

Report on

GEN-2017-150 Modification Request Impact Study

Revision R1 September 8, 2026

Submitted to
SPP



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Revision History

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION
09/08/2026	Aneden Consulting	Initial Report Issued

Executive Summary

Aneden Consulting (Aneden) was retained by the SPP to perform a Modification Request Impact Study (Study) for the GEN-2017-150 project, an active Generation Interconnection Request (GIR) with a Point of Interconnection (POI) at the Minco 345 kV Substation.

The GEN-2017-150 project interconnects in the Oklahoma Gas & Electric (OKGE) transmission system with a capacity of 250 MW. This Study has been requested to evaluate the modification of the GEN-2017-150 project to change the configuration to 74 x PE 3.42 MW solar inverters operating at 3.42 MW for a total assumed dispatch of 253.08 MW. The inverters have a generating capability that exceeds its Generator Interconnection Agreement (GIA) Interconnection Service amount. The injection amount must be limited to 250 MW at the POI as listed in Appendix A of the GIA. As a result, the customer must ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA. The requested modification includes the use of a Power Plant Controller (PPC) to limit the total power injected into the POI.

In addition, the modification request included changes to the collection system, generator step-up transformers, main substation transformers, and generation interconnection line. The previously accepted and modified configurations for GEN-2017-150 are shown in Table ES-1 below.

Table ES-1: GEN-2017-150 Modification Request

Facility	Existing Configuration ¹	Modification Configuration	
Point of Interconnection	MINCO 345 kV (514801)	MINCO 345 kV (514801)	
Configuration/Capacity	138 x 1.8 MW (Solar) + 1 x 1.6 MW (Solar) = 250 MW	74 x PE 3.42 MW (Solar) = 253.08 MW [dispatch], PPC in place to limit POI to 250 MW	
Generation Interconnection Line	Length = 6 miles R = 0.000002 pu X = 0.000015 pu B = 0.141700 pu Rating MVA = 280.0 MVA	Length = 4 miles R = 0.000217 pu X = 0.001890 pu B = 0.035920 pu Rating MVA = 1084.0 MVA	
	<u>Shared with GEN-2017-233:</u> Length = 25 miles R = 0.000026 pu X = 0.000262 pu B = 0.141700 pu Rating MVA = 470.0 MVA	N/A	
Main Substation Transformer ²	X = 8.4973%, R = 0.2124%, Winding MVA = 168 MVA, Rating MVA = 280 MVA	X12 = 8.3382% R12 = 0.1712%, X23 = 1.9696% R23 = 0.0404%, X13 = 11.1976% R13 = 0.2295%, Winding MVA = 51 MVA, Winding 1, 2, & 3 Rating MVA = 85/85/28.3 MVA	X12 = 8.4088% R12 = 0.143%, X23 = 2.5796% R23 = 0.0438%, X13 = 12.1482% R13 = 0.2066%, Winding MVA = 135 MVA, Winding 1, 2, & 3 Rating MVA = 225/225/75 MVA

Table ES-1 Continued

Facility	Existing Configuration ¹	Modification Configuration	
Equivalent GSU Transformer ²	Gen 1 Equivalent Qty: 139 X = 5.9474%, R = 0.793%, Winding MVA = 276 MVA, Rating MVA = 276 MVA	Gen 1 Equivalent Qty: 20 X = 8.9579%, R = 0.8697%, Winding MVA = 82.1 MVA, Rating MVA = 82.1 MVA,	Gen 2 Equivalent Qty: 54 X = 8.9579%, R = 0.8697%, Winding MVA = 221.67 MVA, Rating MVA = 221.67 MVA
Equivalent Collector Line ³	R = 0.000807 pu X = 0.000461 pu B = 0.024560 pu	R = 0.005551 pu X = 0.007486 pu B = 0.010227 pu	R = 0.002305 pu X = 0.003468 pu B = 0.036427 pu
Generator Dynamic Model ⁴ & Power Factor	139 Inverters (REGCAU1) ⁴ Leading: 0.95 Lagging: 0.95	20 x PE 3.42 MW (REGCAU1) ⁴ Leading: 0.833 Lagging: 0.833	54 x PE 3.42 MW (REGCAU1) ⁴ Leading: 0.833 Lagging: 0.833

1) Based on the DISIS-2022-001-1 Stability Model, 2) X and R based on Winding MVA, 3) All pu are on 100 MVA Base 4) DYN stability model name

SPP determined that steady-state analysis was not required because the modifications to the project were not significant enough to change the previously studied steady-state conclusions. However, SPP determined that the change in the inverter configuration required short circuit and dynamic stability analyses.

The scope of this study included reactive power analysis, short circuit analysis, and dynamic stability analysis.

Aneden performed the analyses using the modification request data and the DISIS-2022-001-1 stability study models:

- 2025 Summer Peak (25SP),
- 2025 Winter Peak (25WP)

Aneden reviewed Generation Interconnection Requests (GIRs) that shared the same POI, Minco 345 kV, and updated their models as applicable based on SPP's confirmation of the latest project configurations. The modification under study, GEN-2017-150, is the Existing Generating Facility (EGF) for the GEN-2025-SR6 Surplus Generating Facility (SGF) project. As a result, Aneden included the accepted GEN-2025-SR6 surplus project in the base models and created two stability scenarios to accommodate the status of GEN-2025-SR6.

All analyses were performed using the Siemens PTI PSS/E¹ version 34 software and the results are summarized below.

The results of the reactive power analysis using the 25SP model showed that the GEN-2017-150 project needed a 8.3 MVAR shunt reactor on the 34.5 kV bus of the project substation with the modifications in place, a decrease from the 16.92 MVAR found in the DISIS-2017-002-2 study². This is necessary to offset the capacitive effect on the transmission network caused by the project's transmission line and collector system during reduced generation conditions. The information gathered from the reactive power analysis is provided as information to the Interconnection Customer and Transmission Owner (TO) and/or

¹ Power System Simulator for Engineering

² DISIS-2017-002-2 Restudy of Power Flow, Stability, and Short-Circuit - November 15, 2024

Transmission Operator (TOP). The applicable reactive power requirements will be further reviewed by the TO and/or TOP.

The short circuit analysis was performed using the 25SP stability model modified for short circuit analysis. The results from the short circuit analysis with the updated topology showed that the maximum GEN-2017-150 contribution to three-phase fault currents in the immediate transmission systems at or near the GEN-2017-150 POI was 0.34 kA. The maximum three-phase fault current level within 5 buses of the POI was 46.3 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA. These buses are highlighted in Appendix B.

The dynamic stability analysis was performed using Siemens PTI PSS/E version 34.8.1 software for the two modified study models: 25SP and 25WP, each with two dispatch scenarios to ensure all reliability conditions were studied. 142 fault events were simulated, which included three-phase faults and single-line-to-ground stuck breaker faults.

- Scenario 1: GEN-2017-150 at maximum assumed dispatch, 253.08 MW, and the corresponding SGF, GEN-2025-SR6, disconnected.
- Scenario 2: GEN-2025-SR6 at maximum assumed dispatch, 200.2 MW, and GEN-2017-150 dispatched with the remaining 52.3 MW for a total combination of 252.5 MW.

The results of the dynamic stability analysis showed several existing base case issues that were found in both the original DISIS-2022-001-1 models (without GEN-2025-SR6) and in the models with the GEN-2017-150 modification (and GEN-2025-SR6) included. These issues were not attributed to the GEN-2017-150 modification request and are detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2017-150 modification request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

Based on the results of the study, SPP determined that the requested modification is **not a Material Modification**. The requested modification does not have a material adverse impact on the cost or timing of any other Interconnection Request with a later Queue priority date. As the requested modification places the generating capacity of the Interconnection Request at a higher amount than its Interconnection Service, the customer must install monitoring and control equipment as needed to ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA.

In accordance with FERC Order No. 827, the generating facility will be required to provide dynamic reactive power within the range of 0.95 leading to 0.95 lagging at the high-side of the generator substation.

It is likely that the customer may be required to reduce its generation output to 0 MW in real-time, also known as curtailment, under certain system conditions to allow system operators to maintain the reliability of the transmission network.

Nothing in this study should be construed as a guarantee of transmission service or delivery rights. If the customer wishes to obtain deliverability to final customers, a separate request for transmission service must be requested on SPP's OASIS by the customer.

1.0 Scope of Study

Aneden Consulting (Aneden) was retained by SPP to perform a Modification Request Impact Study (Study) for the GEN-2017-150 project. A Modification Request Impact Study is a generation interconnection study performed to evaluate the impacts of modifying the DISIS study assumptions. The determination of the required scope of the study is dependent upon the specific modification requested and how it may impact the results of the DISIS study. Impacting the DISIS results could potentially affect the cost or timing of any Interconnection Request with a later Queue priority date, deeming the requested modification a Material Modification. The criteria sections below include reasoning as to why an analysis was either included or excluded from the scope of study.

All analyses were performed using the Siemens PTI PSS/E version 34 software. The results of each analysis are presented in the following sections.

1.1 Reactive Power Analysis

SPP requires that a reactive power analysis be performed on the requested configuration if it is a non-synchronous resource. The reactive power analysis determines the capacitive effect at the POI caused by the project's collection system and transmission line's capacitance. A shunt reactor size was determined to offset the capacitive effect and maintain zero (0) MVar injection at the POI while the plant's generators and capacitors were offline.

1.2 Short Circuit Analysis & Stability Analysis

To determine whether stability and short circuit analyses are required, SPP evaluates the difference between the stability models, the stability model parameters and, if needed, the equivalent collector system impedance between the existing configuration and the requested modification. Dynamic stability analysis and short circuit analysis would be required if the differences listed above were determined to have a significant impact on the most recently performed DISIS stability analysis. Dynamic stability analysis was performed on two dispatch scenarios, the first where GEN-2017-150 was online at 100% of the assumed dispatch with GEN-2025-SR6 offline and disconnected, and the second where GEN-2025-SR6 was online at 100% of the assumed dispatch and the GEN-2017-150 project was picking up the remaining EGF GIA capacity.

1.3 Steady-State Analysis

Steady-state analysis is performed if SPP deems it necessary based on the nature of the requested change. SPP determined that steady-state analysis was not required because the modifications to the project were not significant enough to change the previously studied steady-state conclusions.

1.4 Study Limitations

The assessments and conclusions provided in this report are based on assumptions and information provided to Aneden by others. While the assumptions and information provided may be appropriate for the purposes of this report, Aneden does not guarantee that those conditions assumed will occur. In addition, Aneden did not independently verify the accuracy or completeness of the information provided. As such, the conclusions and results presented in this report may vary depending on the extent to which actual future conditions differ from the assumptions made or information used herein.

2.0 Project and Modification Request

The GEN-2017-150 Interconnection Customer requested a modification to its Generation Interconnection Request (GIR) with a Point of Interconnection (POI) at the Minco 345 kV Substation in the Oklahoma Gas & Electric (OKGE) transmission system.

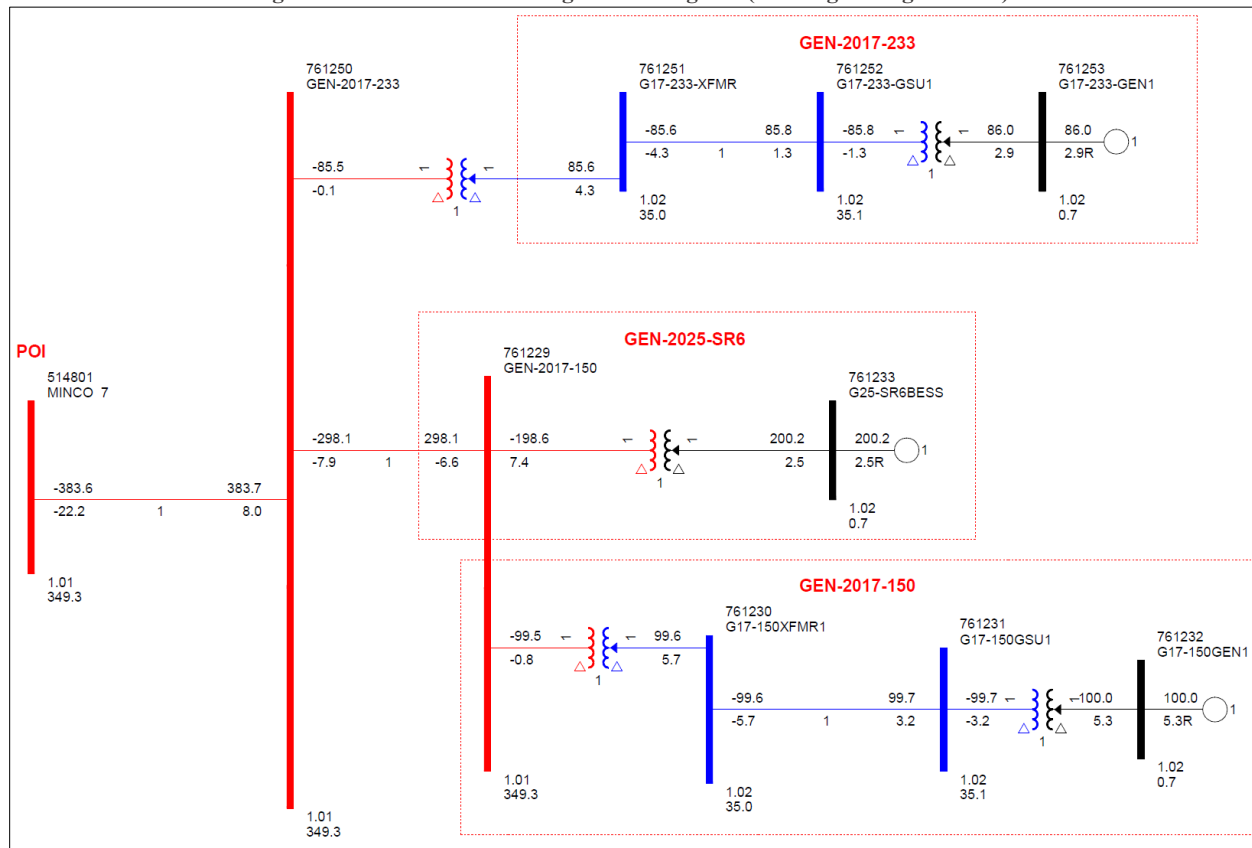
At the time of report posting, the GEN-2017-150 project is an active Interconnection Request with a queue status of “IA FULLY EXECUTED/ON SCHEDULE.” GEN-2017-150 is a solar facility with a maximum summer and winter queue capacity of 250 MW with Energy Resource Interconnection Service (ERIS) and Network Resource Interconnection Service (NRIS).

The GEN-2017-150 project is currently in the DISIS-2017-002 cluster.

Aneden reviewed Generation Interconnection Requests (GIRs) that shared the same POI, Minco 345 kV, and updated their models as applicable based on SPP's confirmation of the latest project configurations. The modification under study, GEN-2017-150, is the Existing Generating Facility (EGF) for the GEN-2025-SR6 Surplus Generating Facility (SGF) project. As a result, Aneden included the accepted GEN-2025-SR6 surplus project in the base models and created two stability scenarios to accommodate the status of GEN-2025-SR6.

Figure 2-1 shows the power flow model single line diagram for the GEN-2017-150 configuration modeled in the DISIS-2022-001-1 25SP stability model with the GEN-2025-SR6 surplus project included.

Figure 2-1: GEN-2017-150 Single Line Diagram (Existing Configuration*)



*based on the DISIS-2022-001-1 25SP model with the GEN-2025-SR6 surplus project included

This Study has been requested to evaluate the modification of GEN-2017-150 to change the configuration to 74 x PE 3.42 MW solar inverters operating at 3.42 MW for a total assumed dispatch of 253.08 MW. The inverters have a generating capability that exceeds its Generator Interconnection Agreement (GIA) Interconnection Service amount. The injection amount must be limited to 250 MW at the POI as listed in Appendix A of the GIA. As a result, the customer must ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA. The requested modification includes the use of a Power Plant Controller (PPC) to limit the total power injected into the POI.

In addition, the modification request included changes to the collection system, generator step-up transformers, main substation transformers, and generation interconnection line. Figure 2-2 shows the power flow model single line diagram for the GEN-2017-150 modification with the GEN-2025-SR6 surplus project included. The existing and modified configurations for GEN-2017-150 are shown in Table 2-1 below.

Figure 2-2: GEN-2017-150 Single Line Diagram (Modification Configuration)

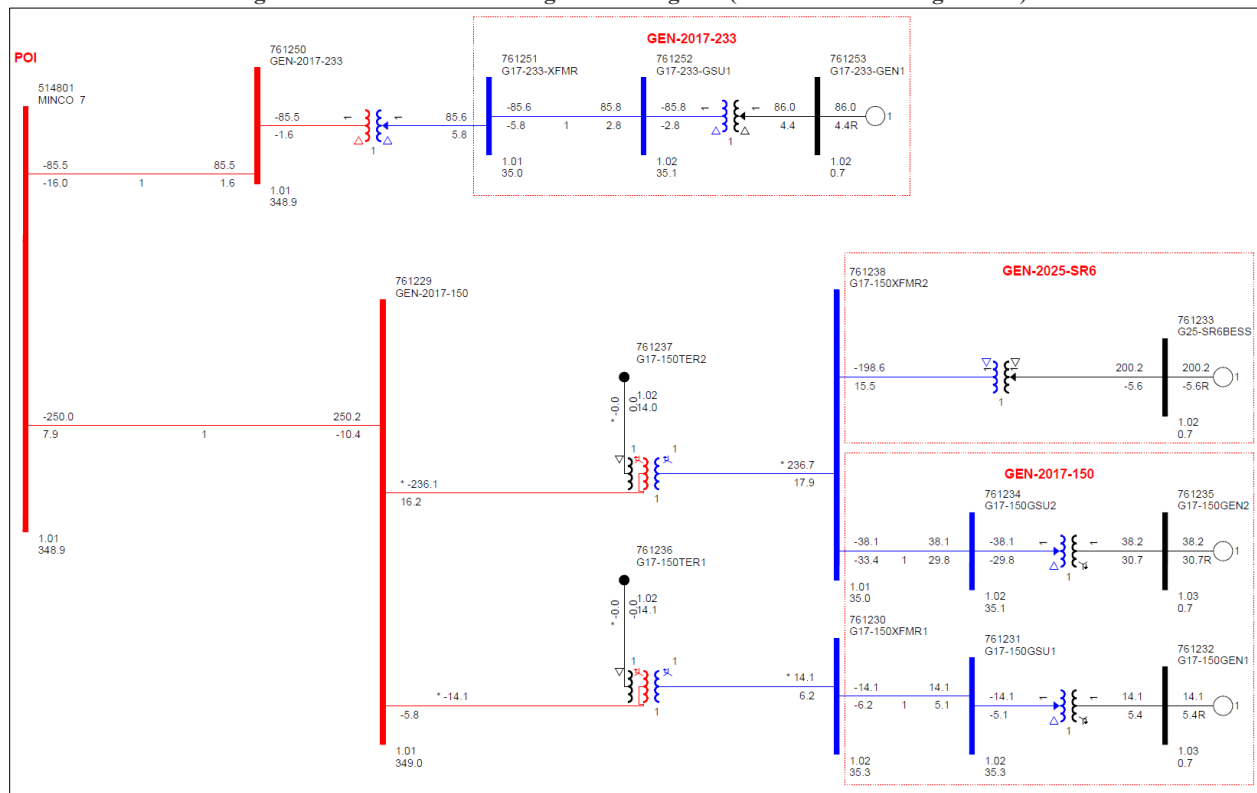


Table 2-1: GEN-2017-150 Modification Request

Facility	Existing Configuration ¹	Modification Configuration	
Point of Interconnection	MINCO 345 kV (514801)	MINCO 345 kV (514801)	
Configuration/Capacity	138 x 1.8 MW (Solar) + 1 x 1.6 MW (Solar) = 250 MW	74 x PE 3.42 MW (Solar) = 253.08 MW [dispatch], PPC in place to limit POI to 250 MW	
Generation Interconnection Line	Length = 6 miles R = 0.000002 pu X = 0.000015 pu B = 0.141700 pu Rating MVA = 280.0 MVA	Length = 4 miles R = 0.000217 pu X = 0.001890 pu B = 0.035920 pu Rating MVA = 1084.0 MVA	
	<u>Shared with GEN-2017-233:</u> Length = 25 miles R = 0.000026 pu X = 0.000262 pu B = 0.141700 pu Rating MVA = 470.0 MVA	N/A	
Main Substation Transformer ²	X = 8.4973%, R = 0.2124%, Winding MVA = 168 MVA, Rating MVA = 280 MVA	X12 = 8.3382% R12 = 0.1712%, X23 = 1.9696% R23 = 0.0404%, X13 = 11.1976% R13 = 0.2295%, Winding MVA = 51 MVA, Winding 1, 2, & 3 Rating MVA = 85/85/28.3 MVA	X12 = 8.4088% R12 = 0.143%, X23 = 2.5796% R23 = 0.0438%, X13 = 12.1482% R13 = 0.2066%, Winding MVA = 135 MVA, Winding 1, 2, & 3 Rating MVA = 225/225/75 MVA
Equivalent GSU Transformer ²	Gen 1 Equivalent Qty: 139 X = 5.9474%, R = 0.793%, Winding MVA = 276 MVA, Rating MVA = 276 MVA	Gen 1 Equivalent Qty: 20 X = 8.9579%, R = 0.8697%, Winding MVA = 82.1 MVA, Rating MVA = 82.1 MVA,	Gen 2 Equivalent Qty: 54 X = 8.9579%, R = 0.8697%, Winding MVA = 221.67 MVA, Rating MVA = 221.67 MVA
Equivalent Collector Line ³	R = 0.000807 pu X = 0.000461 pu B = 0.024560 pu	R = 0.005551 pu X = 0.007486 pu B = 0.010227 pu	R = 0.002305 pu X = 0.003468 pu B = 0.036427 pu
Generator Dynamic Model ⁴ & Power Factor	139 Inverters (REGCAU1) ⁴ Leading: 0.95 Lagging: 0.95	20 x PE 3.42 MW (REGCAU1) ⁴ Leading: 0.833 Lagging: 0.833	54 x PE 3.42 MW (REGCAU1) ⁴ Leading: 0.833 Lagging: 0.833

1) Based on the DISIS-2022-001-1 Stability Model, 2) X and R based on Winding MVA, 3) All pu are on 100 MVA Base 4) DYR stability model name

3.0 Existing vs Modification Comparison

To determine which analyses are required for the Study, the differences between the previously accepted configuration and the requested modification were evaluated. Aneden performed this comparison and the resulting analyses using a set of modified study models developed based on the modification request data and the DISIS-2022-001-1 stability study models. The analysis was completed using PSS/E version 34 software.

The methodology and results of the comparisons are described below.

3.1 Stability Model Parameters Comparison

SPP determined that short circuit and dynamic stability analyses were required due to the change in inverter configuration. The generator dynamic model for the modification can be found in Appendix A.

As short circuit and dynamic stability analyses were already deemed required, a stability model parameters comparison was not needed for determining the scope of the study.

3.2 Equivalent Impedance Comparison Calculation

As the inverter configuration change determined that short circuit and dynamic stability analyses were required, an equivalent impedance comparison was not needed for the determination of the scope of the study.

4.0 Reactive Power Analysis

The reactive power analysis was performed for GEN-2017-150 to determine the capacitive charging effects during reduced generation conditions (unsuitable wind speeds, unsuitable solar irradiance, insufficient state of charge, idle conditions, curtailment, etc.) at the generation site and to size shunt reactors that would reduce the project reactive power contribution to the POI to approximately zero.

4.1 Methodology and Criteria

For this analysis the GEN-2017-233 and GEN-2025-SR6 projects that share the gen-tie line were disconnected. To determine the shunt reactor size required to compensate for the current charging attributed to the modification request, GEN-2017-150, GEN-2025-SR6 and GEN-2017-233 generators were switched offline while the collector system elements of GEN-2017-150 remained in-service. A shunt reactor was tested at the project's collection substation 34.5 kV buses to set the MVar injection at the POI to zero.

The size of the shunt reactor is equivalent to the charging current value at unity voltage and the compensation provided is proportional to the voltage effects on the charging current (i.e., for voltages above unity, reactive compensation is greater than the size of the reactor).

Aneden performed the reactive power analysis using the modification request data based on the 25SP DISIS-2022-001-1 stability study model.

4.2 Results

The results from the analysis showed that the GEN-2017-150 project needed approximately 8.3 MVar of compensation at its collector substation to reduce the MVar injection at the POI to zero. This is a decrease from the 16.92 MVar found in the DISIS-2017-002-2 study³. The final shunt reactor requirements are shown in Table 4-1. Figure 4-1 illustrates the shunt reactor size needed to reduce the POI MVar to approximately zero with the updated topology.

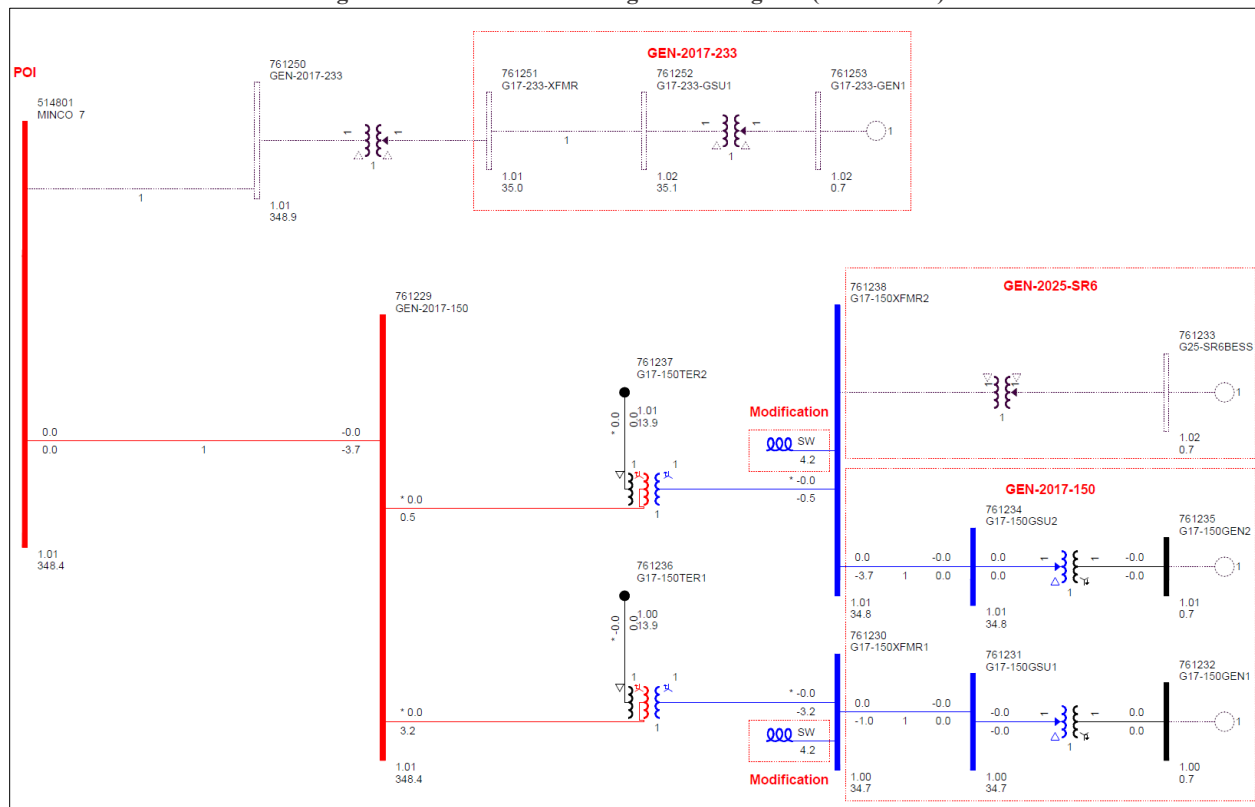
The information gathered from the reactive power analysis is provided as information to the Interconnection Customer and Transmission Owner (TO) and/or Transmission Operator (TOP). The applicable reactive power requirements will be further reviewed by the TO and/or TOP.

Table 4-1: Shunt Reactor Size for Reactive Power Analysis

Machine	POI Bus Number	POI Bus Name	Reactor Size (MVar)
			25SP
GEN-2017-150	514801	MINCO 7 345 kV	8.3

³ DISIS-2017-002-2 Restudy of Power Flow, Stability, and Short-Circuit - November 15, 2024

Figure 4-1: GEN-2017-150 Single Line Diagram (Shunt Sizes)



5.0 Short Circuit Analysis

Aneden performed a short circuit study using the 25SP model for GEN-2017-150 to determine the maximum fault current requiring interruption by protective equipment for each bus in the relevant subsystem. The detailed results of the short circuit analysis are provided in Appendix B.

5.1 Methodology

The short circuit analysis included applying a 3-phase fault on buses up to 5 levels away from the 345 kV POI bus. The PSS/E “Automatic Sequence Fault Calculation (ASCC)” fault analysis module was used to calculate the fault current levels in the transmission system with and without GEN-2017-150 online. The SGF, GEN-2025-SR6, was left online for this analysis.

Aneden created a short circuit model using the 25SP DISIS-2022-001-1 stability study model by adjusting the GEN-2017-150 short circuit parameters consistent with the submitted data. The adjusted parameters used in the short circuit analysis are shown in Table 5-1 below. No other changes were made to the model.

Table 5-1: Short Circuit Model Parameters*

Parameter	Value by Generator Bus#	
	761232	761235
Machine MVA Base	82.1	221.67
R (pu)	0.0	0.0
X" (pu)	1	1

*pu values based on Machine MVA Base

5.2 Results

The results of the short circuit analysis compared the 25SP model with GEN-2025-SR6 online and the GEN-2017-150 modification not connected to the stability Scenario 2 dispatch model with both the existing SGF and GEN-2017-150 in service as described in Section 6.1. The GEN-2017-150 POI bus (Minco 345 kV) fault current magnitudes for the comparison cases are provided in Table 5-2 showing a fault current of 23.67 kA with the GEN-2017-150 project online. Table 5-3 shows the maximum fault current magnitudes and fault current increases with the GEN-2017-150 project online.

The maximum fault current calculated within 5 buses of the POI was 46.3 kA for the 25SP model. Several buses exhibited maximum three-phase fault currents above 40 kA, with the project contributing an incremental increase of less than 0.1%. These buses are highlighted in Appendix B. The maximum GEN-2017-150 contribution to three-phase fault currents was about 1.5% and 0.34 kA⁴.

Table 5-2: POI Short Circuit Comparison Results⁶

Case	GEN-OFF Current (kA)	GEN-ON Current (kA)	kA Change	%Change
25SP	23.32	23.67	0.34	1.5%

⁴ For buses not on the generation interconnection line

Table 5-3: 25SP Short Circuit Comparison Results⁵

Voltage (kV)	Max. Current (kA)	Max kA Change	Max %Change
69	14.4	0.00	0.0%
138	46.3	0.05	0.1%
230	12.6	0.00	0.0%
345	36.4	0.34	1.5%
Max	46.3	0.34	1.5%

⁵ For buses not on the generation interconnection line

6.0 Dynamic Stability Analysis

Aneden performed a dynamic stability analysis to identify the impact of the modifications to GEN-2017-150. The analysis was performed according to SPP's Disturbance Performance Requirements⁶. The modification details are described in Section 2.0 above and the dynamic modeling data is provided in Appendix A. The existing base case issues and simulation plots can be found in Appendix C.

6.1 Methodology and Criteria

The dynamic stability analysis was performed using models developed with the requested GEN-2017-150 configuration of 74 x PE 3.42 MW inverters operating at 3.42 MW (REGCAU1). This stability analysis was performed using Siemens PTI's PSS/E version 34.8.1 software.

The modifications requested for the GEN-2017-150 project were used to create modified stability models for this impact study based on the DISIS-2022-001-1 stability study models:

- 2025 Summer Peak (25SP),
- 2025 Winter Peak (25WP)

Aneden reviewed GIRs that shared the same POI, Minco 345 kV, and updated their models as applicable based on SPP's confirmation of the latest project configurations. The modification under study, GEN-2017-150, is the EGF for the GEN-2025-SR6 SGF project. As a result, Aneden included the accepted GEN-2025-SR6 surplus project in the base models and created two stability scenarios to accommodate the status of GEN-2025-SR6.

Two stability model scenarios were developed using these models to ensure all reliability conditions were studied. The first scenario (Scenario 1) was comprised of GEN-2017-150 online at 100% of the assumed dispatch (253.08MW) while the GEN-2025-SR6 generator was offline and disconnected.

The second scenario (Scenario 2) was comprised of GEN-2025-SR6 at 100% of the studied dispatch (200.2 MW) while the GEN-2017-150 generator picked up the remaining EGF GIA capacity (52.3 MW). The study scenarios are shown in Table 6-1.

Table 6-1: Study Scenarios (Generator Dispatch MW)

Scenario	GEN-2017-150 EGF (MW)	GEN-2025-SR6 SGF (MW)	EGF + SGF (MW)
1	253.08	0 (Offline)	253.08
2	52.3	200.2	252.5

The dynamic model data for the GEN-2017-150 project is provided in Appendix A. The power flow models and associated dynamic database were initialized (no-fault test) to confirm that there were no errors in the initial conditions of the system and the dynamic data.

The following system adjustments were made to address existing base case issues that are not attributed to the modification request:

⁶ SPP Disturbance Performance Requirements:

[https://www.spp.org/documents/28859/spp%20disturbance%20performance%20requirements%20\(twg%20approved\).pdf](https://www.spp.org/documents/28859/spp%20disturbance%20performance%20requirements%20(twg%20approved).pdf)

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- The simulation acceleration factor was reduced, and the iteration limit was increased as needed to resolve stability simulation crashes.
 - Voltage protective relays were disabled to avoid generator trips due to temporary over voltage after fault cleared for generators on bus 587773, 587958, 762903, 760979, 760958, 760937, 769704, 920001, 920002, 920003, 920004, 587793, 587773, 511976, and 587953.
 - Frequency protective relays were disabled to avoid generator trips due to PSSE bus frequency calculation deficiencies for the generators on bus 515439, 599117, 515551, 599119, 599120, and 587773.

During the fault simulations, the active power (PELEC), reactive power (QELEC), and terminal voltage (ETERM) were monitored for GEN-2017-150 and other current and prior queued projects in Group 4. In addition, voltages of five (5) buses away from the POI of the GEN-2017-150 were monitored and plotted. The machine rotor angle for synchronous machines and speed for asynchronous machines within the study areas including 327 (EES-EAI), 330 (AECI), 351 (EES), 356 (AMMO), 502 (CLEC), 515 (SWPA), 520 (AEPW), 523 (GRDA), 524 (OKGE), 525 (WFEC), 526 (SPS), 527 (OMPA), 534 (SUNC), 536 (WERE), 544 (EMDE), and 546 (SPRM) were monitored. The voltages of all 100 kV and above buses within the study area were monitored as well.

6.2 Fault Definitions

Aneden developed fault events as required to study the modification. The new set of faults was simulated using the modified study models. The fault events included three-phase faults and single-line-to-ground stuck breaker faults. Single-line-to-ground faults are approximated by applying a fault impedance to bring the faulted bus positive sequence voltage to 0.6 pu. The simulated faults are listed and described in Table 6-2 below. These contingencies were applied to the modified 25SP and 25WP models.

Table 6-2: Fault Definitions

Fault ID	Planning Event	Fault Descriptions
FLT1000-SB	P4	Stuck Breaker on MINCO 7 (514801) 345 kV Bus a. Apply single phase fault at the MINCO 7 (514801) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MINCO 7 (514801) 345 kV to GRACMNT7 (515800) 345 kV line CKT 1. b.2.Trip the MINCO 7 (514801) 345 kV to MNCWND37 (515549) 345 kV line CKT 1. Trip generator(s) on the Bus MINCO-WTG31 (599117) 0.7 kV Trip generator(s) on the Bus MINCO-WTG32 (515551) 0.7 kV Trip generator(s) on the Bus MINCO-WTG33 (599119) 0.7 kV Trip generator(s) on the Bus MINCO-WTG34 (599120) 0.7 kV Trip generator(s) on the Bus MNCO4G11 (515967) 0.7 kV Trip generator(s) on the Bus MNCO4G21 (515968) 0.7 kV Trip generator(s) on the Bus MNCO4G31 (515969) 0.7 kV Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV
FLT1001-SB	P4	Stuck Breaker on MINCO 7 (514801) 345 kV Bus a. Apply single phase fault at the MINCO 7 (514801) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MINCO 7 (514801) 345 kV to GRACMNT7 (515800) 345 kV line CKT 1. b.2.Trip the MINCO 7 (514801) 345 kV to MCNOWND7 (515444) 345 kV line CKT 1. Trip generator(s) on the Bus MNCOWNG3 (515439) 0.7 kV Trip generator(s) on the Bus MNCOWNG2 (515445) 0.7 kV Trip generator(s) on the Bus MNCOWNG1 (515907) 0.7 kV
FLT1002-SB	P4	Stuck Breaker on MINCO 7 (514801) 345 kV Bus a. Apply single phase fault at the MINCO 7 (514801) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MINCO 7 (514801) 345 kV to CIMARON7 (514901) 345 kV line CKT 1. b.2.Trip the MINCO 7 (514801) 345 kV to MNCWND37 (515549) 345 kV line CKT 1. Trip generator(s) on the Bus MINCO-WTG31 (599117) 0.7 kV Trip generator(s) on the Bus MINCO-WTG32 (515551) 0.7 kV Trip generator(s) on the Bus MINCO-WTG33 (599119) 0.7 kV Trip generator(s) on the Bus MINCO-WTG34 (599120) 0.7 kV Trip generator(s) on the Bus MNCO4G11 (515967) 0.7 kV Trip generator(s) on the Bus MNCO4G21 (515968) 0.7 kV Trip generator(s) on the Bus MNCO4G31 (515969) 0.7 kV Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV
FLT1004-SB	P4	Stuck Breaker on MINCO 7 (514801) 345 kV Bus a. Apply single phase fault at the MINCO 7 (514801) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MINCO 7 (514801) 345 kV to NORMHLL7 (516096) 345 kV line CKT 1. b.2.Trip the MINCO 7 (514801) 345 kV to MCNOWND7 (515444) 345 kV line CKT 1. Trip generator(s) on the Bus MNCOWNG3 (515439) 0.7 kV Trip generator(s) on the Bus MNCOWNG2 (515445) 0.7 kV Trip generator(s) on the Bus MNCOWNG1 (515907) 0.7 kV
FLT1006-SB	P4	Stuck Breaker on GRACMNT7 (515800) 345 kV Bus a. Apply single phase fault at the GRACMNT7 (515800) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT7 (515800) 345 kV to MINCO 7 (514801) 345 kV line CKT 1.
FLT1007-SB	P4	Stuck Breaker on GRACMNT7 (515800) 345 kV Bus a. Apply single phase fault at the GRACMNT7 (515800) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT7 (515800) 345 kV to TREASILD7 (511409) 345 kV line CKT 1.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1008-SB	P4	Stuck Breaker on GRACMNT7 (515800) 345 kV Bus a. Apply single phase fault at the GRACMNT7 (515800) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT7 (515800) 345 kV to TREASILD7 (511409) 345 kV line CKT 1. b.2.Trip the GRACMNT7 (515800) 345 kV / GRACMNT4 (515802) 138 kV / GRACMNT11 (515801) 13.8 kV XFMR CKT 1.
FLT1009-SB	P4	Stuck Breaker on GRACMNT7 (515800) 345 kV Bus a. Apply single phase fault at the GRACMNT7 (515800) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT7 (515800) 345 kV / GRACMNT4 (515802) 138 kV / GRACMNT11 (515801) 13.8 kV XFMR CKT 1.
FLT1010-SB	P4	Stuck Breaker on GRACMNT4 (515802) 138 kV Bus a. Apply single phase fault at the GRACMNT4 (515802) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT4 (515802) 138 kV to WASHITA4 (521089) 138 kV line CKT 1. b.2.Trip the GRACMNT4 (515802) 138 kV to WASHITA4 (521089) 138 kV line CKT 2.
FLT1011-SB	P4	Stuck Breaker on GRACMNT4 (515802) 138 kV Bus a. Apply single phase fault at the GRACMNT4 (515802) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT4 (515802) 138 kV to WASHITA4 (521089) 138 kV line CKT 1. b.2.Trip the GRACMNT4 (515802) 138 kV / GRACMNT7 (515800) 345 kV / GRACMNT11 (515801) 13.8 kV XFMR CKT 1.
FLT1012-SB	P4	Stuck Breaker on GRACMNT4 (515802) 138 kV Bus a. Apply single phase fault at the GRACMNT4 (515802) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT4 (515802) 138 kV to WASHITA4 (521089) 138 kV line CKT 2. b.2.Trip the GRACMNT4 (515802) 138 kV to ANADARK4 (520814) 138 kV line CKT 1.
FLT1013-SB	P4	Stuck Breaker on GRACMNT4 (515802) 138 kV Bus a. Apply single phase fault at the GRACMNT4 (515802) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the GRACMNT4 (515802) 138 kV to ANADARK4 (520814) 138 kV line CKT 1. b.2.Trip the GRACMNT4 (515802) 138 kV / GRACMNT7 (515800) 345 kV / GRACMNT11 (515801) 13.8 kV XFMR CKT 1.
FLT1016-SB	P4	Stuck Breaker on CIMARON7 (514901) 345 kV Bus a. Apply single phase fault at the CIMARON7 (514901) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON7 (514901) 345 kV to NORMHLL7 (516096) 345 kV line CKT 1. b.2.Trip the CIMARON7 (514901) 345 kV / CIMARON4 (514898) 138 kV / CIMARON21 (515715) 13.8 kV XFMR CKT 2.
FLT1018-SB	P4	Stuck Breaker on CIMARON7 (514901) 345 kV Bus a. Apply single phase fault at the CIMARON7 (514901) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON7 (514901) 345 kV to NORTHST7 (514880) 345 kV line CKT 1. b.2.Trip the CIMARON7 (514901) 345 kV to MATHWSN7 (515497) 345 kV line CKT 2.
FLT1020-SB	P4	Stuck Breaker on CIMARON7 (514901) 345 kV Bus a. Apply single phase fault at the CIMARON7 (514901) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON7 (514901) 345 kV to MATHWSN7 (515497) 345 kV line CKT 1. b.2.Trip the CIMARON7 (514901) 345 kV / CIMARON4 (514898) 138 kV / CIMARON11 (515714) 13.8 kV XFMR CKT 1.
FLT1022-SB	P4	Stuck Breaker on CIMARON7 (514901) 345 kV Bus a. Apply single phase fault at the CIMARON7 (514901) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON7 (514901) 345 kV / CIMARON4 (514898) 138 kV / CIMARON11 (515714) 13.8 kV XFMR CKT 1.
FLT1023-SB	P4	Stuck Breaker on CIMARON7 (514901) 345 kV Bus a. Apply single phase fault at the CIMARON7 (514901) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON7 (514901) 345 kV / CIMARON4 (514898) 138 kV / CIMARON21 (515715) 13.8 kV XFMR CKT 2.
FLT1025-SB	P4	Stuck Breaker on CIMARON4 (514898) 138 kV Bus a. Apply single phase fault at the CIMARON4 (514898) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON4 (514898) 138 kV to SARA 4 (514895) 138 kV line CKT 1. b.2.Trip the CIMARON4 (514898) 138 kV to TUTCONT4 (511425) 138 kV line CKT 1.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1027-SB	P4	Stuck Breaker on CIMARON4 (514898) 138 kV Bus a. Apply single phase fault at the CIMARON4 (514898) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON4 (514898) 138 kV to HAYMAKR4 (514863) 138 kV line CKT 1. b.2.Trip the CIMARON4 (514898) 138 kV to CZECHAL4 (514894) 138 kV line CKT 1.
FLT1030-SB	P4	Stuck Breaker on CIMARON4 (514898) 138 kV Bus a. Apply single phase fault at the CIMARON4 (514898) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON4 (514898) 138 kV to EL-RENO4 (514819) 138 kV line CKT 1. b.2.Trip the CIMARON4 (514898) 138 kV / CIMARON7 (514901) 345 kV / CIMARO11 (515714) 13.8 kV XFMR CKT 1.
FLT1032-SB	P4	Stuck Breaker on CIMARON4 (514898) 138 kV Bus a. Apply single phase fault at the CIMARON4 (514898) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the CIMARON4 (514898) 138 kV to JENSENT4 (514820) 138 kV line CKT 1. b.2.Trip the CIMARON4 (514898) 138 kV / CIMARON7 (514901) 345 kV / CIMARO21 (515715) 13.8 kV XFMR CKT 2.
FLT1039-SB	P4	Stuck Breaker on NORMHLL7 (516096) 345 kV Bus a. Apply single phase fault at the NORMHLL7 (516096) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the NORMHLL7 (516096) 345 kV to DRAPER 7 (514934) 345 kV line CKT 1. b.2.Trip the NORMHLL7 (516096) 345 kV / NORMHLL4 (516097) 138 kV / NORMHLL21 (516099) 13.8 kV XFMR CKT 2.
FLT1041-SB	P4	Stuck Breaker on NORMHLL7 (516096) 345 kV Bus a. Apply single phase fault at the NORMHLL7 (516096) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the NORMHLL7 (516096) 345 kV to DRAPER 7 (514934) 345 kV line CKT 2. b.2.Trip the NORMHLL7 (516096) 345 kV / NORMHLL4 (516097) 138 kV / NORMHLL11 (516098) 13.8 kV XFMR CKT 1.
FLT1045-SB	P4	Stuck Breaker on NORMHLL4 (516097) 138 kV Bus a. Apply single phase fault at the NORMHLL4 (516097) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the NORMHLL4 (516097) 138 kV to TURNER 4 (514992) 138 kV line CKT 1. b.2.Trip the NORMHLL4 (516097) 138 kV to PLVALLY4 (514929) 138 kV line CKT 1.
FLT1048-SB	P4	Stuck Breaker on NORMHLL4 (516097) 138 kV Bus a. Apply single phase fault at the NORMHLL4 (516097) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the NORMHLL4 (516097) 138 kV to CHERYCK4 (514957) 138 kV line CKT 1. b.2.Trip the NORMHLL4 (516097) 138 kV / NORMHLL7 (516096) 345 kV / NORMHLL21 (516099) 13.8 kV XFMR CKT 2.
FLT9000-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to GEN-2017-150 (761229) 345 kV line CKT 1, near GEN-2017-233 (761250) 345 kV. a. Apply fault at the GEN-2017-233 (761250) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-150GEN1 (761232) 0.6 kV Trip generator(s) on the Bus G17-150GEN2 (761235) 0.6 kV Trip generator(s) on the Bus G25-SR6BESS (761233) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9001-3PH	P1	3 Phase fault on GEN-2017-233 (761250) 345 kV to MINCO 7 (514801) 345 kV line CKT 1, near GEN-2017-233 (761250) 345 kV. a. Apply fault at the GEN-2017-233 (761250) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-233-GEN1 (761253) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9002-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to GEN-2017-233 (761250) 345 kV line CKT 1, near MINCO 7 (514801) 345 kV. a. Apply fault at the MINCO 7 (514801) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-233-GEN1 (761253) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9003-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to GRACMNT7 (515800) 345 kV line CKT 1, near MINCO 7 (514801) 345 kV. a. Apply fault at the MINCO 7 (514801) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9004-3PH	P1	3 Phase fault on GRACMNT7 (515800) 345 kV to MINCO 7 (514801) 345 kV line CKT 1, near GRACMNT7 (515800) 345 kV. a. Apply fault at the GRACMNT7 (515800) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9005-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to MCNOWND7 (515444) 345 kV line CKT 1, near MINCO 7 (514801) 345 kV. a. Apply fault at the MINCO 7 (514801) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MNCOWNG3 (515439) 0.7 kV Trip generator(s) on the Bus MNCOWNG2 (515445) 0.7 kV Trip generator(s) on the Bus MNCOWNG1 (515907) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9006-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to MNCWND37 (515549) 345 kV line CKT 1, near MINCO 7 (514801) 345 kV. a. Apply fault at the MINCO 7 (514801) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MNCO4G11 (515967) 0.7 kV Trip generator(s) on the Bus MNCO4G21 (515968) 0.7 kV Trip generator(s) on the Bus MNCO4G31 (515969) 0.7 kV Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV Trip generator(s) on the Bus MINCO-WTG31 (599117) 0.7 kV Trip generator(s) on the Bus MINCO-WTG32 (515551) 0.7 kV Trip generator(s) on the Bus MINCO-WTG33 (599119) 0.7 kV Trip generator(s) on the Bus MINCO-WTG34 (599120) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9007-3PH	P1	3 Phase fault on MNCWND37 (515549) 345 kV to MINCO 7 (514801) 345 kV line CKT 1, near MNCWND37 (515549) 345 kV. a. Apply fault at the MNCWND37 (515549) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MNCO4G11 (515967) 0.7 kV Trip generator(s) on the Bus MNCO4G21 (515968) 0.7 kV Trip generator(s) on the Bus MNCO4G31 (515969) 0.7 kV Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV Trip generator(s) on the Bus MINCO-WTG31 (599117) 0.7 kV Trip generator(s) on the Bus MINCO-WTG32 (515551) 0.7 kV Trip generator(s) on the Bus MINCO-WTG33 (599119) 0.7 kV Trip generator(s) on the Bus MINCO-WTG34 (599120) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9008-3PH	P1	3 Phase fault on MNCWND37 (515549) 345 kV to MNCWND47 (515939) 345 kV line CKT 1, near MNCWND37 (515549) 345 kV. a. Apply fault at the MNCWND37 (515549) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MNCO4G11 (515967) 0.7 kV Trip generator(s) on the Bus MNCO4G21 (515968) 0.7 kV Trip generator(s) on the Bus MNCO4G31 (515969) 0.7 kV Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9009-3PH	P1	3 Phase fault on MNCWND47 (515939) 345 kV to MNCWND37 (515549) 345 kV line CKT 1, near MNCWND47 (515939) 345 kV. a. Apply fault at the MNCWND47 (515939) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MNCO4G11 (515967) 0.7 kV Trip generator(s) on the Bus MNCO4G21 (515968) 0.7 kV Trip generator(s) on the Bus MNCO4G31 (515969) 0.7 kV Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9010-3PH	P1	3 Phase fault on MNCWND47 (515939) 345 kV to MNCWND57 (515980) 345 kV line CKT 1, near MNCWND47 (515939) 345 kV. a. Apply fault at the MNCWND47 (515939) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MNCO5G11 (515984) 0.7 kV Trip generator(s) on the Bus MNCO5G21 (515985) 0.7 kV Trip generator(s) on the Bus MNCO5G31 (515986) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9011-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to CIMARON7 (514901) 345 kV line CKT 1, near MINCO 7 (514801) 345 kV. a. Apply fault at the MINCO 7 (514801) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9012-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV to MINCO 7 (514801) 345 kV line CKT 1, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9013-3PH	P1	3 Phase fault on MINCO 7 (514801) 345 kV to NORMHLL7 (516096) 345 kV line CKT 1, near MINCO 7 (514801) 345 kV. a. Apply fault at the MINCO 7 (514801) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9014-3PH	P1	3 Phase fault on NORMHLL7 (516096) 345 kV to MINCO 7 (514801) 345 kV line CKT 1, near NORMHLL7 (516096) 345 kV. a. Apply fault at the NORMHLL7 (516096) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9015-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV to NORMHLL7 (516096) 345 kV line CKT 1, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9016-3PH	P1	3 Phase fault on NORMHLL7 (516096) 345 kV to CIMARON7 (514901) 345 kV line CKT 1, near NORMHLL7 (516096) 345 kV. a. Apply fault at the NORMHLL7 (516096) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9017-3PH	P1	3 Phase fault on GRACMNT7 (515800) 345 kV / GRACMNT4 (515802) 138 kV / GRACMNT11 (515801) 13.8 kV XFMR CKT 1, near GRACMNT7 (515800) 345 kV. a. Apply fault at the GRACMNT7 (515800) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9018-3PH	P1	3 Phase fault on GRACMNT4 (515802) 138 kV / GRACMNT7 (515800) 345 kV / GRACMNT11 (515801) 13.8 kV XFMR CKT 1, near GRACMNT4 (515802) 138 kV. a. Apply fault at the GRACMNT4 (515802) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9019-3PH	P1	3 Phase fault on GRACMNT4 (515802) 138 kV to WASHITA4 (521089) 138 kV line CKT 1, near GRACMNT4 (515802) 138 kV. a. Apply fault at the GRACMNT4 (515802) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9020-3PH	P1	3 Phase fault on WASHITA4 (521089) 138 kV to GRACMNT4 (515802) 138 kV line CKT 1, near WASHITA4 (521089) 138 kV. a. Apply fault at the WASHITA4 (521089) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9021-3PH	P1	3 Phase fault on GRACMNT4 (515802) 138 kV to WASHITA4 (521089) 138 kV line CKT 2, near GRACMNT4 (515802) 138 kV. a. Apply fault at the GRACMNT4 (515802) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9022-3PH	P1	3 Phase fault on WASHITA4 (521089) 138 kV to GRACMNT4 (515802) 138 kV line CKT 2, near WASHITA4 (521089) 138 kV. a. Apply fault at the WASHITA4 (521089) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9023-3PH	P1	3 Phase fault on GRACMNT4 (515802) 138 kV to ANADARK4 (520814) 138 kV line CKT 1, near GRACMNT4 (515802) 138 kV. a. Apply fault at the GRACMNT4 (515802) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9024-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to GRACMNT4 (515802) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9025-3PH	P1	3 Phase fault on GRACMNT4 (515802) 138 kV to ANADARK4 (520814) 138 kV line CKT 1, near GRACMNT4 (515802) 138 kV. a. Apply fault at the GRACMNT4 (515802) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9026-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to GRACMNT4 (515802) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9027-3PH	P1	3 Phase fault on GRACMNT7 (515800) 345 kV to TREASILD7 (511409) 345 kV line CKT 1, near GRACMNT7 (515800) 345 kV. a. Apply fault at the GRACMNT7 (515800) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9028-3PH	P1	3 Phase fault on TREASILD7 (511409) 345 kV to GRACMNT7 (515800) 345 kV line CKT 1, near TREASILD7 (511409) 345 kV. a. Apply fault at the TREASILD7 (511409) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9029-3PH	P1	3 Phase fault on GRACMNT7 (515800) 345 kV to G16-037-TAP (560078) 345 kV line CKT 1, near GRACMNT7 (515800) 345 kV. a. Apply fault at the GRACMNT7 (515800) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9030-3PH	P1	3 Phase fault on G16-037-TAP (560078) 345 kV to GRACMNT7 (515800) 345 kV line CKT 1, near G16-037-TAP (560078) 345 kV. a. Apply fault at the G16-037-TAP (560078) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9031-3PH	P1	3 Phase fault on NORMHLL7 (516096) 345 kV / NORMHLL4 (516097) 138 kV / NORMHLL11 (516098) 13.8 kV XFMR CKT 1, near NORMHLL7 (516096) 345 kV. a. Apply fault at the NORMHLL7 (516096) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9032-3PH	P1	3 Phase fault on NORMHLL4 (516097) 138 kV / NORMHLL7 (516096) 345 kV / NORMHLL11 (516098) 13.8 kV XFMR CKT 1, near NORMHLL4 (516097) 138 kV. a. Apply fault at the NORMHLL4 (516097) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9033-3PH	P1	3 Phase fault on NORMHLL7 (516096) 345 kV to DRAPER 7 (514934) 345 kV line CKT 1, near NORMHLL7 (516096) 345 kV. a. Apply fault at the NORMHLL7 (516096) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9034-3PH	P1	3 Phase fault on DRAPER 7 (514934) 345 kV to NORMHLL7 (516096) 345 kV line CKT 1, near DRAPER 7 (514934) 345 kV. a. Apply fault at the DRAPER 7 (514934) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9035-3PH	P1	3 Phase fault on NORMHLL7 (516096) 345 kV to DRAPER 7 (514934) 345 kV line CKT 2, near NORMHLL7 (516096) 345 kV. a. Apply fault at the NORMHLL7 (516096) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9036-3PH	P1	3 Phase fault on DRAPER 7 (514934) 345 kV to NORMHLL7 (516096) 345 kV line CKT 2, near DRAPER 7 (514934) 345 kV. a. Apply fault at the DRAPER 7 (514934) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9037-3PH	P1	3 Phase fault on WASHITA4 (521089) 138 kV to SLKHILLS 4 (521103) 138 kV line CKT 1, near WASHITA4 (521089) 138 kV. a. Apply fault at the WASHITA4 (521089) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus BCI_WTG (520519) 0.6 kV Trip generator(s) on the Bus BCVI_WTG1 (520522) 0.7 kV Trip generator(s) on the Bus BLUCAN2-WTG5 (599003) 0.7 kV Trip generator(s) on the Bus BLUCAN2-WTG1 (920001) 0.7 kV Trip generator(s) on the Bus BLUCAN2-WTG2 (920002) 0.7 kV Trip generator(s) on the Bus BLUCAN2-WTG3 (920003) 0.7 kV Trip generator(s) on the Bus BLUCAN2-WTG4 (920004) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9038-3PH	P1	3 Phase fault on WASHITA4 (521089) 138 kV to ONEY 4 (521017) 138 kV line CKT 1, near WASHITA4 (521089) 138 kV. a. Apply fault at the WASHITA4 (521089) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9039-3PH	P1	3 Phase fault on WASHITA4 (521089) 138 kV / WASHITA2 (521088) 69 kV / WASHTERT (521179) 7.2 kV XFMR CKT 1, near WASHITA4 (521089) 138 kV. a. Apply fault at the WASHITA4 (521089) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9040-3PH	P1	3 Phase fault on WASHITA2 (521088) 69 kV / WASHITA4 (521089) 138 kV / WASHTERT (521179) 7.2 kV XFMR CKT 1, near WASHITA2 (521088) 69 kV. a. Apply fault at the WASHITA2 (521088) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9041-3PH	P1	3 Phase fault on WASHITA2 (521088) 69 kV to CADDO 2 (520838) 69 kV line CKT 1, near WASHITA2 (521088) 69 kV. a. Apply fault at the WASHITA2 (521088) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9042-3PH	P1	3 Phase fault on WASHITA4 (521089) 138 kV to S.W.S.-4 (511477) 138 kV line CKT 1, near WASHITA4 (521089) 138 kV. a. Apply fault at the WASHITA4 (521089) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9043-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to S.W.S.-4 (511477) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9044-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV / ANADARK2 (520810) 69 kV / ADRKTERT (521181) 13.8 kV XFMR CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9045-3PH	P1	3 Phase fault on ANADARK2 (520810) 69 kV / ANADARK4 (520814) 138 kV / ADRKTERT (521181) 13.8 kV XFMR CKT 1, near ANADARK2 (520810) 69 kV. a. Apply fault at the ANADARK2 (520810) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9046-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to SEQUOYAHJ4 (520422) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9047-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to CHERRYRD 4 (521129) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9048-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to CLVLDSW4 (520508) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9049-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to POCASET4 (521031) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9050-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to GEORGIA4 (520923) 138 kV line CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9051-3PH	P1	3 Phase fault on TREASILD7 (511409) 345 kV to G20-087-TAP (764550) 345 kV line CKT 1, near TREASILD7 (511409) 345 kV. a. Apply fault at the TREASILD7 (511409) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9052-3PH	P1	3 Phase fault on TREASILD7 (511409) 345 kV to GEN-2016-095 (587770) 345 kV line CKT 1, near TREASILD7 (511409) 345 kV. a. Apply fault at the TREASILD7 (511409) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G16-095-GEN1 (587773) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9053-3PH	P1	3 Phase fault on TREASILD7 (511409) 345 kV to GEN-2016-091 (587740) 345 kV line CKT 1, near TREASILD7 (511409) 345 kV. a. Apply fault at the TREASILD7 (511409) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G16-091-GEN1 (587743) 0.7 kV Trip generator(s) on the Bus G16-091-GEN3 (587747) 0.7 kV Trip generator(s) on the Bus G16-091-GEN4 (587748) 0.7 kV Trip generator(s) on the Bus G16-091-GEN2 (587749) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9054-3PH	P1	3 Phase fault on G16-037-TAP (560078) 345 kV to CHISHOLM7 (511553) 345 kV line CKT 1, near G16-037-TAP (560078) 345 kV. a. Apply fault at the G16-037-TAP (560078) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9055-3PH	P1	3 Phase fault on G16-037-TAP (560078) 345 kV to GEN-2016-037 (587230) 345 kV line CKT 1, near G16-037-TAP (560078) 345 kV. a. Apply fault at the G16-037-TAP (560078) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G16-037-GEN1 (587235) 0.7 kV Trip generator(s) on the Bus G16-037-GEN3 (587236) 0.7 kV Trip generator(s) on the Bus G18-021GEN1 (762573) 0.6 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9056-3PH	P1	3 Phase fault on NORMHLL4 (516097) 138 kV to TURNER 4 (514992) 138 kV line CKT 1, near NORMHLL4 (516097) 138 kV. a. Apply fault at the NORMHLL4 (516097) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9057-3PH	P1	3 Phase fault on TURNER 4 (514992) 138 kV to NORMHLL4 (516097) 138 kV line CKT 1, near TURNER 4 (514992) 138 kV. a. Apply fault at the TURNER 4 (514992) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9058-3PH	P1	3 Phase fault on TURNER 4 (514992) 138 kV to SOGATE 4 (514928) 138 kV line CKT 1, near TURNER 4 (514992) 138 kV. a. Apply fault at the TURNER 4 (514992) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9059-3PH	P1	3 Phase fault on NORMHLL4 (516097) 138 kV to MCCLAIN4 (514902) 138 kV line CKT 1, near NORMHLL4 (516097) 138 kV. a. Apply fault at the NORMHLL4 (516097) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9060-3PH	P1	3 Phase fault on MCCLAIN4 (514902) 138 kV to NORMHLL4 (516097) 138 kV line CKT 1, near MCCLAIN4 (514902) 138 kV. a. Apply fault at the MCCLAIN4 (514902) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9061_SP-3PH	P1	3 Phase fault on MCCLAIN4 (514902) 138 kV to SW134TP4 (514876) 138 kV line CKT 1, near MCCLAIN4 (514902) 138 kV. a. Apply fault at the MCCLAIN4 (514902) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9061_WP-3PH	P1	3 Phase fault on MCCLAIN4 (514902) 138 kV to 514887 (514877) 138 kV line CKT 1, near MCCLAIN4 (514902) 138 kV. a. Apply fault at the MCCLAIN4 (514902) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9062-3PH	P1	3 Phase fault on MCCLAIN4 (514902) 138 kV to SARA 4 (514895) 138 kV line CKT 1, near MCCLAIN4 (514902) 138 kV. a. Apply fault at the MCCLAIN4 (514902) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9063-3PH	P1	3 Phase fault on NORMHLL4 (516097) 138 kV to CHERYCK4 (514957) 138 kV line CKT 1, near NORMHLL4 (516097) 138 kV. a. Apply fault at the NORMHLL4 (516097) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9064-3PH	P1	3 Phase fault on CHERYCK4 (514957) 138 kV to NORMHLL4 (516097) 138 kV line CKT 1, near CHERYCK4 (514957) 138 kV. a. Apply fault at the CHERYCK4 (514957) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9065-3PH	P1	3 Phase fault on CHERYCK4 (514957) 138 kV to BOYD 4 (514958) 138 kV line CKT 1, near CHERYCK4 (514957) 138 kV. a. Apply fault at the CHERYCK4 (514957) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9066-3PH	P1	3 Phase fault on NORMHLL4 (516097) 138 kV to PLVALLY4 (514929) 138 kV line CKT 1, near NORMHLL4 (516097) 138 kV. a. Apply fault at the NORMHLL4 (516097) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9067-3PH	P1	3 Phase fault on PLVALLY4 (514929) 138 kV to NORMHLL4 (516097) 138 kV line CKT 1, near PLVALLY4 (514929) 138 kV. a. Apply fault at the PLVALLY4 (514929) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9068-3PH	P1	3 Phase fault on PLVALLY4 (514929) 138 kV to HOLLYWD4 (514953) 138 kV line CKT 1, near PLVALLY4 (514929) 138 kV. a. Apply fault at the PLVALLY4 (514929) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9069-3PH	P1	3 Phase fault on DRAPER 7 (514934) 345 kV to SEMINOL7 (515045) 345 kV line CKT 1, near DRAPER 7 (514934) 345 kV. a. Apply fault at the DRAPER 7 (514934) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9070-3PH	P1	3 Phase fault on DRAPER 7 (514934) 345 kV to SEMINOL7 (515045) 345 kV line CKT 3, near DRAPER 7 (514934) 345 kV. a. Apply fault at the DRAPER 7 (514934) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9071-3PH	P1	3 Phase fault on DRAPER 7 (514934) 345 kV / DRAPER 4 (514933) 138 kV / DRAPER31 (515720) 13.8 kV XFMR CKT 3, near DRAPER 7 (514934) 345 kV. a. Apply fault at the DRAPER 7 (514934) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9072-3PH	P1	3 Phase fault on DRAPER 7 (514934) 345 kV / DRAPER 4 (514933) 138 kV / DRAPER21 (515792) 13.8 kV XFMR CKT 2, near DRAPER 7 (514934) 345 kV. a. Apply fault at the DRAPER 7 (514934) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9073-3PH	P1	3 Phase fault on ANADARK2 (520810) 69 kV to CADD0 2 (520838) 69 kV line CKT 1, near ANADARK2 (520810) 69 kV. a. Apply fault at the ANADARK2 (520810) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9074-3PH	P1	3 Phase fault on ANADARK2 (520810) 69 kV to HARPER2 (520440) 69 kV line CKT 1, near ANADARK2 (520810) 69 kV. a. Apply fault at the ANADARK2 (520810) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9075-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV / CIMARON4 (514898) 138 kV / CIMARO11 (515714) 13.8 kV XFMR CKT 1, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9076-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV / CIMARON7 (514901) 345 kV / CIMARO11 (515714) 13.8 kV XFMR CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9077-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV / CIMARON4 (514898) 138 kV / CIMARO21 (515715) 13.8 kV XFMR CKT 2, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9078-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV / CIMARON7 (514901) 345 kV / CIMARO21 (515715) 13.8 kV XFMR CKT 2, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9079-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV to NORTHST7 (514880) 345 kV line CKT 1, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9080-3PH	P1	3 Phase fault on NORTHST7 (514880) 345 kV to CIMARON7 (514901) 345 kV line CKT 1, near NORTHST7 (514880) 345 kV. a. Apply fault at the NORTHST7 (514880) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9081-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV to MATHWSN7 (515497) 345 kV line CKT 1, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9082-3PH	P1	3 Phase fault on MATHWSN7 (515497) 345 kV to CIMARON7 (514901) 345 kV line CKT 1, near MATHWSN7 (515497) 345 kV. a. Apply fault at the MATHWSN7 (515497) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9083-3PH	P1	3 Phase fault on CIMARON7 (514901) 345 kV to FSHRTAP7 (515610) 345 kV line CKT 1, near CIMARON7 (514901) 345 kV. a. Apply fault at the CIMARON7 (514901) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus KNGFSHR-GEN1 (515664) 0.7 kV Trip generator(s) on the Bus KNGFSHR-GEN2 (515665) 0.7 kV Trip generator(s) on the Bus CANADNG1 (515900) 0.7 kV Trip generator(s) on the Bus CANADNG2 (515902) 0.6 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9084-3PH	P1	3 Phase fault on FSHRTAP7 (515610) 345 kV to CIMARON7 (514901) 345 kV line CKT 1, near FSHRTAP7 (515610) 345 kV. a. Apply fault at the FSHRTAP7 (515610) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus KNGFSHR-GEN1 (515664) 0.7 kV Trip generator(s) on the Bus KNGFSHR-GEN2 (515665) 0.7 kV Trip generator(s) on the Bus CANADNG1 (515900) 0.7 kV Trip generator(s) on the Bus CANADNG2 (515902) 0.6 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9085-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV to SARA 4 (514895) 138 kV line CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9086-3PH	P1	3 Phase fault on SARA 4 (514895) 138 kV to CIMARON4 (514898) 138 kV line CKT 1, near SARA 4 (514895) 138 kV. a. Apply fault at the SARA 4 (514895) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9087-3PH	P1	3 Phase fault on SARA 4 (514895) 138 kV to MCCLAIN4 (514902) 138 kV line CKT 1, near SARA 4 (514895) 138 kV. a. Apply fault at the SARA 4 (514895) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9088-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV to HAYMAKR4 (514863) 138 kV line CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9089-3PH	P1	3 Phase fault on HAYMAKR4 (514863) 138 kV to CIMARON4 (514898) 138 kV line CKT 1, near HAYMAKR4 (514863) 138 kV. a. Apply fault at the HAYMAKR4 (514863) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9090-3PH	P1	3 Phase fault on HAYMAKR4 (514863) 138 kV to DIVISION4 (514853) 138 kV line CKT 1, near HAYMAKR4 (514863) 138 kV. a. Apply fault at the HAYMAKR4 (514863) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9091-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV to CZECHAL4 (514894) 138 kV line CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9092-3PH	P1	3 Phase fault on CZECHAL4 (514894) 138 kV to CIMARON4 (514898) 138 kV line CKT 1, near CZECHAL4 (514894) 138 kV. a. Apply fault at the CZECHAL4 (514894) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9093-3PH	P1	3 Phase fault on CZECHAL4 (514894) 138 kV to XEROX 4 (514893) 138 kV line CKT 1, near CZECHAL4 (514894) 138 kV. a. Apply fault at the CZECHAL4 (514894) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9094-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV to EL-RENO4 (514819) 138 kV line CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9095-3PH	P1	3 Phase fault on EL-RENO4 (514819) 138 kV to CIMARON4 (514898) 138 kV line CKT 1, near EL-RENO4 (514819) 138 kV. a. Apply fault at the EL-RENO4 (514819) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9096-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV to JENSENT4 (514820) 138 kV line CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9097-3PH	P1	3 Phase fault on JENSENT4 (514820) 138 kV to CIMARON4 (514898) 138 kV line CKT 1, near JENSENT4 (514820) 138 kV. a. Apply fault at the JENSENT4 (514820) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9098-3PH	P1	3 Phase fault on JENSENT4 (514820) 138 kV to EL-RENO4 (514819) 138 kV line CKT 1, near JENSENT4 (514820) 138 kV. a. Apply fault at the JENSENT4 (514820) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9099-3PH	P1	3 Phase fault on EL-RENO4 (514819) 138 kV to JENSENT4 (514820) 138 kV line CKT 1, near EL-RENO4 (514819) 138 kV. a. Apply fault at the EL-RENO4 (514819) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9100-3PH	P1	3 Phase fault on EL-RENO4 (514819) 138 kV to OMEGA 4 (515962) 138 kV line CKT 1, near EL-RENO4 (514819) 138 kV. a. Apply fault at the EL-RENO4 (514819) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9101-3PH	P1	3 Phase fault on EL-RENO4 (514819) 138 kV / ELRENO 2 (514818) 69 kV / EL RENO1 (515722) 13.2 kV XFMR CKT 1, near EL-RENO4 (514819) 138 kV. a. Apply fault at the EL-RENO4 (514819) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9102-3PH	P1	3 Phase fault on JENSENT4 (514820) 138 kV to JENSEN 4 (514821) 138 kV line CKT 1, near JENSENT4 (514820) 138 kV. a. Apply fault at the JENSENT4 (514820) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9103-3PH	P1	3 Phase fault on CIMARON4 (514898) 138 kV to TUTCONT4 (511425) 138 kV line CKT 1, near CIMARON4 (514898) 138 kV. a. Apply fault at the CIMARON4 (514898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9104-3PH	P1	3 Phase fault on TUTCONT4 (511425) 138 kV to CIMARON4 (514898) 138 kV line CKT 1, near TUTCONT4 (511425) 138 kV. a. Apply fault at the TUTCONT4 (511425) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9105-3PH	P1	3 Phase fault on TUTCONT4 (511425) 138 kV to CEMRD_TP4 (511576) 138 kV line CKT 1, near TUTCONT4 (511425) 138 kV. a. Apply fault at the TUTCONT4 (511425) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9106-3PH	P1	3 Phase fault on TUTCONT4 (511425) 138 kV to TUTTLE4 (511501) 138 kV line CKT 1, near TUTCONT4 (511425) 138 kV. a. Apply fault at the TUTCONT4 (511425) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9107-3PH	P1	3 Phase fault on NORTHWT7 (514880) 345 kV to MATHWSN7 (515497) 345 kV line CKT 1, near NORTHWT7 (514880) 345 kV. a. Apply fault at the NORTHWT7 (514880) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9108-3PH	P1	3 Phase fault on MATHWSN7 (515497) 345 kV to NORTHWT7 (514880) 345 kV line CKT 1, near MATHWSN7 (515497) 345 kV. a. Apply fault at the MATHWSN7 (515497) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9109-3PH	P1	3 Phase fault on MATHWSN7 (515497) 345 kV to TATONGA7 (515407) 345 kV line CKT 1, near MATHWSN7 (515497) 345 kV. a. Apply fault at the MATHWSN7 (515497) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9110-3PH	P1	3 Phase fault on MATHWSN7 (515497) 345 kV to REDNGTN7 (515875) 345 kV line CKT 1, near MATHWSN7 (515497) 345 kV. a. Apply fault at the MATHWSN7 (515497) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9111-3PH	P1	3 Phase fault on MATHWSN7 (515497) 345 kV to TRAVERSE3 (900001) 345 kV line CKT 1, near MATHWSN7 (515497) 345 kV. a. Apply fault at the MATHWSN7 (515497) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G16-045-GEN3 (587300) 0.7 kV Trip generator(s) on the Bus G16-045-GEN1 (587303) 0.7 kV Trip generator(s) on the Bus G16-045-GEN2 (587307) 0.7 kV Trip generator(s) on the Bus G16-057-GEN3 (587380) 0.7 kV Trip generator(s) on the Bus G16-057-GEN1 (587383) 0.7 kV Trip generator(s) on the Bus G16-057-GEN2 (587387) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9112-3PH	P1	3 Phase fault on FSHRTAP7 (515610) 345 kV to CANADN7 (515605) 345 kV line CKT 1, near FSHRTAP7 (515610) 345 kV. a. Apply fault at the FSHRTAP7 (515610) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus CANADNG1 (515900) 0.7 kV Trip generator(s) on the Bus CANADNG2 (515902) 0.6 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9113-3PH	P1	3 Phase fault on FSHRTAP7 (515610) 345 kV to KNGFSHR7 (515600) 345 kV line CKT 1, near FSHRTAP7 (515610) 345 kV. a. Apply fault at the FSHRTAP7 (515610) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus KNGFSHR-GEN1 (515664) 0.7 kV Trip generator(s) on the Bus KNGFSHR-GEN2 (515665) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9114-3PH	P1	3 Phase fault on ANADARK4 (520814) 138 kV to ORME1 (521110) 13.8 kV XFMR CKT 1, near ANADARK4 (520814) 138 kV. a. Apply fault at the ANADARK4 (520814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus ORME1 (521110) 13.8 kV
FLT9115-3PH	P1	3 Phase fault on MCCLAIN4 (514902) 138 kV to MCLN 2G (515000) 18 kV XFMR CKT 1, near MCCLAIN4 (514902) 138 kV. a. Apply fault at the MCCLAIN4 (514902) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus MCLN 2G (515000) 18 kV

6.3 Scenario 1 Results

Table 6-3 shows the relevant results of the fault events simulated for each of the modified models in Scenario 1. Existing DISIS base case issues are documented separately in Appendix C. The associated stability plots are also provided in Appendix C.

Table 6-3: Scenario 1 Dynamic Stability Results (GEN-2017-150 = 253.08 MW, GEN-2025-SR6 = 0 MW)

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1004-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1006-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1007-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1008-SB	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1009-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1010-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1011-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1012-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1013-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1016-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1018-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1020-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1022-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1023-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1025-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1027-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1030-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1032-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1039-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1041-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1045-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1048-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9021-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9022-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9023-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9024-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9025-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9026-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9027-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9028-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9029-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9030-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9031-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9032-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9033-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9034-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9035-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9036-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9037-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9038-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9039-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9040-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9041-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9042-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9043-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9044-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9045-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9046-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9047-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9048-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9049-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9050-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9051-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9052-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9053-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9054-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9055-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9056-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9057-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9058-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9059-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9060-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9061_SP-3PH	Pass	Pass	Stable	NA	NA	NA
FLT9061_WP-3PH	NA	NA	NA	Pass	Pass	Stable
FLT9062-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9063-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9064-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9065-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9066-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9067-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9068-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9069-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9070-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9071-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9072-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9073-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9074-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9075-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9076-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9077-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9078-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9079-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9080-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9081-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9082-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9083-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9084-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9085-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9086-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9087-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9088-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9089-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9090-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9091-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9092-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9093-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9094-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9095-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9096-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9097-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9098-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9099-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9100-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9101-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9102-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9103-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9104-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9105-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9106-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9107-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9108-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9109-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9110-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9111-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9112-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9113-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9114-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9115-3PH	Pass	Pass	Stable	Pass	Pass	Stable

The results of the Scenario 1 dynamic stability showed several existing base case issues that were found in both the original DISIS-2022-001-1 models (without GEN-2025-SR6) and in the models with the GEN-2017-150 modification (and GEN-2025-SR6) included. These issues were not attributed to the GEN-2017-150 modification request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2017-150 modification request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

6.4 Scenario 2 Results

Table 6-4 shows the relevant results of the fault events simulated for each of the modified models in Scenario 2. Existing DISIS base case issues are documented separately in Appendix C. The associated stability plots are also provided in Appendix C.

Table 6-4: Scenario 2 Dynamic Stability Results (GEN-2017-150 = 52.3 MW, GEN-2025-SR6 = 200.2 MW)

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1004-SB	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1006-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1007-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1008-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1009-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1010-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1011-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1012-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1013-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1016-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1018-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1020-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1022-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1023-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1025-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1027-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1030-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1032-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1039-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1041-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1045-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1048-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9021-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9022-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9023-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9024-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9025-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9026-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9027-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9028-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9029-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9030-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9031-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9032-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9033-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9034-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9035-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9036-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9037-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9038-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9039-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9040-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9041-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9042-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9043-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9044-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9045-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9046-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9047-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9048-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9049-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9050-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9051-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9052-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9053-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9054-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9055-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9056-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9057-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9058-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9059-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9060-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9061_SP-3PH	Pass	Pass	Stable	NA	NA	NA
FLT9061_WP-3PH	NA	NA	NA	Pass	Pass	Stable
FLT9062-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9063-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9064-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9065-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9066-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9067-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9068-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9069-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9070-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9071-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9072-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9073-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9074-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9075-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9076-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9077-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9078-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9079-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9080-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9081-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9082-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9083-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9084-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9085-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9086-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9087-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9088-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9089-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9090-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9091-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9092-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9093-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9094-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9095-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9096-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9097-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9098-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9099-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9100-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9101-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9102-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9103-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9104-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9105-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9106-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9107-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9108-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9109-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9110-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9111-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9112-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9113-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9114-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9115-3PH	Pass	Pass	Stable	Pass	Pass	Stable

The results of the Scenario 2 dynamic stability showed several existing base case issues that were found in both the original DISIS-2022-001-1 models (without GEN-2025-SR6) and in the models with the GEN-2017-150 modification (and GEN-2025-SR6) included. These issues were not attributed to the GEN-2017-150 modification request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2017-150 modification request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

7.0 Modified Capacity Exceeds GIA Capacity

Under FERC Order 845, Interconnection Customers are allowed to request Interconnection Service that is lower than the full generating capacity of their planned generating facilities. The Interconnection Customers must install acceptable control and protection devices that prevent the injection above their requested Interconnection Service amount measured at the POI.

As such, Interconnection Customers are allowed to increase the generating capacity of a generating facility without increasing its Interconnection Service amount stated in its GIA. This is allowable as long as they install the proper control and protection devices, and the requested modification is not determined to be a Material Modification.

The modified generating capacity of GEN-2017-150 exceeds the GIA Interconnection Service amount, 250 MW, as listed in Appendix A of the GIA. The customer must install monitoring and control equipment as needed to ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA.

8.0 Material Modification Determination

In accordance with Attachment V of SPP's Open Access Transmission Tariff, for modifications other than those specifically permitted by Attachment V, SPP shall evaluate the proposed modifications prior to making them and inform the Interconnection Customer in writing of whether the modifications would constitute a Material Modification. Material Modification shall mean (1) modification to an Interconnection Request in the queue that has a material adverse impact on the cost or timing of any other Interconnection Request with a later Queue priority date; or (2) planned modification to an Existing Generating Facility that is undergoing evaluation for a Generating Facility Modification or Generating Facility Replacement, and has a material adverse impact on the Transmission System with respect to: i) steady-state thermal or voltage limits, ii) dynamic system stability and response, or iii) short-circuit capability limit; compared to the impacts of the Existing Generating Facility prior to the modification or replacement.

8.1 Results

SPP determined the requested modification is not a Material Modification based on the results of this Modification Request Impact Study performed by Aneden. Aneden evaluated the impact of the requested modification on the prior study results. Aneden determined that the requested modification did not negatively impact the prior study dynamic stability and short circuit results, and the modifications to the project were not significant enough to change the previously studied steady-state conclusions.

This determination implies that any network upgrades already required by GEN-2017-150 would not be negatively impacted and that no new upgrades are required due to the requested modification, thus not resulting in a material adverse impact on the cost or timing of any other Interconnection Request with a later Queue priority date.