F'
COM 'B 66780-66778 RUNNINU8-RUNNINNT CKT 1
OPENS  A C D E F'
COM 'C 66765-66778 RUNNININ9-RUNNINNT CKT 1
OPENS  A B D E F'
COM ' south transformer trips from outage above'
COM 'D 66753-66779 RUNNING4-RUNNINST CKT 1
OPENS  see above'
COM 'E 66780-66779 RUNNINU8-RUNNINST CKT 1
OPENS  see above'
COM 'F 66764-66779 RUNNINS9-RUNNINST CKT 1
OPENS  see above'
COM 'G 66753-66757 RUNNING4-MORANVI4 CKT 1
VLD SGL, DC RED'
COM 'H 66753-61627 RUNNING4-SHANNON4 CKT 1
VLD SGL, DC RED'
COM '----------'
CONTINGENCY '007     '
COM 'Reduce 100% measured at 67576'
COM 'TRIP LINE FROM BUS 66753 TO BUS 66757 CKT 1
DCRED'
TRIP LINE FROM BUS 66753 TO BUS 66757 CKT 1
TRIP LINE FROM BUS 66753 TO BUS 61627 CKT 1
CHANGE BUS 67503 SHUNT BY 94.0 MW
CHANGE BUS 60002 GENERATION BY 94.0 MW
COM 'CHANGE BUS 60001 GENERATION BY  0.0 MW'
COM 'CHANGE BUS 60002 GENERATION BY  0.0 MW'
COM 'CHANGE BUS 60008 GENERATION BY  0.0 MW'
TRIP LINE FROM BUS 66753 TO BUS 66778 CKT 1
TRIP LINE FROM BUS 66780 TO BUS 66778 CKT 1
TRIP LINE FROM BUS 66765 TO BUS 66778 CKT 1
TRIP LINE FROM BUS 66753 TO BUS 66779 CKT 1
TRIP LINE FROM BUS 66780 TO BUS 66779 CKT 1
TRIP LINE FROM BUS 66764 TO BUS 66779 CKT 1
END

COM ' 009 Defined as multi-circuit, tower'
COM ' Both 63030-60270-60233 and 63030-60202 must trip
for the Coal'
COM ' Creek to Dickinson DC line to trip.  The DC will'
COM ' carry 1000 MW if only one of these lines trip'
COM ' SET BUS 63000 AND 63001 = PGEN + PLOAD =
xxx.0 and xxx.0'
COM ' SET BUS 63041 AND 63030 ALWAYS ZERO FOR
DC TRIP'
COM 'A 63030-60270 DICKNSN3-MPLEGV13 CKT 1
OPENS  C tower, MTL B, A C trip DC line'
COM 'B 60270-60233 MPLEGV13-PARKERS3 CKT 1
OPENS  with A'
COM 'C 63030-60202 DICKNSN3-COON CK3 CKT 1
OPENS  A tower, A C trip DC line'
COM 'D 63030-62925 DICKNSN3-DICKNSN7 CKT 1
Transfr to better simulate DC'
COM 'E 60114-60233 ELM CRK3-PARKERS3 CKT 1
OPENS  A or F,  R of W, tower,  MTL D'
COM 'F 63030-60270 DICKNSN3-MPLEGV13 CKT 1
OPENS  E or G  tower, F G trip DC line'
COM '  60270-60233 MPLEGV13-PARKERS3 CKT 1
OPENS  with F'
COM 'G 63030-60202 DICKNSN3-COON CK3 CKT 1
OPENS  B or F  tower, F G trip DC line'
COM '  63030-62925 DICKNSN3-DICKNSN7 CKT 1
Transfr to better simulate DC'
COM ' Muti-circuit outage of transformer with Dummy Bus
and dummy ownership bus'
COM 'A 60160-60272 SHERCO 3-MPLEGV23 CKT 1
OPENS  B,H,I,J  MTL'
COM 'H 60202-61488 COON CK3-CNCMID1Y CKT 1
OPENS  A,B,I,J  MTL'
COM 'I 60203-61488 COON CK7-CNCMID1Y CKT 1
OPENS  A,B,H,J  MTL'
COM 'J 60656-61488 CNCTER19-CNCMID1Y CKT 1
OPENS  A,B,H,I  MTL'
COM 'B 60272-60202 MPLEGV23-COON CK3 CKT 1
OPENS  A,H,I,J  MTL'
COM '----------'
CONTINGENCY '009   1'
COM 'Tower A with C and, B,H,I,J multi-terminal response'
TRIP LINE FROM BUS 60160 TO BUS 60272 CKT 1
TRIP LINE FROM BUS 60272 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60151 TO BUS 60160 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61488 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60203 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60656 CKT 9
END

CONTINGENCY '009 2'
COM 'Tower A with D with E and, B,H,I,J multi-terminal
response'
TRIP LINE FROM BUS 60160 TO BUS 60272 CKT 1
TRIP LINE FROM BUS 60272 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60151 TO BUS 60114 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61488 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60203 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60656 CKT 9
END

CONTINGENCY '009   4'
COM 'Tower G with B and, A,H,I,J multi-terminal response'
TRIP LINE FROM BUS 60160 TO BUS 60272 CKT 1
TRIP LINE FROM BUS 60272 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 63030 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61488 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60203 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60656 CKT 9
END

CONTINGENCY '009   5'
COM 'Tower DC with Elm Crk-Parkers'
TRIP LINE FROM BUS 60114 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 63030 TO BUS 60270 CKT 1
TRIP LINE FROM BUS 60270 TO BUS 60233 CKT 1
END

CONTINGENCY '009   6'
COM 'Transformer multi-terminal outage, A,B,H,I,J'
TRIP LINE FROM BUS 60160 TO BUS 60272 CKT 1
TRIP LINE FROM BUS 60272 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61488 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60203 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60656 CKT 9
END

CONTINGENCY '009   7'
COM 'Tower A with E and,  multi-terminal response B,H,I,J'
TRIP LINE FROM BUS 60160 TO BUS 60272 CKT 1
TRIP LINE FROM BUS 60272 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60114 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61488 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60203 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60656 CKT 9
END

CONTINGENCY '009   8'
COM 'Tower E with F with A and, responding multi-terminal
B,H,I,J'
TRIP LINE FROM BUS 60114 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60160 TO BUS 60272 CKT 1
TRIP LINE FROM BUS 60272 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 63030 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61488 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60203 CKT 9
TRIP LINE FROM BUS 61488 TO BUS 60656 CKT 9
END

COM ' '
COM ' '
COM ' START SOUTH DAKOTA AREA
CONTINGENCIES'
COM ' '
COM ' '
COM ' '
COM 'NSP - 1  Defined as multi-circuit'
COM 'SPLIT ROCK-WHITE & SPLIT ROCK-SIOUX CITY
345
```

```
COM 'A 60126-60130  SPLT RK3-SPLTRTA3 CKT 1
OPENS  C   tower, B MTL'
COM 'B 60130-66537  SPLTRTA3-WHITE  3 CKT 1
OPENS  A   MTL'
COM 'C 60126-60131  SPLT RK3-SPLTRTB3 CKT 1
OPENS  A   tower, D MTL'
COM 'D 60131-66564  SPLTRTB3-SIOUXCY3 CKT 1
OPENS  C   MTL'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP - 1'
TRIP LINE FROM BUS 60126 TO BUS 60130 CKT 1
TRIP LINE FROM BUS 60130 TO BUS 66537 CKT 1
TRIP LINE FROM BUS 60126 TO BUS 60131 CKT 1
TRIP LINE FROM BUS 60131 TO BUS 66564 CKT 1
END
COM 'NSP - 2  DEFINED AS MULTI-CIRCUIT'
COM 'SPLIT ROCK-CHERRY CREEK/WEST SIOUX
FALLS'
COM 'A 60129-60117  SPLT RK7-CHERRYC7 CKT 1
OPENS B TOWER'
COM 'B 60129-60132  SPLT RK7-WSX FLS7 CKT 1
OPENS A TOWER'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP - 2'
TRIP LINE FROM BUS 60129 TO BUS 60117 CKT 1
TRIP LINE FROM BUS 60129 TO BUS 60132 CKT 1
END
COM ' '
COM ' START MINNESOTA AREA CONTINGENCIES'
COM ' '
COM ' '
COM 'NSP  Defined as multi-circuit, tower'
COM 'A 60192-60108  BLUE LK3-WILMART3  OPENS B
tower'
COM 'B 60215-60261  HYLNDLK7-DEANLAK7  OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSPaa    '
TRIP LINE FROM BUS 60192 TO BUS 60108 CKT 1
TRIP LINE FROM BUS 60215 TO BUS 60261 CKT 1
END

COM 'NSP  Defined as multi-circuit, tower, multi-terminal'
COM 'A 60192-60108  BLUE LK3-WILMART3  OPENS B
tower'
COM 'B 60244-60261  SCOTTCO7-DEANLAK7  OPENS A
tower, C mtl'
COM 'C 60244-60890  SCOTTCO7-SCOTTCO8  VLD SNG
COM '-----------------------------------------------------'
CONTINGENCY 'NSP-    1'
TRIP LINE FROM BUS 60192 TO BUS 60108 CKT 1
TRIP LINE FROM BUS 60244 TO BUS 60261 CKT 1
TRIP LINE FROM BUS 60244 TO BUS 60890 CKT 1
END
CONTINGENCY 'NSP-    2'
TRIP LINE FROM BUS 60244 TO BUS 60261 CKT 1
TRIP LINE FROM BUS 60244 TO BUS 60890 CKT 1
END


COM 'NSP  Defined as multi-circuit, tower'
COM 'A 60215-60261  HYLNDLK7-DEANLAK7  OPENS B
tower'
COM 'B 60215-60193  HYLNDLK7-BLUE LK7  OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSPa    '
TRIP LINE FROM BUS 60215 TO BUS 60261 CKT 1
TRIP LINE FROM BUS 60215 TO BUS 60193 CKT 1
END


COM 'NSP  Defined as multi-circuit, tower'
COM 'A 60249-60182  STLSPRK7-ALDRCH27  OPENS B
tower'
COM 'B 60249-60346  STLSPRK7-CEDARLK  OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSPb    '
TRIP LINE FROM BUS 60249 TO BUS 60182 CKT 1
TRIP LINE FROM BUS 60249 TO BUS 60346 CKT 1
END


COM 'NSP  Defined as multi-circuit, tower'
COM 'A 60208-60263  EDINA  7-EDEN PR7  OPENS B
tower'
COM 'B 60208-60280  EDINA  7-NINE MI7  OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSPc    '
TRIP LINE FROM BUS 60208 TO BUS 60263 CKT 1
TRIP LINE FROM BUS 60208 TO BUS 60280 CKT 1
END

COM 'NSP MTL WILSON'
COM ' REMOVE WILSON TAP AND ALL
CONNECTIONS'
CONTINGENCY 'WILSON7 MTL'
DISCONNECT BUS 60904
END

COM 'NSP  Defined as multi-circuit, tower'
COM 'A 60246-60195  SO TOWN7-CDRVALE7  OPENS B
tower'
COM 'B 60246-60245  SO TOWN7-SHEPARD7  OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSPd    '
TRIP LINE FROM BUS 60246 TO BUS 60195 CKT 1
TRIP LINE FROM BUS 60246 TO BUS 60245 CKT 1
END


COM 'NSP  Defined as multi-circuit, tower'
COM 'A 60153-62927  MNTCELO7-LKCONST7  OPENS
B,C,D tower'
COM 'B 60153-62955  MNTCELO7-OAKWOOD7  OPENS
A,C,D tower'
COM 'C 62955-60269  OAKWOOD7-HASSAN 7'
COM 'D 62927-60155  LKCONST7-PULASKI7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP MONTICELLO 115 Kv DBLCKT'
TRIP LINE FROM BUS 60153 TO BUS 62927 CKT 1
TRIP LINE FROM BUS 60153 TO BUS 62955 CKT 1
TRIP LINE FROM BUS 62955 TO BUS 60269 CKT 1
TRIP LINE FROM BUS 62927 TO BUS 60155 CKT 1
END


COM 'NSP  Defined as multi-circuit, multi-terminal'
COM 'A 60221-60202  KOLMNLK3-COON CK3   OPENS
B TOWER, C MTL'
COM 'B 60221-60251  KOLMNLK3-TERMINL3   OPENS
A tower, DEF mtl'
COM 'C 60221-60222  KOLMNLK3-KOLMNLK7   VLD
SNG'
COM 'D 61492-60251  TERMID1Y-TERMINL3   D E F
VLD SNG'
COM 'E 61492-60252  TERMID1Y-TERMINL7   D E F VLD
SNG'
COM 'F 61492-61187  TERMID1Y-TERTER19   D E F VLD
SNG'
COM '-----------------------------------------------------'
CONTINGENCY 'NSPf    '
TRIP LINE FROM BUS 60221 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 9
TRIP LINE FROM BUS 61492 TO BUS 60251 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 60252 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 61187 CKT 10
END


COM 'NSP  Defined as multi-circuit, multi-terminal'
COM 'A 60221-60199  KOLMNLK3-CHIS CO3   OPENS  B
TOWER, C MTL'
COM 'B 60221-60186  KOLMNLK3-AS KING3   OPENS  A
tower'
COM 'C 60221-60222  KOLMNLK3-KOLMNLK7 ckt 2
VLD SNG'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP--    1'
TRIP LINE FROM BUS 60221 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60186 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 10
END
CONTINGENCY 'NSP--    2'
TRIP LINE FROM BUS 60221 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 10
END


COM 'NSP  Defined as multi-circuit'
COM 'A 60186-60199  AS KING3-CHIS CO3   only for both
B&C'
COM 'B 60186-60236  AS KING3-REDROCK3   OPENS  C
tower'
COM 'C 60186-60304  AS KING3-EAU CL 3   OPENS  B
tower, mtl DE'
COM 'D 60304-39244  EAU CL 3-ARP 345    vld sgl'
COM 'E 60304-60305  EAU CL 3-EAU CLA5 ckt9 OPENS C
D'
COM ' These lines are west of Council Creek'
COM ' They could trip for loss of E.C.-Arpin 345 kV'
COM ' 39901 [COC DPC     ] to 38342 [COC 69  69.0]'
COM ' 38333 [HLT 69  69.0] to 68821 [MAUSTON 69.0]'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP    1'
TRIP LINE FROM BUS 60186 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60236 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60304 CKT 1
TRIP LINE FROM BUS 60304 TO BUS 39244 CKT 1
TRIP LINE FROM BUS 60304 TO BUS 60305 CKT 9
TRIP LINE FROM BUS 39901 TO BUS 38342 CKT 1
TRIP LINE FROM BUS 38333 TO BUS 68821 CKT 1
END
CONTINGENCY 'NSP    2'
TRIP LINE FROM BUS 60186 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60236 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60304 CKT 1
TRIP LINE FROM BUS 60304 TO BUS 39244 CKT 1
TRIP LINE FROM BUS 60304 TO BUS 60305 CKT 9
END


COM 'NSP  Defined as multi-circuit'
COM 'A 60238-60179  REDROCK7-AFTON  7   OPENS B
tower'
COM 'B 60238-60344  REDROCK7-WOODBUR7   OPENS
A tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP5    '
TRIP LINE FROM BUS 60238 TO BUS 60179 CKT 1
TRIP LINE FROM BUS 60238 TO BUS 60344 CKT 1
END

COM 'NSP  Defined as multi-circuit'
COM 'A 60223-60341  KOCHREF7-ROSEMON7   OPENS
B tower'
COM 'B 60223-62229  KOCHREF7-APPVLTE7   OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP7    '
TRIP LINE FROM BUS 60223 TO BUS 60341 CKT 1
TRIP LINE FROM BUS 60223 TO BUS 62229 CKT 1
END

COM 'NSP Defined as multi-terminal'
COM 'DISCONNECT APPLE VALLEY TAP'
COM 'CLOSE APPLE VALEY TO APPLE VALLEY TAP'
COM 'LOSE CAP AT KOCH REFINERY'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP KOCH REFINERY-JOHNNY CAKE'
CLOSE LINE FROM BUS 62233 TO BUS 62228 CKT 1
DISCONNECT BUS 62229
SET BUS 60223 SHUNT TO 0 PERCENT
END

COM 'NSP  Defined as multi-circuit'
COM 'A 60238-60204  REDROCK7-COTTAGE7   OPENS B
tower'
COM 'B 60236-60186  REDROCK3-AS KING7   OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP8    '
TRIP LINE FROM BUS 60238 TO BUS 60204 CKT 1
TRIP LINE FROM BUS 60236 TO BUS 60186 CKT 1
END


COM 'NSP  Defined as multi-circuit'
COM 'A 60245-60214  SHEPARD7-HIBRDGE7   OPENS B
tower'
COM 'B 60245-60246  SHEPARD7-SO TOWN7   OPENS A
tower'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP9    '
TRIP LINE FROM BUS 60245 TO BUS 60214 CKT 1
TRIP LINE FROM BUS 60245 TO BUS 60246 CKT 1
END

CONTINGENCY 'NSP EAST BALDWIN'
COM TRIP PINE LAKE - EAST BALDWIN 161 KV
COM TRIP PINE LAKE - APPLE RIVER 161 KV
COM TRIP APPLE RIVER - APPLE RIVER 161/69 KV TR
TRIP BRANCH FROM BUS 60314 TO BUS 61504 CKT 1
TRIP BRANCH FROM BUS 60314 TO BUS 69565 CKT 1
TRIP BRANCH FROM BUS 69007 TO BUS 69565 CKT 1
END

COM 'NSP DEFINED AS DOUBLE CIRCUIT'
COM 'A 60336-60267 NSSJCT 7-BATCRKT7   OPENS B C
D mtl'
COM 'B 60266-60238 BATTCRK7-REDROCK7   OPENS A
B C mtl'
COM 'C 60336-60337 NSSJCT 7-NSSTAP 7'
COM 'D 60336-60238 NSSJCT 7-REDROCK7'
COM 'E 60335-60337 MAXWELL7-NSPTAP 7'
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COM '-----------------------------------------------------'
CONTINGENCY 'NSP BATTLE CREEK DBLCKT'
DISCONNECT BUS 60335
DISCONNECT BUS 60337
DISCONNECT BUS 60338
DISCONNECT BUS 60336
DISCONNECT BUS 60267
DISCONNECT BUS 60266
END

COM '505  Defined as multi-circuit, NSP'
COM 'A 66551-66508 GRANITF7-S3     7 CKT 1   OPENS B
C'
COM 'B 66552-66508 MARS ER7-S3     7 CKT 1   OPENS A
C'
COM 'B 60371-66508 ERIE RD-S3     7 CKT 1   OPENS A B'
COM '-----------------------------------------------------'
CONTINGENCY '505     '
TRIP LINE FROM BUS 66551 TO BUS 66508 CKT 1
TRIP LINE FROM BUS 66552 TO BUS 66508 CKT 1
TRIP LINE FROM BUS 60371 TO BUS 66508 CKT 1
END

COM '530  Defined as multi-circuit'
COM 'A 60119-60171  LKYNKTN7-MARSHTP7 CKT
OPENS B C D'
COM 'B 60148-60171  MINVALY4-MARSHTP7 CKT 1
OPENS A C D'
COM 'C 60170-60171  MARSHAL7-MARSHTP7 CKT 1
OPENS A B'
COM 'D 60119-60853 LKYNKTN7-LK YANK8 CKT 2
OPENS A B C'
COM '-----------------------------------------------------'
CONTINGENCY '530       '
TRIP LINE FROM BUS 60119 TO BUS 60171 CKT 1
TRIP LINE FROM BUS 60148 TO BUS 60171 CKT 1
TRIP LINE FROM BUS 60170 TO BUS 60171 CKT 1
TRIP LINE FROM BUS 60119 TO BUS 60853 CKT 2
END

COM '670 GRE Defined as multi-circuit, tower'
COM 'A 60160-60202  SHERCO 3-COON CK3 CKT 1
OPENS B, C,     tower'
COM 'B 63031-60160  BUNKER 3-SHERCO 3 CKT 1
OPENS A, C mtl, tower'
COM 'C 63031-60202  BUNKER 3-COON CK3 CKT 1
OPENS A, B mtl, tower'
COM '**GRE Defined as multi-terminal'
COM 'D 60160-60202  SHERCO 3-COON CK3 CKT 1
OPENS E,F,G'
COM 'E 61487-60655  CNCMID2Y-CNCTER29 CKT 1
OPENS D,E,G'
COM 'F 61487-60203  CNCMID2Y-COON CK7 CKT 1
OPENS D,E,F'
COM 'G 61487-60202  CNCMID2Y-COON CK3 CKT 1
OPENS D,E,F'
COM '**GRE Defined as multi-terminal '
COM 'F 63031-60160  BUNKER 3-SHERCO 3 CKT 1
OPENS G, H'
COM 'G 63031-60202  BUNKER 3-COON CK3 CKT 1
OPENS F, H'
COM 'H 63046-63031-63076  BUNKER 4-BUNKER 3 CKT
1   OPENS F, G'
COM '-----------------------------------------------------'
CONTINGENCY '670     1'
COM 'Tower outage with resulting multi-terminal'
TRIP LINE FROM BUS 60160 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60160 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60202 CKT 1
COM 'also trips the following because of A, tower'
TRIP LINE FROM BUS 60202 TO BUS 61487 CKT 10
TRIP LINE FROM BUS 61487 TO BUS 60203 CKT 10
TRIP LINE FROM BUS 61487 TO BUS 60655 CKT 10
COM 'also trips the following because of B, tower'
DISCONNECT BRANCH FROM BUS 63046 TO BUS
63031 TO BUS 63076 CKT 1
END
CONTINGENCY '670     2'
COM 'Valid multi-terminal only'
TRIP LINE FROM BUS 63031 TO BUS 60160 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60202 CKT 1
DISCONNECT BRANCH FROM BUS 63046 TO BUS
63031 TO BUS 63076 CKT 1
END
CONTINGENCY '670     3'
COM 'Valid multi-terminal only'
TRIP LINE FROM BUS 60160 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 61487 CKT 10
TRIP LINE FROM BUS 61487 TO BUS 60203 CKT 10
TRIP LINE FROM BUS 61487 TO BUS 60655 CKT 10
END

COM '700  Defined as multi-circuit'
COM 'A 60105-60192  PR ISLD3-BLUE LK3   OPENS  B
tower'
COM 'B 60192-60217  BLUE LK3-INVRHLS3   OPENS  A
tower'
COM 'C 60217-60236  INVRHLS3-REDROCK3   OPENS  B
mtl
COM '-----------------------------------------------------'
CONTINGENCY '700    1'
TRIP LINE FROM BUS 60105 TO BUS 60192 CKT 1
TRIP LINE FROM BUS 60192 TO BUS 60217 CKT 1
TRIP LINE FROM BUS 60217 TO BUS 60236 CKT 1
END
CONTINGENCY '700    2'
COM ' Multi-terminal portion only'
TRIP LINE FROM BUS 60192 TO BUS 60217 CKT 1
TRIP LINE FROM BUS 60217 TO BUS 60236 CKT 1
END

COM '705  Defined as multi-circuit, tower, mtl'
COM 'A 60192-60233  BLUE LK3-PARKERS3   OPENS  B
or C tower'
COM 'B 60192-60262  BLUE LK3-EDEN PR3   OPENS  A
tower MTL'
COM 'C 60233-60262  PARKERS3-EDEN PR3   OPENS  A
tower MTL'
COM '**    Defined as multi-terminal'
COM 'B 60192-60262  BLUE LK3-EDEN PR3   OPENS  B'
COM 'D 60262-60263  EDEN PR3-EDEN PR7   OPENS  B'
COM '**    Defined as multi-terminal'
COM 'C 60233-60262  PARKERS3-EDEN PR3   OPENS  E'
COM 'E 60262-60263  EDEN PR3-EDEN PR7   OPENS  C'
COM '-----------------------------------------------------'
CONTINGENCY '705       1'
COM 'Tower with resulting multi-terminal'
TRIP LINE FROM BUS 60192 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60192 TO BUS 60262 CKT 1
COM 'Also trips the following because of B'
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 9
END
CONTINGENCY '705       2'
COM 'Tower with resulting multi-terminal'
TRIP LINE FROM BUS 60192 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60233 TO BUS 60262 CKT 1
COM 'Also trips the following because of C'
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
END
CONTINGENCY '705       3'
COM 'Valid Multi-terminal only'
TRIP LINE FROM BUS 60192 TO BUS 60262 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 9
END
CONTINGENCY '705       4'
COM 'Valid Multi-terminal only'
TRIP LINE FROM BUS 60233 TO BUS 60262 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
END

COM '710 Defined as multi-terminal, tower'
COM ' Multi-terminal trips A and B'
COM 'A 62925-62667  DICKNSN7-ST BONI7   OPENS B C'
COM 'B 62667-60277  ST BONI7-WWACNIA7   OPENS A
C'
COM 'D 62667-63021-62695 ST BONI7-ST BONI-STBONI
T   OPENS A B'
COM ' A and B multi-curcuit tower with portions of C'
COM 'C 62925-60206  DICKNSN7-CROWRVR7'
COM '-----------------------------------------------------'
COM 'mtl outage portion'
CONTINGENCY '710   1'
TRIP LINE FROM BUS 62925 TO BUS 62667 CKT 1
TRIP LINE FROM BUS 62667 TO BUS 60277 CKT 1
DISCONNECT BRANCH FROM BUS 62667 TO BUS
63021 TO BUS 62695 CKT 1
END
COM 'mtl, tower outage portion'
CONTINGENCY '710   2'
TRIP LINE FROM BUS 62925 TO BUS 60206 CKT 1
TRIP LINE FROM BUS 62925 TO BUS 62667 CKT 1
TRIP LINE FROM BUS 62667 TO BUS 60277 CKT 1
DISCONNECT BRANCH FROM BUS 62667 TO BUS
63021 TO BUS 62695 CKT 1
END

COM '720  Defined as multi-circuit, tower'
COM 'A 60211-60234  GLESNLK7-PARKERS7  1   OPENS
B  tower'
COM 'B 60211-60234  GLESNLK7-PARKERS7  2   OPENS
A  tower'
COM '-----------------------------------------------------'
CONTINGENCY '720       1'
TRIP LINE FROM BUS 60211 TO BUS 60234 CKT 1
TRIP LINE FROM BUS 60211 TO BUS 60234 CKT 2
END

COM '740  Defined as multi-circuit, tower'
COM 'A 60103-63071  CANNFLS5-SPRNGCK5   OPENS  B
tower MTL'
COM 'B 60106-62224  PR ISLD5-RAVENNA5   OPENS  A
tower'
COM '62224-63071 RAVENNA5-SPRNGCK5;
COM '**    Defined as multi-terminal'
COM 'C 60103-60324  CANNFLS5-CANNFLS7   OPENS
D'
COM 'D 60103-63071  CANNFLS5-SPRNGCK5   OPENS
C'
COM '-----------------------------------------------------'
CONTINGENCY '740    '
TRIP LINE FROM BUS 60103 TO BUS 63071 CKT 1
TRIP LINE FROM BUS 60106 TO BUS 63071 CKT 1
COM 'Also trips the following because of A'
TRIP LINE FROM BUS 60103 TO BUS 60324 CKT 5
END

COM '760  Defined as multi-circuit, tower'
COM 'A 60105-60236  PR ISLD3-REDROCK3  1   OPENS
B'
COM 'B 60105-60236  PR ISLD3-REDROCK3  2   OPENS
A'
COM '-----------------------------------------------------'
CONTINGENCY '760     '
TRIP LINE FROM BUS 60105 TO BUS 60236 CKT 1
TRIP LINE FROM BUS 60105 TO BUS 60236 CKT 2
END

COM '780  Defined as multi-circuit, tower'
COM 'A 60143-60146  BENTON 7-GRANCTY7   OPENS  B
tower'
COM 'B 60143-60348  BENTON 7-BENCTP7    OPENS  A
tower, MTL'
COM 'C 60146-60161  GRANCTY7-STREGIS7   radial when
A&B'
COM 'DEFINED AS MTL'
COM 'B 60143-60348  BENTON 7-BENCTP7    OPENS  D
E'
COM 'D 60348-60146  BENCTP7 -GRANCTY7   OPENS  B
E'
COM 'E 60348-60157  BENCTP7 -STCLOUD7   OPENS  B
D'
COM '-----------------------------------------------------'
CONTINGENCY '780    1'
TRIP LINE FROM BUS 60143 TO BUS 60146 CKT 1
TRIP LINE FROM BUS 60143 TO BUS 60348 CKT 1
TRIP LINE FROM BUS 60348 TO BUS 60146 CKT 1
TRIP LINE FROM BUS 60348 TO BUS 60157 CKT 1
TRIP LINE FROM BUS 60146 TO BUS 60161 CKT 1
END
CONTINGENCY '780    2'
TRIP LINE FROM BUS 60143 TO BUS 60348 CKT 1
TRIP LINE FROM BUS 60348 TO BUS 60146 CKT 1
TRIP LINE FROM BUS 60348 TO BUS 60157 CKT 1
END

COM '900  Defined as multi-circuit, tower'
COM 'A 60105-60192  PR ISLD3-BLUE LK3   OPENS  B
tower'
COM 'B 60105-60236  PR ISLD3-REDROCK3   OPENS  A
tower'
COM '-----------------------------------------------------'
CONTINGENCY '900    '
TRIP LINE FROM BUS 60105 TO BUS 60192 CKT 1
TRIP LINE FROM BUS 60105 TO BUS 60236 CKT 1
END

COM '905  Defined as multi-circuit, tower'
COM 'A 60105-61950  PR ISLD3-BYRON  3   OPENS  B
tower'
COM 'B 60105-60236  PR ISLD3-REDROCK3   OPENS  A
tower'
COM '-----------------------------------------------------'
CONTINGENCY '905    '
TRIP LINE FROM BUS 60105 TO BUS 61950 CKT 1
TRIP LINE FROM BUS 60105 TO BUS 60236 CKT 2
END

COM '930  Defined as multi-circuit, multi-terminal'
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COM 'A 60233-60114  PARKERS3-ELM CRK3   OPENS  B
TOWER'
COM 'B 60233-60270  PARKERS3-MPLEGV13   OPENS  A
TOWER, C MTL'
COM 'C 60270-63030  MPLEGV13-DICKNSN3   OPENS  B
MTL'
COM 'D 61489-60233  PKLMID2Y-PARKERS3   OPENS
ONLY FOR A&B, D E F MTL'
COM 'E 61489-60234  PKLMID2Y-PARKERS7   OPENS
ONLY FOR A&B, D E F MTL'
COM 'F 61489-60656  PKLMID2Y-PKLTER29   OPENS
ONLY FOR A&B, D E F MTL'
COM '-----------------------------------------------------'
CONTINGENCY '930    1'
TRIP LINE FROM BUS 60233 TO BUS 60114 CKT 1
TRIP LINE FROM BUS 60233 TO BUS 60270 CKT 1
TRIP LINE FROM BUS 60270 TO BUS 63030 CKT 1
TRIP LINE FROM BUS 61489 TO BUS 60233 CKT 10
TRIP LINE FROM BUS 61489 TO BUS 60234 CKT 10
TRIP LINE FROM BUS 61489 TO BUS 60659 CKT 10
END
CONTINGENCY '930    2'
TRIP LINE FROM BUS 60233 TO BUS 60270 CKT 1
TRIP LINE FROM BUS 60270 TO BUS 63030 CKT 1
END
CONTINGENCY '930    3'
TRIP LINE FROM BUS 61489 TO BUS 60233 CKT 10
TRIP LINE FROM BUS 61489 TO BUS 60234 CKT 10
TRIP LINE FROM BUS 61489 TO BUS 60659 CKT 10
END

COM '955  Defined as multi-circuit, multi-terminal'
COM 'A 60115-60269  ELMCRK 7-HASSAN 7   OPENS  B
TOWER'
COM 'B 60115-60177  ELMCRK 7-CHAMPLN7   OPENS
A TOWER, C D E MTL'
COM 'C 60177-60178  CHAMPLN7-CHAMP T7   OPENS  B
D E MTL'
COM 'D 60178-60205  CHAMP T7-CRKEDLK7   OPENS  B
C E MTL'
COM 'E 60178-60254  CHAMP T7-WCNRAPD7   OPENS
B C D MTL'
COM '-----------------------------------------------------'
CONTINGENCY '955    1'
TRIP LINE FROM BUS 60115 TO BUS 60269 CKT 1
TRIP LINE FROM BUS 60115 TO BUS 60177 CKT 1
TRIP LINE FROM BUS 60177 TO BUS 60178 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60205 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60254 CKT 1
END
CONTINGENCY '955    2'
TRIP LINE FROM BUS 60115 TO BUS 60177 CKT 1
TRIP LINE FROM BUS 60177 TO BUS 60178 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60205 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60254 CKT 1
END

COM '960  Defined as multi-circuit'
COM 'A 60234-60249  PARKERS7-STLSPRK7   OPENS  B
TOWER'
COM 'B 60234-60259  PARKERS7-BASCRK 7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '960    '
TRIP LINE FROM BUS 60234 TO BUS 60346 CKT 1
TRIP LINE FROM BUS 60234 TO BUS 60259 CKT 1
END

COM '965  Defined as multi-circuit'
COM 'A 60234-60249  PARKERS7-STLSPRK7   OPENS  B
TOWER'
COM 'B 60259-60227  BASCRK 7-MEDLAKE7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '965    '
TRIP LINE FROM BUS 60234 TO BUS 60346 CKT 1
TRIP LINE FROM BUS 60259 TO BUS 60227 CKT 1
END

COM ' 970 Defined as multi-circuit'
COM 'A 60234-60249  PARKERS7-STLSPRK7   OPENS  B
TOWER'
COM 'B 60227-60182  MEDLAKE7-ALDRCH27   OPENS
A TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '970    '
TRIP LINE FROM BUS 60234 TO BUS 60346 CKT 1
TRIP LINE FROM BUS 60227 TO BUS 60182 CKT 1
END

COM '975  Defined as multi-circuit'
COM 'A 60182-60227  ALDRCH27-MEDLAKE7   OPENS
B TOWER'
COM 'B 60181-60216  ALDRICH7-INDIANA7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '975    '
TRIP LINE FROM BUS 60234 TO BUS 60346 CKT 1
TRIP LINE FROM BUS 60227 TO BUS 60182 CKT 1
END

COM '980  Defined as multi-circuit'
COM 'A 60355-60240  WRIV RD7-RIVRSID7   OPENS  B
TOWER'
COM 'B 60355-60240  WRIV RD7-RIVRSID7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '980    '
TRIP LINE FROM BUS 60355 TO BUS 60240 CKT 1
TRIP LINE FROM BUS 60355 TO BUS 60240 CKT 2
END

COM '985  Defined as multi-circuit'
COM 'A 60240-60253  RIVRSID7-TWIN LK7   OPENS  B
TOWER'
COM 'B 60240-60268  RIVRSID7-BRKLNPK7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '985    '
TRIP LINE FROM BUS 60240 TO BUS 60253 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60268 CKT 1
END

COM '990  Defined as multi-circuit'
COM 'A 60240-60209  RIVRSID7-ELLOTPK7   OPENS  B
C TOWER'
COM 'B 60240-60210  RIVRSID7-FIFTHST7   OPENS  A C
TOWER'
COM 'C 60240-60226  RIVRSID7-MAIN ST7   OPENS  A B
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '990    '
TRIP LINE FROM BUS 60240 TO BUS 60209 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60210 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60226 CKT 1
END

COM '995  Defined as multi-circuit'
COM 'A 60253-60203  TWIN LK7-COON CK7   OPENS  B
TOWER'
COM 'B 60253-60240  TWIN LK7-RIVRSID7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '995    '
TRIP LINE FROM BUS 60253 TO BUS 60203 CKT 1
TRIP LINE FROM BUS 60253 TO BUS 60240 CKT 1
END

COM '996  Defined as multi-circuit'
COM 'A 60203-60253  COON CK7-TWIN LK7   OPENS  B
TOWER'
COM 'B 60203-60268  COON CK7-BRKLNPK7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '996    '
TRIP LINE FROM BUS 60203 TO BUS 60253 CKT 1
TRIP LINE FROM BUS 60203 TO BUS 60268 CKT 1
END

COM '997  Defined as multi-circuit'
COM 'A 60203-60253  COON CK7-TWIN LK7   OPENS  B
TOWER'
COM 'B 60240-60268  RIVRSID7-BRKLNPK7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '997    '
TRIP LINE FROM BUS 60203 TO BUS 60253 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60268 CKT 1
END

COM '998  Defined as multi-circuit'
COM 'A 60229-60203  MOORELK7-COON CK7   OPENS
B TOWER'
COM 'B 60229-60240  MOORELK7-RIVRSID7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '998    '
TRIP LINE FROM BUS 60229 TO BUS 60203 CKT 1
TRIP LINE FROM BUS 60229 TO BUS 60240 CKT 1
END

COM '903  Defined as multi-circuit'
COM 'A 60229-60203  MOORELK7-COON CK7   OPENS
B TOWER'
COM 'B 60229-60240  MOORELK7-RIVRSID7   OPENS  A
TOWER'
COM '-----------------------------------------------------'
CONTINGENCY '903    '
TRIP LINE FROM BUS 60229 TO BUS 60203 CKT 1
TRIP LINE FROM BUS 60229 TO BUS 60240 CKT 1
END

COM '907  Defined as multi-circuit, multi-terminal'
COM 'A 60202-60221  COON CK3-KOLMNLK3   OPENS
B TOWER, C MTL'
COM 'B 60202-60251  COON CK3-TERMINL3   OPENS  A
TOWER, D E F MTL'
COM 'C 60221-60222  KOLMNLK3-KOLMNLK7   VLD
SNG'
COM 'D 61491-60251  TERMID2Y-TERMINL3   D E F
VLD SNG'
COM 'E 61491-60252  TERMID2Y-TERMINL7   D E F VLD
SNG'
COM 'F 61491-61188  TERMID2Y-TERTER29   D E F VLD
SNG'
COM '-----------------------------------------------------'
CONTINGENCY '907    1'
TRIP LINE FROM BUS 60202 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 10
TRIP LINE FROM BUS 61491 TO BUS 60251 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 60252 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 61188 CKT 9
END
CONTINGENCY '907    2'
TRIP LINE FROM BUS 60202 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 9
END
CONTINGENCY '907    3'
TRIP LINE FROM BUS 60202 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 61491 TO BUS 60251 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 60252 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 61188 CKT 9
END
CONTINGENCY '907    4'
TRIP LINE FROM BUS 61491 TO BUS 60251 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 60252 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 61188 CKT 9
END

COM '913  Defined as mulit-circuitmulti-terminal'
COM 'A 60252-60241  TERMINL7-ROSE PL7   OPENS  B
tower'
COM 'B 60252-60184  TERMINL7-APACHET7   OPENS  A
tower, C D E mtl'
COM 'C 60184-60183  APACHET7-APACHE 7   OPENS  B
D E'
COM 'D 60184-60185  APACHET7-ARDNHLS7   OPENS
B C E'
COM 'E 60185-60909  ARDNHLS7-ARDNHL28   VLD
SNG'
COM '-----------------------------------------------------'
CONTINGENCY '013    1'
TRIP LINE FROM BUS 60252 TO BUS 60241 CKT 1
TRIP LINE FROM BUS 60252 TO BUS 60184 CKT 1
TRIP LINE FROM BUS 60184 TO BUS 60183 CKT 1
TRIP LINE FROM BUS 60184 TO BUS 60185 CKT 1
TRIP LINE FROM BUS 60185 TO BUS 60909 CKT 1
END
CONTINGENCY '913    2'
TRIP LINE FROM BUS 60252 TO BUS 60184 CKT 1
TRIP LINE FROM BUS 60184 TO BUS 60183 CKT 1
TRIP LINE FROM BUS 60184 TO BUS 60185 CKT 1
TRIP LINE FROM BUS 60185 TO BUS 60909 CKT 1
END
COM 'NSP Defined as multi-terminal'
COM 'A 60601-60158 SHERCO  -STCLTP  7 OPENS B C'
COM 'B 60158-62815 STCLTP  7-STCLOUD7'
COM 'C 62815-60158 I94PARK7-STCLTP  7'
COM '-----------------------------------------------------'
CONTINGENCY 'SHERCO - ST CLOUD MTL'
TRIP LINE FROM BUS 60601 TO BUS 60158 CKT 1
TRIP LINE FROM BUS 60158 TO BUS 60157 CKT 1
TRIP LINE FROM BUS 60158 TO BUS 62815 CKT 1
END
COM '917  Defined as multi-circuit, multi-terminal'
COM 'A 60251-60221  TERMINL3-KOLMNLK3   OPENS
B TOWER, C D E MTL'
COM 'B 60202-60251  COON CK3-TERMINL3   OPENS  A
TOWER, F G H MTL'
COM 'C 61492-60251  TERMID1Y-TERMINL3   C D E
VLD SNG'
COM 'D 61492-60252  TERMID1Y-TERMINL7   C D E
VLD SNG'
COM 'E 61492-61187  TERMID1Y-TERTER19   C D E VLD
SNG'
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COM 'F 61491-60251  TERMID2Y-TERMINL3   F G H
VLD SNG'
COM 'G 61491-60252  TERMID2Y-TERMINL7   F G H
VLD SNG'
COM 'H 61491-61188  TERMID2Y-TERTER29   F G H
VLD SNG'
COM '-----------------------------------------------------'
CONTINGENCY '917    1'
TRIP LINE FROM BUS 60251 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 61492 TO BUS 60251 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 60252 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 61187 CKT 10
TRIP LINE FROM BUS 61491 TO BUS 60251 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 60252 CKT 9
TRIP LINE FROM BUS 61491 TO BUS 61188 CKT 9
END
CONTINGENCY '917    2'
TRIP LINE FROM BUS 60251 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 61492 TO BUS 60251 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 60252 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 61187 CKT 10
END
CONTINGENCY '917    3'
TRIP LINE FROM BUS 61492 TO BUS 60251 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 60252 CKT 10
TRIP LINE FROM BUS 61492 TO BUS 61187 CKT 10
END
COM
**************************************************
********************Start of New contingencies for Xcel
8/2/07
COM TRIP NOBLES CO - LAKEFIELD JC 345 KV LINE
COM TRIP ELK 161/69 KV TX 1
COM TRIP ELK 161/69 KV TX 2
COM TRIP BREWSTER - ELK 161 KV LINE (4 MILE
DOUBLE CKT)
COM TRIP BREWSTER - HERON LK
COM TRIP HERON LK 161/69 KV TX 1
CONTINGENCY 'NSP LAKEFIELD 1'
TRIP LINE FROM BUS 34006 TO BUS 60286 CKT 1
TRIP LINE FROM BUS 34004 TO BUS 34223 CKT 1
TRIP LINE FROM BUS 34004 TO BUS 34223 CKT 2
TRIP LINE FROM BUS 34004 TO BUS 62709 CKT 1
TRIP LINE FROM BUS 62709 TO BUS 34005 CKT 1
TRIP LINE FROM BUS 34005 TO BUS 34225 CKT 1
END
CONTINGENCY ' NSP 825 2'
COM TRIP NOBLES CO - LAKEFIELD JC 345 KV LINE
COM TRIP LAKEFIELD JC - DICKINSON CO 161 KV
LINE (6 MILE DOUBLE CKT)
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 34006 TO BUS 60286 CKT 1
TRIP LINE FROM BUS 34887 TO BUS 34007 CKT 1
END
CONTINGENCY ' NSP 825 3'
COM TRIP SPLIT ROCK - NOBLES CO 345 KV LINE
COM TRIP SPLIT ROCK 115/161 KV TX
COM TRIP SPLIT ROCK - DAN JUHL 161 KV LINE
COM TRIP DAN JUHL - MAGNOLIA 161 KV LINE
COM TRIP MAGNOLIA - ELK 161 KV LINE (8 MILE
DOUBLE CKT)
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 60126 TO BUS 60286 CKT 1
TRIP LINE FROM BUS 60129 TO BUS 60128 CKT 6
TRIP LINE FROM BUS 60128 TO BUS 60370 CKT 1
TRIP LINE FROM BUS 60370 TO BUS 34003 CKT 1
TRIP LINE FROM BUS 34003 TO BUS 34004 CKT 1
END
CONTINGENCY ' NSP 825 4'
COM TRIP SPLIT ROCK - NOBLE CO 345 KV
COM TRIP SPLIT ROCK - SIOUX CITY 345 KV (5 MILES
DOUBLE CKT)
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 60126 TO BUS 60286 CKT 1
TRIP LINE FROM BUS 60131 TO BUS 60126 CKT 1
TRIP LINE FROM BUS 60131 TO BUS 66564 CKT 1
END
CONTINGENCY 'NSP loonlake-eastwood-westfaribault'
COM TRIP EASTWOOD - LOON TAP 115 KV LINE
COM TRIP LOON TAP - LOON LAKE 115 KV LINE
COM TRIP LOON LAKE 115/69 KV TX
COM TRIP LOON TAP - W FARIBAULT
TRIP LINE FROM BUS 60830 TO BUS 60113 CKT 1
TRIP LINE FROM BUS 60830 TO BUS 60265 CKT 1
TRIP LINE FROM BUS 60265 TO BUS 60107 CKT 1
TRIP LINE FROM BUS 60265 TO BUS 60264 CKT 1
TRIP LINE FROM BUS 60264 TO BUS 61976 CKT 1
END
CONTINGENCY 'NSP EASTWOOD DBL-CKT'
COM TRIP EASTWOOD - DOME 115 KV LINE
COM TRIP DOME - SUMMIT 115 KV LINE
COM TRIP EASTWOOD - LOON TAP 115 KV LINE
COM TRIP LOON TAP - LOON LAKE 115 KV LINE
COM TRIP LOON LAKE 115/69 KV TX
COM TRIP LOON TAP - W FARIBAULT
COM COMMON TOWER OUTAGE Eastwood Dbl Ckt
TRIP LINE FROM BUS 60830 TO BUS 60113 CKT 1
TRIP LINE FROM BUS 60113 TO BUS 60380 CKT 1
TRIP LINE FROM BUS 60830 TO BUS 60265 CKT 1
TRIP LINE FROM BUS 60265 TO BUS 60107 CKT 1
TRIP LINE FROM BUS 60265 TO BUS 60264 CKT 1
TRIP LINE FROM BUS 60264 TO BUS 61976 CKT 1
END
CONTINGENCY 'NSP DOME PIPE'
COM 'TRIP SUMMIT TO DOME'
COM 'TRIP DOME - EASTWOOD'
DISCONNECT BUS 60113
END
COM 'NSP Defined as multi-terminal'
COM 'A 60267-62234 AIRLAKE7-LKMARN 7'
COM 'B 62234-60384 LKMARN 7-FEPTP  7 OPENS A'
COM '-----------------------------------------------------'
CONTINGENCY 'FARIBAULT ENERGY GEN - AIR
LAKE MTL'
TRIP LINE FROM BUS 60267 TO BUS 62234 CKT 1
TRIP LINE FROM BUS 62234 TO BUS 60384 CKT 1
END
CONTINGENCY 'NSP WESTGATE'
COM TRIP WESTGATE - EDEN PRAIRIE 115 KV CKT 1
COM TRIP WESTGATE - EDEN PRAIRIE 115 KV CKT 2
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 60256 TO BUS 60263 CKT 1
TRIP LINE FROM BUS 60256 TO BUS 60263 CKT 2
END
CONTINGENCY 'NSP SPS 2'
COM TRIP WILMARTH - BLUE LAKE 345 KV CKT 1
COM TRIP MEC STEAM TURBINE
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 60108 TO BUS 60192 CKT 1
REMOVE MACHINE 1 FROM BUS 60062
END
CONTINGENCY 'NSP SPS 3'
COM TRIP LAKEFIELD JC - LGS 345 KV LINE
COM TRIP LAKEFIELD JC - NOBLES CO 345 KV LINE
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 34006 TO BUS 60331
TRIP LINE FROM BUS 34006 TO BUS 60286
END
CONTINGENCY 'NSP-GRE SPS 3-4 COMBO'
COM TRIP 345 KV LINE FROM LGS - FIELDON /
WILMARTH
COM TRIP LAKEFIELD JC - NOBLES CO 345 KV LINE
COM TRIP TRIMONT WIND GENERATION
COM TRIP LAKEFIELD GENERATING STATION
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 60331 TO BUS 60364
TRIP LINE FROM BUS 34006 TO BUS 60286
TRIP LINE FROM BUS 34006 TO BUS 60331
END
CONTINGENCY 'NSP - ATC STONE LK - STINSON'
COM TRIP 345 KV LINE FROM STONE LK -
ARROWHEAD
COM TRIP 161 KV LINE FROM STONE LK - MINONG
COM TRIP 161 KV LINE FROM MINONG - STINSON
COM TRIP 161/115 KV TX AT STINSON
COM '-----------------------------------------------------'
TRIP LINE FROM BUS 39450 TO BUS 39449
TRIP LINE FROM BUS 60290 TO BUS 61631
TRIP LINE FROM BUS 61631 TO BUS 61630
TRIP LINE FROM BUS 61630 TO BUS 61570
END
COM ' '
COM ' '
COM '  END MINNESOTA AREA CONTINGENCIES'
COM ' '
COM ' '
COM '  START WISCONSIN AREA CONTINGENCIES'
COM ' '
COM ' '
COM 'NSP  Defined as multi-circuit'
COM 'A 60325-60187  WILOWRV7-AS KING7   OPENS  B'
COM 'B 60325-60313  WILOWRV7-PINE LK7   OPENS  A'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP11     '
TRIP LINE FROM BUS 60325 TO BUS 60187 CKT 1
TRIP LINE FROM BUS 60325 TO BUS 60313 CKT 1
END
COM '835  Defined as multi-circuit'
COM 'A 60282-60329 REDCDR 5-CRYSTAL5 CKT 1
OPENS  B tower'
COM 'B 60282-60319 REDCDR 5-WHEATTP5 CKT 1
OPENS  C D mtl'
COM 'C 60319-60318 WHEATTP5-WHT 56 5 CKT 1
OPENS  B D mtl'
COM 'D 60319-60320 WHEATTP5-HYDROLN5 CKT 1
OPENS  B C mtl'
COM '-----------------------------------------------------'
CONTINGENCY '835    '
TRIP LINE FROM BUS 60282 TO BUS 60329 CKT 1
TRIP LINE FROM BUS 60282 TO BUS 60319 CKT 1
TRIP LINE FROM BUS 60319 TO BUS 60318 CKT 1
TRIP LINE FROM BUS 60319 TO BUS 60320 CKT 1
END
COM 'CONTINGENCY 735  Defined as multi-circuit'
COM 'REVIEWED BY XCEL ENERGY 7/2002'
COM 'A 60297-60298  OSPREY 7-PARKFLS7     OPENS
B'
COM 'B 60298-69120  PARKFLS7-CRANDPC      OPENS
A'
COM 'B 60298-69120  PARKFLS7-CRANDPC      OPENS
C D E'
COM 'C 69120-60340  CRANDPC -PHILIPS7     OPENS   B
D E'
COM 'D 60340-69108  PHILIPS7-PHILDPC      OPENS   B C
E'
COM 'E 69108-60301  PHILDPC -PRENTCE7     OPENS   B
C D'
COM '-----------------------------------------------------'
COM 'CONTINGENCY '735    1'
COM 'TRIP LINE FROM BUS 60297 TO BUS 60283 CKT 1
COM 'TRIP LINE FROM BUS 60283 TO BUS 60298 CKT 1
COM 'TRIP LINE FROM BUS 60298 TO BUS 60303 CKT 1
COM 'TRIP LINE FROM BUS 60303 TO BUS 69120 CKT 1
COM 'TRIP LINE FROM BUS 69120 TO BUS 60340 CKT 1
COM 'TRIP LINE FROM BUS 60340 TO BUS 69108 CKT 1
COM 'TRIP LINE FROM BUS 69108 TO BUS 60301 CKT 1
COM 'END
COM 'CONTINGENCY '735    3'
COM 'TRIP LINE FROM BUS 60298 TO BUS 60303 CKT 1
COM 'TRIP LINE FROM BUS 60303 TO BUS 69120 CKT 1
COM 'TRIP LINE FROM BUS 69120 TO BUS 60340 CKT 1
COM 'TRIP LINE FROM BUS 60340 TO BUS 69108 CKT 1
COM 'TRIP LINE FROM BUS 69108 TO BUS 60301 CKT 1
COM 'END
COM '880  Defined as  tower'
COM 'A 69523-69527 GENOA  5-HARMONY5 CKT 1
OPENS  B  tower'
COM 'B 69523-34021 GENOA  5-LANSING5 CKT 1
OPENS  A  tower'
COM '-----------------------------------------------------'
CONTINGENCY '880    '
TRIP LINE FROM BUS 69523 TO BUS 69527 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 34021 CKT 1
END
COM 'NSP DEFINED AS Multi Terminal'
COM 'A 61684-61632 STIN-WI7-DAHLBRG7   OPENS B-N
mtl'
COM 'B 61632-60292 DAHLBRG7-IRONRIV7   OPENS A
& C-N mtl'
COM 'C 60292-60291 IRONRIV7-INOPUMP7   OPENS A-B
& D-N'
COM 'D 60291-69105 INOPUMP7-PILSEN7    OPENS A-C
& E-N'
COM 'E 69105-60295 PILSEN7 -BAYFRNT7   OPENS A-D
& F-N'
COM 'F 60292-69111 IRONRIV7-IRON RIV   OPENS A-E
& G-N'
COM 'G 69111-61114 IRON RIV-OULU  9'
COM 'H 69114-61113 OULU  9-ORIENTA9'
COM 'I 61113-61112 ORIENTA9-PORTWNG9'
COM 'J 61112-69110 PORTWNG9-HERBSTR9'
COM 'K 69110-61111 HERBSTER-HERBSTR9'
COM 'L 61111-61145 HERBSTR9-HIVREG 9'
COM 'M 61145-61115 H1VREG 9-BARK BA9'
COM 'N 61115-61110 BARK BA9-CORNUCO9'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP BAYFRONT-STINSON-
IRONRIVER MTL'
DISCONNECT BUS 61632
DISCONNECT BUS 60292
DISCONNECT BUS 60291
DISCONNECT BUS 69105
DISCONNECT BUS 69111
DISCONNECT BUS 61114
DISCONNECT BUS 61113
DISCONNECT BUS 61112
DISCONNECT BUS 69110
DISCONNECT BUS 61111
DISCONNECT BUS 61145
DISCONNECT BUS 61115
DISCONNECT BUS 61110
END
COM 'NSP DEFINED AS Multi Terminal'
COM 'A 60290-60293 ST LAKES-FRMSINN5   OPENS B C
mtl'
COM 'B 60293-60294 FRMSINN5-GINGLES5'
COM 'C 60293-60664 FRMSINN5-FRMRSIN8'
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COM '---'
CONTINGENCY 'STONELAKE-FARMERSINN-GINGLES MTL'
DISCONNECT BUS 60293
END
COM 'NSP DEFINED AS Multi Terminal'
COM 'A 60305-60323 EAU CLA5-SEVN ML5 OPENS B C mtl'
COM 'B 60323-60316 SEVN ML5-TREMVAL5 OPENS A C MTL'
COM 'C 60323-61071 SEVN ML5-SEVN ML8'
COM '---'
CONTINGENCY 'NSP EAU CLAIRE - TREMVAL MTL'
DISCONNECT BUS 60323
END
COM ' '
COM ' '
COM ' END WISCONSIN AREA CONTINGENCIES'
COM ' '
COM '!!!'
COM '!!!!! !!!!!'
COM '!! THESE CONTINGENCIES ARE TO REPRESENT CATEGORY C DISTURBANCES WITH !!'
COM '!! STUCK BREAKERS WITHIN MINNESOTA !!'
COM '!!!!! !!!!!'
COM '!!!'
COM ' '
COM --
COM Breaker Failure (C.2)
COM --
COM 'CONTINGENCY C-DRYTNXFMR-1140STK'
COM '66752-66787 DRAYTON 230 - DRAYTON Y #1 230'
COM '66705-66787 DRAYTON 115 - DRAYTON Y #1 230'
COM '66763-66787 DRAYTON 13.2 - DRAYTON Y #1 230'
COM '66705-63255 DRAYTON 115 - DONALDSON 115'
COM '66705-63257 DRAYTON 115 - HENSEL 115'
COM '63257-63192 HENSEL 115 - HENSEL Y 115'
COM '66796-63192 HENSEL 69 - HENSEL Y 115'
COM '63157-63192 HENSEL 41.6 - HENSEL Y 115'
COM '---'
CONTINGENCY '1140STK'
TRIP LINE FROM BUS 66752 TO BUS 66787 CKT 1
TRIP LINE FROM BUS 66705 TO BUS 66787 CKT 1
TRIP LINE FROM BUS 66763 TO BUS 66787 CKT 1
TRIP LINE FROM BUS 66705 TO BUS 63255 CKT 1
TRIP LINE FROM BUS 66705 TO BUS 63257 CKT 1
TRIP LINE FROM BUS 63257 TO BUS 63192 CKT 1
TRIP LINE FROM BUS 66796 TO BUS 63192 CKT 1
TRIP LINE FROM BUS 63157 TO BUS 63192 CKT 1
END
COM 'CONTINGENCY C-DRYTNXFMR-1150STK'
COM '66752-66788 DRAYTON 230 - DRAYTON Y #2 230'
COM '66705-66788 DRAYTON 115 - DRAYTON Y #2 230'
COM '66763-66788 DRAYTON 13.2 - DRAYTON Y #2 230'
COM '66705-63255 DRAYTON 115 - DONALDSON 115'
COM '66705-63257 DRAYTON 115 - HENSEL 115'
COM '63257-63192 HENSEL 115 - HENSEL Y 115'
COM '66796-63192 HENSEL 69 - HENSEL Y 115'
COM '63157-63192 HENSEL 41.6 - HENSEL Y 115'
COM '---'
CONTINGENCY '1150STK'
TRIP LINE FROM BUS 66752 TO BUS 66788 CKT 1
TRIP LINE FROM BUS 66705 TO BUS 66788 CKT 1
TRIP LINE FROM BUS 66762 TO BUS 66788 CKT 1
TRIP LINE FROM BUS 66705 TO BUS 63255 CKT 1
TRIP LINE FROM BUS 66705 TO BUS 63257 CKT 1
TRIP LINE FROM BUS 63257 TO BUS 63192 CKT 1
TRIP LINE FROM BUS 66796 TO BUS 63192 CKT 1
TRIP LINE FROM BUS 63157 TO BUS 63192 CKT 1
END
COM 'CONTINGENCY C-WNGR-ADBN-1435STK'
COM '66717-63237 ULRICH 115 - MAHNOMEN 115'
COM '63236-66717 AUDUBON 115 - ULRICH 115'
COM '63237-63238 MAHNOMEN 115 - WINGER 115'
COM '66717-66781 ULRICH 115 - ULRICH Y 115'
COM '67039-66781 ULRICH 69 - ULRICH Y 115'
COM '66773-66781 ULRICH 41.6 - ULRICH Y 115'
COM '63236-62529 AUDUBON 115 - COMORANT 115'
COM '63236-63202 AUDUBON 115 - AUDUBON Y 230'
COM '63136-63202 AUDUBON 41.6 - AUDUBON Y 230'
COM '63336-63202 AUDUBON 230 - AUDUBON Y 230'
COM '---'
CONTINGENCY '1435STK'
TRIP LINE FROM BUS 66717 TO BUS 63237 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 66717 CKT 1
TRIP LINE FROM BUS 63237 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 66717 TO BUS 66781 CKT 1
TRIP LINE FROM BUS 67039 TO BUS 66781 CKT 1
TRIP LINE FROM BUS 66773 TO BUS 66781 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63136 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 63202 CKT 1
END
COM 'CONTINGENCY C-ADBN-WNGR-1345STK'
COM '66717-63237 ULRICH 115 - MAHNOMEN 115'
COM '63236-66717 AUDUBON 115 - ULRICH 115'
COM '63237-63238 MAHNOMEN 115 - WINGER 115'
COM '66717-66781 ULRICH 115 - ULRICH Y 115'
COM '67039-66781 ULRICH 69 - ULRICH Y 115'
COM '66773-66781 ULRICH 41.6 - ULRICH Y 115'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '63238-63250 WINGER 115 - FERTILE 115'
COM '63238-63251 WINGER 115 - PLUMMER TAP 115'
COM '63238-63239 WINGER 115 - BAGLEY 115'
COM '63238-66786 WINGER 115 - WINGER Y 115'
COM '67018-66786 WINGER 69 - WINGER Y 115'
COM '63138-66786 WINGER 41.6 - WINGER Y 115'
COM '---'
CONTINGENCY '1345STK'
TRIP LINE FROM BUS 66717 TO BUS 63237 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 66717 CKT 1
TRIP LINE FROM BUS 63237 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 66717 TO BUS 66781 CKT 1
TRIP LINE FROM BUS 67039 TO BUS 66781 CKT 1
TRIP LINE FROM BUS 66773 TO BUS 66781 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63251 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63239 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 67018 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63138 TO BUS 66786 CKT 1
END
COM 'CONTINGENCY C-BDRA-BMDJI-1245STK'
COM '66710-63246 NARY 115 - BEMIDJI 115'
COM '66710-63247 NARY 115 - CASS LAKE 115'
COM '63247-63248 CASS LAKE 115 - CASS LAKE NORTH 115'
COM '66710-66716 NARY 115 - LAPORTE 115'
COM '66716-66715 NARY 115 - LEECH LAKE 115'
COM '66716-61640 NARY 115 - BADOURA 115'
COM '63247-63197 CASS LAKE 115 - CASS LAKE Y 115'
COM '63347-63197 CASS LAKE 115 - CASS LAKE Y 115'
COM '63246-63245 BEMIDJI 115 - WILTON 115'
COM '---'
CONTINGENCY '1245STK'
TRIP LINE FROM BUS 66710 TO BUS 63246 CKT 1
TRIP LINE FROM BUS 66710 TO BUS 63247 CKT 1
TRIP LINE FROM BUS 63247 TO BUS 63248 CKT 1
TRIP LINE FROM BUS 66710 TO BUS 66716 CKT 1
TRIP LINE FROM BUS 66716 TO BUS 66715 CKT 1
TRIP LINE FROM BUS 66716 TO BUS 61640 CKT 1
TRIP LINE FROM BUS 63247 TO BUS 63197 CKT 1
TRIP LINE FROM BUS 63347 TO BUS 63197 CKT 1
TRIP LINE FROM BUS 63246 TO BUS 63245 CKT 1
END
COM 'CONTINGENCY C-BMDJI-BDRA-725LSTK'
COM '66710-63246 NARY 115 - BEMIDJI 115'
COM '66710-63247 NARY 115 - CASS LAKE 115'
COM '63247-63248 CASS LAKE 115 - CASS LAKE NORTH 115'
COM '66710-66716 NARY 115 - LAPORTE 115'
COM '66716-66715 LAPORTE 115 - LEECH LAKE 115'
COM '66716-61640 LAPORTE 115 - BADOURA 115'
COM '63247-63197 CASS LAKE 115 - CASS LAKE Y 115'
COM '63347-63197 CASS LAKE 69 - CASS LAKE Y 115'
COM '61640-61644 BADOURA 115 - DOG LAKE 115'
COM '61640-62410 BADOURA 115 - PALMER LAKE 115'
COM '61640-61794 BADOURA 115 - BADOURA Y 115'
COM '61610-61794 BADOURA 230 - BADOURA Y 115'
COM '61795-61794 BADOURA 13.8 - BADOURA Y 115'
COM '61640-61840 BADOURA 115 - BADOURA 34.5'
COM '61640-61840 BADOURA 115 - BADOURA 34.5'
COM '---'
CONTINGENCY '725LSTK'
TRIP LINE FROM BUS 66710 TO BUS 63246 CKT 1
TRIP LINE FROM BUS 66710 TO BUS 63247 CKT 1
TRIP LINE FROM BUS 63247 TO BUS 63248 CKT 1
TRIP LINE FROM BUS 66710 TO BUS 66716 CKT 1
TRIP LINE FROM BUS 66716 TO BUS 66715 CKT 1
TRIP LINE FROM BUS 66716 TO BUS 61640 CKT 1
TRIP LINE FROM BUS 63247 TO BUS 63197 CKT 1
TRIP LINE FROM BUS 63347 TO BUS 63197 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61644 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 62410 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61610 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61795 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61840 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61840 CKT 2
END
COM 'CONTINGENCY C-HBRD-ADBN-2125STK'
COM '63336-63053 AUDUBON 230 - HUBBARD 230'
COM '63053-61641 HUBBARD 230 - HUBBARD 115'
COM '63236-63202 AUDUBON 230 - AUDUBON Y 230'
COM '63236-63202 AUDUBON 115 - AUDUBON Y 230'
COM '63136-63202 AUDUBON 41.6 - AUDUBON Y 230'
COM '63336-60133 AUDUBON 230 - SHEYENNE 230'
COM '63336-63136 AUDUBON 230 - AUDUBON 41.6'
COM '---'
CONTINGENCY '2125STK'
TRIP LINE FROM BUS 63336 TO BUS 63053 CKT 1
TRIP LINE FROM BUS 63053 TO BUS 61641 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63136 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 60133 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 63136 CKT 1
END

COM 'CONTINGENCY C-ADBN-HBRD-4TSTK'
COM '63336-63053 AUDUBON 230 - HUBBARD 230'
COM '63053-61641 HUBBARD 230 - HUBBARD 115'
COM '61641-62421 HUBBARD 115 - PARKRPD 115'
COM '---'
CONTINGENCY '4TSTK'
TRIP LINE FROM BUS 63336 TO BUS 63053 CKT 1
TRIP LINE FROM BUS 63053 TO BUS 61641 CKT 1
TRIP LINE FROM BUS 61641 TO BUS 62421 CKT 1
END

COM 'CONTINGENCY C-ADBN-HBRD-99LSTK'
COM '63336-63053 AUDUBON 230 - HUBBARD 230'
COM '63053-61641 HUBBARD 230 - HUBBARD 115'
COM '63053-61610 HUBBARD 230 - BADOURA 230'
COM '61610-61612 BADOURA 230 - RIVERTON 230'
COM '61610-61794 BADOURA 230 - BADOURA Y 230'
COM '61640-61794 BADOURA 115 - BADOURA Y 230'
COM '61795-61794 BADOURA 13.8 - BADOURA Y 230'
COM '---'
CONTINGENCY '99LSTK'
TRIP LINE FROM BUS 63336 TO BUS 63053 CKT 1
TRIP LINE FROM BUS 63053 TO BUS 61641 CKT 1
TRIP LINE FROM BUS 63053 TO BUS 61610 CKT 1
TRIP LINE FROM BUS 61610 TO BUS 61612 CKT 1
TRIP LINE FROM BUS 61610 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61795 TO BUS 61794 CKT 1
END
COM 'CONTINGENCY C-MRRS-HTLK-1295STK'
COM '63219-66555 GRANT COUNTY 115 - MORRIS 115'
COM '63219-63223 GRANT COUNTY 115 - HOOT LAKE 115'
COM '63219-63220 GRANT COUNTY 115 - ELBOW LAKE 115'
COM '63223-63123 HOOT LAKE 115 - HOOT LAKE 41.6'
COM '63223-63324 HOOT LAKE 115 - HOOT LAKE GENERATOR #3'
COM '63223-63233 HOOT LAKE 115 - EDGETOWN TAP 115'
COM '---'
CONTINGENCY '1295STK'
TRIP LINE FROM BUS 63219 TO BUS 66555 CKT 1
TRIP LINE FROM BUS 63219 TO BUS 63223 CKT 1
TRIP LINE FROM BUS 63219 TO BUS 63220 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63123 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63324 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63233 CKT 1
END
COM '----115 kV outage -------------------WILL BE INVALID CONTINGENCY WITH BIG STONE II IN-SERVICE----------------------------------'
COM 'CONTINGENCY C-HTLK-MRRS-1562STK'
COM '63219-66555 GRANT COUNTY 115 - MORRIS 115'
COM '63219-63223 GRANT COUNTY 115 - HOOT LAKE 115'
COM '63219-63220 GRANT COUNTY 115 - ELBOW LAKE 115'
COM '66555-66554 MORRIS 115 - MORRIS 230'
COM '66555-63218 MORRIS 115 - OTP MORRIS 115'
COM '66555-66318 MORRIS 115 - MORRIS 41.6'
COM '66555-62003 MORRIS 115 - GRACEVILLE TAP 115'
COM '---'
COM CONTINGENCY '1562STK'
COM TRIP LINE FROM BUS 63219 TO BUS 66555 CKT 1
COM TRIP LINE FROM BUS 63219 TO BUS 63223 CKT 1
COM TRIP LINE FROM BUS 63219 TO BUS 63220 CKT 1

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COM TRIP LINE FROM BUS 66555 TO BUS 66554 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 66318 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63219 CKT 1
COM END
COM 'CONTINGENCY C-HTLK-GRNTCO-1345STK'
COM '63219-66555 GRANT COUNTY 115 - MORRIS 115'
COM '63219-63223 GRANT COUNTY 115 - HOOT LAKE 115'
COM '63219-63220 GRANT COUNTY 115 - ELBOW LAKE 115'
COM '63220-63221 ELBOW LAKE 115 - BRANDON 115'
COM '63221-67455 BRANDON 115 - BRANDON 41.6'
COM '63221-67452 BRANDON 115 - ALEXANDRIA SWITCHING STATION 115'
COM '-----------------------------------------------------------'
CONTINGENCY '1345STK1'
TRIP LINE FROM BUS 63219 TO BUS 66555 CKT 1
TRIP LINE FROM BUS 63219 TO BUS 63223 CKT 1
TRIP LINE FROM BUS 63219 TO BUS 63220 CKT 1
TRIP LINE FROM BUS 63220 TO BUS 63221 CKT 1
TRIP LINE FROM BUS 63221 TO BUS 67455 CKT 1
TRIP LINE FROM BUS 63221 TO BUS 67452 CKT 1
END
COM 'CONTINGENCY C-GRNTCO-ALXSS-1615STK'
COM '63219-63220 GRANT COUNTY 115 - ELBOW LAKE 115'
COM '63220-63221 ELBOW LAKE 115 - BRANDON 115'
COM '63221-67455 BRANDON 115 - BRANDON 41.6'
COM '63221-67452 BRANDON 115 - ALEXANDRIA SWITCHING STATION 115'
COM '67452-67453 ALEXANDRIA SWITCHING STATION 115 - ALEXANDRIA SOUTHWEST MUNICIPAL 115'
COM '67453-67454 ALEXANDRIA SOUTHWEST MUNICIPAL 115 - ALEXANDRIA POLEYARD 115'
COM '-----------------------------------------------------------'
CONTINGENCY '1615STK'
TRIP LINE FROM BUS 63219 TO BUS 63220 CKT 1
TRIP LINE FROM BUS 63220 TO BUS 63221 CKT 1
TRIP LINE FROM BUS 63221 TO BUS 67455 CKT 1
TRIP LINE FROM BUS 63221 TO BUS 67452 CKT 1
TRIP LINE FROM BUS 67452 TO BUS 67453 CKT 1
TRIP LINE FROM BUS 67453 TO BUS 67454 CKT 1
END
COM 'CONTINGENCY C-GRNTCO-ALXSS-1665STK'
COM '63219-63220 GRANT COUNTY 115 - ELBOW LAKE 115'
COM '63220-63221 ELBOW LAKE 115 - BRANDON 115'
COM '63221-67455 BRANDON 115 - BRANDON 41.6'
COM '63221-67452 BRANDON 115 - ALEXANDRIA SWITCHING STATION 115'
COM '67452-63222 ALEXANDRIA SWITCHING STATION 115 - ALEXANDRIA 115'
COM '63222-60144 ALEXANDRIA 115 - DOUGLAS COUNTY 115'
COM '-----------------------------------------------------------'
CONTINGENCY '1615STK1'
TRIP LINE FROM BUS 63219 TO BUS 63220 CKT 1
TRIP LINE FROM BUS 63220 TO BUS 63221 CKT 1
TRIP LINE FROM BUS 63221 TO BUS 67455 CKT 1
TRIP LINE FROM BUS 63221 TO BUS 67452 CKT 1
TRIP LINE FROM BUS 67452 TO BUS 63222 CKT 1
TRIP LINE FROM BUS 63222 TO BUS 60144 CKT 1
END
COM 'CONTINGENCY 'C-DGLSCO-ALX-1625STK'
COM '67452-63222 ALEXANDRIA SWITCHING STATION 115 - ALEXANDRIA 115'
COM '63222-60144 ALEXANDRIA 115 - DOUGLAS COUNTY 115'
COM '67452-67453 ALEXANDRIA SWITCHING STATION 115 - ALEXANDRIA MUNICIPAL 115'
COM '67453-67454 ALEXANDRIA MUNICIPAL 115 - ALEXANDRIA POLEYARD 115'
COM '-----------------------------------------------------------'
CONTINGENCY '1625STK'
TRIP LINE FROM BUS 67452 TO BUS 63222 CKT 1
TRIP LINE FROM BUS 63222 TO BUS 60144 CKT 1
TRIP LINE FROM BUS 67452 TO BUS 67453 CKT 1
TRIP LINE FROM BUS 67453 TO BUS 67454 CKT 1
END
COM 'CONTINGENCY C-ALX-DGLSCO-5N606STK'
COM '67452-63222 ALEXANDRIA SWITCHING STATION 115 - ALEXANDRIA 115'
COM '63222-60144 ALEXANDRIA 115 - DOUGLAS COUNTY 115'
COM '60144-62817 DOUGLAS COUNTY 115 - LAKE SAUK TAP 115'
COM '62817-62818 LAKE SAUK TAP 115 - LAKE SAUK 115'
COM '62817-61647 LAKE SAUK 115 - LONG PRAIRIE 115'
COM '-----------------------------------------------------------'
CONTINGENCY '5N606STK'
TRIP LINE FROM BUS 67452 TO BUS 63222 CKT 1
TRIP LINE FROM BUS 63222 TO BUS 60144 CKT 1
TRIP LINE FROM BUS 60144 TO BUS 62817 CKT P1
TRIP LINE FROM BUS 62817 TO BUS 62818 CKT 1
TRIP LINE FROM BUS 62817 TO BUS 61647 CKT 1
END
COM 'CONTINGENCY 'C-ALXSS-ALXPLYD-1575STK'
COM '67452-67453 ALEXANDRIA SWITCHING STATION 115 - ALEXANDRIA MUNICIPAL 115'
COM '67453-67454 ALEXANDRIA MUNICIPAL 115 - ALEXANDRIA POLEYARD 115'
COM '67454-67461 ALEXANDRIA POLEYARD 115 - ALEXANDRIA SOUTH 115'
COM '67454-62752 ALEXANDRIA POLEYARD 115 - MILTONA TAP 115'
COM '-----------------------------------------------------------'
CONTINGENCY '1575STK'
TRIP LINE FROM BUS 67452 TO BUS 67453 CKT 1
TRIP LINE FROM BUS 67453 TO BUS 67454 CKT 1
TRIP LINE FROM BUS 67454 TO BUS 67461 CKT 1
TRIP LINE FROM BUS 67454 TO BUS 62752 CKT 1
END
COM 'CONTINGENCY C-INMN-ALXMUN-1565STK'
COM '67454-62752 ALEXANDRIA POLEYARD 115 - MILTONA 115'
COM '62752-62527 MILTONA TAP 115 - ELMO 115'
COM '62527-62531 ELMO 115 - INMAN 115'
COM '62752-62753 MILTONA TAP 115 - MILTONA 115'
COM '62753-62773 MILTON 115 - MILTON 41.6'
COM '67454-67461 ALEXANDRIA POLEYARD 115 - ALEXANDRIA MUNICIPAL 115'
COM '67454-67453 ALEXANDRIA POLEYARD 115 - ALEXANDRIA SOUTHWEST 115'
COM '-----------------------------------------------------------
'
CONTINGENCY '1565STK'
TRIP LINE FROM BUS 67454 TO BUS 62752 CKT 1
TRIP LINE FROM BUS 62752 TO BUS 62527 CKT 1
TRIP LINE FROM BUS 62527 TO BUS 62531 CKT 1
TRIP LINE FROM BUS 62752 TO BUS 62753 CKT 1
TRIP LINE FROM BUS 62753 TO BUS 62773 CKT 1
TRIP LINE FROM BUS 67454 TO BUS 67461 CKT 1
TRIP LINE FROM BUS 67454 TO BUS 67453 CKT 1
END
COM 'CONTINGENCY C-ALXMUN-INMN-1555STK'
COM '67454-62752 ALEXANDRIA POLEYARD 115 - MILTONA 115'
COM '62752-62527 MILTONA TAP 115 - ELMO 115'
COM '62527-62531 ELMO 115 - INMAN 115'
COM '62752-62753 MILTONA TAP 115 - MILTONA 115'
COM '62753-62773 MILTONA 115 - MILTONA 41.6'
COM '67454-67461 ALEXANDRIA POLEYARD 115 - ALEXANDRIA SOUTH MUNICIPAL 115'
COM '62531-62526 INMAN 115 - RUSH LAKE 115'
COM '62526-62562 RUSH LAKE 115 - RUSH LAKE 41.6'
COM '62526-63286 RUSH LAKE 115 - QUADRANT 115'
COM '63286-63235 QUADRANT 115 - PERHAM 115'
COM '63235-62530 PERHAM 115 - FRAZEE 115'
COM '62530-67462 FRAZEE 115 - DETROIT LAKES INDUSTRIAL 115'
COM '-----------------------------------------------------------
--'
CONTINGENCY '1555STK'
TRIP LINE FROM BUS 67454 TO BUS 62752 CKT 1
TRIP LINE FROM BUS 62752 TO BUS 62527 CKT 1
TRIP LINE FROM BUS 62527 TO BUS 62531 CKT 1
TRIP LINE FROM BUS 62752 TO BUS 62753 CKT 1
TRIP LINE FROM BUS 62753 TO BUS 62773 CKT 1
TRIP LINE FROM BUS 67454 TO BUS 67461 CKT 1
TRIP LINE FROM BUS 62531 TO BUS 62526 CKT 1
TRIP LINE FROM BUS 62526 TO BUS 62562 CKT 1
TRIP LINE FROM BUS 62526 TO BUS 63286 CKT 1
TRIP LINE FROM BUS 63286 TO BUS 63235 CKT 1
TRIP LINE FROM BUS 63235 TO BUS 62530 CKT 1
TRIP LINE FROM BUS 62530 TO BUS 67462 CKT 1
END
COM 'CONTINGENCY C-ALXMUN-INMN-1515STK'
COM '67454-62752 ALEXANDRIA POLEYARD 115 - MILTONA 115'
COM '62752-62527 MILTONA TAP 115 - ELMO 115'
COM '62527-62531 ELMO 115 - INMAN 115'
COM '62752-62753 MILTONA TAP 115 - MILTONA 115'
COM '62753-62773 MILTONA 115 - MILTONA 41.6'
COM '67454-67461 ALEXANDRIA POLEYARD 115 - ALEXANDRIA SOUTH MUNICIPAL 115'
COM '62531-63052-63072 INMAN 115 - INMAN 230 - INMAN  T'
COM '63052-63051 INMAN 230 - HENNING 230'
COM '63052-61611 INMAN 230 - WING RIVER 230'
COM '-----------------------------------------------------------
----'
CONTINGENCY '1515STK'
TRIP LINE FROM BUS 67454 TO BUS 62752 CKT 1
TRIP LINE FROM BUS 62752 TO BUS 62527 CKT 1
TRIP LINE FROM BUS 62527 TO BUS 62531 CKT 1
TRIP LINE FROM BUS 62752 TO BUS 62753 CKT 1
TRIP LINE FROM BUS 62753 TO BUS 62773 CKT 1
TRIP LINE FROM BUS 67454 TO BUS 67461 CKT 1
DISCONNECT LINE FROM BUS 62531 TO BUS 63052 TO BUS 63072 CKT 1
TRIP LINE FROM BUS 63052 TO BUS 63051 CKT 1
TRIP LINE FROM BUS 63052 TO BUS 61611 CKT 1
END
COM 'CONTINGENCY C-ADBN-DTRTLKWST-STK'
COM '63236-63207 AUDUBON 115 - DETROIT LAKES RURAL 115'
COM '63207-67464 DETROIT LAKES RURAL 115 - DETROIT LAKES WEST 115'
COM '67464-67462 DETROIT LAKES WEST 115 - DETROIT LAKES INDUSTRIAL 115'
COM '-----------------------------------------------------------
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CONTINGENCY 'ADBN-DTLKW'
TRIP LINE FROM BUS 63236 TO BUS 63207 CKT 1
TRIP LINE FROM BUS 63207 TO BUS 67464 CKT 1
TRIP LINE FROM BUS 67464 TO BUS 67462 CKT 1
END
COM 'CONTINGENCY C-DTRTLKWST-DTRTLKIND-STK'
COM '67464-67462 DETROIT LAKES WEST 115 - DETROIT LAKES INDUSTRIAL 115'
COM '67462-67463 DETROIT LAKES INDUSTRIAL 115 - DETROIT LAKES RUDD STREET 115'
COM '67462-62530 DETROIT LAKES INDUSTRIAL 115 - FRAZEE 115'
COM '-----------------------------------------------------------
---'
CONTINGENCY 'DTLKW-DTLKIN'
TRIP LINE FROM BUS 67464 TO BUS 67462 CKT 1
TRIP LINE FROM BUS 67462 TO BUS 67463 CKT 1
TRIP LINE FROM BUS 67462 TO BUS 62530 CKT 1
END
COM 'CONTINGENCY C-WNGR-SLWY-1385STK'
COM '63239-63238 BAGLEY 115 - WINGER 115'
COM '63239-63243 BAGLEY 115 - SHEVLIN 115'
COM '63239-63241 BAGLEY 115 - CLEARBROOK 115'
COM '63243-63285 SHEVLIN 115 - SOLWAY 115'
COM '63243-66727 SHEVLIN 115 - RICE LAKE TAP 115'
COM '63241-63240 CLEARBROOK 115 - MN PIPELINE 115'
COM '63241-63242 CLEARBROOK 115 - CLEARBROOK PIPELINE 115'
COM '66727-66729 RICE LAKE TAP 115 - RICE LAKE 115'
COM '66727-63244 RICE LAKE TAP 115 - ITASCA 115'
COM '63240-63340 MN PIPELINE 115 - MN PIPELINE 4.2'
COM '63242-63342 CLEARBROOK PIPELINE 115 - CLEARBROOK PIPELINE 4.2'
COM '63244-63344 ITASCA 115 - ITASCA 4.2'
COM '63285-63281 SOLWAY 115 - WILTON LAKEHEAD PIPELINE TAP 115'
COM '63281-63280 WILTON LAKEHEAD PIPELINE TAP 115 - WILTON LAKEHEAD PIPELINE 115'
COM '63281-63245 WILTON LAKEHEAD PIPELINE TAP 115 - WILTON 115'
COM '-----------------------------------------------------------
---'
CONTINGENCY '1385STK'
TRIP LINE FROM BUS 63239 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 63239 TO BUS 63243 CKT 1
TRIP LINE FROM BUS 63239 TO BUS 63241 CKT 1
TRIP LINE FROM BUS 63243 TO BUS 63285 CKT 1
TRIP LINE FROM BUS 63243 TO BUS 66727 CKT 1
TRIP LINE FROM BUS 63241 TO BUS 63240 CKT 1
TRIP LINE FROM BUS 63241 TO BUS 63242 CKT 1
TRIP LINE FROM BUS 66727 TO BUS 66729 CKT 1
TRIP LINE FROM BUS 66727 TO BUS 63244 CKT 1
TRIP LINE FROM BUS 63240 TO BUS 63340 CKT 1
TRIP LINE FROM BUS 63242 TO BUS 63342 CKT 1
TRIP LINE FROM BUS 63244 TO BUS 63344 CKT 1
TRIP LINE FROM BUS 63285 TO BUS 63281 CKT 1
TRIP LINE FROM BUS 63281 TO BUS 63280 CKT 1
TRIP LINE FROM BUS 63281 TO BUS 63245 CKT 1
END
COM 'CONTINGENCY C-SLWY-WNGR-1335STK'
COM '63239-63238 BAGLEY 115 - WINGER 115'
COM '63239-63243 BAGLEY 115 - SHEVLIN 115'
COM '63239-63241 BAGLEY 115 - CLEARBROOK 115'
COM '63243-63285 SHEVLIN 115 - SOLWAY 115'
COM '63243-66727 SHEVLIN 115 - RICE LAKE TAP 115'
COM '63241-63240 CLEARBROOK 115 - MN PIPELINE 115'
COM '63241-63242 CLEARBROOK 115 - CLEARBROOK PIPELINE 115'
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COM '66727-66729 RICE LAKE TAP 115 - RICE LAKE
115'
COM '66727-63244 RICE LAKE TAP 115 - ITASCA 115'
COM '63240-63340 MN PIPELINE 115 - MN PIPELINE 4.2'
COM '63242-63342 CLEARBROOK PIPELINE 115 -
CLEARBROOK PIPELINE 4.2'
COM '63244-63344 ITASCA 115 - ITASCA 4.2'
COM '63238-66786 WINGER 115 - WINGER Y 115'
COM '67018-66786 WINGER 69 - WINGER Y 115'
COM '63138-66786 WINGER 41.6 - WINGER Y 115'
COM '63238-63251 WINGER 115 - PLUMMER TAP 115'
COM '63238-63237 WINGER 115 - MAHNOMEN 115'
COM '63238-63250 WINGER 115 - FERTILE 115'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '1335STK'
TRIP LINE FROM BUS 63239 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 63239 TO BUS 63243 CKT 1
TRIP LINE FROM BUS 63239 TO BUS 63241 CKT 1
TRIP LINE FROM BUS 63243 TO BUS 63285 CKT 1
TRIP LINE FROM BUS 63243 TO BUS 66727 CKT 1
TRIP LINE FROM BUS 63241 TO BUS 63240 CKT 1
TRIP LINE FROM BUS 63241 TO BUS 63242 CKT 1
TRIP LINE FROM BUS 66727 TO BUS 66729 CKT 1
TRIP LINE FROM BUS 66727 TO BUS 63244 CKT 1
TRIP LINE FROM BUS 63240 TO BUS 63340 CKT 1
TRIP LINE FROM BUS 63242 TO BUS 63342 CKT 1
TRIP LINE FROM BUS 63244 TO BUS 63344 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 67018 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63138 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63251 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63237 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
END
COM 'CONTINGENCY C-SLWY-WLTN-1515STK'
COM '63285-63281 SOLWAY 115 - WILTON LAKEHEAD
PIPELINE TAP 115'
COM '63281-63280 WILTON LAKEHEAD PIPELINE TAP
115 - WILTON LAKEHEAD PIPELINE 115'
COM '63281-63245 WILTON LAKEHEAD PIPELINE TAP
115 - WILTON 115'
COM '63245-66776 WILTON 115 - WILTON Y 115'
COM '63145-66776 WILTON 41.6 - WILTON Y 115'
COM '66768-66776 WILTON 69 - WILTON Y 115'
COM '63245-63186 WILTON 115 - WILTON Y 230'
COM '63345-63186 WILTON 230- WILTON Y 230'
COM '63343-63186 WILTON 13.2 - WILTON Y 230'
COM '63245-63246 WILTON 115 - BEMIDJI 115'
COM '-----------------------------------------------------------------
------'
CONTINGENCY '1515STK2'
TRIP LINE FROM BUS 63285 TO BUS 63281 CKT 1
TRIP LINE FROM BUS 63281 TO BUS 63280 CKT 1
TRIP LINE FROM BUS 63281 TO BUS 63245 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 66776 CKT 1
TRIP LINE FROM BUS 63145 TO BUS 66776 CKT 1
TRIP LINE FROM BUS 66968 TO BUS 66776 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63345 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63343 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63246 CKT 1
END
COM 'CONTINGENCY C-WLTN-BMDJI-1235STK'
COM '63245-63246 WILTON 115 - BEMIDJI 115'
COM '63246-63196 BEMIDJI 115 - BEMIDJI Y 115'
COM '63346-63196 BEMIDJI 12.5 - BEMIDJI Y 115'
COM '67015-63196 BEMIDJI 69 - BEMIDJI Y 115'
COM '63246-66789 BEMIDJI 115 - BEMIDJI Y 115'
COM '63146-66789 BEMIDJI 41.6 - BEMIDJI Y 115'
COM '67015-66789 BEMIDJI 69 - BEMIDJI Y 115'
COM '63245-63281 WILTON 115 - WILTON LAKEHEAD
PIPELINE TAP 115'
COM '63245-63186 WILTON 115 - WILTON Y 230'
COM '63345-63186 WILTON 230 - WILTON Y 230'
COM '63343-63186 WILTON 13.2 - WILTON Y 230'
COM '-----------------------------------------------------------------
-----'
COM CONTINGENCY '1235STK'
COM TRIP LINE FROM BUS 63245 TO BUS 63246 CKT 1
COM TRIP LINE FROM BUS 63246 TO BUS 63196 CKT 1
COM TRIP LINE FROM BUS 63346 TO BUS 63196 CKT 1
COM TRIP LINE FROM BUS 67015 TO BUS 63196 CKT 1
COM TRIP LINE FROM BUS 63246 TO BUS 66789 CKT 1
COM TRIP LINE FROM BUS 63146 TO BUS 66789 CKT 1
COM TRIP LINE FROM BUS 67015 TO BUS 66789 CKT 1
COM TRIP LINE FROM BUS 63245 TO BUS 63281 CKT 1
COM TRIP LINE FROM BUS 63245 TO BUS 63186 CKT 1
COM TRIP LINE FROM BUS 63345 TO BUS 63186 CKT 1
COM TRIP LINE FROM BUS 63343 TO BUS 63186 CKT 1
COM END
COM 'CONTINGENCY C-DRYTN-DNDSN-1725STK'
COM '66705-63255 DRAYTON 115 - DONALDSON 115'
COM '63255-63256 DONALDSON 115 - DONALDSON
PIPELINE 115'
COM '63255-66718 DONALDSON 115 - HALMA 115'
COM '63255-66714 DONALDSON 115 - WARSAW 115'
COM '63255-63155 DONALDSON 115 - DONALDSON
41.6'
COM '63255-63155 DONALDSON 115 - DONALDSON
41.6'
COM '63256-63356 DONALDSON PIPELINE 115 -
DONALDSON PIPELINE 4.2'
COM '63256-63356 DONALDSON PIPELINE 115 -
DONALDSON PIPELINE 4.2'
COM '66718-66708 HALMA 115 - KARLSTAD 115'
COM '66708-66785 KARLSTAD 115 - KARLSTAD Y 115'
COM '66838-66785 KARLSTAD 69 - KARLSTAD Y 115'
COM '63156-66785 KARLSTAD 41.6 - KARLSTAD Y 115'
COM '66708-63254 KARLSTAD 115 - VIKING 115'
COM '63254-63354 VIKING 115 - VIKING 4.2'
COM '63254-66713 VIKING 115 - THIEF RIVER FALLS
115'
COM '-----------------------------------------------------------------
-'
COM CONTINGENCY '1725STK'
COM TRIP LINE FROM BUS 66705 TO BUS 63255 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 63256 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 66718 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 66714 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 63155 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 63155 CKT 2
COM TRIP LINE FROM BUS 63256 TO BUS 63356 CKT 1
COM TRIP LINE FROM BUS 63256 TO BUS 63356 CKT 2
COM TRIP LINE FROM BUS 66718 TO BUS 66708 CKT 1
COM TRIP LINE FROM BUS 66708 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 66838 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 63156 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 66708 TO BUS 63254 CKT 1
COM TRIP LINE FROM BUS 63254 TO BUS 63354 CKT 1
COM TRIP LINE FROM BUS 63254 TO BUS 66713 CKT 1
COM END
COM 'CONTINGENCY C-DNDSN-DRYTN-1160STK'
COM '66705-63255 DRAYTON 115 - DONALDSON 115'
COM '63255-63256 DONALDSON 115 - DONALDSON
PIPELINE 115'
COM '63255-66714 DONALDSON 115 - WARSAW 115'
COM '63255-63155 DONALDSON 115 - DONALDSON
41.6'
COM '63255-63155 DONALDSON 115 - DONALDSON
41.6'
COM '63256-63356 DONALDSON PIPELINE 115 -
DONALDSON PIPELINE 4.2'
COM '63256-63356 DONALDSON PIPELINE 115 -
DONALDSON PIPELINE 4.2'
COM '66752-66787 DRAYTON 230 - DRAYTON Y #1 230'
COM '66705-66787 DRAYTON 115 - DRAYTON Y #1 230'
COM '66763-66787 DRAYTON 13.2 - DRAYTON Y #1 230'
COM '66752-66788 DRAYTON 230 - DRAYTON Y #2 230'
COM '66705-66788 DRAYTON 115 - DRAYTON Y #2 230'
COM '66762-66788 DRAYTON 13.2 - DRAYTON Y #2 230'
COM '66705-63257 DRAYTON 115 - HENSEL 115'
COM '63257-63192 HENSEL 115 - HENSEL Y 115'
COM '66796-63192 HENSEL 69 - HENSEL Y 115'
COM '63157-63192 HENSEL 41.6 - HENSEL Y 115'
COM '-----------------------------------------------------------------
-'
COM CONTINGENCY '1160STK'
COM TRIP LINE FROM BUS 66705 TO BUS 63255 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 63256 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 66714 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 63155 CKT 1
COM TRIP LINE FROM BUS 63255 TO BUS 63155 CKT 2
COM TRIP LINE FROM BUS 63256 TO BUS 63356 CKT 1
COM TRIP LINE FROM BUS 63256 TO BUS 63356 CKT 2
COM TRIP LINE FROM BUS 66752 TO BUS 66787 CKT 1
COM TRIP LINE FROM BUS 66705 TO BUS 66787 CKT 1
COM TRIP LINE FROM BUS 66763 TO BUS 66787 CKT 1
COM TRIP LINE FROM BUS 66752 TO BUS 66788 CKT 1
COM TRIP LINE FROM BUS 66705 TO BUS 66788 CKT 1
COM TRIP LINE FROM BUS 66762 TO BUS 66788 CKT 1
COM TRIP LINE FROM BUS 66705 TO BUS 63257 CKT 1
COM TRIP LINE FROM BUS 63257 TO BUS 63192 CKT 1
COM TRIP LINE FROM BUS 66796 TO BUS 63192 CKT 1
COM TRIP LINE FROM BUS 63157 TO BUS 63192 CKT 1
COM END
COM 'CONTINGENCY C-DNDSN-TRF-1260STK'
COM '63255-66718 DONALDSON 115 - HALMA 115'
COM '66718-66708 HALMA 115 - KARLSTAD 115'
COM '66708-66785 KARLSTAD 115 - KARLSTAD Y 115'
COM '66838-66785 KARLSTAD 69 - KARLSTAD Y 115'
COM '63156-66785 KARLSTAD 41.6 - KARLSTAD Y 115'
COM '66708-63254 KARLSTAD 115 - VIKING 115'
COM '63254-63354 VIKING 115 - VIKING 4.2'
COM '63254-66713 VIKING 115 - THIEF RIVER FALLS
115'
COM '66713-66723 THIEF RIVER FALLS 115 -
GREENWOOD 115'
COM '66723-66726 GREENWOOD 115 - ANDERSON 115'
COM '66726-66725 ANDERSON 115 - WARREN 115'
COM '-----------------------------------------------------------------
'
COM CONTINGENCY '1260STK'
COM TRIP LINE FROM BUS 63255 TO BUS 66718 CKT 1
COM TRIP LINE FROM BUS 66718 TO BUS 66708 CKT 1
COM TRIP LINE FROM BUS 66708 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 66838 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 63156 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 66708 TO BUS 63254 CKT 1
COM TRIP LINE FROM BUS 63254 TO BUS 63354 CKT 1
COM TRIP LINE FROM BUS 63254 TO BUS 66713 CKT 1
COM TRIP LINE FROM BUS 66713 TO BUS 66723 CKT 1
COM TRIP LINE FROM BUS 66723 TO BUS 66726 CKT 1
COM TRIP LINE FROM BUS 66726 TO BUS 66725 CKT 1
COM END
COM 'CONTINGENCY C-DNDSN-TRF-1290STK'
COM '63255-66718 DONALDSON 115 - HALMA 115'
COM '66718-66708 HALMA 115 - KARLSTAD 115'
COM '66708-66785 KARLSTAD 115 - KARLSTAD Y 115'
COM '66838-66785 KARLSTAD 69 - KARLSTAD Y 115'
COM '63156-66785 KARLSTAD 41.6 - KARLSTAD Y 115'
COM '66708-63254 KARLSTAD 115 - VIKING 115'
COM '63254-63354 VIKING 115 - VIKING 4.2'
COM '63254-66713 VIKING 115 - THIEF RIVER FALLS
115'
COM '66713-66782 THIEF RIVER FALLS 115 - THIEF
RIVER FALLS Y 115'
COM '66767-66782 THIEF RIVER FALLS 13.2 - THIEF
RIVER FALLS Y 115'
COM '66910-66782 THIEF RIVER FALLS 69 - THIEF
RIVER FALLS Y 115'
COM '-----------------------------------------------------------------
--'
COM CONTINGENCY '1290STK'
COM TRIP LINE FROM BUS 63255 TO BUS 66718 CKT 1
COM TRIP LINE FROM BUS 66718 TO BUS 66708 CKT 1
COM TRIP LINE FROM BUS 66708 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 66838 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 63156 TO BUS 66785 CKT 1
COM TRIP LINE FROM BUS 66708 TO BUS 63254 CKT 1
COM TRIP LINE FROM BUS 63254 TO BUS 63354 CKT 1
COM TRIP LINE FROM BUS 63254 TO BUS 66713 CKT 1
COM TRIP LINE FROM BUS 66713 TO BUS 66782 CKT 1
COM TRIP LINE FROM BUS 66767 TO BUS 66782 CKT 1
COM TRIP LINE FROM BUS 66910 TO BUS 66782 CKT 1
COM END
COM 'CONTINGENCY C-WNGR-TRF-1280STK'
COM '66713-63253 THIEF RIVER FALLS 115 -
PLUMMER PIPELINE 115'
COM '63253-63251 PLUMMER PIPELINE 115 -
PLUMMER TAP 115'
COM '63251-63252 PLUMMER TAP 115 - PLUMMER 115'
COM '63251-63238 PLUMMER TAP 115 - WINGER 115'
COM '63253-63353 PLUMMER PIPELINE 115 -
PLUMMER PIPELINE 4.2'
COM '63253-63353 PLUMMER PIPELINE 115 -
PLUMMER PIPELINE 4.2'
COM '66713-66782 THIEF RIVER FALLS 115 - THIEF
RIVER FALLS Y 115'
COM '66767-66782 THIEF RIVER FALLS 13.2 - THIEF
RIVER FALLS Y 115'
COM '66910-66782 THIEF RIVER FALLS 69 - THIEF
RIVER FALLS Y 115'
COM '-----------------------------------------------------------------
--'
COM CONTINGENCY '1280STK'
COM TRIP LINE FROM BUS 66713 TO BUS 63253 CKT 1
COM TRIP LINE FROM BUS 63253 TO BUS 63251 CKT 1
COM TRIP LINE FROM BUS 63251 TO BUS 63252 CKT 1
COM TRIP LINE FROM BUS 63251 TO BUS 63238 CKT 1
COM TRIP LINE FROM BUS 63253 TO BUS 63353 CKT 1
COM TRIP LINE FROM BUS 63253 TO BUS 63353 CKT 2
COM TRIP LINE FROM BUS 66713 TO BUS 66782 CKT 1
COM TRIP LINE FROM BUS 66767 TO BUS 66782 CKT 1
COM TRIP LINE FROM BUS 66910 TO BUS 66782 CKT 1
COM END
COM 'CONTINGENCY C-WNGR-TRF-1270STK'
COM '66713-63253 THIEF RIVER FALLS 115 -
PLUMMER PIPELINE 115'
COM '63253-63251 PLUMMER PIPELINE 115 -
PLUMMER TAP 115'
COM '63251-63252 PLUMMER TAP 115 - PLUMMER 115'
COM '63251-63238 PLUMMER TAP 115 - WINGER 115'
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COM '63253-63353 PLUMMER PIPELINE 115 -
PLUMMER PIPELINE 4.2'
COM '63253-63353 PLUMMER PIPELINE 115 -
PLUMMER PIPELINE 4.2'
COM '66713-66723 THIEF RIVER FALLS 115 -
GREENWOOD 115'
COM '66723-66726 GREENWOOD 115 - ANDERSON 115'
COM '66726-66725 ANDERSON 115 - WARREN 115'
COM '-----------------------------------------------------------------
--'
COM CONTINGENCY '1280STK1'
COM TRIP LINE FROM BUS 66713 TO BUS 63253 CKT 1
COM TRIP LINE FROM BUS 63253 TO BUS 63251 CKT 1
COM TRIP LINE FROM BUS 63251 TO BUS 63252 CKT 1
COM TRIP LINE FROM BUS 63251 TO BUS 63238 CKT 1
COM TRIP LINE FROM BUS 63253 TO BUS 63353 CKT 1
COM TRIP LINE FROM BUS 63253 TO BUS 63353 CKT 2
COM TRIP LINE FROM BUS 66713 TO BUS 66723 CKT 1
COM TRIP LINE FROM BUS 66723 TO BUS 66726 CKT 1
COM TRIP LINE FROM BUS 66726 TO BUS 66725 CKT 1
COM END
COM 'CONTINGENCY C-TRF-WNGR-1365STK'
COM '66713-63253 THIEF RIVER FALLS 115 -
PLUMMER PIPELINE 115'
COM '63253-63251 PLUMMER PIPELINE 115 -
PLUMMER TAP 115'
COM '63251-63252 PLUMMER TAP 115 - PLUMMER 115'
COM '63251-63238 PLUMMER TAP 115 - WINGER 115'
COM '63253-63353 PLUMMER PIPELINE 115 -
PLUMMER PIPELINE 4.2'
COM '63253-63353 PLUMMER PIPELINE 115 -
PLUMMER PIPELINE 4.2'
COM '63238-63237 WINGER 115 - MAHNOMEN 115'
COM '63238-63239 WINGER 115 - BAGLEY 115'
COM '63238-63250 WINGER 115 - FERTILE 115'
COM '63238-66786 WINGER 115 - WINGER Y 115'
COM '67018-66786 WINGER 69 - WINGER Y 115'
COM '63138-66786 WINGER 41.6 - WINGER Y 115'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '-----------------------------------------------------------------
--'
CONTINGENCY '1280STK2'
TRIP LINE FROM BUS 66713 TO BUS 63253 CKT 1
TRIP LINE FROM BUS 63253 TO BUS 63251 CKT 1
TRIP LINE FROM BUS 63251 TO BUS 63252 CKT 1
TRIP LINE FROM BUS 63251 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 63253 TO BUS 63353 CKT 1
TRIP LINE FROM BUS 63253 TO BUS 63353 CKT 2
TRIP LINE FROM BUS 63238 TO BUS 63237 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63239 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 67018 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63138 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
END
COM 'CONTINGENCY C-FLCNR-DNDSN-1715STK'
COM '66706-66722 FALCONER 115 - OSLO 115'
COM '66722-66714 OSLO 115 - WARSAW 115'
COM '66714-63255 WARSAW 115 - DONALDSON 115'
COM '66722-63284 OSLO 115 - OSLO TOWN 115'
COM '63284-66724 OSLO TOWN 115 - ALVARADO 115'
COM '66724-66725 ALVARADO 115 - WARREN 115'
COM '66725-66726 WARREN 115 - ANDERSON
NORTHWEST 115'
COM '66714-66775 WARSAW 115 - WARSAW Y 115'
COM '66834-66775 WARSAW 69 - WARSAW Y 115'
COM '66774-66775 WARSAW 13.2 - WARSAW Y 115'
COM '63255-66705 DONALDSON 115 - DRAYTON 115'
COM '63255-63155 DONALDSON 115 - DONALDSON
41.6'
COM '63255-63155 DONALDSON 115 - DONALDSON
41.6'
COM '63255-63256 DONALDSON 115 - DONALDSON
PIPELINE 115'
COM '63256-63356 DONALDSON PIPELINE 115 -
DONALDSON PIPELINE 4.2'
COM '63256-63356 DONALDSON PIPELINE 115 -
DONALDSON PIPELINE 4.2'
COM '-----------------------------------------------------------------
-----'
CONTINGENCY '1715STK'
TRIP LINE FROM BUS 66706 TO BUS 66722 CKT 1
TRIP LINE FROM BUS 66722 TO BUS 66714 CKT 1
TRIP LINE FROM BUS 66714 TO BUS 63255 CKT 1
TRIP LINE FROM BUS 66722 TO BUS 63284 CKT 1
TRIP LINE FROM BUS 63284 TO BUS 66724 CKT 1
TRIP LINE FROM BUS 66724 TO BUS 66725 CKT 1
TRIP LINE FROM BUS 66725 TO BUS 66726 CKT 1
COM TRIP LINE FROM BUS 66714 TO BUS 66775 CKT 1
COM TRIP LINE FROM BUS 66834 TO BUS 66775 CKT 1
COM TRIP LINE FROM BUS 66774 TO BUS 66775 CKT 1
TRIP LINE FROM BUS 63255 TO BUS 66705 CKT 1
TRIP LINE FROM BUS 63255 TO BUS 63155 CKT 1
TRIP LINE FROM BUS 63255 TO BUS 63155 CKT 2
TRIP LINE FROM BUS 63255 TO BUS 63256 CKT 1
TRIP LINE FROM BUS 63256 TO BUS 63356 CKT 1
TRIP LINE FROM BUS 63256 TO BUS 63356 CKT 2
TRIP LINE FROM BUS 63255 TO BUS 66718 CKT 1
END
COM 'CONTINGENCY C-FLCNR-ANDRSN-1220STK'
COM '66706-66722 FALCONER 115 - OSLO 115'
COM '66722-66714 OSLO 115 - WARSAW 115'
COM '66714-63255 WARSAW 115 - DONALDSON 115'
COM '66722-63284 OSLO 115 - OSLO TOWN 115'
COM '63284-66724 OSLO TOWN 115 - ALVARADO 115'
COM '66724-66725 ALVARADO 115 - WARREN 115'
COM '66725-66726 WARREN 115 - ANDERSON
NORTHWEST 115'
COM '66714-66775 WARSAW 115 - WARSAW Y 115'
COM '66834-66775 WARSAW 69 - WARSAW Y 115'
COM '66774-66775 WARSAW 13.2 - WARSAW Y 115'
COM '66726-66723 ANDERSON 115 - GREENWOOD 115'
COM '66723-66713 GREENWOOD 115 - THIEF RIVER
FALLS 115'
COM '-----------------------------------------------------------------
'
CONTINGENCY '1220STK'
TRIP LINE FROM BUS 66706 TO BUS 66722 CKT 1
TRIP LINE FROM BUS 66722 TO BUS 66714 CKT 1
TRIP LINE FROM BUS 66714 TO BUS 63255 CKT 1
TRIP LINE FROM BUS 66722 TO BUS 63284 CKT 1
TRIP LINE FROM BUS 63284 TO BUS 66724 CKT 1
TRIP LINE FROM BUS 66724 TO BUS 66725 CKT 1
TRIP LINE FROM BUS 66725 TO BUS 66726 CKT 1
COM TRIP LINE FROM BUS 66714 TO BUS 66775 CKT 1
COM TRIP LINE FROM BUS 66834 TO BUS 66775 CKT 1
COM TRIP LINE FROM BUS 66774 TO BUS 66775 CKT 1
TRIP LINE FROM BUS 66726 TO BUS 66723 CKT 1
TRIP LINE FROM BUS 66723 TO BUS 66713 CKT 1
END
COM 'CONTINGENCY C-DNDSN-FLCNR-1130STK'
COM '66706-66722 FALCONER 115 - OSLO 115'
COM '66722-66714 OSLO 115 - WARSAW 115'
COM '66714-63255 WARSAW 115 - DONALDSON 115'
COM '66722-63284 OSLO 115 - OSLO TOWN 115'
COM '63284-66724 OSLO TOWN 115 - ALVARADO 115'
COM '66724-66725 ALVARADO 115 - WARREN 115'
COM '66725-66726 WARREN 115 - ANDERSON
NORTHWEST 115'
COM '66714-66775 WARSAW 115 - WARSAW Y 115'
COM '66834-66775 WARSAW 69 - WARSAW Y 115'
COM '66774-66775 WARSAW 13.2 - WARSAW Y 115'
COM '66706-66443 FALCONER 115 - GRAND FORKS 115'
COM '66706-63249 FALCONER 115 - CROOKSTON 115'
COM '-----------------------------------------------------------------
'
CONTINGENCY '1130STK'
TRIP LINE FROM BUS 66706 TO BUS 66722 CKT 1
TRIP LINE FROM BUS 66722 TO BUS 66714 CKT 1
TRIP LINE FROM BUS 66714 TO BUS 63255 CKT 1
TRIP LINE FROM BUS 66722 TO BUS 63284 CKT 1
TRIP LINE FROM BUS 63284 TO BUS 66724 CKT 1
TRIP LINE FROM BUS 66724 TO BUS 66725 CKT 1
TRIP LINE FROM BUS 66725 TO BUS 66726 CKT 1
COM TRIP LINE FROM BUS 66714 TO BUS 66775 CKT 1
COM TRIP LINE FROM BUS 66834 TO BUS 66775 CKT 1
COM TRIP LINE FROM BUS 66774 TO BUS 66775 CKT 1
TRIP LINE FROM BUS 66706 TO BUS 66443 CKT 1
TRIP LINE FROM BUS 66706 TO BUS 63249 CKT 1
END
COM 'CONTINGENCY C-CNBY-BGSTN-1685STK'
COM '63214-63213 BIG STONE 115 - MARIETTA 115'
COM '63213-63212 MARIETTA 115 - BURR 115'
COM '63212-63211 BURR 115 - CANBY 115'
COM '63212-63210 BURR 115 - TORONTO 115'
COM '63213-63113 MARIETTA 115 - MARIETTA 41.6'
COM '63214-63195 BIG STONE 115 - BIG STONE Y 230'
COM '63314-63195 BIG STONE 230 - BIG STONE Y 230'
COM '63316-63195 BIG STONE 13.2 - BIG STONE Y 230'
COM '63214-63215 BIG STONE 115 - HIGHWAY 12 115'
COM 'NEED TO REDUCE BIG STONE GENERATION TO
330 MW NET'
COM '-----------------------------------------------------------------
'
CONTINGENCY '1685STK'
TRIP LINE FROM BUS 63214 TO BUS 63213 CKT 1
TRIP LINE FROM BUS 63213 TO BUS 63212 CKT 1
TRIP LINE FROM BUS 63212 TO BUS 63211 CKT 1
TRIP LINE FROM BUS 63212 TO BUS 63210 CKT 1
TRIP LINE FROM BUS 63213 TO BUS 63113 CKT 1
TRIP LINE FROM BUS 63214 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63314 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63316 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63214 TO BUS 63215 CKT 1
SET BUS 63315 GENERATION TO 346.5 MW
END
COM '-------115 kV outage--------INVALID
CONTINGENCY WITH BIG STONE II IN-SERVICE--------
-----------------------------------'
COM 'CONTINGENCY C-BGSTN-CNBY-1515STK'
COM '63214-63213 BIG STONE 115 - MARIETTA 115'
COM '63213-63212 MARIETTA 115 - BURR 115'
COM '63212-63211 BURR 115 - CANBY 115'
COM '63212-63210 BURR 115 - TORONTO 115'
COM '63213-63113 MARIETTA 115 - MARIETTA 41.6'
COM '63211-63111 CANBY 115 - CANBY 41.6'
COM '63211-66551 CANBY 115 - GRANITE FALLS 115'
COM '63211-63206 CANBY 115 - DAWSON 115'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1515STK3'
COM TRIP LINE FROM BUS 63214 TO BUS 63213 CKT 1
COM TRIP LINE FROM BUS 63213 TO BUS 63212 CKT 1
COM TRIP LINE FROM BUS 63212 TO BUS 63211 CKT 1
COM TRIP LINE FROM BUS 63212 TO BUS 63210 CKT 1
COM TRIP LINE FROM BUS 63213 TO BUS 63113 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63111 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63212 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63312 CKT 1
COM END
COM '-------115 kV outage--------INVALID
CONTINGENCY WITH BIG STONE II IN-SERVICE--------
-----------------------------------'
COM 'CONTINGENCY C-GRNTFLS-CNBY-1525STK'
COM '66551-63211 GRANITE FALLS 115 - CANBY 115'
COM '63211-63111 CANBY 115 - CANBY 41.6'
COM '63211-63206 CANBY 115 - DAWSON 115'
COM '63211-63212 CANBY 115 - BURR 115'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1525STK'
COM TRIP LINE FROM BUS 66551 TO BUS 63211 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63111 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63312 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63212 CKT 1
COM END
COM '------------INVALID CONTINGENCY WITH BIG
STONE II IN-SERVICE-----------------------------------------'
COM 'CONTINGENCY C-CNBY-GRNTFLS-1662STK'
COM '66551-63211 GRANITE FALLS 115 - CANBY 115'
COM '66551-60148 GRANITE FALLS 115 - MN VALLEY
115'
COM '66551-66508 GRANITE FALLS 115 - MARSHALL
115'
COM '66551-66298 GRANITE FALLS 115 - GRANITE
FALLS 69'
COM '66551-66296 GRANITE FALLS 115 - GRANITE
FALLS Y 230'
COM '66550-66296 GRANITE FALLS 230 - GRANITE
FALLS Y 230'
COM '66297-66296 GRANITE FALLS 13.8 - GRANITE
FALLS Y 230'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1662STK'
COM TRIP LINE FROM BUS 66551 TO BUS 63211 CKT 1
COM TRIP LINE FROM BUS 66551 TO BUS 60148 CKT 1
COM TRIP LINE FROM BUS 66551 TO BUS 66508 CKT 1
COM TRIP LINE FROM BUS 66551 TO BUS 66298 CKT 1
COM TRIP LINE FROM BUS 66551 TO BUS 66296 CKT 1
COM TRIP LINE FROM BUS 66550 TO BUS 66296 CKT 1
COM TRIP LINE FROM BUS 66297 TO BUS 66296 CKT 1
COM END
COM 'CONTINGENCY C-ORTN-BGSTN-1675STK'
COM '63215-63216 HIGHWAY 12 115 - ORTONVILLE
115'
COM '63214-63215 BIG STONE 115 - HIGHWAY 12 115'
COM '63214-63195 BIG STONE 115 - BIG STONE Y 230'
COM '63314-63195 BIG STONE 230 - BIG STONE Y 230'
COM '63316-63195 BIG STONE 13.8 - BIG STONE Y 230'
COM '63214-63213 BIG STONE 115 - MARIETTA 115'
COM 'NEED TO REDUCE BIG STONE GENERATION TO
330 MW NET'
COM '-----------------------------------------------------------------'
CONTINGENCY '1675STK'
TRIP LINE FROM BUS 63215 TO BUS 63216 CKT 1
TRIP LINE FROM BUS 63214 TO BUS 63215 CKT 1
TRIP LINE FROM BUS 63214 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63314 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63316 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63214 TO BUS 63213 CKT 1
SET BUS 63315 GENERATION TO 346.5 MW
END
COM '----115 kV outage--------INVALID CONTINGENCY
WITH BIG STONE II IN-SERVICE-----------------------------
-------------'
COM 'CONTINGENCY C-CNBY-ORTN-1465STK'
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COM '63216-63287 ORTONVILLE 115 - ORTONVILLE
QUARRY 115'
COM '63287-63288 ORTONVILLE QUARRY 115 -
ODESSA 115'
COM '63288-62000 ODESSA 115 - MARSH LAKE 115'
COM '62000-63289 MARSH LAKE 115 - CORRELL 115'
COM '63289-63217 CORRELL 115 - APPLETON 115'
COM '63217-63206 APPELTON 115 - DAWSON 115'
COM '63206-63211 DAWSON 115 - CANBY 115'
COM '62000-62038 MARSH LAKE 115 - MARSH LAKE
41.6'
COM '63216-62003 ORTONVILLE 115 - GRACEVILLE
TAP 115'
COM '63216-63116 ORTONVILLE 115 - ORTONVILLE
41.6'
COM '63216-63215 ORTONVTILLE 115 - HIGHWAY 12
115'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1465STK'
COM TRIP LINE FROM BUS 63216 TO BUS 63287 CKT 1
COM TRIP LINE FROM BUS 63287 TO BUS 63288 CKT 1
COM TRIP LINE FROM BUS 63288 TO BUS 62000 CKT 1
COM TRIP LINE FROM BUS 62000 TO BUS 63289 CKT 1
COM TRIP LINE FROM BUS 63289 TO BUS 63217 CKT 1
COM TRIP LINE FROM BUS 63217 TO BUS 63206 CKT 1
COM TRIP LINE FROM BUS 63206 TO BUS 63211 CKT 1
COM TRIP LINE FROM BUS 62000 TO BUS 62038 CKT 1
COM TRIP LINE FROM BUS 63216 TO BUS 63287 CKT 1
COM TRIP LINE FROM BUS 63216 TO BUS 63116 CKT 1
COM TRIP LINE FROM BUS 63216 TO BUS 63215 CKT 1
COM END
COM 'CONTINGENCY B-CNBY-ORTNVL'
COM '63216-63287 ORTONVILLE 115 - ORTONVILLE
QUARRY 115'
COM '63287-63288 ORTONVILLE QUARRY 115 -
ODESSA 115'
COM '63288-62000 ODESSA 115 - MARSH LAKE 115'
COM '62000-63289 MARSH LAKE 115 - CORRELL 115'
COM '63289-63217 CORRELL 115 - APPLETON 115'
COM '63217-63206 APPELTON 115 - DAWSON 115'
COM '63206-63211 DAWSON 115 - CANBY 115'
COM '62000-62038 MARSH LAKE 115 - MARSH LAKE
41.6'
COM '-----------------------------------------------------------------
-'
CONTINGENCY 'CNBY-ORTNVL'
TRIP LINE FROM BUS 63216 TO BUS 63287 CKT 1
TRIP LINE FROM BUS 63287 TO BUS 63288 CKT 1
TRIP LINE FROM BUS 63288 TO BUS 62000 CKT 1
TRIP LINE FROM BUS 62000 TO BUS 63289 CKT 1
TRIP LINE FROM BUS 63289 TO BUS 63217 CKT 1
COM TRIP LINE FROM BUS 63217 TO BUS 63206 CKT 1
COM TRIP LINE FROM BUS 63206 TO BUS 63211 CKT 1
TRIP LINE FROM BUS 62000 TO BUS 62038 CKT 1
END
COM '----115 kV outage--------INVALID CONTINGENCY
WITH BIG STONE II IN-SERVICE-----------------------------
-------------'
COM 'CONTINGENCY C-APLTN-DWSN-STK'
COM '63216-63287 ORTONVILLE 115 - ORTONVILLE
QUARRY 115'
COM '63287-63288 ORTONVILLE QUARRY 115 -
ODESSA 115'
COM '63288-62000 ODESSA 115 - MARSH LAKE 115'
COM '62000-63289 MARSH LAKE 115 - CORRELL 115'
COM '63289-63217 CORRELL 115 - APPLETON 115'
COM '63217-63206 APPELTON 115 - DAWSON 115'
COM '63206-63211 DAWSON 115 - CANBY 115'
COM '62000-62038 MARSH LAKE 115 - MARSH LAKE
41.6'
COM '63211-63111 CANBY 115 - CANBY 41.6'
COM '63211-63212 CANBY 115 - BURR 115'
COM '63211-66551 CANBY 115 - GRANITE FALLS 115'
COM '-----------------------------------------------------------------
-'
COM CONTINGENCY 'CNBY-ORTNVL1'
COM TRIP LINE FROM BUS 63216 TO BUS 63287 CKT 1
COM TRIP LINE FROM BUS 63287 TO BUS 63288 CKT 1
COM TRIP LINE FROM BUS 63288 TO BUS 62000 CKT 1
COM TRIP LINE FROM BUS 62000 TO BUS 63289 CKT 1
COM TRIP LINE FROM BUS 63289 TO BUS 63217 CKT 1
COM TRIP LINE FROM BUS 63217 TO BUS 63206 CKT 1
COM TRIP LINE FROM BUS 63206 TO BUS 63211 CKT 1
COM TRIP LINE FROM BUS 62000 TO BUS 62038 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63111 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63212 CKT 1
COM TRIP LINE FROM BUS 63211 TO BUS 63312 CKT 1
COM END
COM 'CONTINGENCY C-CRKSTN-WNGR-1355STK'
COM '63249-63250 CROOKSTON 115 - FERTILE 115'
COM '63250-63238 FERTILE 115 - WINGER 115'
COM '63250-63150 FERTILE 115 - FERTILE 41.6'
COM '63238-66786 WINGER 115 - WINGER Y 115'
COM '63138-66786 WINGER 41.6 - WINGER Y 115'
COM '67018-66786 WINGER 69 - WINGER Y 115'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '63238-63239 WINGER 115 - BAGLEY 115'
COM '63238-63237 WINGER 115 - MAHNOMEN 115'
COM '63238-63251 WINGER 115 - PLUMMER TAP 115'
COM '-----------------------------------------------------------------
---'
CONTINGENCY '1355STK'
TRIP LINE FROM BUS 63249 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 63250 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 63250 TO BUS 63150 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63138 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 67018 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63239 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63237 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63251 CKT 1
END
COM 'CONTINGENCY C-WNGR-CRKSTN-1615STK'
COM '63249-63250 CROOKSTON 115 - FERTILE 115'
COM '63250-63238 FERTILE 115 - WINGER 115'
COM '63250-63150 FERTILE 115 - FERTILE 41.6'
COM '63249-66706 CROOKSTON 115 - FALCONER 115'
COM '-----------------------------------------------------------------
---'
CONTINGENCY '1615STK2'
TRIP LINE FROM BUS 63249 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 63250 TO BUS 63238 CKT 1
TRIP LINE FROM BUS 63250 TO BUS 63150 CKT 1
TRIP LINE FROM BUS 63249 TO BUS 66706 CKT 1
END
COM 'CONTINGENCY C-FLCNR-CRKSTN-1625STK'
COM '66706-63249 FALCONER 115 - CROOKSTON 115'
COM '63249-63250 CROOKSTON 115 - FERTILE 115'
COM '-----------------------------------------------------------------
---'
CONTINGENCY '1625STK1'
TRIP LINE FROM BUS 66706 TO BUS 63249 CKT 1
TRIP LINE FROM BUS 63249 TO BUS 63250 CKT 1
END
COM 'CONTINGENCY C-CRKSTN-FLCNR-1110STK'
COM '66706-63249 FALCONER 115 - CROOKSTON 115'
COM '63249-63250 CROOKSTON 115 - FERTILE 115'
COM '66706-66722 FALCONER 115 - OSLO 115'
COM '-----------------------------------------------------------------
---'
CONTINGENCY '1110STK'
TRIP LINE FROM BUS 66706 TO BUS 63249 CKT 1
TRIP LINE FROM BUS 63249 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 66706 TO BUS 66722 CKT 1
END
COM 'CONTINGENCY C-ADBN-HTLK-1275STK'
COM '63223-63233 HOOT LAKE 115 - EDGETOWN TAP
115'
COM '63233-63234 EDGETOWN TAP 115 - PELICAN
RAPIDS 115'
COM '63233-63232 EDGETOWN TAP 115 - EDGETOWN
115'
COM '63232-62532 EDGETOWN 115 - FERGUS FALLS
115'
COM '63234-62528 PELICAN RAPIDS 115 - TAMARAC
115'
COM '62528-62533 TAMARAC 115 - COMORANT 115'
COM '62533-62529 COMORANT 115 - COMORANT JCT.
115'
COM '63236-62529 AUDUBON 115 - COMORANT JCT.
115'
COM '62528-63310 TAMARAC 115 - TAMARAC 41.6'
COM '62528-63310 TAMARAC 115 - TAMARAC 41.6'
COM '62529-62530 FRAZEE TAP 115 - FRAZEE 115'
COM '62530-62566 FRAZEE 115 - FRAZEE 41.6'
COM '63223-63324 HOOT LAKE 115 - HOOT LAKE UNIT
#3'
COM '63223-63219 HOOT LAKE 115 - GRANT COUNTY
115'
COM '63223-63123 HOOT LAKE 115 - HOOT LAKE 41.6'
COM '-----------------------------------------------------------------
------'
CONTINGENCY '1275STK'
TRIP LINE FROM BUS 63223 TO BUS 63233 CKT 1
TRIP LINE FROM BUS 63233 TO BUS 63234 CKT 1
TRIP LINE FROM BUS 63233 TO BUS 63232 CKT 1
TRIP LINE FROM BUS 63232 TO BUS 62532 CKT 1
TRIP LINE FROM BUS 63234 TO BUS 62528 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 62533 CKT 1
TRIP LINE FROM BUS 62533 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 63310 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 63310 CKT 2
TRIP LINE FROM BUS 62529 TO BUS 62530 CKT 1
TRIP LINE FROM BUS 62530 TO BUS 62566 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63324 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63219 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63123 CKT 1
END
COM 'CONTINGENCY C-HTLK-ADBN-1415STK'
COM '63223-63233 HOOT LAKE 115 - EDGETOWN TAP
115'
COM '63233-63234 EDGETOWN TAP 115 - PELICAN
RAPIDS 115'
COM '63233-63232 EDGETOWN TAP 115 - EDGETOWN
115'
COM '63232-62532 EDGETOWN 115 - FERGUS FALLS
115'
COM '63234-62528 PELICAN RAPIDS 115 - TAMARAC
115'
COM '62528-62533 TAMARAC 115 - COMORANT 115'
COM '62533-62529 COMORANT 115 - COMORANT JCT.
115'
COM '63236-62529 AUDUBON 115 - COMORANT JCT.
115'
COM '62528-63310 TAMARAC 115 - TAMARAC 41.6'
COM '62528-63310 TAMARAC 115 - TAMARAC 41.6'
COM '62529-62530 FRAZEE TAP 115 - FRAZEE 115'
COM '62530-62566 FRAZEE 115 - FRAZEE 41.6'
COM '63136-63202 AUDUBON 41.6 - AUDUBON Y 230'
COM '63236-66717 AUDUBON 115 - ULRICH 115'
COM '63236-63207 AUDUBON 115 - DETROIT LAKES
INDUSTRIAL 115'
COM '-----------------------------------------------------------------
------'
CONTINGENCY '1275STK1'
TRIP LINE FROM BUS 63223 TO BUS 63233 CKT 1
TRIP LINE FROM BUS 63233 TO BUS 63234 CKT 1
TRIP LINE FROM BUS 63233 TO BUS 63232 CKT 1
TRIP LINE FROM BUS 63232 TO BUS 62532 CKT 1
TRIP LINE FROM BUS 63234 TO BUS 62528 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 62533 CKT 1
TRIP LINE FROM BUS 62533 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 63310 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 63310 CKT 2
TRIP LINE FROM BUS 62529 TO BUS 62530 CKT 1
TRIP LINE FROM BUS 62530 TO BUS 62566 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63136 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 66717 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 63207 CKT 1
END
COM 'CONTINGENCY C-ADBN-FRZE-1325STK
COM '63223-63233 HOOT LAKE 115 - EDGETOWN TAP
115'
COM '63233-63234 EDGETOWN TAP 115 - PELICAN
RAPIDS 115'
COM '63233-63232 EDGETOWN TAP 115 - EDGETOWN
115'
COM '63232-62532 EDGETOWN 115 - FERGUS FALLS
115'
COM '63234-62528 PELICAN RAPIDS 115 - TAMARAC
115'
COM '62528-62533 TAMARAC 115 - COMORANT 115'
COM '62533-62529 COMORANT 115 - COMORANT JCT.
115'
COM '63236-62529 AUDUBON 115 - COMORANT JCT.
115'
COM '62528-63310 TAMARAC 115 - TAMARAC 41.6'
COM '62528-63310 TAMARAC 115 - TAMARAC 41.6'
COM '62529-62530 FRAZEE TAP 115 - FRAZEE 115'
COM '62530-62566 FRAZEE 115 - FRAZEE 41.6'
COM '62530-63235 FRAZEE 115 - PERHAM 115'
COM '63235-63286 PERHAM 115 - QUADRANT 115'
COM '63286-62526 QUADRANT 115 - RUSH LAKE 115'
COM '62526-62531 RUSH LAKE 115 - INMAN 115'
COM '62526-62562 RUSH LAKE 115 - RUSH LAKE 41.6'
COM '-----------------------------------------------------------------'
CONTINGENCY '1325STK'
TRIP LINE FROM BUS 63223 TO BUS 63233 CKT 1
TRIP LINE FROM BUS 63233 TO BUS 63234 CKT 1
TRIP LINE FROM BUS 63233 TO BUS 63232 CKT 1
TRIP LINE FROM BUS 63232 TO BUS 62532 CKT 1
TRIP LINE FROM BUS 63234 TO BUS 62528 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 62533 CKT 1
TRIP LINE FROM BUS 62533 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 62529 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 63310 CKT 1
TRIP LINE FROM BUS 62528 TO BUS 63310 CKT 2
TRIP LINE FROM BUS 62529 TO BUS 62530 CKT 1
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TRIP LINE FROM BUS 62530 TO BUS 62566 CKT 1
TRIP LINE FROM BUS 62530 TO BUS 63235 CKT 1
TRIP LINE FROM BUS 63235 TO BUS 63286 CKT 1
TRIP LINE FROM BUS 63286 TO BUS 62526 CKT 1
TRIP LINE FROM BUS 62526 TO BUS 62531 CKT 1
TRIP LINE FROM BUS 62526 TO BUS 62562 CKT 1
END
COM 'CONTINGENCY C-WHPTN-FRGS-2285STK'
COM '63331-63329 FERGUS FALLS 230 - WAHPETON 230'
COM '66754-63329 MAPLE RIVER 230 - WAHPETON 230'
COM '63329-63191 WAHPETON 230 - WAHPETON Y #1 230'
COM '63229-63191 WAHPETON 115 - WAHPETON Y #1 230'
COM '63129-63191 WAHPETON 41.6 - WAHPETON Y #1 230'
COM '63331-63051 FERGUS FALLS 230 - HENNING 230'
COM '63331-63194 FERGUS FALLS 230 - FERGUS FALLS Y 230'
COM '63332-63194 FERGUS FALLS 13.2 - FERGUS FALLS Y 230'
COM '63231-63194 FERGUS FALLS 115 - FERGUS FALLS Y 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '2285STK'
TRIP LINE FROM BUS 63331 TO BUS 63329 CKT 1
TRIP LINE FROM BUS 66754 TO BUS 63329 CKT 1
TRIP LINE FROM BUS 63329 TO BUS 63191 CKT 1
TRIP LINE FROM BUS 63229 TO BUS 63191 CKT 1
TRIP LINE FROM BUS 63129 TO BUS 63191 CKT 1
TRIP LINE FROM BUS 63331 TO BUS 63051 CKT 1
TRIP LINE FROM BUS 63331 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63332 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63231 TO BUS 63194 CKT 1
END
COM 'CONTINGENCY C-FRGS-WHPTN-2335STK'
COM '63327-63329 HANKINSON 230 - WAHPETON 230'
COM '63329-63201 WAHPETON 230 - WAHPETON Y #2 230'
COM '63129-63201 WAHPETON 41.6 - WAHPETON Y #2 230'
COM '63229-63201 WAHPETON 115 - WAHPETON Y #2 230'
COM '63329-63191 WAHPETON 230 - WAHPETON Y #1 230'
COM '63129-63191 WAHPETON 41.6 - WAHPETON Y #1 230'
COM '63229-63191 WAHPETON 115 - WAHPETON Y #1 230'
COM '63229-63331 WAHPETON 230 - FERGUS FALLS 230'
COM '63229-66754 WAHPETON 230 - MAPLE RIVER 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '2335STK'
TRIP LINE FROM BUS 63327 TO BUS 63329 CKT 1
TRIP LINE FROM BUS 63329 TO BUS 63201 CKT 1
TRIP LINE FROM BUS 63129 TO BUS 63201 CKT 1
TRIP LINE FROM BUS 63229 TO BUS 63201 CKT 1
TRIP LINE FROM BUS 63329 TO BUS 63191 CKT 1
TRIP LINE FROM BUS 63129 TO BUS 63191 CKT 1
TRIP LINE FROM BUS 63229 TO BUS 63191 CKT 1
TRIP LINE FROM BUS 63229 TO BUS 63201 CKT 1
TRIP LINE FROM BUS 63229 TO BUS 63228 CKT 1
END
COM 'CONTINGENCY C-WNGR-WLTN-1525STK'
COM '66758-63345 WINGER 230 - WILTON 230'
COM '63345-63186 WILTON 230 - WILTON Y 230'
COM '63245-63186 WILTON 115 - WILTON Y 230'
COM '63343-63186 WILTON 13.2 - WILTON Y 230'
COM '63245-63281 WILTON 115 - WILTON LAKEHEAD PIPELINE TAP 115'
COM '63245-63246 WILTON 115 - BEMIDJI 115'
COM '63245-66776 WILTON 115 - WILTON Y 115'
COM '63145-66776 WILTON 41.6 - WILTON Y 115'
COM '66968-66776 WILTON 69 - WILTON Y 115'
COM '-----------------------------------------------------------------'
CONTINGENCY '1525STK1'
TRIP LINE FROM BUS 66758 TO BUS 63345 CKT 1
TRIP LINE FROM BUS 63345 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63343 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63281 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63246 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 66776 CKT 1
TRIP LINE FROM BUS 63145 TO BUS 66776 CKT 1
TRIP LINE FROM BUS 66968 TO BUS 66776 CKT 1
END
COM 'CONTINGENCY C-WLTN-WNGR-53STK'
COM '66758-63345 WINGER 230 - WILTON 230'
COM '63345-63186 WILTON 230 - WILTON Y 115'
COM '63245-63186 WILTON 115 - WILTON Y 115'
COM '63343-63186 WILTON 13.2 - WILTON Y 115'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '53STK'
TRIP LINE FROM BUS 66758 TO BUS 63345 CKT 1
TRIP LINE FROM BUS 63345 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63343 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
END
COM 'CONTINGENCY C-WLTN-WNGR-52STK'
COM '66758-63345 WINGER 230 - WILTON 230'
COM '63345-63186 WILTON 230 - WILTON Y 230'
COM '63245-63186 WILTON 115 - WILTON Y 230'
COM '63343-63186 WILTON 13.2 - WILTON Y 230'
COM '66758-66755 WINGER 230 - PRAIRIE 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '52STK'
TRIP LINE FROM BUS 66758 TO BUS 63345 CKT 1
TRIP LINE FROM BUS 63345 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63245 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 63343 TO BUS 63186 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 66755 CKT 1
END
COM 'CONTINGENCY C-PRARE-WNGR-56STK'
COM '66758-66755 WINGER 230 - PRAIRIE 230'
COM '66758-66754 WINGER 230 - MAPLE RIVER 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '56STK'
TRIP LINE FROM BUS 66758 TO BUS 66755 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 66754 CKT 1
END
COM 'CONTINGENCY C-WNGR-PRARE-49STK'
COM '66758-66755 WINGER 230 - PRAIRIE 230'
COM '66755-66437 PRIARIE 230 - GRAND FORKS 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '49STK'
TRIP LINE FROM BUS 66758 TO BUS 66755 CKT 1
TRIP LINE FROM BUS 66755 TO BUS 66437 CKT 1
END
COM 'CONTINGENCY C-WNGR-PRARE-48STK'
COM '66758-66755 WINGER 230 - PRAIRIE 230'
COM '66755-63047 PRAIRE 230 - RAMSEY 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '48STK'
TRIP LINE FROM BUS 66758 TO BUS 66755 CKT 1
TRIP LINE FROM BUS 66755 TO BUS 63047 CKT 1
END
COM '----115 kV outage--------INVALID CONTINGENCY WITH BIG STONE II IN-SERVICE-----------------------------'
COM 'CONTINGENCY C-MRRS-ORTN-1445STK'
COM '63216-62003 ORTONVILLE 115 - GRACEVILLE TAP 115'
COM '66555-62003 MORRIS 115 - GRACEVILLE TAP 115'
COM '62003-62004 GRACEVILLE TAP 115 - GRACEVILLE 115'
COM '63216-63116 ORTONVILLE 115 - ORTONVILLE 41.6'
COM '63216-63287 ORTONVILLE 115 - ORTONVILLE QUARRY 115'
COM '63216-63215 ORTONVILLE 115 - HIGHWAY 12 115'
COM '63224-62004 DUMONT 115 - GRACEVILLE 115'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1445STK'
COM TRIP LINE FROM BUS 62002 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 62003 TO BUS 62004 CKT 1
COM TRIP LINE FROM BUS 63216 TO BUS 63116 CKT 1
COM TRIP LINE FROM BUS 63216 TO BUS 63287 CKT 1
COM TRIP LINE FROM BUS 63216 TO BUS 63215 CKT 1
COM TRIP LINE FROM BUS 63224 TO BUS 62004 CKT 1
COM END
COM '----115 kV outage--------INVALID CONTINGENCY WITH BIG STONE II IN-SERVICE-----------------------------'
COM 'CONTINGENCY C-ORTN-MRRS-1762STK'
COM '63216-62003 ORTONVILLE 115 - GRACEVILLE TAP 115'
COM '66555-62003 MORRIS 115 - GRACEVILLE TAP 115'
COM '62003-62004 GRACEVILLE TAP 115 - GRACEVILLE 115'
COM '62004-63224 GRACEVILLE 115 - DUMONT 115'
COM '66555-66554 MORRIS 115 - MORRIS 230'
COM '66555-63218 MORRIS 115 - OTP MORRIS 115'
COM '66555-63219 MORRIS 115 - GRANT COUNTY 115'
COM '66555-66318 MORRIS 115 - MORRIS 41.6'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1762STK'
COM TRIP LINE FROM BUS 62002 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 62003 TO BUS 62004 CKT 1
COM TRIP LINE FROM BUS 62004 TO BUS 63224 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 66554 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63219 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 66318 CKT 1
COM END
COM '----115 kV outage--------INVALID CONTINGENCY WITH BIG STONE II IN-SERVICE-----------------------------'
COM 'CONTINGENCY C-BNSN-MRRS-1662STK'
COM '66555-63218 MORRIS 115 - OTP MORRIS 115'
COM '63218-62002 OTP MORRIS 115 - WALDEN 115'
COM '62002-62001 WALDEN 115 - BENSON 115'
COM '62001-62013 BENSON 115 - BENSON 41.6'
COM '66555-66554 MORRIS 115 - MORRIS 230'
COM '66555-63219 MORRIS 115 - GRANT COUNTY 115'
COM '66555-62003 MORRIS 115 - GRACEVILLE TAP 115'
COM '66555-66318 MORRIS 115 - MORRIS 41.6'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1662STK1'
COM TRIP LINE FROM BUS 66555 TO BUS 63218 CKT 1
COM TRIP LINE FROM BUS 63218 TO BUS 62002 CKT 1
COM TRIP LINE FROM BUS 62002 TO BUS 62001 CKT 1
COM TRIP LINE FROM BUS 62001 TO BUS 62013 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 66554 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 63219 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 66318 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 66318 CKT 1
COM END
COM '----115 kV outage--------INVALID CONTINGENCY WITH BIG STONE II IN-SERVICE-----------------------------'
COM 'CONTINGENCY C-ORTN-GRCVL-1515STK'
COM '63216-62003 ORTONVILLE 115 - GRACEVILLE TAP 115'
COM '66555-62003 MORRIS 115 - GRACEVILLE TAP 115'
COM '62004-62003 GRACEVILLE 115 - GRACEVILLE TAP 115'
COM '62004-63224 GRACEVILLE 115 - DUMONT 115'
COM '63224-63294 DUMONT 115 - TRAVERSE WHEATON 115'
COM '63294-63225 TRAVERSE WHEATON 115 - WHEATON SOUTH 115'
COM '63225-63295 WHEATON SOUTH 115 - TRAVERSE WHEATON PIPELINE 115'
COM '63295-63227 TRAVERSE WHEATON PIPELINE 115 - FAIRMOUNT 115'
COM '63227-63296 FAIRMOUNT 115 - TYLER SOUTH 115'
COM '63296-63228 TYLER SOUTH 115 - TYLER 115'
COM '63228-63229 TYLER 115 - WAHPETON 115'
COM '-----------------------------------------------------------------'
COM CONTINGENCY '1515STK4'
COM TRIP LINE FROM BUS 63335 TO BUS 62003 CKT 1
COM TRIP LINE FROM BUS 66555 TO BUS 62003 CKT 1
COM TRIP LINE FROM BUS 62004 TO BUS 62003 CKT 1
COM TRIP LINE FROM BUS 62004 TO BUS 63224 CKT 1
COM TRIP LINE FROM BUS 63224 TO BUS 63294 CKT 1
COM TRIP LINE FROM BUS 63294 TO BUS 63225 CKT 1
COM TRIP LINE FROM BUS 63227 TO BUS 63295 CKT 1
COM TRIP LINE FROM BUS 63295 TO BUS 63227 CKT 1
COM TRIP LINE FROM BUS 63227 TO BUS 63296 CKT 1
COM TRIP LINE FROM BUS 63296 TO BUS 63228 CKT 1
COM TRIP LINE FROM BUS 63228 TO BUS 63229 CKT 1
COM END
END
COM 'CONTINGENCY C-INMN-FRGS-2265STK'
COM '63331-63051 FERGUS FALLS 230 - HENNING 230'
COM '63051-63052 HENNING 230 - INMAN 230'
COM '63051-63309 HENNING 230 - HENNING 41.6'
COM '63331-63194 FERGUS FALLS 230 - FERGUS FALLS Y 230'
COM '63231-63194 FERGUS FALLS 115 - FERGUS FALLS Y 230'
COM '63332-63194 FERGUS FALLS 13.2 - FERGUS FALLS Y 230'
COM '63331-63329 FERGUS FALLS 230 - WAHPETON 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '2265STK'
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TRIP LINE FROM BUS 63331 TO BUS 63051 CKT 1
TRIP LINE FROM BUS 63051 TO BUS 63052 CKT 1
TRIP LINE FROM BUS 63051 TO BUS 63309 CKT 1
TRIP LINE FROM BUS 63331 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63231 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63332 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63331 TO BUS 63329 CKT 1
END
COM 'CONTINGENCY C-FRGS-INMN-2815STK'
COM '63331-63051 FERGUS FALLS 230 - HENNING 230'
COM '63051-63052 HENNING 230 - INMAN 230'
COM '63051-63309 HENNING 230 - HENNING 41.6'
COM '63052-62531 INMAN 230 - INMAN 115'
COM '63052-61611 INMAN 230 - WING RIVER 230'
COM '-----------------------------------------------------------------
'
CONTINGENCY '2815STK'
TRIP LINE FROM BUS 63331 TO BUS 63051 CKT 1
TRIP LINE FROM BUS 63051 TO BUS 63052 CKT 1
TRIP LINE FROM BUS 63051 TO BUS 63309 CKT 1
TRIP LINE FROM BUS 63052 TO BUS 62531 CKT 1
TRIP LINE FROM BUS 63052 TO BUS 61611 CKT 1
END
COM 'CONTINGENCY C-INMN-WNGRVR-915LSTK'
COM '63052-63058 INMAN 230 - WING RIVER 230'
COM '63052-63051 INMAN 230 - HENNING 230'
COM '62893-63058-62894 WING RIVER 115 - WING
RIVER Y 230 – WING RIVER T'
COM '63058-61612 WING RIVER 230 - RIVERTON 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '915LSTK'
TRIP LINE FROM BUS 63052 TO BUS 63058 CKT 1
TRIP LINE FROM BUS 63052 TO BUS 63051 CKT 1
TRIP LINE FROM BUS 63058 TO BUS 61612 CKT 1
DISCONNECT LINE FROM BUS 62893 TO BUS 63058 TO
BUS 62894 CKT 1
END
COM 'CONTINGENCY C-RSHLK-INMN-1525STK'
COM '63052-62531-63072 INMAN 230 - INMAN 115 -
INMAN  T'
COM '62531-62526 INMAN 115 - RUSH LAKE 115'
COM '62526-62562 RUSH LAKE 115 - RUSH LAKE 41.6'
COM '62526-63286 RUSH LAKE 115 - QUADRANT 115'
COM '63235-63286 PERHAM 115 - QUADRANT 115'
COM '63235-62530 PERHAM 115 - FRAZEE 115'
COM '-----------------------------------------------------------------'
CONTINGENCY '1525STK2'
DISCONNECT LINE FROM BUS 63052 TO BUS 62531 TO
BUS 63072 CKT 1
TRIP LINE FROM BUS 62531 TO BUS 62526 CKT 1
TRIP LINE FROM BUS 62526 TO BUS 62562 CKT 1
TRIP LINE FROM BUS 62526 TO BUS 63286 CKT 1
TRIP LINE FROM BUS 63235 TO BUS 63286 CKT 1
TRIP LINE FROM BUS 63235 TO BUS 62530 CKT 1
END
COM 'CONTINGENCY C-FRGSXFMR-1515STK'
COM '63331-63194 FERGUS FALLS 230 - FERGUS FALLS
Y 230'
COM '63231-63194 FERGUS FALLS 115 - FERGUS FALLS
Y 230'
COM '63332-63194 FERGUS FALLS 13.2 - FERGUS
FALLS Y 230'
COM '63231-63223 FERGUS FALLS 115 - HOOT LAKE
115'
COM '63223-63323 HOOT LAKE 115 - HOOT LAKE
GENERATOR UNIT #2'
COM '-----------------------------------------------------------------'
CONTINGENCY '1515STK5'
TRIP LINE FROM BUS 63331 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63231 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63332 TO BUS 63194 CKT 1
TRIP LINE FROM BUS 63231 TO BUS 63223 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63323 CKT 1
END
COM 'CONTINGENCY C-FRGS-HTLK-1795STK'
COM '63223-63323 HOOT LAKE 115 - HOOT LAKE
GENERATOR UNIT #2'
COM '63223-63123 HOOT LAKE 115 - HOOT LAKE 41.6'
COM '63223-63219 HOOT LAKE 115 - GRANT COUNTY
115'
COM '63223-63231 HOOT LAKE 115 - FERGUS FALLS
115'
COM '63223-63233 HOOT LAKE 115 - EDGETOWN TAP
115'
COM '63223-63324 HOOT LAKE 115 - HOOT LAKE
GENERATOR UNIT #3'
COM '-----------------------------------------------------------------'
CONTINGENCY '1795STK'
TRIP LINE FROM BUS 63223 TO BUS 63323 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63123 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63219 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63231 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63233 CKT 1
TRIP LINE FROM BUS 63223 TO BUS 63324 CKT 1
END
COM 'CONTINGENCY C-SHYNE-ADBN-2115STK'
COM '63336-60133 AUDUBON 230 - SHEYENNE 230'
COM '63336-63136 AUDUBON 230 - AUDUBON 41.6'
COM '63336-63202 AUDUBON 230 - AUDUBON Y 230'
COM '63136-63202 AUDUBON 41.6 - AUDUBON Y 230'
COM '63236-63202 AUDUBON 115 - AUDUBON Y 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '2115STK'
TRIP LINE FROM BUS 63336 TO BUS 60133 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 63136 CKT 1
TRIP LINE FROM BUS 63336 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63136 TO BUS 63202 CKT 1
TRIP LINE FROM BUS 63236 TO BUS 63202 CKT 1
END
COM 'CONTINGENCY C-ADBN-SHYNE-7F5STK'
COM '63336-60133 AUDUBON 230 - SHEYENNE 230'
COM '60133-66754 SHEYENNE 230 - MAPLE RIVER 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '7F5STK'
TRIP LINE FROM BUS 63336 TO BUS 60133 CKT 1
TRIP LINE FROM BUS 60133 TO BUS 66754 CKT 1
END
COM 'CONTINGENCY C-ADBN-SHYNE-7F6STK'
COM '63336-60133 AUDUBON 230 - SHEYENNE 230'
COM '60133-60134 SHEYENNE 230 - SHEYENNE 115'
COM '60133-60134 SHEYENNE 230 - SHEYENNE 115'
COM '-----------------------------------------------------------------'
CONTINGENCY '7F6STK'
TRIP LINE FROM BUS 63336 TO BUS 60133 CKT 1
TRIP LINE FROM BUS 60133 TO BUS 60134 CKT 5
TRIP LINE FROM BUS 60133 TO BUS 60134 CKT 6
END
COM 'CONTINGENCY C-BLR-BGSTN-2645STK'
COM '63314-66503 BIG STONE 230 - BLAIR 230'
COM '63314-63195 BIG STONE 230 - BIG STONE Y 230'
COM '63214-63195 BIG STONE 115 - BIG STONE Y 230'
COM '63316-63195 BIG STONE 13.2 - BIG STONE Y 230'
COM 'NEED TO REDUCE BIG STONE GENERATION TO
250 MW NET'
COM '-----------------------------------------------------------------'
CONTINGENCY '2645STK'
TRIP LINE FROM BUS 63314 TO BUS 66503 CKT 1
TRIP LINE FROM BUS 63314 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63214 TO BUS 63195 CKT 1
TRIP LINE FROM BUS 63316 TO BUS 63195 CKT 1
SET BUS 63315 GENERATION TO 266.5 MW
END
COM 'CONTINGENCY C-BLR-BGSTN-2615STK'
COM '63314-66503 BIG STONE 230 - BLAIR 230'
COM '63314-63315 BIG STONE 230 - BIG STONE
GENERATOR UNIT #1'
COM 'NEED TO TRIP BIG STONE GENERATOR'
COM '-----------------------------------------------------------------'
CONTINGENCY '2615STK'
TRIP LINE FROM BUS 63314 TO BUS 66503 CKT 1
TRIP LINE FROM BUS 63314 TO BUS 63315 CKT 1
DISCONNECT BUS 63315
END
COM 'CONTINGENCY C-BGSTN-BLR-482STK'
COM '63314-66503 BIG STONE 230 - BLAIR 230'
COM '66503-66224 BLAIR 230 - BLAIR 69'
COM 'NEED TO REDUCE BIG STONE GENERATION TO
250 MW NET'
COM '-----------------------------------------------------------------'
CONTINGENCY '482STK'
TRIP LINE FROM BUS 63314 TO BUS 66503 CKT 1
TRIP LINE FROM BUS 66503 TO BUS 66224 CKT 1
SET BUS 63315 GENERATION TO 266.5 MW
END
COM 'CONTINGENCY C-BGSTN-BLR-182STK'
COM '63314-66503 BIG STONE 230 - BLAIR 230'
COM '66503-66550 BLAIR 230 - GRANITE FALLS 230'
COM 'NEED TO REDUCE BIG STONE GENERATION TO
250 MW NET'
COM '-----------------------------------------------------------------'
CONTINGENCY '182STK'
TRIP LINE FROM BUS 63314 TO BUS 66503 CKT 1
TRIP LINE FROM BUS 66503 TO BUS 66550 CKT 1
SET BUS 63315 GENERATION TO 266.5 MW
END
COM 'CONTINGENCY C-WNGRXFMR-1915STK'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '63238-66786 WINGER 115 - WINGER Y 115'
COM '63138-66786 WINGER 41.6 - WINGER Y 115'
COM '67018-66786 WINGER 69 - WINGER Y 115'
COM '63238-63237 WINGER 115 - MAHNOMEN 115'
COM '63238-63239 WINGER 115 - BAGLEY 115'
COM '63238-63250 WINGER 115 - FERTILE 115'
COM '63238-63251 WINGER 115 - PLUMMER TAP 115'
COM '63250-63150 FERTILE 115 - FERTILE 41.6'
COM '-----------------------------------------------------------------'
CONTINGENCY '1915STK'
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63138 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 67018 TO BUS 66786 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63237 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63239 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63250 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63251 CKT 1
TRIP LINE FROM BUS 63250 TO BUS 63150 CKT 1
END
COM 'CONTINGENCY C-WNGRXFMR-55STK'
COM '66758-63187 WINGER 230 - WINGER Y 230'
COM '63238-63187 WINGER 115 - WINGER Y 230'
COM '63338-63187 WINGER 13.2 - WINGER Y 230'
COM '66758-66754 WINGER 230 - MAPLE RIVER 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '55STK'
TRIP LINE FROM BUS 66758 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63238 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 63338 TO BUS 63187 CKT 1
TRIP LINE FROM BUS 66758 TO BUS 66754 CKT 1
END
COM 'CONTINGENCY C-PRAREXFMR-44STK'
COM '66755-66712 PRAIRIE 230 - PRAIRIE 115'
COM '66755-66437 PRAIRIE 230 - GRAND FORKS 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '44STK'
TRIP LINE FROM BUS 66755 TO BUS 66712 CKT 1
TRIP LINE FROM BUS 66755 TO BUS 66437 CKT 1
END
COM 'CONTINGENCY C-PRARE-GNDFKS-486STK'
COM '66755-66437 PRAIRIE 230 - GRAND FORKS 230'
COM '66437-66200 GRAND FORKS 230 - GRAND FORKS
Y 230'
COM '66443-66200 GRAND FORKS 115 - GRAND FORKS
Y 230'
COM '66201-66200 GRAND FORKS 13.8 - GRAND FORKS
Y 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '486STK'
TRIP LINE FROM BUS 66755 TO BUS 66437 CKT 1
TRIP LINE FROM BUS 66437 TO BUS 66200 CKT 1
TRIP LINE FROM BUS 66443 TO BUS 66200 CKT 1
TRIP LINE FROM BUS 66201 TO BUS 66200 CKT 1
END
COM 'CONTINGENCY C-WNGR-MPLRVR-65STK'
COM '66758-66754 WINGER 230 - MAPLE RIVER 230'
COM '66754-60133 MAPLE RIVER 230 - SHEYENNE 230'
COM '-----------------------------------------------------------------'
CONTINGENCY '65STK'
TRIP LINE FROM BUS 66758 TO BUS 66754 CKT 1
TRIP LINE FROM BUS 66754 TO BUS 60133 CKT 1
END
COM 'CONTINGENCY C-SHYNE-MPLRVR-64STK'
COM '66754-60133 MAPLE RIVER 230 - SHEYENNE 230'
COM '66754-60136 MAPLE RIVER 230 - MAPLE RIVER
115'
COM '-----------------------------------------------------------------'
CONTINGENCY '64STK'
TRIP LINE FROM BUS 66754 TO BUS 60133 CKT 1
TRIP LINE FROM BUS 66754 TO BUS 60136 CKT 5
END
COM
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************************************GRE STUCK
BREAKER additions
COM 'MILACA-BENTON COUNTY-MONTICELLO WITH
BENTON COUNTY STUCK BREAKER 41RB8'
COM '61910-63045 BENTON COUNTY-MILACA'
COM '63045-60152 BENTON COUNTY-MONTICELLO'
COM '-----------------------------------------------------'
CONTINGENCY 'BENTON COUNTY 41RB8 STUCK    '
TRIP LINE FROM BUS 61910 TO BUS 63045 CKT 1
TRIP LINE FROM BUS 63045 TO BUS 60152 CKT 1
END
COM 'MUD LAKE-BENTON COUNTY-SHERCO WITH
BENTON COUNTY STUCK BREAKER 41RB5'
COM '61617-63045 BENTON COUNTY-MUDLAKE'
COM '63045-60142 BENTON COUNTY-BENTON
COUNTY 345 (2 XFS)'
COM '60160-60142 SHERCO-BENTON COUNTY 345'
COM '-----------------------------------------------------'
CONTINGENCY 'BENTON COUNTY 41RB5 STUCK    '
TRIP LINE FROM BUS 61617 TO BUS 63045 CKT 1
DISCONNECT BRANCH FROM BUS 63045 TO BUS
60142 TO BUS 63075 CKT 1
DISCONNECT BRANCH FROM BUS 63045 TO BUS
60142 TO BUS 63079 CKT 2
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TRIP LINE FROM BUS 60160 TO BUS 60142 CKT 1
END
COM 'MONTICELLO-ELK RIVER-BUNKER LAKE WITH
ELK RIVER STUCK BREAKER 14RB1'
COM '63043-63046 ELK RIV4-BUNKER 4 CKT 1 '
COM '63043-62134-62156 ELK RIV4-ELKR14S8-
ELKR141T CKT 1 '
COM '63043-62134-62157 ELK RIV4-ELKR14S8-
ELKR142T CKT 2 '
COM '63043-60152 ELK RIV4-MNTCELO4 CKT 1 '
COM '-----------------------------------------------------'
CONTINGENCY 'ELK RIVER 14RB1 STUCK '
TRIP LINE FROM BUS 63043 TO BUS 63046 CKT 1
DISCONNECT BRANCH FROM BUS 63043 TO BUS
62134 TO BUS 62156 CKT 1
TRIP LINE FROM BUS 63043 TO BUS 60152 CKT 1
DISCONNECT BRANCH FROM BUS 63043 TO BUS
62134 TO BUS 62157 CKT 2
END
COM 'BENTON COUNTY-MONTICELLO-ELK RIVER
WITH MONTICELLO STUCK BREAKER 7N1 OR 7N2'
COM '63045-60152 BENTON COUNTY-MONTICELLO'
COM '60152-60151 MONTICELLO 345/230 XF '
COM '60153-60151 MONTICELLO 345/115 XF '
COM '63043-60152 ELK RIV4-MNTCELO4 CKT 1 '
COM '63043-62134-62156 ELK RIV4-ELKR14S8-
ELKR141T CKT 1'
COM '-----------------------------------------------------'
CONTINGENCY 'MONTICELLO 7N1 OR 7N2 STUCK'
TRIP LINE FROM BUS 63045 TO BUS 60152 CKT 1
TRIP LINE FROM BUS 60152 TO BUS 60151 CKT 6
TRIP LINE FROM BUS 60153 TO BUS 60151 CKT 10
TRIP LINE FROM BUS 63043 TO BUS 60152 CKT 1
DISCONNECT BRANCH FROM BUS 63043 TO BUS
62134 TO BUS 62156 CKT 1
END
COM 'ELK RIVER-BUNKER LAKE-BLAINE WITH
BUNKER LAKE STUCK BREAKER 30RB2'
COM '63043-63046 ELK RIV4-BUNKER 4 CKT 1 '
COM '63043-62134-62157 ELK RIV4-ELKR14S8-
ELKR142T CKT 2 '
COM '63046-63040 BUNKER 4-BLAINE 4 CKT 1 '
COM '63040-62128-62130 BLAINE 4-BLAINE 8 CKT 1 '
COM '-----------------------------------------------------'
CONTINGENCY 'BUNKER LAKE 30RB2 STUCK '
TRIP LINE FROM BUS 63043 TO BUS 63046 CKT 1
DISCONNECT BRANCH FROM BUS 63043 TO BUS
62134 TO BUS 62157 CKT 2
TRIP LINE FROM BUS 63046 TO BUS 63040 CKT 1
DISCONNECT BRANCH FROM BUS 63040 TO BUS
62128 TO BUS 62130 CKT 2
END
COM 'ELK RIVER-BUNKER LAKE-BUNKER 345 WITH
BUNKER LAKE STUCK BREAKER 30RB1'
COM '63043-62134-62157 ELK RIV4-ELKR14S8-
ELKR142T CKT 2 '
COM '63043-63046 ELK RIV4-BUNKER 4 CKT 1 '
COM '63046-63031-63076 BUNKER 4-BUNKER 3 CKT 1 '
COM '63031-60160 BUNKER 3-SHERCO 3 CKT 1 '
COM '63031-60202 BUNKER 3-COONCK 3 CKT 1 '
COM '-----------------------------------------------------'
CONTINGENCY 'BUNKER LAKE 30RB1 STUCK '
TRIP LINE FROM BUS 63043 TO BUS 63046 CKT 1
DISCONNECT BRANCH FROM BUS 63043 TO BUS
62134 TO BUS 62157 CKT 2
DISCONNECT BRANCH FROM BUS 63046 TO BUS
63031 TO BUS 63076 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60160 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60202 CKT 1
END
COM 'BUNKER LAKE 69-BUNKER LAKE 230-BUNKER
345 WITH BUNKER LAKE STUCK BREAKER 30RB4'
COM '62147-63046 BUNKER 8-BUNKER 4 CKT 1 '
COM '63046-63031 BUNKER 4-BUNKER 3 CKT 1 '
COM '63031-60160 BUNKER 3-SHERCO 3 CKT 1 '
COM '63031-60202 BUNKER 3-COONCK 3 CKT 1 '
COM '-----------------------------------------------------'
CONTINGENCY 'BUNKER LAKE 30RB4 STUCK '
DISCONNECT BRANCH FROM BUS 62147 TO BUS
63046 TO BUS 62153 CKT 1
DISCONNECT BRANCH FROM BUS 63046 TO BUS
63031 TO BUS 63076 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60160 CKT 1
TRIP LINE FROM BUS 63031 TO BUS 60202 CKT 1
END
COM 'BUNKER LAKE 69-BUNKER LAKE-BLAINE
WITH BUNKER LAKE STUCK BREAKER 30RB3'
COM '62147-63046-62153 BUNKER 8-BUNKER 4-
BNKRLK T CKT 1 '
COM '63046-63040 BUNKER 4-BLAINE 4 CKT 1 '
COM '63040-62128-62130 BLAINE 4-BLAINE 8 CKT 1 '
COM '-----------------------------------------------------'
CONTINGENCY 'BUNKER LAKE 30RB3 STUCK '
DISCONNECT BRANCH FROM BUS 62147 TO BUS
63046 TO BUS 62153 CKT 1
TRIP LINE FROM BUS 63046 TO BUS 63040 CKT 1
DISCONNECT BRANCH FROM BUS 63040 TO BUS
62128 TO BUS 62130 CKT 1
END
COM 'BLAINE-RUSH CITY-ROCK CREEK-RED ROCK
WITH RUSH CITY STUCK BREAKER 9RB1'
COM '63048-60237  RUSH CY4-REDROCK4'
COM '60236-60237  REDROCK3-REDROCK4'
COM '60361-63048  ROCKCR 4-RUSH CY4'
COM '63057-63048  LINWOOD4-RUSH CY4'
COM '-----------------------------------------------------'
CONTINGENCY 'RUSH CITY 9RB1 STUCK'
TRIP LINE FROM BUS  63048 TO BUS  60237 CKT 1
TRIP LINE FROM BUS  60236 TO BUS  60237 CKT 5
TRIP LINE FROM BUS  60361 TO BUS  63048 CKT 1
TRIP LINE FROM BUS  63057 TO BUS  63048 CKT 1
END
COM 'BEAR CREEK-ARROWHEAD-ROCK CREEK
WITH BEAR CREEK STUCK BREAKER 81-902L'
COM '63055-61615 BEAR CK4-ARROWHD4 '
COM '63055-60361 BEAR CK4-ROCK CK4 '
COM '60361-61192 ROCK CK4-ROCK CK8 '
COM '-----------------------------------------------------'
CONTINGENCY 'BEAR CREEK 81-902L STUCK '
TRIP LINE FROM BUS 63055 TO BUS 61615 CKT 1
TRIP LINE FROM BUS 63055 TO BUS 60361 CKT 1
TRIP LINE FROM BUS 60361 TO BUS 61192 CKT 1
END
COM 'BEAR CREEK-ARROWHEAD WITH BEAR CREEK
STUCK BREAKER 81L'
COM '63055-61615 BEAR CK4-ARROWHD4 '
COM '63055-62314-62315 BEAR CK4-BEAR CK4 '
COM '-----------------------------------------------------'
CONTINGENCY 'BEAR CREEK 81L STUCK '
TRIP LINE FROM BUS 63055 TO BUS 61615 CKT 1
DISCONNECT BRANCH FROM BUS 63055 TO BUS
62314 TO BUS 62315 CKT 1
END
COM 'BEAR CREEK--ROCK CREEK WITH BEAR CREEK
STUCK BREAKER 902L'
COM '63055-62314-62315 BEAR CK4-BEAR CK4 '
COM '63055-60361 BEAR CK4-ROCK CK4 '
COM '60361-61192 ROCK CK4-ROCK CK8 '
COM '-----------------------------------------------------'
CONTINGENCY 'BEAR CREEK 902L STUCK '
DISCONNECT BRANCH FROM BUS 63055 TO BUS
62314 TO BUS 62315 CKT 1
TRIP LINE FROM BUS 63055 TO BUS 60361 CKT 1
TRIP LINE FROM BUS 60361 TO BUS 61192 CKT 1
END
COM 'BEAR CREEK-ROCK CREEK-RUSH CITY-RED
ROCK WITH ROCK CREEK STUCK BREAKER 7P2'
COM '63048-60237  RUSH CY4-REDROCK4'
COM '60236-60237  REDROCK3-REDROCK4'
COM '60361-63048  ROCKCR 4-RUSH CY4'
COM '63055-60361  BEAR CK4-ROCK CK4 '
COM '60361-61192  ROCK CK4-ROCK CK8 '
COM '-----------------------------------------------------'
CONTINGENCY 'ROCK CREEK 7P2 STUCK'
TRIP LINE FROM BUS  63048 TO BUS  60237 CKT 1
TRIP LINE FROM BUS  60236 TO BUS  60237 CKT 5
TRIP LINE FROM BUS  60361 TO BUS  63048 CKT 1
TRIP LINE FROM BUS  63055 TO BUS  60361 CKT 1
TRIP LINE FROM BUS  60361 TO BUS  61192 CKT 1
END
COM 'RIVERTON-MUDLAKE-BENTON COUNTY WITH
MUDLAKE STUCK BREAKER 89L OR 903L'
COM '61617-63045 MUDLAKE4-BENTON 4 '
COM '61617-61612 MUDLAKE4-RIVERTN4 '
COM '61617-61578 MUDLAKE4-MUD LAKE
TRANSFORMER '
COM '61578-61651 MUDLAKE7-MUD LAKE
TRANSFORMER '
COM '61578-61579 MUDLAKET-MUD LAKE
TRANSFORMER '
COM '-----------------------------------------------------'
CONTINGENCY 'MUDLAKE 89L OR 903L STUCK '
TRIP LINE FROM BUS 61617 TO BUS 63045 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 61612 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 61578 CKT 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1
END
COM 'BRAINERD-MUDLAKE-LIITLE FALLS WITH
MUDLAKE STUCK BREAKER 5-46L'
COM '61651-61652 MUDLAKE7-BRAINRD7'
COM '61651-62175 MUDLAKE7-DEWING 7'
COM '62175-61650 DEWING 7-LTTLEFL7'
COM '-----------------------------------------------------'
CONTINGENCY 'MUDLAKE STUCK BREAKER 5-46L'
TRIP LINE FROM BUS 61651 TO BUS 61652 CKT 1
TRIP LINE FROM BUS 61651 TO BUS 62175 CKT 1
TRIP LINE FROM BUS 62175 TO BUS 61650 CKT 1
END
COM 'BRAINERD-MUDLAKE-LIITLE FALLS WITH
MUDLAKE STUCK BREAKER 5L'
COM '61651-61652 MUDLAKE7-BRAINRD7'
COM '61617-63045 MUDLAKE4-BENTON 4 '
COM '61617-61612 MUDLAKE4-RIVERTN4 '
COM '61617-61578 MUDLAKE4-MUD LAKE
TRANSFORMER '
COM '61578-61651 MUDLAKE7-MUD LAKE
TRANSFORMER '
COM '61578-61579 MUDLAKET-MUD LAKE
TRANSFORMER '
COM '-----------------------------------------------------'
CONTINGENCY 'MUDLAKE STUCK BREAKER 5L'
TRIP LINE FROM BUS 61651 TO BUS 61652 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 63045 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 61612 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 61578 CKT 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1
END
COM 'BRAINERD-MUDLAKE-LIITLE FALLS WITH
MUDLAKE STUCK BREAKER 46L'
COM '61651-62175 MUDLAKE7-DEWING 7'
COM '62175-61650 DEWING 7-LTTLEFL7'
COM '61617-63045 MUDLAKE4-BENTON 4 '
COM '61617-61612 MUDLAKE4-RIVERTN4 '
COM '61617-61578 MUDLAKE4-MUD LAKE
TRANSFORMER '
COM '61578-61651 MUDLAKE7-MUD LAKE
TRANSFORMER '
COM '61578-61579 MUDLAKET-MUD LAKE
TRANSFORMER '
COM '-----------------------------------------------------'
CONTINGENCY 'MUDLAKE STUCK BREAKER 46L'
TRIP LINE FROM BUS 61651 TO BUS 62175 CKT 1
TRIP LINE FROM BUS 62175 TO BUS 61650 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 63045 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 61612 CKT 1
TRIP LINE FROM BUS 61617 TO BUS 61578 CKT 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1
END
COM 'CONTINGENCY BADOURA-64LSTK'
COM '63053-61610 HUBBARD 230 - BADOURA 230'
COM '61610-61612 BADOURA 230 - RIVERTON 230'
COM '61610-61794 BADOURA 230 - BADOURA Y 230'
COM '61640-61794 BADOURA 115 - BADOURA Y 230'
COM '61795-61794 BADOURA 13.8 - BADOURA Y 230'
COM '66716-61640 LAPORTE 115 - BADOURA 115'
COM '61640-61644 BADOURA 115 - DOG LAKE 115'
COM '61640-62410 BADOURA 115 - PALMER LAKE 115'
COM '61640-61840 BADOURA 115 - BADOURA 34.5'
COM '61640-61840 BADOURA 115 - BADOURA 34.5'
COM '-----------------------------------------------------'
CONTINGENCY 'BADOURA 64LSTK'
TRIP LINE FROM BUS 63053 TO BUS 61610 CKT 1
TRIP LINE FROM BUS 61610 TO BUS 61612 CKT 1
TRIP LINE FROM BUS 61610 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 61795 TO BUS 61794 CKT 1
TRIP LINE FROM BUS 66716 TO BUS 61640 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61644 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 62410 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61840 CKT 1
TRIP LINE FROM BUS 61640 TO BUS 61840 CKT 2
END
COM 'Wing River 115 STUCK BREAKER 1T'
COM '63052-63058 INMAN  4-WINGRIV4 CKT 1 '
COM '62893-63058-62894 WING RIVER 115 - WING
RIVER Y 230 – WING RIVER T'
COM '63058-61612 WING RIVER 230 - RIVERTON 230'
COM '62893-61647 WING RIVER 115-LONG PRAIRIE 115'
COM '62893-61642 WING RIVER 115-VERNDALE 115'
COM '-----------------------------------------------------'
CONTINGENCY 'WING RIVER 1T STUCK'
TRIP LINE FROM BUS 63052 TO BUS 63058 CKT 1
DISCONNECT BRANCH FROM BUS 62893 TO BUS
63058 TO BUS 62894 CKT 1
TRIP LINE FROM BUS 63058 TO BUS 61612 CKT 1
TRIP LINE FROM BUS 62893 TO BUS 61647 CKT 1
TRIP LINE FROM BUS 62893 TO BUS 61642 CKT 1
COM '-----------------------------------------------------'
END
COM 'Wing River 115 STUCK BREAKER 47L OR 133L'
COM '61613-61647 WING RIVER 115-LONG PRAIRIE 115'
COM '61613-61642 WING RIVER 115-VERNDALE 115'
COM '-----------------------------------------------------'
CONTINGENCY 'WING RIVER 47L OR 133L STUCK'
TRIP LINE FROM BUS 61613 TO BUS 61647 CKT 1
TRIP LINE FROM BUS 61613 TO BUS 61642 CKT 1
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COM '-----------------------------------------------------------'
END
COM 'WILLMAR-GRANITE FALLS WITH GRANITE
FALLS 982 STUCK BREAKER'
COM '66550-63050 GRANITF4-WILLMAR4'
COM '63050-62427-62443 WILLMAR4-WILLMR8-
WILLMR2T OPENS A
COM '66550-60150  GRANITF4-MNVLTAP4'
COM '60150-63054  MNVLTAP4-PANTHER4'
COM '66550-66554  GRANITF4-MORRIS 4'
COM '66550-60147 GRANITF4-MN VALL4'
COM '66550-66530 GRANITF4-WATERTOWN'
COM '66550-63503 GRANITF4-BLAIR'
COM '66550-66296 GRANITF4-GRANITE FALLS XF'
COM '-----------------------------------------------------------'
CONTINGENCY 'GRANITE FALLS 982 STUCK'
TRIP LINE FROM BUS 66550 TO BUS 63050 CKT 1
DISCONNECT BRANCH FROM BUS 63050 TO BUS
62427 TO BUS 62443 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 60150 CKT 1
TRIP LINE FROM BUS 60150 TO BUS 63054 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66554 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 60147 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66530 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66503 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66296 CKT 1
END
COM 'PANTHER-GRANITE FALLS WITH GRANITE
FALLS 682 STUCK BREAKER'
COM '66550-63050 GRANITF4-WILLMAR4'
COM '66550-60150 GRANITF4-MNVLTAP4'
COM '66550-66554 GRANITF4-MORRIS 4'
COM '66550-60147 GRANITF4-MN VALL4'
COM '66550-66530 GRANITF4-WATERTOWN'
COM '66550-63503 GRANITF4-BLAIR'
COM '66550-66296 GRANITF4-GRANITE FALLS XF'
COM '60150-60149 MNVLTAP4-MN VALLEY XF'
COM '60150-63054 MNVLTAP4-PANTHER'
COM '60148-60149 MN VALLEY 230/115 XF'
COM '-----------------------------------------------------------'
CONTINGENCY 'GRANITE FALLS 682 STUCK'
TRIP LINE FROM BUS 66550 TO BUS 63050 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 60150 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66554 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 60147 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66530 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66503 CKT 1
TRIP LINE FROM BUS 66550 TO BUS 66296 CKT 1
TRIP LINE FROM BUS 60150 TO BUS 60149 CKT 1
TRIP LINE FROM BUS 60150 TO BUS 63054 CKT 1
TRIP LINE FROM BUS 60148 TO BUS 60149 CKT P6
END
COM 'PANTHER-GRANITE FALLS WITH MN VALLEY
6XY STUCK BREAKER'
COM '66550-60150 GRANITF4-MNVLTAP4'
COM '60150-60149 MNVLTAP4-MN VALLEY XF'
COM '60150-63054 MNVLTAP4-PANTHER'
COM '60148-60149 MN VALLEY 230/115 XF'
COM '60148-66551 MN VALLEY115-GRANITE FALLS
115'
COM '60148-60357 MN VALLEY-MAYNARD'
COM '60148-60683 MN VALLEY 115/69 XF'
COM '-----------------------------------------------------------'
CONTINGENCY 'MNVALLEY 6XY STUCK'
TRIP LINE FROM BUS 66550 TO BUS 60150 CKT 1
TRIP LINE FROM BUS 60150 TO BUS 60149 CKT 1
TRIP LINE FROM BUS 60150 TO BUS 63054 CKT 1
TRIP LINE FROM BUS 60148 TO BUS 60149 CKT P6
TRIP LINE FROM BUS 60148 TO BUS 66551 CKT 1
TRIP LINE FROM BUS 60148 TO BUS 60357 CKT 1
TRIP LINE FROM BUS 60148 TO BUS 60683 CKT 1
END
COM '-----------------------------------------------------------'
COM 'BYRON-PLEASANT VALLEY-ADAMS WITH
PLEASANT VALLEY 19JB2 STUCK'
COM '63032-61950  PL VLLY3-BYRON  3'
COM '63032-60102  PL VLLY3-ADAMS  3'
COM '60102-34014  ADAMS  3-ADAMS  5'
COM '60102-34018  ADAMS  3-HAZLTON3'
CONTINGENCY 'PLEASANT VALLEY 19JB2 STUCK'
TRIP LINE FROM BUS 63032 TO BUS 61950 CKT 1
TRIP LINE FROM BUS 63032 TO BUS 60102 CKT 1
TRIP LINE FROM BUS 60102 TO BUS 34014 CKT 1
TRIP LINE FROM BUS 60102 TO BUS 34018 CKT 1
END
COM 'BYRON-PLEASANT VALLEY-ADAMS WITH
PLEASANT VALLEY 19JB3 STUCK'
COM '63032-63070-63073  PL VLLY3-PL VLLY5'
COM '63032-60102  PL VLLY3-ADAMS  3'
COM '60102-34014  ADAMS  3-ADAMS  5'
COM '60102-34018  ADAMS  3-HAZLTON3'
COM '-----------------------------------------------------------'
CONTINGENCY 'PLEASANT VALLEY 19JB3 STUCK'
DISCONNECT BRANCH FROM BUS 63032 TO BUS
63070 TO BUS 63073 CKT 1
TRIP LINE FROM BUS 63032 TO BUS 60102 CKT 1
TRIP LINE FROM BUS 60102 TO BUS 34014 CKT 1
TRIP LINE FROM BUS 60102 TO BUS 34018 CKT 1
END
COM 'BYRON-PLEASANT VALLEY-ADAMS WITH
PLEASANT VALLEY 19JB1 STUCK'
COM '63032-61950  PL VLLY3-BYRON  3'
COM '63032-63070-63073  PL VLLY3-PL VLLY5'
COM '-----------------------------------------------------------'
CONTINGENCY 'PLEASANT VALLEY 19JB1 STUCK'
DISCONNECT BRANCH FROM BUS 63032 TO BUS
63070 TO BUS 63073 CKT 1
TRIP LINE FROM BUS 63032 TO BUS 61950 CKT 1
END
COM Updated on 9/6/2005 by Shawn Heilman
COM MP 230 KV BREAKER FAILURE CONTINGENCY
FILE
COM
COM ARROWHEAD HVDC POLE 1
COM
CONTINGENCY 'AHD 1-3H'
COM NEED TO TRIP DC LINE POLE 1
TRIP LINE FROM BUS 61554 TO BUS 61555 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61615 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61673 CKT 1 /* 6T
COM 90L ALSO TRIPS
COM 98-99LW ALSO TRIPS
END
CONTINGENCY '13H-902LW B1'
COM NEED TO TRIP DC LINE POLE 1
TRIP LINE FROM BUS 61615 TO BUS 63055 CKT 1 /*
902L
END
COM
COM ARROWHEAD 902 LINE
COM
CONTINGENCY '13H-902LW B2'
COM NEED TO TRIP DC LINE POLE 1
TRIP LINE FROM BUS 61615 TO BUS 63055 CKT 1 /*
902L
END
CONTINGENCY 'AHD 902L'
TRIP LINE FROM BUS 61556 TO BUS 61557 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61615 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61673 CKT 2 /* 7T
COM 2-4H ALSO TRIPS
COM 90L ALSO TRIPS
END
COM
COM ARROWHEAD 90 LINE
COM
CONTINGENCY 'AHD 90L'
TRIP LINE FROM BUS 61554 TO BUS 61555 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61615 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61673 CKT 1 /* 6T
TRIP LINE FROM BUS 61615 TO BUS 61624 CKT 1 /* 90
LINE
COM 1-3H ALSO TRIPS
END
CONTINGENCY '24H-90LW B1'
TRIP LINE FROM BUS 61615 TO BUS 61624 CKT 1 /* 90
LINE
COM NEED TO TRIP DC LINE POLE 2
END
COM
COM ARROWHEAD HVDC POLE 2
COM
CONTINGENCY '24H-90LW B2'
TRIP LINE FROM BUS 61615 TO BUS 61624 CKT 1 /* 90
LINE
COM NEED TO TRIP DC LINE POLE 2
END
CONTINGENCY 'AHD 2-4H'
COM NEED TO TRIP DC LINE POLE 2
TRIP LINE FROM BUS 61556 TO BUS 61557 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61615 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61673 CKT 2 /* 7T
COM 902L ALSO TRIPS
COM 98L ALSO TRIPS
END
COM
COM ARROWHEAD 98 LINE
COM
CONTINGENCY '98-99LW B2'
TRIP LINE FROM BUS 61614 TO BUS 61625 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61616 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61615 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61554 TO BUS 61555 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61615 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61673 CKT 1 /* 6T
COM 90L ALSO TRIPS
COM 1-3H ALSO TRIPS
END
CONTINGENCY 'AHD 98L'
TRIP LINE FROM BUS 61614 TO BUS 61625 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61616 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61615 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61556 TO BUS 61557 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61615 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61673 CKT 2 /* 7T
COM 902L ALSO TRIPS
COM 2-4H ALSO TRIPS
END
COM
COM ARROWHEAD TRANSFORMER 7
COM
CONTINGENCY 'AHD 7T'
TRIP LINE FROM BUS 61556 TO BUS 61557 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61615 CKT 2 /* 7T
TRIP LINE FROM BUS 61556 TO BUS 61673 CKT 2 /* 7T
TRIP LINE FROM BUS 61673 TO BUS 62447 CKT 1 /*
BUS 1
TRIP LINE FROM BUS 61673 TO BUS 61668 CKT 1 /*
BUS 1
TRIP LINE FROM BUS 61673 TO BUS 61676 CKT 1 /*
BUS 1
TRIP LINE FROM BUS 61673 TO BUS 61679 CKT 1 /*
BUS 1
TRIP LINE FROM BUS 61673 TO BUS 61688 CKT 1 /*
BUS 1
COM 902L ALSO TRIPS
COM 2-4H ALSO TRIPS
COM 98L ALSO TRIPS
END
COM
COM ARROWHEAD TRANSFORMER 6
COM
CONTINGENCY 'AHD 6T'
TRIP LINE FROM BUS 61554 TO BUS 61555 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61615 CKT 1 /* 6T
TRIP LINE FROM BUS 61554 TO BUS 61673 CKT 1 /* 6T
TRIP LINE FROM BUS 61673 TO BUS 61674 CKT 1 /*
BUS 2
TRIP LINE FROM BUS 61673 TO BUS 62445 CKT 1 /*
BUS 2
TRIP LINE FROM BUS 61673 TO BUS 61687 CKT 1 /*
BUS 2
COM 90L ALSO TRIPS
COM 1-3H ALSO TRIPS
COM 98-99LW ALSO TRIPS
END
COM
COM BLACKBERRY 83 LINE
COM
CONTINGENCY 'BLKBRY 83L'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 1 /* 83
LINE
TRIP LINE FROM BUS 61568 TO BUS 61569 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61625 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61739 CKT 2 /* 2T
COM 98L ALSO TRIPS
COM 92L ALSO TRIPS
END
CONTINGENCY '83-93LW B1'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 1 /* 83
LINE
TRIP LINE FROM BUS 61625 TO BUS 61624 CKT 1 /* 93
LINE
END
COM
COM BLACKBERRY 93 LINE
COM
CONTINGENCY 'BLKBRY 93L'
TRIP LINE FROM BUS 61625 TO BUS 61624 CKT 1 /* 93
LINE
TRIP LINE FROM BUS 61566 TO BUS 61567 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61625 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61739 CKT 1 /* 1T
COM 98-FUT.1LW ALSO TRIPS
COM 95L ALSO TRIPS
END
CONTINGENCY '83-93LW B2'
TRIP LINE FROM BUS 61625 TO BUS 61624 CKT 1 /* 93
LINE
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 1 /* 83
LINE
END
COM
```

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COM BLACKBERRY 98 LINE
COM
CONTINGENCY 'BLKBRY 98L'
TRIP LINE FROM BUS 61614 TO BUS 61625 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61616 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61615 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61568 TO BUS 61569 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61625 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61739 CKT 2 /* 2T
COM 83L ALSO TRIPS
COM 92L ALSO TRIPS
END
CONTINGENCY '98-FUT.1LW'
TRIP LINE FROM BUS 61614 TO BUS 61625 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61616 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61615 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61566 TO BUS 61567 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61625 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61739 CKT 1 /* 1T
COM 93L ALSO TRIPS
COM 95L ALSO TRIPS
END
COM
COM BLACKBERRY 92 LINE
COM
CONTINGENCY 'BLKBRY 92L'
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
TRIP LINE FROM BUS 61568 TO BUS 61569 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61625 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61739 CKT 2 /* 2T
COM 98L ALSO TRIPS
COM 83L ALSO TRIPS
END
CONTINGENCY '92-95LW B1'
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 2 /* 95
LINE
END
COM
COM BLACKBERRY 95 LINE
COM
CONTINGENCY 'BLKBRY 95L'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 2 /* 95
LINE
TRIP LINE FROM BUS 61566 TO BUS 61567 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61625 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61739 CKT 1 /* 1T
COM 93L ALSO TRIPS
COM 98-FUT.1LW ALSO TRIPS
END
CONTINGENCY '92-95LW B2'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 2 /* 95
LINE
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
END
COM
COM BLACKBERRY TRANSFORMER 2
COM
CONTINGENCY 'BLKBRY 2T'
TRIP LINE FROM BUS 61568 TO BUS 61569 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61625 CKT 2 /* 2T
TRIP LINE FROM BUS 61568 TO BUS 61739 CKT 2 /* 2T
TRIP LINE FROM BUS 61739 TO BUS 61737 CKT 1 /*
BUS 2
TRIP LINE FROM BUS 61739 TO BUS 61781 CKT 1 /*
BUS 2
TRIP LINE FROM BUS 61739 TO BUS 61663 CKT 1 /*
BUS 2
TRIP LINE FROM BUS 61614 TO BUS 61625 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61616 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61615 CKT 1 /* 98
LINE
END
COM
COM BLACKBERRY TRANSFORMER 1
COM
CONTINGENCY 'BLKBRY 1T'
TRIP LINE FROM BUS 61566 TO BUS 61567 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61625 CKT 1 /* 1T
TRIP LINE FROM BUS 61566 TO BUS 61739 CKT 1 /* 1T
TRIP LINE FROM BUS 61739 TO BUS 61737 CKT 2 /*
BUS 1
END
COM
COM BOSWELL GENERATOR 4 LINE
COM
CONTINGENCY 'BOSWELL 4H'
DISCONNECT BUS 61775 /* GENERATOR 4
COM FUT.1-83LW ALSO TRIPS
COM 95L ALSO TRIPS
END
CONTINGENCY '4H-94LW B1'
DISCONNECT BUS 61775 /* GENERATOR 4
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
END
COM
COM BOSWELL 94 LINE
COM
CONTINGENCY 'BOSWELL 94L'
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
COM 83L ALSO TRIPS
COM 3H ALSO TRIPS
END
CONTINGENCY '4H-94LW B2'
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
DISCONNECT BUS 1475 /* GENERATOR 4
END
COM
COM BOSWELL 83 LINE
COM
CONTINGENCY 'FUT.1-83LW'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 1 /* 83
LINE
COM 4H ALSO TRIPS
COM 95L ALSO TRIPS
END
CONTINGENCY 'BOSWELL 83L'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 1 /* 83
LINE
COM 4H ALSO TRIPS
COM 95L ALSO TRIPS
END
COM
COM BOSWELL 95 LINE
COM
CONTINGENCY 'BOSWELL 95L'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 2 /* 95
LINE
COM 4H ALSO TRIPS
COM FUT.11-83LW ALSO TRIPS
END
CONTINGENCY '3H-95LW B1'
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 2 /* 95
LINE
DISCONNECT BUS 61774 /* GENERATOR 3
END
COM
COM BOSWELL GENERATOR 3 LINE
COM
CONTINGENCY 'BOSWELL 3H'
DISCONNECT BUS 61774 /* GENERATOR 3
COM 94L ALSO TRIPS
COM 83L ALSO TRIPS
END
CONTINGENCY '3H-95LW B2'
DISCONNECT BUS 61774 /* GENERATOR 3
TRIP LINE FROM BUS 61626 TO BUS 61625 CKT 2 /* 95
LINE
END
COM
COM FORBES 93 LINE
COM
CONTINGENCY 'FUT.1 93LW'
TRIP LINE FROM BUS 61625 TO BUS 61624 CKT 1 /* 93
LINE
TRIP LINE FROM BUS 61564 TO BUS 61565 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61624 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61722 CKT 2 /* 3T
LINE
COM 80L ALSO TRIPS
COM 7T ALSO TRIPS
END
COM
COM FORBES 90 LINE
COM
CONTINGENCY '80-90LW B1'
TRIP LINE FROM BUS 61615 TO BUS 61624 CKT 1 /* 90
LINE
TRIP LINE FROM BUS 61624 TO BUS 61623 CKT 1 /* 80
LINE
END
COM
COM FORBES 80 LINE
COM
CONTINGENCY 'FORBES 80L'
TRIP LINE FROM BUS 61624 TO BUS 61623 CKT 1 /* 80
LINE
TRIP LINE FROM BUS 61564 TO BUS 61565 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61624 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61722 CKT 2 /* 3T
LINE
COM FUT.1 93LW ALSO TRIPS
COM 7T ALSO TRIPS
END
CONTINGENCY '80-90LW B2'
TRIP LINE FROM BUS 61624 TO BUS 61623 CKT 1 /* 80
LINE
TRIP LINE FROM BUS 61615 TO BUS 61624 CKT 1 /* 90
LINE
END
COM
COM FORBES TRANSFORMER 2
COM
COM
COM FORBES TRANSFORMER 3
COM
CONTINGENCY 'FORBES 3T'
TRIP LINE FROM BUS 61564 TO BUS 61565 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61624 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61722 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61722 TO BUS 61721 CKT 1 /*
BUS 1
TRIP LINE FROM BUS 61722 TO BUS 61702 CKT 1 /*
BUS 1
COM 80L ALSO TRIPS
COM FUT.1 93LW ALSO TRIPS
END
COM
COM FORBES TRANSFORMER 7-8
COM
CONTINGENCY 'FORBES 8T'
TRIP LINE FROM BUS 61550 TO BUS 61551 CKT 1 /* 7T
TRIP LINE FROM BUS 61550 TO BUS 60101 CKT 1 /* 7T
TRIP LINE FROM BUS 61550 TO BUS 61624 CKT 1 /* 7T
TRIP LINE FROM BUS 61552 TO BUS 61553 CKT 1 /* 8T
TRIP LINE FROM BUS 61552 TO BUS 60101 CKT 1 /* 8T
TRIP LINE FROM BUS 61552 TO BUS 61624 CKT 1 /* 8T
COM 20K ALSO TRIPS
COM 90L ALSO TRIPS
COM 93L ALSO TRIPS
END
COM
COM FORBES TRANSFORMER 7-8
COM
CONTINGENCY 'FORBES 7T'
TRIP LINE FROM BUS 61550 TO BUS 61551 CKT 1 /* 7T
TRIP LINE FROM BUS 61550 TO BUS 60101 CKT 1 /* 7T
TRIP LINE FROM BUS 61550 TO BUS 61624 CKT 1 /* 7T
TRIP LINE FROM BUS 61552 TO BUS 61553 CKT 1 /* 8T
TRIP LINE FROM BUS 61552 TO BUS 60101 CKT 1 /* 8T
TRIP LINE FROM BUS 61552 TO BUS 61624 CKT 1 /* 8T
TRIP LINE FROM BUS 61564 TO BUS 61565 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61624 CKT 2 /* 3T
LINE
TRIP LINE FROM BUS 61564 TO BUS 61722 CKT 2 /* 3T
LINE
COM 80L ALSO TRIPS
COM FUT.1 93LW ALSO TRIPS
END
COM
COM HILLTOP 98 LINE
COM
CONTINGENCY 'HILTOP 1T'
TRIP LINE FROM BUS 61614 TO BUS 61625 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61616 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61614 TO BUS 61615 CKT 1 /* 98
LINE
TRIP LINE FROM BUS 61576 TO BUS 61577 CKT 1 /*
TRANSFOMER 1
TRIP LINE FROM BUS 61576 TO BUS 61616 CKT 1 /*
TRANSFOMER 1
TRIP LINE FROM BUS 61576 TO BUS 61672 CKT 1 /*
TRANSFOMER 1
DISCONNECT BUS 61672 /* 115 KV BUS
END
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COM
COM HUBBARD TRANSFORMER 4
COM
CONTINGENCY 'HUBBARD 99L'
TRIP LINE FROM BUS 61612 TO BUS 61610 CKT 1 /* 91
LINE (NO BREAKERS AT BADOURA)
TRIP LINE FROM BUS 61610 TO BUS 63053 CKT 1 /* 99
LINE (NO BREAKERS AT BADOURA)
TRIP LINE FROM BUS 61610 TO BUS 61794 CKT 1 /* 64
LINE (NO BREAKERS AT BADOURA)
DISCONNECT BUS 61641 /* TRANSFORMER 4
DISCONNECT BUS 63053 /* BUS 230 KV
COM 2125 ALSO TRIPS
END
CONTINGENCY 'HUBBARD 4T'
DISCONNECT BUS 62410 /* BUS 115 KV
DISCONNECT BUS 61641 /* TRANSFORMER 4
DISCONNECT BUS 63053 /* BUS 230 KV
COM 2125 ALSO TRIPS
END
COM
COM LITTLE FORKS TRANSFORMER 1
COM
CONTINGENCY 'LT FRKS 907L'
TRIP LINE FROM BUS 61627 TO BUS 66753 CKT 1 /*
907 LINE
DISCONNECT BUS 61751 /* TRANSFORMER 3
DISCONNECT BUS 61617 /* BUS 230 KV
END
CONTINGENCY 'LT FRKS 126L'
TRIP LINE FROM BUS 61751 TO BUS 61752 CKT 1 /*
126 LINE
DISCONNECT BUS 61751 /* TRANSFORMER 3
DISCONNECT BUS 61617 /* BUS 230 KV
END
COM
COM MINNTAC 80 LINE
COM
CONTINGENCY 'MINTC 80-96L'
TRIP LINE FROM BUS 61624 TO BUS 61623 CKT 1 /* 80
LINE
TRIP LINE FROM BUS 61627 TO BUS 61623 CKT 1 /* 96
LINE
TRIP LINE FROM BUS 61558 TO BUS 61559 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61558 TO BUS 61623 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61558 TO BUS 61710 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61560 TO BUS 61561 CKT 2 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61560 TO BUS 61623 CKT 2 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61560 TO BUS 61710 CKT 2 /*
TRANSFORMER 2
COM 1T ALSO TRIPS
COM 2T ALSO TRIPS
END
CONTINGENCY 'MINNTAC 2T'
TRIP LINE FROM BUS 61624 TO BUS 61623 CKT 1 /* 80
LINE
TRIP LINE FROM BUS 61560 TO BUS 61561 CKT 2 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61560 TO BUS 61623 CKT 2 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61560 TO BUS 61710 CKT 2 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61710 TO BUS 61708 CKT 1 /*
115 KV BUS 2
TRIP LINE FROM BUS 61710 TO BUS 61712 CKT 1 /*
115 KV BUS 2
COM 80-96L ALSO TRIPS
END
COM
COM MINNTAC 96 LINE
COM
CONTINGENCY 'MINNTAC 1T'
TRIP LINE FROM BUS 61627 TO BUS 61623 CKT 1 /* 96
LINE
TRIP LINE FROM BUS 61558 TO BUS 61559 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61558 TO BUS 61623 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61558 TO BUS 61710 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61710 TO BUS 61709 CKT 1 /*
115 KV BUS 1
TRIP LINE FROM BUS 61710 TO BUS 61711 CKT 1 /*
115 KV BUS 1
COM 80-96L ALSO TRIPS
END
COM
COM MUD LAKE TRANSFORMER 1
COM
CONTINGENCY 'MUDLAKE 89L'
TRIP LINE FROM BUS 61612 TO BUS 61617 CKT 1 /* 89
LINE
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61617 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1 /*
TRANSFORMER 1
END
CONTINGENCY 'MUDLAKE 5L'
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61617 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1 /*
TRANSFORMER 1
DISCONNECT BUS 61651 /* 115 KV BUS
COM TRIP LINE NO. 5
COM 903L ALSO TRIPS
END
CONTINGENCY 'MUDLAKE 46L'
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61617 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1 /*
TRANSFORMER 1
DISCONNECT BUS 61651 /* 115 KV BUS
TRIP LINE FROM BUS 61651 TO BUS 62175 CKT 1 /* 46
LINE
TRIP LINE FROM BUS 62175 TO BUS 61650 CKT 1 /* 46
LINE
END
CONTINGENCY 'MUDLAKE 903L'
TRIP LINE FROM BUS 61578 TO BUS 61579 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61617 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61578 TO BUS 61651 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61617 TO BUS 63045 CKT 1 /*
903 LINE
END
COM
COM RIVERTON 89 LINE
COM
CONTINGENCY 'RIVERTON 89L'
TRIP LINE FROM BUS 61612 TO BUS 61617 CKT 1 /* 89
LINE
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
COM 89-97LW ALSO TRIPS
COM 91-92LW ALSO TRIPS
END
CONTINGENCY '89-97LW B1'
TRIP LINE FROM BUS 61612 TO BUS 61617 CKT 1 /* 89
LINE
TRIP LINE FROM BUS 61612 TO BUS 61611 CKT 1 /* 97
LINE
DISCONNECT BUS 61798 /* 97 LINE
END
COM
COM RIVERTON 97 LINE
COM
CONTINGENCY '89-97LW B2'
TRIP LINE FROM BUS 61612 TO BUS 61611 CKT 1 /* 97
LINE
DISCONNECT BUS 61798 /* 97 LINE
TRIP LINE FROM BUS 61612 TO BUS 61617 CKT 1 /* 89
LINE
END
CONTINGENCY 'RIVERTON 97L'
TRIP LINE FROM BUS 61612 TO BUS 61611 CKT 1 /* 97
LINE
DISCONNECT BUS 61798 /* 97 LINE
TRIP LINE FROM BUS 61612 TO BUS 61796 CKT 1 /* 60
LINE
COM 91L ALSO TRIPS
COM 20K ALSO TRIPS
END
COM
COM RIVERTON 92 LINE
COM
CONTINGENCY 'RIVERTON 89L'
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
TRIP LINE FROM BUS 61612 TO BUS 61617 CKT 1 /* 89
LINE
END
CONTINGENCY '91-92LW B1'
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
TRIP LINE FROM BUS 61612 TO BUS 61610 CKT 1 /* 91
LINE
END
COM
COM RIVERTON 91 LINE
COM
CONTINGENCY '91-92LW B2'
TRIP LINE FROM BUS 61612 TO BUS 61610 CKT 1 /* 91
LINE
TRIP LINE FROM BUS 61625 TO BUS 61612 CKT 1 /* 92
LINE
COM 89L ALSO TRIPS
END
CONTINGENCY 'RIVERTON 91L'
TRIP LINE FROM BUS 61612 TO BUS 61610 CKT 1 /* 91
LINE (NO BREAKERS AT BADOURA)
TRIP LINE FROM BUS 61610 TO BUS 63053 CKT 1 /* 99
LINE (NO BREAKERS AT BADOURA)
TRIP LINE FROM BUS 61610 TO BUS 61794 CKT 1 /* 64
LINE (NO BREAKERS AT BADOURA)
TRIP LINE FROM BUS 61612 TO BUS 61796 CKT 1 /* 60
LINE
COM 97L ALSO TRIPS
COM 20K ALSO TRIPS
END
COM
COM RIVERTON 60 LINE
COM
CONTINGENCY 'RIVERTON 60L'
TRIP LINE FROM BUS 61612 TO BUS 61796 CKT 1 /* 60
LINE
DISCONNECT BUS 61653 /* RIVERTON 115KV BUS
COM 97L ALSO TRIPS
COM 20K ALSO TRIPS
COM 91L ALSO TRIPS
END
CONTINGENCY 'RIVRTON 60LX'
TRIP LINE FROM BUS 61612 TO BUS 61796 CKT 1 /* 60
LINE
DISCONNECT BUS 61653 /* RIVERTON 115KV BUS
COM 97L ALSO TRIPS
COM 20K ALSO TRIPS
COM 91L ALSO TRIPS
END
COM
COM SHANNON 907 LINE
COM
CONTINGENCY 'SHANON 907L'
TRIP LINE FROM BUS 61627 TO BUS 66753 CKT 1 /*
907 LINE
COM TRANSFORMER 2 TRIPS
COM 96L ALSO TRIPS
COM 2T ALSO TRIPS
END
CONTINGENCY 'SHANON 94L'
TRIP LINE FROM BUS 61627 TO BUS 66753 CKT 1 /*
907 LINE
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
END
COM
COM SHANNON 94 LINE
COM
CONTINGENCY 'SHANON 94L'
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
TRIP LINE FROM BUS 61627 TO BUS 66753 CKT 1 /*
907 LINE
END
CONTINGENCY '94-96LW B1'
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
TRIP LINE FROM BUS 61627 TO BUS 61623 CKT 1 /* 96
LINE
END
COM
COM SHANNON 96 LINE
COM
CONTINGENCY 'SHANON 96L'
TRIP LINE FROM BUS 61627 TO BUS 61623 CKT 1 /* 96
LINE
TRIP LINE FROM BUS 61785 TO BUS 61627 CKT 1 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61785 TO BUS 61749 CKT 1 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61785 TO BUS 61750 CKT 1 /*
TRANSFORMER 2
COM 907L ALSO TRIPS
COM 2T ALSO TRIPS
END
CONTINGENCY '94-96LW B2'
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TRIP LINE FROM BUS 61627 TO BUS 61623 CKT 1 /* 96
LINE
TRIP LINE FROM BUS 61626 TO BUS 61627 CKT 1 /* 94
LINE
END
CONTINGENCY 'SHANNON 1T'
TRIP LINE FROM BUS 61562 TO BUS 61627 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61562 TO BUS 61563 CKT 1 /*
TRANSFORMER 1
TRIP LINE FROM BUS 61562 TO BUS 61749 CKT 1 /*
TRANSFORMER 1
DISCONNECT BUS 61749 /* SHANNON 1 115KV BUS
END
COM
CONTINGENCY 'SHANON 2T'
TRIP LINE FROM BUS 61785 TO BUS 61627 CKT 1 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61785 TO BUS 61749 CKT 1 /*
TRANSFORMER 2
TRIP LINE FROM BUS 61785 TO BUS 61750 CKT 1 /*
TRANSFORMER 2
DISCONNECT BUS 61749 /* SHANNON 115KV BUS
END
COM
COM WING RIVER TRANSFORMER 1
COM
CONTINGENCY 'WING RIVR 1T'
DISCONNECT BUS 61798 /* TRANSFORMER 1
TRIP LINE FROM BUS 61612 TO BUS 61611 CKT 1 /* 97
LINE
DISCONNECT BUS 61611 /* BUS 230KV
DISCONNECT BUS 61613 /* BUS 115KV
COM 915L ALSO TRIPS
COM 1R ALSO TRIPS
END
COM 'ELK 8380 STUCK'
COM 'A 60129-60128  SPLIT R7-SPLIT R5   OPENS  B C D
E F'
COM 'B 60128-34003  SPLIT R5-MAGNLIA5   OPENS  A C
D E F'
COM 'C 34003-34004  MAGNLIA5-ELK    5   OPENS  A B
D E F'
COM 'D 34004-62709  ELK     -BREWSTER   OPEND  A B
C E F'
COM 'E 62709-34005  BREWSTER-HRN LK 5   OPEND  A
B C E F'
COM 'F 34005-34225  HRN LK 5-HERONLK8 CKT 1'
COM '-----------------------------------------------'
CONTINGENCY '785    '
TRIP LINE FROM BUS 60129 TO BUS 60128 CKT 6
TRIP LINE FROM BUS 60128 TO BUS 34003 CKT 1
TRIP LINE FROM BUS 34003 TO BUS 34004 CKT 1
TRIP LINE FROM BUS 34004 TO BUS 62709 CKT 1
TRIP LINE FROM BUS 62709 TO BUS 34005 CKT 1
TRIP LINE FROM BUS 34005 TO BUS 34225 CKT 1
END
COM 'CONTINGENCY FOR STUCK BREAKER ON THE
BUS A AT ALMA'
COM 'ALMA-MARSHLAND 69543-60309'
COM 'ALMA-ELK MOUND 69543-69551'
COM 'ALMA TX2 69543-68874'
COM 'ALMA-WABACO 69543-69549'
COM 'NEED TO TRIP ALMA 4 AND 5'
COM '-----------------------------------------------'
CONTINGENCY 'ALMA-A-STK'
TRIP LINE FROM BUS 69543 TO BUS 60309 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 69551 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 69549 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 68874 CKT 2
DISCONNECT BUS 69540
DISCONNECT BUS 69538
END
COM 'CONTINGENCY FOR STUCK BREAKER ON THE
BUS B AT ALMA'
COM 'ALMA-ROCK ELM 69543-69545'
COM 'ALMA-TREMVAL 69543-60316'
COM 'ALMA TX1 69543-68874'
COM 'NEED TO TRIP JPM'
COM '-----------------------------------------------'
CONTINGENCY 'ALMA-B-STK'
TRIP LINE FROM BUS 69543 TO BUS 60316 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 69545 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 68874 CKT 1
DISCONNECT BUS 69542
END
COM 'CONTINGENCY FOR STUCK BREAKER ON
4QB13 BUS TIE AT ALMA'
COM 'ALMA-MARSHLAND 69543-60309'
COM 'ALMA-ELK MOUND 69543-69551'
COM 'ALMA TX2 69543-68874'
COM 'ALMA-WABACO 69543-69549'
COM 'NEED TO TRIP ALMA 4 AND 5'
COM 'ALMA-ROCK ELM 69543-69545'
COM 'ALMA-TREMVAL 69543-60316'
COM 'ALMA TX1 69543-68874'
COM 'NEED TO TRIP JPM'
COM '-----------------------------------------------'
CONTINGENCY 'ALMA-A-B-STK'
TRIP LINE FROM BUS 69543 TO BUS 60316 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 69545 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 68874 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 60309 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 69551 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 69549 CKT 1
TRIP LINE FROM BUS 69543 TO BUS 68874 CKT 2
DISCONNECT BUS 69540
DISCONNECT BUS 69538
DISCONNECT BUS 69542
DISCONNECT BUS 69543
END
COM 'CONTINGENCY FOR STUCK 2QB1 BREAKER ON
THE GENOA NORTH BUS'
COM 'GENOA-LACROSSE TAP 69523-69535'
COM 'LACROSSE-LACROSSE TAP 69535-60308'
COM 'GENOA-HARMONY 69523-69527'
COM 'GENOA TX1 69523-68810'
COM 'GENOA-SENECA 69523-69507'
COM '-----------------------------------------------'
CONTINGENCY 'GENOA-N-STK'
TRIP LINE FROM BUS 69535 TO BUS 60308 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 69535 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 69507 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 69527 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 68810 CKT 1
END
COM 'CONTINGENCY FOR STUCK BREAKER ON THE
GENOA SOUTH BUS'
COM 'GENOA-LANSING 69523-34021'
COM 'GENOA-COULEE 69523-60302'
COM 'GENOA TX2 69523-68810'
COM 'TRIP GENOA 3 UNIT'
COM '-----------------------------------------------'
CONTINGENCY 'GENOA-S-STK'
TRIP LINE FROM BUS 69523 TO BUS 34021 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 60302 CKT 1
TRIP LINE FROM BUS 69523 TO BUS 68810 CKT 2
DISCONNECT BUS 69522
END

COM 'CONTINGENCY FOR STUCK BREAKER ON THE
SOURIS 5T70'
COM '-----------------------------------------------'
CONTINGENCY 'SOURIS 5T70'
TRIP LINE FROM BUS 60138 TO BUS 60046 CKT 1
TRIP LINE FROM BUS 60140 TO BUS 60046 CKT 1
TRIP LINE FROM BUS 60138 TO BUS 60139 CKT 1
END

COM 'Parkwood 12WB2 stuck'
COM 'A 62090-60205 PARKWD 7-CRKEDLK7 CKT 1
OPENS B'
COM 'A 62090-60203 PARKWD 7-COON CK7 CKT 1
OPENS B'
COM 'B 62090-62132 PARKWD 7-PARKWD 8 CKT 1
OPENS A'
COM '-----------------------------------------------'
CONTINGENCY '12WB2 Stuck'
TRIP LINE FROM BUS 62090 TO BUS 60205 CKT 1
TRIP LINE FROM BUS 62090 TO BUS 60203 CKT 1
DISCONNECT BRANCH FROM BUS 62090 TO BUS
62132 TO BUS 62158 CKT 1
DISCONNECT BRANCH FROM BUS 62090 TO BUS
62132 TO BUS 62159 CKT 2
END

COM 'STK 5P45 BKR'
COM '60183-60184 APACHE 7-APACHET7'
COM '60184-60185 APACHE 7-ARDNHLS7'
COM '60185-60225 ARDNHLS7-LXNGTON7'
COM '60184-60252 APACHET7-TERMINL7'
COM 'AUTO TRANSFER CLOSE 60919-60864 TCAAP  8-
TCAAPTP8'
CONTINGENCY 'STK 5P45 BKR ARDEN HILLS'
DISCONNECT BUS 60184
DISCONNECT BUS 60185
CLOSE BRANCH FROM BUS 60919 TO BUS 60864 CKT 1
END

COM 'STK 5M15 BKR'
COM '60183-60184 APACHE 7-APACHET7'
COM '60184-60185 APACHE 7-ARDNHLS7'
COM '60184-60252 APACHET7-TERMINL7'
COM '60252-60275 TERMINL7-PRIOR  7'
COM '60275-60228 PRIOR  7-MERIMPK7'
CONTINGENCY 'STK 5M15 BKR TERMINAL'
DISCONNECT BUS 60184
DISCONNECT BUS 60275
END

COM 'STK 5M12 BKR'
COM '60252-60241 TERMINL7-ROSE PL7'
COM '60252-60256 TERMINL7-WESTERN7'
CONTINGENCY 'STK 5P12 BKR TERMINAL'
TRIP LINE FROM BUS 60252 TO BUS 60241 CKT 1
TRIP LINE FROM BUS 60252 TO BUS 60255 CKT 1
END

COM 'STK 5M18 BKR'
COM 'TRIP THREE WINDING TRANSFORMER
REPRESENTATION CKT 9'
COM 'REMOVE TERTIARY BUS'
COM '60251-60221 TERMINL3-KOLMNLK3'
COM '60252-60213 TERMINL7-GOPHER 7'
CONTINGENCY 'STK 5P18 BKR TERMINAL'
DISCONNECT BUS 61491
DISCONNECT BUS 61188
TRIP LINE FROM BUS 60251 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60213 TO BUS 60252 CKT 1
END

COM 'STK 8M4 BKR'
COM 'TRIP THREE WINDING TRANSFORMER
REPRESENTATION CKT 9'
COM 'REMOVE TERTIARY BUS'
COM 'TRIP THREE WINDING TRANSFORMER
REPRESENTATION CKT 10'
COM 'REMOVE TERTIARY BUS'
COM '60251-60221 TERMINL3-KOLMNLK3'
COM '60251-60202 TERMINL3-COON CK3'
CONTINGENCY 'STK 8M4 BKR TERMINAL'
DISCONNECT BUS 61491
DISCONNECT BUS 61188
DISCONNECT BUS 61492
DISCONNECT BUS 61187
DISCONNECT BUS 60251
END

COM 'STK 8P30 BKR'
COM '60221-60222 KOLMNLK3-KOLMNLK7 CKT 9'
COM '60221-60202 KOLMNLK3-COON CK3'
COM '60221-60186 KOLMNLK3-AS KING3'
CONTINGENCY 'STK 8P30 BKR KOLHMAN LAKE'
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 9
TRIP LINE FROM BUS 60221 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60186 CKT 1
END

COM 'STK 8P34 BKR'
COM '60221-60222 KOLMNLK3-KOLMNLK7 CKT 10'
COM '60221-60251 KOLMNLK3-TERMINL3'
COM '60221-60199 KOLMNLK3-CHIS CO3'
CONTINGENCY 'STK 8P34 BKR KOLHMAN LAKE'
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 10
TRIP LINE FROM BUS 60221 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60199 CKT 1
END

COM 'STK 8P33 BKR'
COM '60221-60222 KOLMNLK3-KOLMNLK7 CKT 9'
COM '60221-60251 KOLMNLK3-TERMINL3'
COM '60221-60202 KOLMNLK3-COON CK3'
CONTINGENCY 'STK 8P33 BKR KOLHMAN LAKE'
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 9
TRIP LINE FROM BUS 60221 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60202 CKT 1
END
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COM 'STK 8P32 BKR'
COM '60221-60222 KOLMNLK3-KOLMNLK7 CKT 10'
COM '60221-60199 KOLMNLK3-CHIS CO3'
COM '60221-60186 KOLMNLK3-AS KING3'
CONTINGENCY 'NSP STK 8P32 BKR KOLHMAN LAKE'
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 10
TRIP LINE FROM BUS 60221 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60221 TO BUS 60186 CKT 1
END

COM 'STK 5P106 BKR'
COM '60221-60222 KOLMNLK3-KOLMNLK7 CKT 9'
COM '60221-60202 KOLMNLK3-COON CK3'
COM '60222-60224 KOLMNLK7-LONG LK7'
CONTINGENCY 'STK 5P106 BKR KOLHMAN LAKE'
TRIP LINE FROM BUS 60221 TO BUS 60222 CKT 9
TRIP LINE FROM BUS 60221 TO BUS 60202 CKT 1
TRIP LINE FROM BUS 60222 TO BUS 60224 CKT 1
END

COM 'NSP STK 5P51 BKR'
COM '60222-60224 KOLMNLK7-LONG LK7'
COM '60224-60176 LONG LK7-BAYTOWN7'
COM '60176-60187 BAYTOWN7-AS KING7'
COM 'LONG LAKE LOAD NOW SUPPORTED FROM
OAKDALE'
CONTINGENCY 'STK 5P51 BKR NEAR LONG LAKE'
DISCONNECT BUS 60176
END

COM 'NSP STK 5M70 BKR'
COM '60240-60226 RIVRSID7-MAIN ST7'
COM '60226-60213 MAIN ST7-GOPHER 7'
CONTINGENCY 'STK 5M70 BKR MAIN ST'
TRIP LINE FROM BUS 60240 TO BUS 60226 CKT 1
TRIP LINE FROM BUS 60226 TO BUS 60213 CKT 1
END

COM 'NSP STK 5M64 BKR'
COM '60210-60226 FIFTHST7-MAIN ST7'
COM '60226-60213 MAIN ST7-GOPHER 7'
CONTINGENCY 'STK 5M64 BKR MAIN ST'
TRIP LINE FROM BUS 60210 TO BUS 60226 CKT 1
TRIP LINE FROM BUS 60226 TO BUS 60213 CKT 1
END

COM 'NSP STK 5M68 BKR'
COM '60240-60226 RIVRSID7-MAIN ST7'
COM '60226-60209 MAIN ST7-ELLOTPK7'
CONTINGENCY 'STK 5M68 BKR MAIN ST'
TRIP LINE FROM BUS 60240 TO BUS 60226 CKT 1
TRIP LINE FROM BUS 60226 TO BUS 60209 CKT 1
DISCONNECT BUS 603209
END

COM 'NSP STK 5M66 BKR'
COM '60210-60226 FIFTHST7-MAIN ST7'
COM '60226-60209 MAIN ST7-ELLOTPK7'
CONTINGENCY 'STK 5M66 BKR MAIN ST'
TRIP LINE FROM BUS 60240 TO BUS 60226 CKT 1
TRIP LINE FROM BUS 60226 TO BUS 60209 CKT 1
DISCONNECT BUS 603209
END

COM 'NSP STK 5M319 BKR'
COM '60240-60355 RIVERSID7-WRIV RD7 CKT 2'
COM 'GEN UNIT NO. 7'
CONTINGENCY 'STK 5M319 BKR RIVERSIDE'
TRIP LINE FROM BUS 60240 TO BUS 60355 CKT 2
DISCONNECT BUS 60007
END

COM 'NSP STK 5M308 BKR'
COM '60240-60229 RIVRSID7-MOORELK7'
COM '60240-60183 RIVRSID7-APACHE 7'
CONTINGENCY 'STK 5M308 BKR RIVERSIDE'
TRIP LINE FROM BUS 60240 TO BUS 60229 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60183 CKT 1
END

COM 'NSP STK 5M330 BKR'
COM '60240-60226 RIVRSID7-MAIN ST7'
COM '60240-60183 RIVRSID7-APACHE 7'
CONTINGENCY 'NSP STK 5M330 BKR RIVERSIDE'
TRIP LINE FROM BUS 60240 TO BUS 60226 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60183 CKT 1
END

COM 'NSP STK 5M333 BKR'
COM '60240-60268 RIVRSID7-BRKLNPK7'
COM '60240-60210 RIVRSID7-FIFTHST7'
CONTINGENCY 'NSP STK 5M333 BKR RIVERSIDE'
TRIP LINE FROM BUS 60240 TO BUS 60268 CKT 1
TRIP LINE FROM BUS 60240 TO BUS 60210 CKT 1
END

COM 'NSP STK 5M143 BKR'
COM '60253-60203 TWIN LK7-COON CK7'
COM '60253-60240 TWIN LK7-RIVRSID7'
CONTINGENCY 'NSP STK 5M143 BKR TWIN LAKES'
TRIP LINE FROM BUS 60253 TO BUS 60203 CKT 1
TRIP LINE FROM BUS 60253 TO BUS 60240 CKT 1
END

COM 'NSP STK 5M145 BKR'
COM '60253-60203 TWIN LK7-COON CK7'
COM '60253-60216 TWIN LK7-INDIANA7'
COM '60216-60181 INDIANA7-ADTRICH7'
CONTINGENCY 'NSP STK 5M145 BKR TWIN LAKES'
TRIP LINE FROM BUS 60253 TO BUS 60203 CKT 1
TRIP LINE FROM BUS 60253 TO BUS 60216 CKT 1
TRIP LINE FROM BUS 60216 TO BUS 60181 CKT 1
END

COM 'NSP STK 5M296 BKR'
COM '60355-60181 WRIV RD7-ALDRICH7 CKT2'
COM '60355-60240 WRIV RD7-RIVRSID7 CKT1'
CONTINGENCY 'NSP STK 5M296 BKR WEST RIVER
ROAD'
TRIP LINE FROM BUS 60355 TO BUS 60181 CKT 2
TRIP LINE FROM BUS 60355 TO BUS 60240 CKT 1
END

COM 'NSP STK 5M293 BKR'
COM '60355-60181 WRIV RD7-ALDRICH7 CKT2'
COM '60355-60240 WRIV RD7-RIVRSID7 CKT2'
CONTINGENCY 'NSP STK 5M293 BKR WEST RIVER
ROAD'
TRIP LINE FROM BUS 60355 TO BUS 60181 CKT 2
TRIP LINE FROM BUS 60355 TO BUS 60240 CKT 2
END

COM 'NSP STK 5M117 BKR'
COM '60203-60254 COON CK7-WCNRAPD7'
COM '60203-62090 COON CK7-PRKWOOD7'
CONTINGENCY 'NSP STK 5M117 BKR COON CREEK'
TRIP LINE FROM BUS 60203 TO BUS 60254 CKT 1
TRIP LINE FROM BUS 60203 TO BUS 62090 CKT 1
END

COM 'NSP STK 5M118 BKR'
COM '60203-60268 COON CK7-BRKLNPK7'
COM '60203-62090 COON CK7-PRKWOOD7'
CONTINGENCY 'NSP STK 5M118 BKR COON CREEK'
TRIP LINE FROM BUS 60203 TO BUS 60268 CKT 1
TRIP LINE FROM BUS 60203 TO BUS 62090 CKT 1
END

COM 'NSP STK 5M29 BKR'
COM '60115-60177 ELMCRK7 -CHAMPLN7'
COM '60177-60178 CHAMPLN7-CHAMP T7'
COM '60178-60205 CHAMP T7-CRKEDLK7'
COM '60178-60254 CHAMP T7-WCNRAPD7'
COM '60254-60203 WCNRAPD7-COON CK7'
CONTINGENCY 'NSP STK 5M29 BKR WST COON RPDS'
TRIP LINE FROM BUS 60115 TO BUS 60177 CKT 1
TRIP LINE FROM BUS 60177 TO BUS 60178 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60205 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60254 CKT 1
TRIP LINE FROM BUS 60254 TO BUS 60203 CKT 1
END

COM 'NSP STK 5m242 BKR'
COM '60115-60177 ELMCRK7 -CHAMPLN7'
COM '60177-60178 CHAMPLN7-CHAMP T7'
COM '60178-60205 CHAMP T7-CRKEDLK7'
COM '60178-60254 CHAMP T7-WCNRAPD7'
COM '60115-60269 ELMCRK7 -HASSAN 7'
CONTINGENCY 'NSP STK 5m242 BKR ELM CREEK'
TRIP LINE FROM BUS 60115 TO BUS 60177 CKT 1
TRIP LINE FROM BUS 60177 TO BUS 60178 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60205 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60254 CKT 1
TRIP LINE FROM BUS 60254 TO BUS 60203 CKT 1
END

COM 'NSP STK 5M243 BKR'
COM '60115-60177 ELMCRK7 -CHAMPLN7'
COM '60177-60178 CHAMPLN7-CHAMP T7'
COM '60178-60205 CHAMP T7-CRKEDLK7'
COM '60178-60254 CHAMP T7-WCNRAPD7'
COM '60115 SHUNT REMOVED'
CONTINGENCY 'NSP STK 5M243 BKR ELM CREEK'
TRIP LINE FROM BUS 60115 TO BUS 60177 CKT 1
TRIP LINE FROM BUS 60177 TO BUS 60178 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60205 CKT 1
TRIP LINE FROM BUS 60178 TO BUS 60254 CKT 1
DISCONNECT BUS 603211
END

COM 'NSP STK 5M276 8M47 8M49 BKR,
TRANSFORMER FAILURE, OR BUS FAULT ON 115 OR
345'
COM '60114-60151 ELM CRK3-MNTCELO3'
COM '60114-60233 ELM CRK3-PARKERS3'
COM '60114-60115 ELM CRK3-ELMCRK 7'
CONTINGENCY 'NSP STK 5M276 8M47 8M49 BKR ELM
CLREEK'
DISCONNECT BUS 60114
END

COM 'NSP STK 5M277 BKR'
COM '60114-60151 ELM CRK3-MNTCELO3'
COM '60114-60233 ELM CRK3-PARKERS3'
COM '60114-60115 ELM CRK3-ELMCRK 7'
COM '60115-62107 ELMCRK 7-OSSEO  7'
COM '60232-60254 OSSEO  7-WCNRAPD7'
CONTINGENCY 'NSP STK 5M277 BKR ELM CLREEK'
DISCONNECT BUS 60114
DISCONNECT BUS 60232
DISCONNECT BUS 62107
END

COM 'NSP STK 5M278 BKR'
COM '60114-60151 ELM CRK3-MNTCELO3'
COM '60114-60233 ELM CRK3-PARKERS3'
COM '60114-60115 ELM CRK3-ELMCRK 7'
COM '60115-62107 ELMCRK 7-OSSEO  7'
COM '60232-60254 OSSEO  7-WCNRAPD7'
COM '60115 SHUNT REMOVED'
CONTINGENCY 'NSP STK 5M278 BKR ELM CLREEK'
DISCONNECT BUS 60232
DISCONNECT BUS 62107
DISCONNECT BUS 603211
END

COM
'++++++++++++++++++++++++++++++++++++++++++++
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COM 'DUE TO LIMITATIONS OF PSSE CONTINGENCY
FILES THE BREAKER FAILURES AT'
COM 'ALDRICH WILL RESULT IN REMOVAL OF ALL
240 MVAR'S OF CAPACITORS.
COM 'IF THIS BECOMES A PROBLEM 120 MVAR OF
CAP BANKS CAN BE TURNED BACK ON'
COM 'DURING MOST OUTAGES TO HELP SUPPORT
VOLTAGES.'

COM 'STK 5M403 BKR ALDRICH'
COM 'LOSS OF HERC GENERATOR'
COM 'LOSS OF 120 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M403 BKR ALDRICH'
DISCONNECT BUS 60181
DISCONNECT BUS 603210
END

COM 'STK 5M406 BKR ALDRICH'
COM '60181-60355 ALDRICH7-WRIV RD7'
COM 'LOSS OF 120 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M406 BKR ALDRICH'
TRIP LINE FROM BUS 60181 TO BUS 60355 CKT 2
DISCONNECT BUS 603210
END

COM 'STK 5M409 BKR ALDRICH'
COM '60181-60355 ALDRICH7-WRIV RD7'
COM 'LOSS OF 120 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M409 BKR ALDRICH'
TRIP LINE FROM BUS 60181 TO BUS 60355 CKT 1
DISCONNECT BUS 603210
END

COM 'STK 5M410 BKR ALDRICH'
COM '60181-60355 ALDRICH7-WRIV RD7'
COM '60181-60210 ALDRICH7-FIFTHST7'
CONTINGENCY 'NSP STK 5M410 BKR ALDRICH'
TRIP LINE FROM BUS 60181 TO BUS 60216 CKT 1
TRIP LINE FROM BUS 60216 TO BUS 60253 CKT 1
END

COM 'STK 5M411 BKR ALDRICH'
COM '60181-60210 ALDRICH7-FIFTHST7'
COM 'LOSS OF 120 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M411 BKR ALDRICH'
TRIP LINE FROM BUS 60181 TO BUS 60210 CKT 1
DISCONNECT BUS 603210
END

COM 'STK 5M415 BKR ALDRICH'
COM '60181-60216 ALDRICH7-INDIANA7'
COM '60216-60253 INDIANA7-TWIN LK7'
COM 'LOSS OF 120 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M415 BKR ALDRICH'
TRIP LINE FROM BUS 60181 TO BUS 60216 CKT 1
TRIP LINE FROM BUS 60216 TO BUS 60253 CKT 1
DISCONNECT BUS 603210
END

COM 'END OF ALDRICH BREAKER FAILURES'
COM
'++++++++++++++++++++++++++++++++++++++++++++
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COM 'STK 5M49 BKR PARKERS LAKE'
COM '60234-60259 PARKERS7-BASCRK 7'
COM '60234-60211 PARKERS7-GLESNLK7 CKT 2'
COM '60259-60227 BASCRK 7-MEDLAKE7'
CONTINGENCY 'NSP STK 5M49 BKR PARKERS LAKE'
TRIP LINE FROM BUS 60234 TO BUS 60259 CKT 1
TRIP LINE FROM BUS 60234 TO BUS 60211 CKT 2
TRIP LINE FROM BUS 60259 TO BUS 60227 CKT 1
END

COM 'STK 5M48 BKR PARKERS LAKE'
COM '60234-60211 PARKERS7-GLESNLK7 CKT 2'
COM 'LOSS OF 180 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M48 BKR PARKERS LAKE'
TRIP LINE FROM BUS 60234 TO BUS 60211 CKT 2
DISCONNECT BUS 603208
END

COM 'STK 5M52 BKR PARKERS LAKE'
COM '60234-60346 PARKERS7-CEADRLK7'
COM '60234-60211 PARKERS7-GLESNLK7 CKT 1'
CONTINGENCY 'NSP STK 5M52 BKR PARKERS LAKE'
TRIP LINE FROM BUS 60234 TO BUS 60346 CKT 1
TRIP LINE FROM BUS 60234 TO BUS 60211 CKT 1
END

COM 'STK 5M51 BKR PARKERS LAKE'
COM '60234-60211 PARKERS7-GLESNLK7 CKT 1'
COM 'LOSS OF 180 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M51 BKR PARKERS LAKE'
TRIP LINE FROM BUS 60234 TO BUS 60211 CKT 1
DISCONNECT BUS 603208
END

COM 'STK 5M57 BKR PARKERS LAKE'
COM 'LOSS OF THREE WINDING TRANSFORMER #10'
COM 'LOSS OF 180 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M57 BKR PARKERS LAKE'
DISCONNECT BUS 61489
DISCONNECT BUS 60659
DISCONNECT BUS 603208
END

COM 'STK 5M60 BKR PARKERS LAKE'
COM 'LOSS OF THREE WINDING TRANSFORMER #9
WITH REACTORS'
COM 'LOSS OF 180 MVAR OF SWITCHED SHUNT'
CONTINGENCY 'NSP STK 5M60 BKR PARKERS LAKE'
DISCONNECT BUS 61490
DISCONNECT BUS 60660
DISCONNECT BUS 603208
END

COM 'STK 8M13 BKR PARKERS LAKE'
COM 'LOSS OF THREE WINDING TRANSFORMER #10'
COM '60233-60192 PARKERS3-BLUE LK3'
CONTINGENCY 'NSP STK 8M13 BKR PARKERS LAKE'
DISCONNECT BUS 61489
DISCONNECT BUS 60659
TRIP LINE FROM BUS 60233 TO BUS 60192 CKT 1
END

COM 'STK 8M12 BKR PARKERS LAKE'
COM '60233-60192 PARKERS3-BLUE LK3'
COM '60233-60270 PARKERS3-MPLEGV13'
COM '60270-63030 DICKNSN3-MPLEGV13'
CONTINGENCY 'NSP STK 8M12 BKR PARKERS LAKE'
TRIP LINE FROM BUS 60233 TO BUS 60192 CKT 1
TRIP LINE FROM BUS 63030 TO BUS 60270 CKT 1
TRIP LINE FROM BUS 60233 TO BUS 60270 CKT 1
END

COM 'STK 8M11 BKR PARKERS LAKE'
COM 'LOSE PARKERS LAKE 3 WINDING XFMR CKT 9
AND REACTORS'
COM '60233-60270 PARKERS3-MPLEGV13'
COM '60270-63030 DICKNSN3-MPLEGV13'
CONTINGENCY 'NSP STK 8M11 BKR PARKERS LAKE'
DISCONNECT BUS 61490
DISCONNECT BUS 60660
TRIP LINE FROM BUS 63030 TO BUS 60270 CKT 1
TRIP LINE FROM BUS 60233 TO BUS 60270 CKT 1
END

COM 'STK 8M14 BKR PARKERS LAKE'
COM 'LOSE PARKERS LAKE 3 WINDING XFMR CKT 10'
COM '60233-60114 PARKERS3-ELM CRK3'
CONTINGENCY 'NSP STK 8M14 BKR PARKERS LAKE'
DISCONNECT BUS 61490
DISCONNECT BUS 60660
TRIP LINE FROM BUS 60233 TO BUS 60114 CKT 1
END

COM 'STK 8M15 BKR PARKERS LAKE'
COM '60233-60114 PARKERS3-ELM CRK3'
COM '60233-60262 PARKERS3-EDEN PR3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT #10'
CONTINGENCY 'NSP STK 8M15 BKR PARKERS LAKE'
TRIP LINE FROM BUS 60233 TO BUS 60114 CKT 1
TRIP LINE FROM BUS 60233 TO BUS 60262 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
END

COM 'STK 8M16 BKR PARKERS LAKE'
COM 'LOSS OF THREE WINDING TRANSFORMER #10'
COM '60233-60262 PARKERS3-EDEN PR3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT #10'
CONTINGENCY 'NSP STK 8M16 BKR PARKERS LAKE'
DISCONNECT BUS 61489
DISCONNECT BUS 60659
TRIP LINE FROM BUS 60233 TO BUS 60262 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
END

COM 'STK 5M347 BKR GLEASON LAKE'
COM '60211-60234 GLESNLK7-PARKERS7 CKT 1'
COM '60211-62924 GLESNLK7-MEDINA 7'
CONTINGENCY 'NSP STK 5M347 BKR GLEASON LAKE'
TRIP LINE FROM BUS 60211 TO BUS 60234 CKT 1
TRIP LINE FROM BUS 60211 TO BUS 62924 CKT 1
END

COM 'STK 5M84 BKR GLEASON LAKE'
COM '60211-62924 GLESNLK7-MEDINA 7'
COM '60211-60887 GLESNLK7-GLESNLK8'
CONTINGENCY 'NSP STK 5M84 BKR GLEASON LAKE'
TRIP LINE FROM BUS 60211 TO BUS 62924 CKT 1
TRIP LINE FROM BUS 60211 TO BUS 60887 CKT 1
END

COM 'STK 115/69 Kv XFMR BKR GLEASON LAKE'
COM '60211-60887 GLESNLK7-GLESNLK8'
COM '60887-60885 GLESNLK8-MOUND  8'
COM '60887-60332 GLESNLK8-GLENLK18'
COM '60885-63021 MOUND  8-ST BONI8'
COM 'CLOSE 60332-60219 GLENLK18-GLENLK28'
CONTINGENCY 'NSP STK 115/69 Kv XFMR BKR
GLEASON LAKE'
TRIP LINE FROM BUS 60887 TO BUS 60885 CKT 1
TRIP LINE FROM BUS 60211 TO BUS 60887 CKT 1
TRIP LINE FROM BUS 60887 TO BUS 60332 CKT 1
TRIP LINE FROM BUS 60885 TO BUS 63021 CKT 1
CLOSE LINE FROM BUS 60332 TO BUS 60219 CKT 1
END

COM 'NSP STK 5M160 BKR EDINA'
COM '60208-60280 EDINA 7-NINE MI7'
COM '60208-60263 EDINA 7-EDEN PR7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M160 BKR EDINA'
TRIP LINE FROM BUS 60208 TO BUS 60280 CKT 1
TRIP LINE FROM BUS 60208 TO BUS 60263 CKT 1
END

COM 'NSP STK 5M159 BKR EDINA'
COM '60208-60249 EDINA 7-STLSPRK7'
COM '60208-60263 EDINA 7-EDEN PR7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M159 BKR EDDEN PRARIE'
TRIP LINE FROM BUS 60208 TO BUS 60249 CKT 1
TRIP LINE FROM BUS 60208 TO BUS 60263 CKT 1
END

COM 'NSP STK 8m45 BKR EDEN PRARIE'
COM '60262-60192 EDEN PR3-BLUE LK3'
COM '60262-60233 EDEN PR3-PARKERS3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT 9'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT 10'
COM '60263-60208 EDEN PR7-EDINA  7;'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M45 BKR EDEN PRARIE'
TRIP LINE FROM BUS 60262 TO BUS 60192 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 9
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
TRIP LINE FROM BUS 60263 TO BUS 60208 CKT 1
END
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COM 'NSP STK 8m210 BKR EDEN PRARIE'
COM '60262-60192 EDEN PR3-BLUE LK3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT 9'
COM '60263-60208 EDEN PR7-EDINA  7;'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M210 BKR EDEN PRARIE'
TRIP LINE FROM BUS 60262 TO BUS 60192 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 9
TRIP LINE FROM BUS 60263 TO BUS 60208 CKT 1
END

COM 'NSP STK 8m213 BKR EDEN PRARIE'
COM '60262-60233 EDEN PR3-PARKERS3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT 10'
COM '60263-60208 EDEN PR7-EDINA  7;'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M213 BKR EDEN PRARIE'
TRIP LINE FROM BUS 60262 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
TRIP LINE FROM BUS 60263 TO BUS 60208 CKT 1
END

COM 'NSP STK 8m211 BKR EDEN PRARIE'
COM '60262-60233 EDEN PR3-PARKERS3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT 10'
COM '60263-60256 EDEN PR7-WSTGATE7 CKT 1;'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M211 BKR EDEN PRARIE'
TRIP LINE FROM BUS 60262 TO BUS 60233 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 10
TRIP LINE FROM BUS 60263 TO BUS 60256 CKT 1
END

COM 'NSP STK 8m214 BKR EDEN PRARIE'
COM '60262-60192 EDEN PR3-BLUE LK3'
COM '60262-60263 EDEN PR3-EDEN PR7 CKT 9'
COM '60263-60256 EDEN PR7-WSTGATE7 CKT 2;'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M214 BKR EDEN PRARIE'
TRIP LINE FROM BUS 60262 TO BUS 60192 CKT 1
TRIP LINE FROM BUS 60262 TO BUS 60263 CKT 9
TRIP LINE FROM BUS 60263 TO BUS 60256 CKT 2
END

COM 'NSP STK 5m3 BKR WESTGATE'
COM '60263-60256 EDEN PR7-WSTGATE7 CKT 2'
COM 'LOSE WESTGATE SHUNT'
CONTINGENCY 'NSP STK 5M3 BKR WEST GATE'
TRIP LINE FROM BUS 60263 TO BUS 60256 CKT 2
DISCONNECT BUS 603206
END

COM 'NSP STK 5M7 BKR WESTGATE'
COM '60256-60257 WSTGATE7-BLUFFCK7'
COM '60257-62660 BLUFFCK7-CHANHAS7'
COM '62660-60367 CHANHAS7-MNRIVER7'
COM 'LOSE WESTGATE SHUNT'
CONTINGENCY 'NSP STK 5M7 BKR WEST GATE'
TRIP LINE FROM BUS 60256 TO BUS 60257 CKT 1
TRIP LINE FROM BUS 62660 TO BUS 60257 CKT 1
TRIP LINE FROM BUS 62660 TO BUS 60367 CKT 1
DISCONNECT BUS 603206
END

COM 'NSP STK 5m261 BKR Black Dog'
COM 'Disconnect 60190 and all attached generation'
COM '60242-62669 SAVAGE 7-EAGLECK7'
COM '62669-60189 EAGLECK7-SHAKOPE7'
COM '60189-60244 SHAKOPE7-SCOTTCO7'
CONTINGENCY 'NSP STK 5M261 BKR BLACK DOG'
DISCONNECT BUS 60190
DISCONNECT BUS 60011
DISCONNECT BUS 60012
TRIP LINE FROM BUS 60242 TO BUS 62669 CKT 1
TRIP LINE FROM BUS 62669 TO BUS 60189 CKT 1
TRIP LINE FROM BUS 60189 TO BUS 60244 CKT 1
DISCONNECT BUS 603209
END

COM 'NSP STK 5M253, 5M258, AND GEN BKR BLACK
DOG'
COM '60258-60190 WILSON 7-BLK DOG7 CKT 1'
COM '60190-60242 BLK DOG7-SAVAGE 7'
COM '60242-62669 SAVAGE 7-EAGLECK7'
COM '62669-60189 EAGLECK7-SHAKOPE7'
COM '60189-60244 SHAKOPE7-SCOTTCO7'
COM 'DISCONNECT GENERATOR 5'
CONTINGENCY 'NSP STK 5m258,253 AND GEN BKR
BLACK DOG'
TRIP LINE FROM BUS 60258 TO BUS 60190 CKT 1
TRIP LINE FROM BUS 60190 TO BUS 60242 CKT 1
TRIP LINE FROM BUS 60242 TO BUS 62669 CKT 1
TRIP LINE FROM BUS 62669 TO BUS 60189 CKT 1
TRIP LINE FROM BUS 60189 TO BUS 60244 CKT 1
DISCONNECT BUS 60011
END

COM 'NSP STK 5M255, 5M256, AND GEN BKR BLACK
DOG'
COM '60190-60193 BLK DOG7-BLUE LK7'
COM '60258-60190 WILSON 7-BLK DOG7 CKT 3'
COM '60258-60280 WILSON 7-NINE MI7'
COM 'DISCONNECT GENERATOR 5'
CONTINGENCY 'NSP STK 5m255,256 AND GEN BKR
BLACK DOG'
TRIP LINE FROM BUS 60190 TO BUS 60193 CKT 1
DISCONNECT BUS 60904
DISCONNECT BUS 60011
END

COM 'NSP STK 5M264 BKR BLACK DOG'
COM 'DISCONNECT BLACK DOG 60200'
COM 'DISCONNECT BLACK DOG GEN 3 AND 4'
COM '60188-62225 RIVERWD7-BURNVIL7'
CONTINGENCY 'NSP STK 5M264 BKR BLACK DOG'
DISCONNECT BUS 60200
DISCONNECT BUS 60013
DISCONNECT BUS 60014
TRIP LINE FROM BUS 60188 TO BUS 62225 CKT 1
END

COM 'NSP STK 5M254, 5M257, 5M259 AND 4GEN BKR
BLACK DOG'
COM '60200-60195 BLK DG27-CDRVALE7'
COM '60200-62666 BLK DG27-GLNDALE7'
COM '60188-62225 RIVERWD7-BURNVIL7'
COM '60200-62230 BLK DG27-PILOTKBT'
COM 'DISCONNECT GENERATOR 4'
CONTINGENCY 'NSP STK 5m254,257,259,4GEN BKR
BLACK DOG'
TRIP LINE FROM BUS 60200 TO BUS 60195 CKT 1
TRIP LINE FROM BUS 60200 TO BUS 62666 CKT 1
TRIP LINE FROM BUS 60200 TO BUS 62230 CKT 1
DISCONNECT BUS 60014
END

COM 'NSP STK 5M251, 5M252, AND 3GEN BKR BLACK
DOG'
COM '60200-60195 BLK DG27-CDRVALE7'
COM '60200-60188 BLK DG27-RIVERWD7'
COM '60188-62225 RIVERWD7-BURNVIL7'
COM '60200-62230 BLK DG27-PILOTKBT'
COM 'DISCONNECT GENERATOR 3'
CONTINGENCY 'NSP STK 5m251,252,3GEN BKR BLACK
DOG'
TRIP LINE FROM BUS 60200 TO BUS 60195 CKT 1
TRIP LINE FROM BUS 60200 TO BUS 60188 CKT 1
TRIP LINE FROM BUS 60188 TO BUS 62225 CKT 1
TRIP LINE FROM BUS 60200 TO BUS 62230 CKT 1
DISCONNECT BUS 60013
END

COM 'NSP STK 5M167 BKR WILSON'
COM '60258-60260 WILSON 7-E BLOOM7'
COM '60258-60904 WILSON 7-WILSON TAP7'
COM 'REMOVE SHUNT AT WILSON'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M167 BKR WILSON'
TRIP LINE FROM BUS 60258 TO BUS 60260 CKT 1
TRIP LINE FROM BUS 60258 TO BUS 60904 CKT 1
DISCONNECT BUS 603205
END

COM 'NSP STK 5M173 BKR WILSON'
COM '60258-60260 WILSON 7-E BLOOM7'
COM '60258-60904 WILSON 7-WILSON TAP7'
COM '60904-60280 WILSON TAP7-MINE MI7'
COM '60904-60190 WILSON TAP7-BLK DOG7'
COM 'REMOVE SHUNT AT WILSON'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M173 BKR WILSON'
TRIP LINE FROM BUS 60258 TO BUS 60260 CKT 1
DISCONNECT BUS 60904
DISCONNECT BUS 603205
END

COM 'NSP STK 5M171 BKR WILSON'
COM '60258-60200 WILSON 7-BLK DG27 CKT 2'
COM '60258-60904 WILSON 7-WILSON TAP7'
COM 'REMOVE SHUNT AT WILSON'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M171 BKR WILSON'
TRIP LINE FROM BUS 60258 TO BUS 60200 CKT 2
TRIP LINE FROM BUS 60258 TO BUS 60904 CKT 1
DISCONNECT BUS 603205
END

COM 'NSP STK 5M169 BKR WILSON'
COM '60258-60190 WILSON 7-BLK DOG7 CKT 1'
COM '60258-60904 WILSON 7-WILSON TAP7'
COM 'REMOVE SHUNT AT WILSON'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M169 BKR WILSON'
TRIP LINE FROM BUS 60258 TO BUS 60190 CKT 1
TRIP LINE FROM BUS 60258 TO BUS 60904 CKT 1
DISCONNECT BUS 603205
END

COM 'NSP STK 5M186 BKR ELLIOT PARK'
COM '60209-60246 ELLOTPK7-SO TOWN7'
COM '60209-60226 ELLOTPK7-MAIN ST7'
COM 'LOSE ELLIOT PARK SHUNT'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5m186 BKR ELLIOT PARK'
TRIP LINE FROM BUS 60209 TO BUS 60246 CKT 1
TRIP LINE FROM BUS 60209 TO BUS 60226 CKT 1
DISCONNECT BUS 603209
END

COM 'NSP STK 5M182 BKR ELLIOT PARK'
COM '60209-60240 ELLOTPK7-RIVRSID7'
COM '60209-60226 ELLOTPK7-MAIN ST7'
COM 'LOSE ELLIOT PARK SHUNT'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5m182 BKR ELLIOT PARK'
TRIP LINE FROM BUS 60209 TO BUS 60240 CKT 1
TRIP LINE FROM BUS 60209 TO BUS 60226 CKT 1
DISCONNECT BUS 603209
END

COM 'NSP STK 5M184 BKR ELLIOT PARK'
COM '60209-60240 ELLOTPK7-RIVRSID7'
COM '60209-60246 ELLOTPK7-SO TOWN7'
COM 'LOSE ELLIOT PARK SHUNT'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5m184 BKR ELLIOT PARK'
TRIP LINE FROM BUS 60209 TO BUS 60240 CKT 1
TRIP LINE FROM BUS 60209 TO BUS 60246 CKT 1
DISCONNECT BUS 603209
END

COM 'NSP STK 5M154 BKR BLUE LAKE'
COM 'DISCONNECT GENERATORS 1,2,3 AND 4'
COM '60193-60190 BLUE LK7-BLK DOG7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5m154 BKR BLUE LAKE'
TRIP LINE FROM BUS 60209 TO BUS 60240 CKT 1
DISCONNECT BUS 60026
DISCONNECT BUS 61477
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DISCONNECT BUS 60027
DISCONNECT BUS 61476
DISCONNECT BUS 60025
DISCONNECT BUS 60024
END

COM 'NSP STK 5M157 BKR BLUE LAKE'
COM 'DISCONNECT GENERATORS 7 AND 8'
COM 'LOSE BLUE LAKE 7 - HYLAND LAKE - DEAN LAKE - SCOTT CO'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5m157 BKR BLUE LAKE'
DISCONNECT BUS 60057
DISCONNECT BUS 60215
DISCONNECT BUS 60261
DISCONNECT BUS 60056
END

COM 'NSP STK 5M151 BKR BLUE LAKE'
COM '60192-60193 BLUE LK3-BLUE LK7 CKT 9'
COM '60193-60191 BLUE LK7-BLUE LK4'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5m151 BKR BLUE LAKE'
TRIP LINE FROM BUS 60192 TO BUS 60193 CKT 9
TRIP LINE FROM BUS 60193 TO BUS 60191 CKT 1
END

COM 'NSP STK 8m26 BKR BLUE LAKE'
COM '60192-60193 BLUE LK3-BLUE LK7 CKT 9'
COM '60192-60233 BLUE LK3-PARKERS3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M26 BKR BLUE LAKE'
TRIP LINE FROM BUS 60192 TO BUS 60193 CKT 9
TRIP LINE FROM BUS 60192 TO BUS 60233 CKT 1
END

COM 'NSP STK 8M33 BKR BLUE LAKE'
COM '60192-60108 BLUE LK3-WILMART3'
COM '60192-60233 BLUE LK3-PARKERS3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M33 BKR BLUE LAKE'
TRIP LINE FROM BUS 60192 TO BUS 60108 CKT 1
TRIP LINE FROM BUS 60192 TO BUS 60233 CKT 1
END

COM 'NSP STK 8M32 BKR BLUE LAKE'
COM '60192-60193 BLUE LK3-BLUE LK7 CKT 9'
COM '60192-60108 BLUE LK3-WILMART3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M32 BKR BLUE LAKE'
TRIP LINE FROM BUS 60192 TO BUS 60193 CKT 9
TRIP LINE FROM BUS 60192 TO BUS 60108 CKT 1
END

COM 'NSP STK 8m27 BKR BLUE LAKE'
COM 'DISCONNECT INVER HILLS'
COM '60192-60233 BLUE LK3-PARKERS3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M27 BKR BLUE LAKE'
DISCONNECT BUS 60217
TRIP LINE FROM BUS 60192 TO BUS 60233 CKT 1
END

COM 'NSP STK 8m28 BKR BLUE LAKE'
COM 'DISCONNECT INVER HILLS'
COM '60192-60105 BLUE LK3-PR ISLD3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M28 BKR BLUE LAKE'
DISCONNECT BUS 60217
TRIP LINE FROM BUS 60192 TO BUS 60105 CKT 1
END

COM 'NSP STK 8m34 BKR BLUE LAKE'
COM '60263-60262 EDEN PR3-EDEN PR7 CKT 9'
COM '60262-60192 EDEN PR3-BLUE LK3'
COM '60192-60233 BLUE LK3-PR ISLD3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M34 BKR BLUE LAKE'
TRIP LINE FROM BUS 60263 TO BUS 60262 CKT 9
TRIP LINE FROM BUS 60192 TO BUS 60262 CKT 1
TRIP LINE FROM BUS 60192 TO BUS 60105 CKT 1
END

COM 'NSP STK 5P135 BKR CHEMOLITE'
COM 'DISCONNECT GENERATION 60018 & 60017'
COM '60201-60204 CHEMOLT7-COTTAGE7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P135 BKR CHEMOLITE'
DISCONNECT BUS 60018
DISCONNECT BUS 60017
TRIP LINE FROM BUS 60201 TO BUS 60204 CKT 1
END

COM 'NSP STK 5P133 BKR CHEMOLITE'
COM 'DISCONNECT GENERATION 60018 & 60017'
COM 'DISCONNECT BUSES FROM CHEMOLITE-INVERHILLS'
COM ''
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P133 BKR CHEMOLITE'
DISCONNECT BUS 60018
DISCONNECT BUS 60017
DISCONNECT BUS 60247
DISCONNECT BUS 60273
DISCONNECT BUS 60271
DISCONNECT BUS 60274
END

COM 'NSP STK 5P130 BKR CHEMOLITE'
COM 'DISCONNECT BUSES BETWEEN CHEMOLITE AND ROSEMOUNT'
COM 'DISCONNECT BUSES FROM CHEMOLITE-INVERHILLS'
COM '
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P130 BKR CHEMOLITE'
DISCONNECT BUS 60247
DISCONNECT BUS 60273
DISCONNECT BUS 60271
DISCONNECT BUS 60274
DISCONNECT BUS 60342
DISCONNECT BUS 62258
END

COM 'NSP STK 5P132 BKR CHEMOLITE'
COM 'DISCONNECT BUSES BETWEEN CHEMOLITE AND ROSEMOUNT'
COM 'DISCONNECT BUSES FROM CHEMOLITE-INVERHILLS'
COM '60201-60204 CHEMOLT7-COTTAGE7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P132 BKR CHEMOLITE'
DISCONNECT BUS 60342
DISCONNECT BUS 62258
TRIP LINE FROM BUS 60201 TO BUS 60204 CKT 1
END

COM 'NSP STK 5P215 BKR ROSEMOUNT'
COM 'DISCONNECT BUSES BETWEEN CHEMOLITE AND ROSEMOUNT'
COM '60341-60223 ROSEMON7-KOCHREF7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P215 BKR ROSEMOUNT'
DISCONNECT BUS 60342
DISCONNECT BUS 62258
TRIP LINE FROM BUS 60341 TO BUS 60223 CKT 1
END

COM 'NSP STK 5P214 BKR ROSEMOUNT'
COM '60341-60233 ROSEMON7-EMPIRE 7'
COM '60341-60223 ROSEMON7-KOCHREF7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P214 BKR ROSEMOUNT'
TRIP LINE FROM BUS 60341 TO BUS 62235 CKT 1
TRIP LINE FROM BUS 60341 TO BUS 60223 CKT 1
END

COM 'NSP STK 8P24 BKR RED ROCK'
COM 'DISCONNECT REDRCK-INVERHILLS-BLUELAKE'
COM '60236-60105 REDROCK3-PR ISLD3 CKT 1'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P24 BKR RED ROCK'
DISCONNECT BUS 60217
TRIP LINE FROM BUS 60236 TO BUS 60105 CKT 1
END

COM 'NSP STK 8P22 BKR RED ROCK'
COM '60236-60238 REDROCK3-REDROCK7 CKT 10'
COM '60236-60186 REDROCK3-AS KING3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P22 BKR RED ROCK'
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 10
TRIP LINE FROM BUS 60236 TO BUS 60186 CKT 1
DISCONNECT BUS 601035
END

COM 'NSP STK 8P25 BKR RED ROCK'
COM '60236-60238 REDROCK3-REDROCK7 CKT 10'
COM '60236-60105 REDROCK3-PR ISLD3 CKT 1'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P25 BKR RED ROCK'
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 10
TRIP LINE FROM BUS 60236 TO BUS 60105 CKT 1
DISCONNECT BUS 601035
END

COM 'NSP STK 8P28 BKR RED ROCK'
COM '60236-60238 REDROCK3-REDROCK7 CKT 10'
COM '60236-60105 REDROCK3-PR ISLD3 CKT 2'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P28 BKR RED ROCK'
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 10
TRIP LINE FROM BUS 60236 TO BUS 60105 CKT 2
DISCONNECT BUS 601035
END

COM 'NSP STK 8P27 BKR RED ROCK'
COM '60236-60238 REDROCK3-REDROCK7 CKT 9'
COM '60236-60105 REDROCK3-PR ISLD3 CKT 2'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P27 BKR RED ROCK'
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 9
TRIP LINE FROM BUS 60236 TO BUS 60105 CKT 2
END

COM 'NSP STK 8P23 BKR RED ROCK'
COM '60236-60238 REDROCK3-REDROCK7 CKT 9'
COM 'DISCONNECT REDRCK-INVERHILLS-BLUELAKE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P23 BKR RED ROCK'
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 9
DISCONNECT BUS 60217
END

COM 'NSP STK 5P141 BKR INVER HILLS'
COM '60218-60223 INVRHLS7-KOCHREF7'
COM 'DISCONNECT ALL INVER HILLS GENERATION'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P141 BKR INVER HILLS'
TRIP LINE FROM BUS 60218 TO BUS 60223 CKT 1
DISCONNECT BUS 60031
DISCONNECT BUS 61479
DISCONNECT BUS 61479
DISCONNECT BUS 61480
DISCONNECT BUS 60033
DISCONNECT BUS 60032
DISCONNECT BUS 61478
DISCONNECT BUS 60029
DISCONNECT BUS 60028
END

COM 'NSP STK 5P144 BKR INVER HILLS'
COM '60218-60220 INVRHLS7-INVRGRV7'
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COM '60220-60914 INVRGRV7-INVERGR8'
COM 'DISCONNECT ALL INVER HILLS GENERATION'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P144 BKR INVER HILLS'
TRIP LINE FROM BUS 60218 TO BUS 60220 CKT 1
TRIP LINE FROM BUS 60220 TO BUS 60914 CKT 2
DISCONNECT BUS 60031
DISCONNECT BUS 61479
DISCONNECT BUS 61479
DISCONNECT BUS 61480
DISCONNECT BUS 60033
DISCONNECT BUS 60032
DISCONNECT BUS 61478
DISCONNECT BUS 60029
DISCONNECT BUS 60028
END

COM 'NSP STK 5P147 BKR INVER HILLS'
COM 'DISCONNECT REDRCK-INVERHILLS-
BLUELAKE'
COM 'DISCONNECT ALL INVER HILLS GENERATION'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P147 BKR INVER HILLS'
DISCONNECT BUS 60217
DISCONNECT BUS 60031
DISCONNECT BUS 61479
DISCONNECT BUS 61479
DISCONNECT BUS 61480
DISCONNECT BUS 60033
DISCONNECT BUS 60032
DISCONNECT BUS 61478
DISCONNECT BUS 60029
DISCONNECT BUS 60028
END

COM 'NSP STK 5P148 BKR INVER HILLS'
COM 'DISCONNECT REDRCK-INVERHILLS-
BLUELAKE'
COM 'DISCONNECT INVER HILLS TO cHEMOLITE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P148 BKR INVER HILLS'
DISCONNECT BUS 60217
DISCONNECT BUS 60271
DISCONNECT BUS 60274
DISCONNECT BUS 60247
DISCONNECT BUS 60273
END

COM 'NSP STK 5P145 BKR INVER HILLS'
COM '60218-60220 INVRHLS7-INVRGRV7'
COM '60220-60914 INVRGRV7-INVERGR8'
COM 'DISCONNECT INVER HILLS TO cHEMOLITE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P145 BKR INVER HILLS'
TRIP LINE FROM BUS 60218 TO BUS 60220 CKT 1
TRIP LINE FROM BUS 60220 TO BUS 60914 CKT 2
DISCONNECT BUS 60271
DISCONNECT BUS 60274
DISCONNECT BUS 60247
DISCONNECT BUS 60273
END

COM 'NSP STK 5P142 BKR INVER HILLS'
COM '60218-60223 INVRHLS7-KOCHREF7'
COM 'DISCONNECT INVER HILLS TO cHEMOLITE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P142 BKR INVER HILLS'
TRIP LINE FROM BUS 60218 TO BUS 60223 CKT 1
DISCONNECT BUS 60271
DISCONNECT BUS 60274
DISCONNECT BUS 60247
DISCONNECT BUS 60273
END

COM 'NSP STK 5P82 BKR RED ROCK'
COM '60238-60204 REDROCK7-COTTAGE7'
COM '60236-60238 REDROCK3-REDROCK7 CKT9'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P82 BKR RED ROCK'
TRIP LINE FROM BUS 60238 TO BUS 60204 CKT 1
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 9
END

COM 'NSP STK 5P83 BKR RED ROCK'
COM 'SWITCH OUT RED ROCK 115 Kv CAPS'
COM '60236-60238 REDROCK3-REDROCK7 CKT9'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P83 BKR RED ROCK'
DISCONNECT BUS 603207
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 9
END

COM 'NSP STK K4 BKR RED ROCK'
COM '60238-60248 REDROCK7-STCKYDS7'
COM 'DISCONNECT REDROCK-RIVERFALLS-
CRYSTALCAVE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK K4 BKR RED ROCK'
TRIP LINE FROM BUS 60238 TO BUS 60248 CKT 1
DISCONNECT BUS 68966
DISCONNECT BUS 60327
DISCONNECT BUS 60328
DISCONNECT BUS 61244
DISCONNECT BUS 60330
END

COM 'NSP STK 944 BKR RED ROCK'
COM 'REMOVE SHUNTS FROM REDROCK 115 Kv'
COM 'DISCONNECT REDROCK-RIVERFALLS-
CRYSTALCAVE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 944 BKR RED ROCK'
DISCONNECT BUS 603207
DISCONNECT BUS 68966
DISCONNECT BUS 60327
DISCONNECT BUS 60328
DISCONNECT BUS 61244
DISCONNECT BUS 60330
END

COM 'NSP STK K5 BKR RED ROCK'
COM 'SWITCH OUT RED ROCK 115 Kv CAPS'
COM '60236-60238 REDROCK3-REDROCK7 CKT10'
COM '60238-60239 REDROCK7-ROGRSLK7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK K5 BKR RED ROCK'
DISCONNECT BUS 601035
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 10
TRIP LINE FROM BUS 60239 TO BUS 60238 CKT 1
END

COM 'NSP STK 943 BKR RED ROCK'
COM 'SWITCH OUT RED ROCK 115 Kv CAPS AND
REACTORS'
COM '60236-60238 REDROCK3-REDROCK7 CKT10'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 943 BKR RED ROCK'
DISCONNECT BUS 603207
TRIP LINE FROM BUS 60236 TO BUS 60238 CKT 10
DISCONNECT BUS 601035
END

COM 'NSP STK K3 BKR RED ROCK'
COM '60238-60179 REDROCK7-AFTON  7'
COM '60238-60266 REDROCK7-BATTCRK7 CKT 2'
COM '60266-60267 BATTCRK7-BATCRKT7 CLOSE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK K3 BKR RED ROCK'
TRIP LINE FROM BUS 60238 TO BUS 60266 CKT 2
TRIP LINE FROM BUS 60238 TO BUS 60179 CKT 1
CLOSE LINE FROM BUS 60266 TO BUS 60267 CKT 1
END

COM 'NSP STK 966 BKR RED ROCK'
COM '60238-60179 REDROCK7-AFTON  7'
COM 'SWITCH OUT RED ROCK 115 Kv CAPS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 966 BKR RED ROCK'
TRIP LINE FROM BUS 60238 TO BUS 60179 CKT 1
DISCONNECT BUS 603207
END

COM 'NSP STK K2 BKR RED ROCK'
COM '60238-60344 REDROCK7-WOODBUR7'
COM 'DISCONNECT REDROCK-MAXWELL'
COM '60266-60267 BATTCRK7-BATCRKT7 CLOSE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK K2 BKR RED ROCK'
TRIP LINE FROM BUS 60238 TO BUS 60344 CKT 1
CLOSE LINE FROM BUS 60266 TO BUS 60267 CKT 1
DISCONNECT BUS 60336
DISCONNECT BUS 60337
DISCONNECT BUS 60338
DISCONNECT BUS 60335
END

COM 'NSP STK 946 BKR RED ROCK'
COM '60238-60344 REDROCK7-WOODBUR7'
COM 'SWITCH OUT RED ROCK 115 Kv CAPS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 946 BKR RED ROCK'
TRIP LINE FROM BUS 60238 TO BUS 60344 CKT 1
DISCONNECT BUS 603207
END

COM 'NSP STK 5P62 BKR ROGERS LAKE'
COM '60239-60238 ROGRSLK7-REDROCK7'
COM 'SWITCH OUT ROGERS LAKE 115 Kv CAPS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P62 BKR RED ROCK'
TRIP LINE FROM BUS 60239 TO BUS 60238 CKT 1
DISCONNECT BUS 603212
END

COM 'NSP STK 5P191 BKR ROGERS LAKE'
COM '60239-60248 ROGRSLK7-STCKYDS7'
COM 'SWITCH OUT ROGERS LAKE 115 Kv CAPS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P191 BKR RED ROCK'
TRIP LINE FROM BUS 60239 TO BUS 60248 CKT 1
DISCONNECT BUS 603212
END

COM 'NSP STK 5P229 BKR ROGERS LAKE'
COM '60239-60214 ROGRSLK7-HIBRDGE7'
COM 'SWITCH OUT ROGERS LAKE 115 Kv CAPS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P229 BKR RED ROCK'
TRIP LINE FROM BUS 60239 TO BUS 60214 CKT 1
DISCONNECT BUS 603212
END

COM 'NSP STK 5P190 BKR ROGERS LAKE'
COM '60239-60248 ROGRSLK7-STCKYDS7'
COM '60239-60278 ROGRSLK7-LONEOK27'
COM '60278-60334 LONEOK27-LONE OA7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P190 BKR RED ROCK'
TRIP LINE FROM BUS 60239 TO BUS 60248 CKT 1
TRIP LINE FROM BUS 60239 TO BUS 60278 CKT 2
CLOSE LINE FROM BUS 60278 TO BUS 60334 CKT 1
END

COM 'NSP STK 5P15 BKR INVER GROVE'
COM 'DISCONNECT INVER GROVE BUS'
COM '60239-60278 ROGRSLK7-LONEOK27'
COM '60278-60334 LONEOK27-LONE OA7'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5P15 BKR RED ROCK'
DISCONNECT BUS 60220
TRIP LINE FROM BUS 62230 TO BUS 62242 TO BUS
62221 CKT 1
END

COM 'NSP STK 5P2 BKR KING'
COM '60186-60187 AS KING3-AS KING7'
COM '60187-60231 AS KING7-OAKPARK7'
COM '-----------------------------------------------------'
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CONTINGENCY 'NSP STK 5P2 BKR KING'
TRIP LINE FROM BUS 60186 TO BUS 60187 CKT 1
TRIP LINE FROM BUS 60187 TO BUS 60231 CKT 1
DISCONNECT BUS 601036
END

COM 'NSP STK 8P4 BKR KING'
COM '60186-60221 AS KING3-KOLMNLK3'
COM '60186-60187 AS KING3-AS KING7'
COM 'REMOVE KINGS REACTORS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P4 BKR KING'
TRIP LINE FROM BUS 60186 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60187 TO BUS 60186 CKT 1
DISCONNECT BUS 601036
END

COM 'NSP STK 8P1 BKR KING'
COM 'DISCONNECT KING GENERATOR'
COM '60186-60187 AS KING3-AS KING7'
COM 'REMOVE KINGS REACTORS'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P1 BKR KING'
DISCONNECT BUS 60006
TRIP LINE FROM BUS 60187 TO BUS 60186 CKT 1
DISCONNECT BUS 601036
END

COM 'NSP STK 8P2 BKR KING'
COM 'DISCONNECT KING GENERATOR'
COM '60186-60236 AS KING3-REDROCK3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P2 BKR KING'
DISCONNECT BUS 60006
TRIP LINE FROM BUS 60186 TO BUS 60236 CKT 1
END

COM 'NSP STK 8P3 BKR KING'
COM '60186-60199 AS KING3-CHIS CO3'
COM '60186-60236 AS KING3-REDROCK3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P3 BKR KING'
TRIP LINE FROM BUS 60186 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60236 CKT 1
END

COM 'NSP STK 8P6 BKR KING'
COM '60186-60199 AS KING3-CHIS CO3'
COM '60186-60304 AS KING3-EAU CL 3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P6 BKR KING'
TRIP LINE FROM BUS 60186 TO BUS 60199 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60304 CKT 1
END

COM 'NSP STK 8P5 BKR KING'
COM '60186-60221 AS KING3-KOLMNLK3'
COM '60186-60304 AS KING3-EAU CL 3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8P5 BKR KING'
TRIP LINE FROM BUS 60186 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60186 TO BUS 60304 CKT 1
END

COM 'NSP STK 5M114 BKR COON CREEK'
COM '60202-60203 COON CK3-COON CK7 CKT9'
COM '60203-60268 COON CK7-BRKLNPK7'
COM 'DISCONNECT COON CREEK - OWNER CHANGE -
SHERCO'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M114 BKR COON CREEK'
TRIP LINE FROM BUS 60203 TO BUS 60268 CKT 1
DISCONNECT BUS 61488
DISCONNECT BUS 60656
DISCONNECT BUS 60272
END

COM 'NSP STK 5M115 BKR COON CREEK'
COM '60203-62090 COON CK7-PRKWOOD7'
COM '60203-60268 COON CK7-BRKLNPK7'
COM 'PARKWOOD XFMR 2 REMOVE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M115 BKR COON CREEK'
TRIP LINE FROM BUS 60203 TO BUS 62090 CKT 1
TRIP LINE FROM BUS 60203 TO BUS 60268 CKT 1
TRIP LINE FROM BUS 62090 TO BUS 62132 TO BUS
62159 CKT 2
END

COM 'NSP STK 5M124 BKR COON CREEK'
COM 'COON CRK XFMR CKT 10'
COM '60203-62090 COON CK7-PRKWOOD7'
COM 'PARKWOOD XFMR 2 REMOVE'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 5M124 BKR COON CREEK'
TRIP LINE FROM BUS 60203 TO BUS 62090 CKT 1
DISCONNECT BUS 61487
DISCONNECT BUS 60655
TRIP LINE FROM BUS 62090 TO BUS 62132 TO BUS
62159 CKT 2
END

COM 'NSP STK 8M24 BKR COON CREEK'
COM 'COON CRK XFMR CKT 10'
COM '60202-63030 COON CK3-DICKNSN3'
COM '60202-60160 COON CK3-SHERCO 3'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M24 BKR COON CREEK'
TRIP LINE FROM BUS 60202 TO BUS 63030 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 60160 CKT 1
DISCONNECT BUS 61487
DISCONNECT BUS 60655
END

COM 'NSP STK 8M23 BKR COON CREEK'
COM 'COON CRK XFMR CKT 9'
COM '60202-63030 COON CK3-DICKNSN3'
COM 'dISCONNECT SHERCO - OWNER CHANGE -
COON CREEK'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M23 BKR COON CREEK'
TRIP LINE FROM BUS 60202 TO BUS 63030 CKT 1
DISCONNECT BUS 61488
DISCONNECT BUS 60656
DISCONNECT BUS 60272
END

COM 'NSP STK 8M36 BKR COON CREEK'
COM 'COON CRK XFMR CKT 10'
COM '60202-60251 COON CK3-TERMINL3'
COM '60202-60160 COON CK3-SHERCO 3'
COM 'TERMINAL XFMR CKT 10'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M36 BKR COON CREEK'
TRIP LINE FROM BUS 60202 TO BUS 60251 CKT 1
TRIP LINE FROM BUS 60202 TO BUS 60160 CKT 1
DISCONNECT BUS 61487
DISCONNECT BUS 60655
DISCONNECT BUS 61492
DISCONNECT BUS 61187
END

COM 'NSP STK 8M35 BKR COON CREEK'
COM 'COON CRK XFMR CKT 9'
COM '60202-60251 COON CK3-TERMINL3'
COM 'dISCONNECT SHERCO - OWNER CHANGE -
COON CREEK'
COM 'DISCONNECT TERMINAL XFMR 10'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M35 BKR COON CREEK'
TRIP LINE FROM BUS 60202 TO BUS 60251 CKT 1
DISCONNECT BUS 61488
DISCONNECT BUS 60656
DISCONNECT BUS 60272
DISCONNECT BUS 61492
DISCONNECT BUS 61187
END

COM 'NSP STK 8M38 BKR COON CREEK'
COM 'COON CRK XFMR CKT 9'
COM '60202-60221 COON CK3-KOLMNLK3'
COM 'dISCONNECT SHERCO - OWNER CHANGE -
COON CREEK'
COM ' DISCONNECT KOHLMAN LAKE XFMR 9'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M38 BKR COON CREEK'
TRIP LINE FROM BUS 60202 TO BUS 60221 CKT 1
TRIP LINE FROM BUS 60222 TO BUS 60221 CKT 9
DISCONNECT BUS 61488
DISCONNECT BUS 60656
DISCONNECT BUS 60272
END

COM 'NSP STK 8M39 BKR COON CREEK'
COM '60202-60221 COON CK3-KOLMNLK3'
COM 'dISCONNECT COON CREEK-BUNKER-SHERCO'
COM ' DISCONNECT KOHLMAN LAKE XFMR 9'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M39 BKR COON CREEK'
TRIP LINE FROM BUS 60222 TO BUS 60221 CKT 9
TRIP LINE FROM BUS 60202 TO BUS 60221 CKT 1
DISCONNECT BUS 63031
END

COM 'NSP STK 8M40 BKR COON CREEK'
COM '60202-60160 COON CK3-SHERCO 3'
COM 'DISCONNECT COON CREEK-BUNKER-SHERCO'
COM 'DISCONNECT COON CRK CKT 10 XFMR'
COM '-----------------------------------------------------'
CONTINGENCY 'NSP STK 8M40 BKR COON CREEK'
TRIP LINE FROM BUS 60202 TO BUS 60160 CKT 1
DISCONNECT BUS 63031
DISCONNECT BUS 61487
DISCONNECT BUS 60655
END

CONTINGENCY 'NSP STK BRK STCLOUD1'
COM FAULT ON GRANITE CITY - BENTON 115 KV
LINE#1
COM BREAKRE 5N40 STUCK (GRANITE CITY)
COM TRIP LINE FROM GRANITE CITY TO BENTON 115
KV LINE
COM TRIP LINE FROM GRANITE CITY TO
CROSSROADS 115 KV LINE
TRIP BRANCH FROM BUS 60146 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60146 TO BUS 60164 CKT 1
END

CONTINGENCY 'NSP STK BRK STCLOUD2'
COM FAULT ON GRANITE CITY - BENTON 115 KV
LINE#1
COM BREAKER 5N66 STUCK (GRANITE CITY)
COM TRIP LINE FROM GRANITE CITY TO BENTON 115
KV LINE
COM TRIP LINE FROM GRANITE CITY TO MAYHEW
LAKE
TRIP BRANCH FROM BUS 60146 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60146 TO BUS 60347 CKT 1
END

CONTINGENCY 'NSP STK BRK STCLOUD3'
COM FAULT ON GRANITE CITY - BENTON 115 KV
LINE#1
COM BREAKER 5N53 STUCK (BENTON)
COM TRIP LINE FROM GRANITE CITY TO BENTON #1
COM TRIP BENTON 115/230 KV TR #5
TRIP BRANCH FROM BUS 60146 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60143 TO BUS 63045 CKT 5
END

CONTINGENCY 'NSP STK BRK STCLOUD4'
COM FAULT ON BENTON - ST.CLOUD TAP 115 KV
LINE (#2)
COM BREAKER 5N55 STUCK (BENTON)
COM TRIP LINE FROM GRANITE CITY TO BENTON CO
TAP
COM TRIP LINE FROM BENTON CO TAP TO BENTON
COM TRIP LINE FROM BENTON CO TAP TO STCLOUD
COM TRIP TRANSFORMER # 5 AT BENTON
TRIP BRANCH FROM BUS 60146 TO BUS 60348 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60157 CKT 1
TRIP BRANCH FROM BUS 60143 TO BUS 63045 CKT 5
END
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CONTINGENCY 'NSP STK BRK STCLOUD5'
COM FAULT ON GRANITE CITY - ST.CLOUD TAP 115 KV LINE (#2)
COM BREAKER 5N106 STUCK (GRANITE CITY)
COM TRIP LINE FROM GRANITE CITY TO BENTON CO TAP
COM TRIP LINE FROM BENTON CO TAP TO BENTON
COM TRIP LINE FROM BENTON CO TAP TO STCLOUD
COM TRIP ALL THE GENERATION AT GRANITE CITY
TRIP BRANCH FROM BUS 60146 TO BUS 60348 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60157 CKT 1
REMOVE MACHINE 1 FROM BUS 60146
REMOVE MACHINE 2 FROM BUS 60146
REMOVE MACHINE 3 FROM BUS 60146
REMOVE MACHINE 4 FROM BUS 60146
END

CONTINGENCY 'NSP STK BRK STCLOUD6'
COM FAULT ON GRANITE CITY - ST.CLOUD TAP 115 KV LINE (#2)
COM BREAKER 5N67 STUCK (GRANITE CITY)
COM TRIP LINE FROM GRANITE CITY TO BENTON CO TAP
COM TRIP LINE FROM BENTON CO TAP TO BENTON
COM TRIP LINE FROM STCLOUD TAP TO STCLOUD
COM TRIP LINE FROM GRANITE CITY TO MAYHEW LAKE
TRIP BRANCH FROM BUS 60146 TO BUS 60348 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60157 CKT 1
TRIP BRANCH FROM BUS 60146 TO BUS 60347 CKT 1
END

CONTINGENCY 'NSP STK BRK STCLOUD7'
COM FAULT ON SAUK RIVER - sT. CLOUD 115 KV LINE
COM BREAKER 5N33 AT ST. CLOUD STUCK
COM TRIP LINE FROM SAUK RIVER TO ST. CLOUD
COM TRIP LINE FROM ST. CLOUD TO ST. CLOUD TAP
TRIP BRANCH FROM BUS 60154 TO BUS 60157 CKT 1
TRIP BRANCH FROM BUS 60157 TO BUS 60158 CKT 1
END

CONTINGENCY 'NSP STK BRK STCLOUD8'
COM FAULT ON SHERCO - ST. CLOUD TAP 115 KV LINE (3 TERMINAL)
COM BREAKER 5N34 ST ST. CLOUD STUCK
COM TRIP LINE FROM SHERCO TO ST. CLOUD TAP
COM TRIP LINE FROM ST. CLOUD TAP TO I94 PARK
COM TRIP LINE FROM ST. CLOUD TAP TO ST. CLOUD
COM TRIP LINE FROM ST. CLOUD TO SAUK RIVER
TRIP BRANCH FROM BUS 60601 TO BUS 60158 CKT 1
TRIP BRANCH FROM BUS 60158 TO BUS 62815 CKT 1
TRIP BRANCH FROM BUS 60158 TO BUS 60157 CKT 1
TRIP BRANCH FROM BUS 60157 TO BUS 60154 CKT 1
END

CONTINGENCY 'NSP STK BRK STCLOUD9'
COM FAULT ON BENTON - GRANITE CITY - ST. CLOUD 3 TERMINAL LINE
COM BREAKER 5N31 STUCK AT ST. CLOUD
COM TRIP LINE FROM GRANITE CITY TO ST CLOUD TAP
COM TRIP LINE FROM BENTON CO TAP TO BENTON
COM TRIP LINE FROM BENTON CO TAP TO STCLOUD
COM TRIP LINE FROM STCLOUD TO STCLOUD TAP (TO SUGUSTA)
TRIP BRANCH FROM BUS 60146 TO BUS 60348 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60143 CKT 1
TRIP BRANCH FROM BUS 60348 TO BUS 60157 CKT 1
TRIP BRANCH FROM BUS 60157 TO BUS 60159 CKT 1
END

COM~~~~~~
COM LIST OF STUCK BREAKER CONINGENCIES FOR BECKER AREA

CONTINGENCY 'NSP STK BRK BECKER1'
COM FAULT ON MONTICELLO - PULASKI - DICKINSON 115 KV LINE
COM BREAKER 5N9 STUCK (MONTICELLO)
COM TRIP LINE FROM DICKINSON TO PULASKI
COM TRIP LINE FROM PULASKI TO LAKE CONSTANCE
COM TRIP LINE FROM LAKE CONSTANCE TO MONTICELLO
COM TRIP LINE FROM MONTICELLO TO OAKWOOD
COM TRIP LINE FROM OAKWOOD TO HASSEN
TRIP BRANCH FROM BUS 60155 TO BUS 62926 CKT 1
TRIP BRANCH FROM BUS 60155 TO BUS 62927 CKT 1
TRIP BRANCH FROM BUS 62927 TO BUS 60153 CKT 1
TRIP BRANCH FROM BUS 60153 TO BUS 62955 CKT 1
TRIP BRANCH FROM BUS 62955 TO BUS 60269 CKT 1
END

CONTINGENCY 'NSP STK BRK BECKER2'
COM FAULT ON MONTICELLO - PULASKI - DICKINSON 115 KV LINE
COM BREAKER 5N6 STUCK (MONTICELLO)
COM TRIP LINE FROM DICKINSON TO PULASKI
COM TRIP LINE FROM PULASKI TO LAKE CONSTANCE
COM TRIP LINE FROM LAKE CONSTANCE TO MONTICELLO
COM TRIP MONTICELLO 345/115 KV TR 10
TRIP BRANCH FROM BUS 60155 TO BUS 62926 CKT 1
TRIP BRANCH FROM BUS 60155 TO BUS 62927 CKT 1
TRIP BRANCH FROM BUS 62927 TO BUS 60153 CKT 1
TRIP BRANCH FROM BUS 60151 TO BUS 60153 CKT 10
END

CONTINGENCY 'NSP STK BRK BECKER3'
COM FAULT ON BENTON - SHERCO 345 KV LINE
COM BREAKER 8N29 STUCK AT SHERCO
COM TRIP 345 KV LINE FROM BENTON TO SHERCO
COM TRIP 345/115 KV TR AT SHERCO
TRIP BRANCH FROM BUS 60160 TO BUS 60142 CKT 1
TRIP BRANCH FROM BUS 60160 TO BUS 60601 CKT 1
END

CONTINGENCY 'NSP STK BRK BECKER4'
COM FAULT ON SHERCO - ST. CLOUD - I94 INDUSTRIAL PARK 3 TERMIANAL LINE
COM BREAKER 5N128 STUCK AT SHERCO
COM TRIP 115 KV LINE FROM SHERCO TO ST CLOUD TAP
COM TRIP 115 KV LINE FROM ST CLOUD TAP TO ST CLOUD
COM TRIP 115 KV LINE FROM ST CLOUD TAP TO I94 PARK
COM TRIP SHERCO 345/115 KV TR
COM TRIP 115 KV LINE FROM SHERCO - LIBERTY
TRIP BRANCH FROM BUS 60601 TO BUS 60158 CKT 1
TRIP BRANCH FROM BUS 60158 TO BUS 60157 CKT 1
TRIP BRANCH FROM BUS 60158 TO BUS 62815 CKT 1
TRIP BRANCH FROM BUS 60160 TO BUS 60601 CKT 1
TRIP BRANCH FROM BUS 60601 TO BUS 62093 CKT 1
END

CONTINGENCY 'NSP STK BRK BECKER5'
COM FAULT ON SHERCO - MONTICELLO 345 KV LINE
COM BREAKER 8N12 STUCK (MONTI)
COM TRIP 345 KV LINE FROM SHERCO TO MONTICELLO
COM TRIP MONTICELLO 345/230 KV TR
COM TRIP MONTICELLO 345/115 KV TR
COM TRIP MONTICELLO - BENTON CO 230 KV LINE
TRIP BRANCH FROM BUS 60160 TO BUS 60151 CKT 1
TRIP BRANCH FROM BUS 60151 TO BUS 60152 CKT 6
TRIP BRANCH FROM BUS 60151 TO BUS 60153 CKT 10
TRIP BRANCH FROM BUS 60152 TO BUS 63045 CKT 1
END

CONTINGENCY 'NSP STK BRK BECKER6'
COM FAULT ON ELM CREEK - MONTICELLO 345 KV LINE
COM BREAKER 8N6 STUCK (MONTI)
COM TRIP 345 KV LINE FROM ELM CREEK - MONTICELLO
COM TRIP MONTICELLO 345/230 KV TR
COM TRIP MONTICELLO 345/115 KV TR
COM TRIP MONTICELLO - BENTON CO 230 KV LINE
TRIP BRANCH FROM BUS 60151 TO BUS 60114 CKT 1
TRIP BRANCH FROM BUS 60151 TO BUS 60152 CKT 6
TRIP BRANCH FROM BUS 60151 TO BUS 60153 CKT 10
TRIP BRANCH FROM BUS 60152 TO BUS 63045 CKT 1
END

CONTINGENCY 'NSP STK BRK BECKER7'
COM FAULT ON BENTON - MONTICELLO 230 KV LINE
COM BREAKER 7N1 AT MONTICELLO STUCK
COM TRIP LINE FROM BENTON TO MONTICELLO
COM TRIP MONTICELLO 345/230 KV TR
COM TRIP MONTICELLO 345/115 KV TR
TRIP BRANCH FROM BUS 60151 TO BUS 60152 CKT 6
TRIP BRANCH FROM BUS 60151 TO BUS 60153 CKT 10
TRIP BRANCH FROM BUS 60152 TO BUS 63045 CKT 1
END
CONTINGENCY 'END OF FILE'
TRIP LINE FROM BUS 99999 TO BUS 99998 CKT 99
END
E