Report on

GEN-2013-002 and GEN-2013-019 Modification Request Impact Study

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Submitted to
Southwest Power Pool

SPP Southwest Power Pool

anedenconsulting.com

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Revision History

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION
11/27/2024	Aneden Consulting	Initial Report Issued

Executive Summary

Aneden Consulting (Aneden) was retained by the Southwest Power Pool (SPP) to perform a Modification Request Impact Study (Study) for the combined GEN-2013-002 and GEN-2013-019 project, an active Generation Interconnection Request (GIR) with a Point of Interconnection (POI) at the Monolith 115 kV Substation.

The GEN-2013-002 and GEN-2013-019 project interconnects in the Nebraska Public Power District (NPPD) transmission system with a capacity of 124.2 MW. This Study has been requested to evaluate the modification of the combined GEN-2013-002 and GEN-2013-019 project to change the configuration to 35 x PE FS 4010M solar inverters operating at 3.5485 MW for a total assumed dispatch of 124.2 MW. The inverters are rated at 4.01 MW, thus the generating capability (140.35 MW) exceeds its Generator Interconnection Agreement (GIA) Interconnection Service amount. The injection amount must be limited to 124.2 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 transformer, and generation interconnection line. The previously accepted and modified configurations for GEN-2013-002 and GEN-2013-019 are shown in Table ES-1 below.

Table ES-1: GEN-2013-002 and GEN-2013-019 Modification Request

Facility	Previous Configuration[1]			Modification Configuration
Point of Interconnection	Monolith 115 kV (640591)			Monolith 115 kV (640591)
Configuration/Capacity	16 x GE 3.4 MW Turbines (wind) + 2 x GE 2.82 MW Turbines (wind) + 25 x Power Electronics 4.01 MVA Inverters (solar) = 148.26 MW [dispatched at 124.2 MW] Units are rated higher than dispatched, PPC in place to limit POI to 124.2 MW			35 x PE FS 4010M operating at 3.5485 MW (solar) = 124.2 MW [dispatch] Units are rated at 4.01 MW, PPC in place to limit POI to 124.2 MW
Generation Interconnection Line	Length = 0.2 miles R = 0.000180 pu X = 0.001050 pu B = 0.000160 pu Rating MVA = 177.3 MVA			Length = 1.6 miles R = 0.000380 pu X = 0.003670 pu B = 0.001940 pu Rating MVA = 177.3 MVA
Main Substation Transformer[2]	Voltage: 115 / 34.5 kV X = 8.497%, R = 0.213%, Winding MVA = 102 MVA, Rating MVA = 170 MVA			Voltage: 115 / 34.5 / 13.8 kV X12 = 8.497% R12 = 0.212%, X23 = 3.999% R23 = 0.1%, X13 = 11.996% R13 = 0.299%, Winding MVA = 102 MVA, Winding 1, 2, & 3 Rating MVA = 170 MVA
Equivalent GSU Transformer[2]	Gen 1 Equivalent Qty: 16 X = 7.115%, R = 0.705%, Winding MVA = 59.152 MVA, Rating MVA = 61 MVA	Gen 2 Equivalent Qty: 2 X = 5.699%, R = 0.759%, Winding MVA = 5.6 MVA, Rating MVA = 6.5 MVA	Gen 3 Equivalent Qty: 25 X = 8.958%, R = 0.869%, Winding MVA = 105.175 MVA, Rating MVA[4] = 105.2 MVA	Gen 1 Equivalent Qty: 35 X[3] = 0%, R[3] = 0%, Winding MVA = 147.245 MVA, Rating MVA[4] = 147.2 MVA
Equivalent Collector Line[5]	R = 0.014992 pu X = 0.027776 pu B = 0.020481 pu		R = 0.003106 pu X = 0.003490 pu B = 0.012851 pu	R = 0.002539 pu X = 0.002875 pu B = 0.008830 pu
Generator Dynamic Model[6] & Power Factor	16 x GE 3.4 MW (GEWTG0705)[6] Leading: 0.9 Lagging: 0.9	2 x GE 2.82 MW (GEWTG0705)[6] Leading: 0.9 Lagging: 0.9	25 x Power Electronics 4.01 MVA (REGCAU1)[6] Leading: 0.88 Lagging: 0.88	35 x PE FS 4010M 4.01 MVA (REGCAU1)[6] Leading: 0.88 Lagging: 0.88

1) Previous accepted modification configuration, 2) X and R based on Winding MVA, 3) Inverter Output AC Voltage at 34.5 kV, 4) Rating rounded in PSSE, 5) All pu are on 100 MVA Base, 6) DYR 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 fuel type from hybrid (wind and solar) to only solar 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-2018-002/2019-001 stability study models:

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

Aneden reviewed Generation Interconnection Requests (GIRs) that shared the same POI, Monolith 115 kV, and updated their models as applicable based on SPP's confirmation of the latest project configurations. The modification under study, GEN-2013-002 and GEN-2013-019, is the Existing Generating Facility (EGF) for the GEN-2024-SR10 Surplus Generating Facility (SGF) project. As a result, Aneden included the accepted GEN-2024-SR10 surplus project in the base models and created two stability scenarios to accommodate the status of GEN-2024-SR10.

All analyses were performed using the Siemens PTI PSS/E[1] version 34 software and the results are summarized below.

The results of the reactive power analysis using the 25SP model showed that the combined GEN-2013-002 and GEN-2013-019 project needed a 1.1 MVAr shunt reactor on the 34.5 kV bus of the project substation with the modifications in place, a decrease from the 3.5 MVAr found in the previous modification study[2]. 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 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 combined GEN-2013-002 and GEN-2013-019 contribution to three-phase fault currents in the immediate transmission systems at or near the GEN-2013-002 and GEN-2013-019 POI was 0.61 kA. The maximum three-phase fault current level within 5 buses of the POI was 42.5 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA for both of the cases. These buses are highlighted in Appendix B.

The dynamic stability analysis was performed using Siemens PTI PSS/E version 34.8.0 software for the two modified study models: 25SP and 25WP, each with two dispatch scenarios to ensure all reliability conditions were studied. 145 fault events were simulated, which included three-phase faults and single-line-to-ground stuck breaker faults.

- Scenario 1: GEN-2013-002 and GEN-2013-019 at maximum assumed dispatch, 124.2 MW, and the corresponding SGF, GEN-2024-SR10, disconnected.

[1] Power System Simulator for Engineering
[2] GEN-2013-002 & GEN-2013-019 Modification Request Impact Study– June 7, 2023

- Scenario 2: GEN-2024-SR10 at maximum assumed dispatch, 80.08 MW, and GEN-2013-002 and GEN-2013-019 dispatched with the remaining 44.12 MW for a total combination of 124.2 MW.

The results of the dynamic stability analysis showed several existing base case issues that were found in both the original DISIS-2018-002/2019-001 models (without GEN-2024-SR10) and in the models with the GEN-2013-002 and GEN-2013-019 modification (and GEN-2024-SR10) included. These issues were not attributed to the GEN-2013-002 and GEN-2013-019 modification request and are detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2013-002 and GEN-2013-019 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 Southwest Power Pool's OASIS by the customer.

1.0 Scope of Study

Aneden Consulting (Aneden) was retained by the Southwest Power Pool (SPP) to perform a Modification Request Impact Study (Study) for the combined GEN-2013-002 and GEN-2013-019 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-2013-002 and GEN-2013-019 was online at 100% of the assumed dispatch with GEN-2024-SR10 offline and disconnected, and the second where GEN-2024-SR10 was online at 100% of the assumed dispatch and the combined GEN-2013-002 and GEN-2013-019 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-2013-002 and GEN-2013-019 Interconnection Customer requested a modification to its Generation Interconnection Request (GIR) with a Point of Interconnection (POI) at the Monolith 115 kV Substation in the Nebraska Public Power District (NPPD) transmission system.

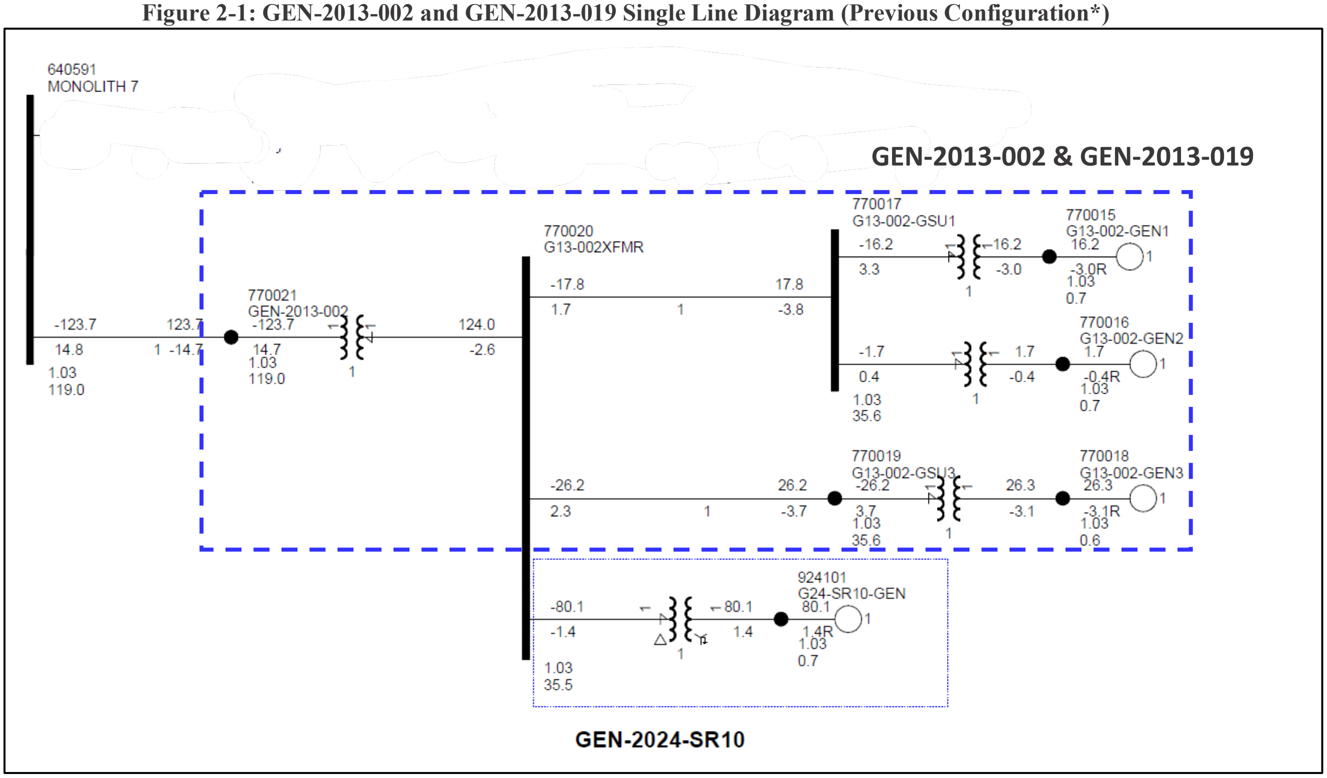
At the time of report posting, the combined GEN-2013-002 and GEN-2013-019 project is an active Interconnection Request with a queue status of “IA FULLY EXECUTED/ON SCHEDULE.” GEN-2013-002 and GEN-2013-019 is a solar facility with a maximum combined summer and winter queue capacity of 124.2 MW with Energy Resource Interconnection Service (ERIS) and Network Resource Interconnection Service (NRIS).

The GEN-2013-002 and GEN-2013-019 project is currently in the DISIS-2013-001 and DISIS-2013-002 clusters, respectively.

Aneden reviewed Generation Interconnection Requests (GIRs) that shared the same POI, Monolith 115 kV, and updated their models as applicable based on SPP’s confirmation of the latest project configurations. The modification under study, GEN-2013-002 and GEN-2013-019, is the Existing Generating Facility (EGF) for the GEN-2024-SR10 Surplus Generating Facility (SGF) project. As a result, Aneden included the accepted GEN-2024-SR10 surplus project in the base models and created two stability scenarios to accommodate the status of GEN-2024-SR10.

Figure 2-1 shows the power flow model single line diagram for the previously accepted combined GEN-2013-002 and GEN-2013-019 configuration modeled in the DISIS-2018-002/2019-001 25SP stability model with the GEN-2024-SR10 surplus project included.

Figure 2-1: GEN-2013-002 and GEN-2013-019 Single Line Diagram (Previous Configuration*)



*based on the previously accepted configuration with the GEN-2024-SR10 surplus project included

This Study has been requested to evaluate the modification of GEN-2013-002 and GEN-2013-019 to change the configuration to 35 x PE FS 4010M solar inverters operating at 3.5485 MW for a total assumed dispatch of 124.2 MW. The inverters are rated at 4.01 MW, thus the generating capability (140.35 MW) exceeds its Generator Interconnection Agreement (GIA) Interconnection Service amount. The injection amount must be limited to 124.2 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 transformer, and generation interconnection line. Figure 2-2 shows the power flow model single line diagram for the combined GEN-2013-002 and GEN-2013-019 modification with the GEN-2024-SR10 surplus project included. The previously accepted and modified configurations for GEN-2013-002 and GEN-2013-019 are shown in Table 2-1 below.

Figure 2-2: GEN-2013-002 and GEN-2013-019 Single Line Diagram (Modification Configuration)

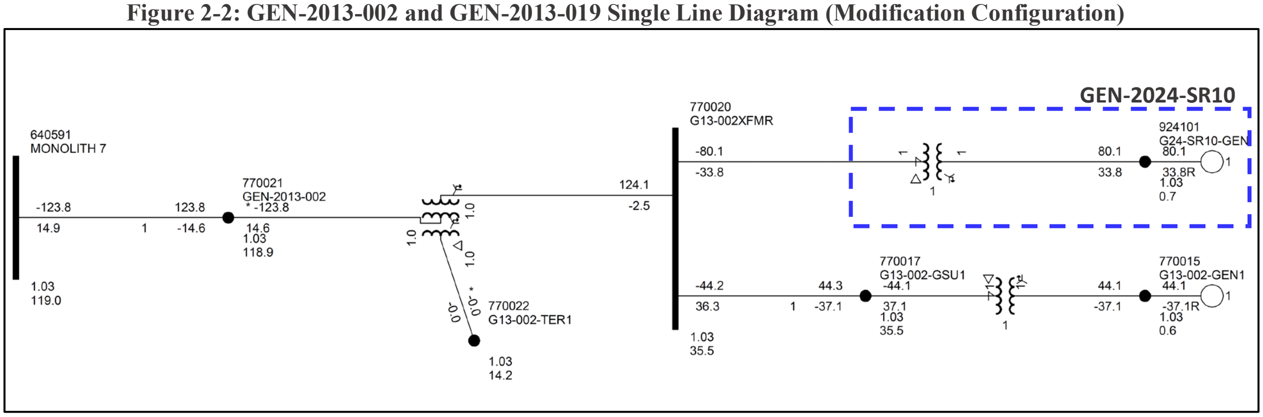


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Table 2-1: GEN-2013-002 and GEN-2013-019 Modification Request

Facility	Previous Configuration[1]			Modification Configuration
Point of Interconnection	Monolith 115 kV (640591)			Monolith 115 kV (640591)
Configuration/Capacity	16 x GE 3.4 MW Turbines (wind) + 2 x GE 2.82 MW Turbines (wind) + 25 x Power Electronics 4.01 MVA Inverters (solar) = 148.26 MW [dispatched at 124.2 MW] Units are rated higher than dispatched, PPC in place to limit POI to 124.2 MW			35 x PE FS 4010M operating at 3.5485 MW (solar) = 124.2 MW [dispatch] Units are rated at 4.01 MW, PPC in place to limit POI to 124.2 MW
Generation Interconnection Line	Length = 0.2 miles R = 0.000180 pu X = 0.001050 pu B = 0.000160 pu Rating MVA = 177.3 MVA			Length = 1.6 miles R = 0.000380 pu X = 0.003670 pu B = 0.001940 pu Rating MVA = 177.3 MVA
Main Substation Transformer[2]	Voltage: 115 / 34.5 kV X = 8.497%, R = 0.213%, Winding MVA = 102 MVA, Rating MVA = 170 MVA			Voltage: 115 / 34.5 / 13.8 kV X12 = 8.497% R12 = 0.212%, X23 = 3.999% R23 = 0.1%, X13 = 11.996% R13 = 0.299%, Winding MVA = 102 MVA, Winding 1, 2, & 3 Rating MVA = 170 MVA
Equivalent GSU Transformer[2]	Gen 1 Equivalent Qty: 16 X = 7.115%, R = 0.705%, Winding MVA = 59.152 MVA, Rating MVA = 61 MVA	Gen 2 Equivalent Qty: 2 X = 5.699%, R = 0.759%, Winding MVA = 5.6 MVA, Rating MVA = 6.5 MVA	Gen 3 Equivalent Qty: 25 X = 8.958%, R = 0.869%, Winding MVA = 105.175 MVA, Rating MVA[4] = 105.2 MVA	Gen 1 Equivalent Qty: 35 X[3] = 0%, R[3] = 0%, Winding MVA = 147.245 MVA, Rating MVA[4] = 147.2 MVA
Equivalent Collector Line[5]	R = 0.014992 pu X = 0.027776 pu B = 0.020481 pu		R = 0.003106 pu X = 0.003490 pu B = 0.012851 pu	R = 0.002539 pu X = 0.002875 pu B = 0.008830 pu
Generator Dynamic Model[6] & Power Factor	16 x GE 3.4 MW (GEWTG0705)[6] Leading: 0.9 Lagging: 0.9	2 x GE 2.82 MW (GEWTG0705)[6] Leading: 0.9 Lagging: 0.9	25 x Power Electronics 4.01 MVA (REGCAU1)[6] Leading: 0.88 Lagging: 0.88	35 x PE FS 4010M 4.01 MVA (REGCAU1)[6] Leading: 0.88 Lagging: 0.88

1) Previous accepted modification configuration, 2) X and R based on Winding MVA, 3) Inverter Output AC Voltage at 34.5 kV, 4) Rating rounded in PSSE, 5) All pu are on 100 MVA Base, 6) 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-2018-002/2019-001 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 because of the fuel type change from hybrid (wind and solar) to only solar. This is because the short circuit contribution and stability responses of the previously accepted configuration and the requested modification's configuration may differ. 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 the determination of the scope of the study.

3.2 Equivalent Impedance Comparison Calculation

As the fuel type 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-2013-002 and GEN-2013-019 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

To determine the shunt reactor size required to compensate for the current charging attributed to the modification request, the shunt size required from the GEN-2024-SR10 surplus study was placed first. Once the shunt size for the SGF was placed, the GEN-2013-002 and GEN-2013-019 incremental shunt reactor size was then calculated.

For each of the shunt reactor sizes calculated, all project generators were switched offline while other collector system elements remained in-service. A shunt reactor was tested at the project's collection substation 34.5 kV bus 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-2018-002/2019-001 stability study model.

4.2 Results

The results from the analysis showed that the GEN-2013-002 and GEN-2013-019 project needed approximately 1.1 MVAr of compensation at its collector substation to reduce the MVAr injection at the POI to zero with the SGF reactor in place. GEN-2024-SR10 did not require reactive compensation per the surplus study report[3], so a reactor was not placed for the SGF. This is a decrease from the 3.5 MVAr found in the previous modification study[4]. 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.

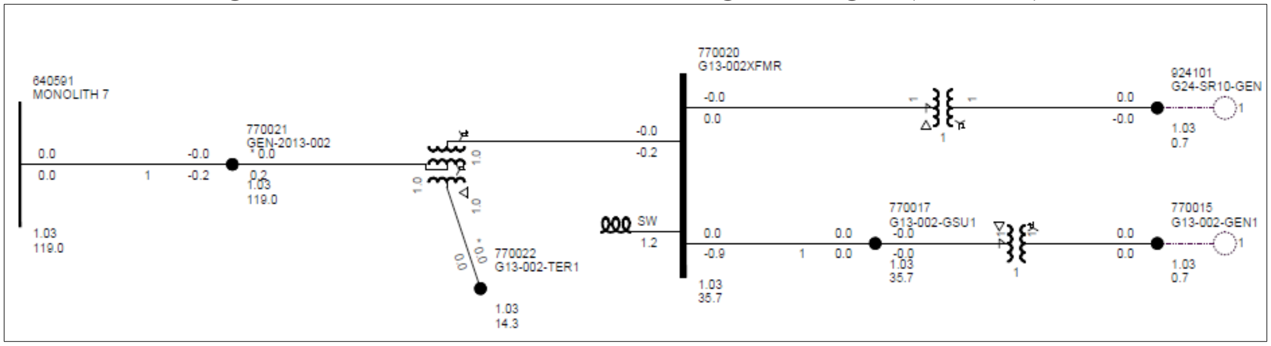
The information gathered from the reactive power analysis is provided as information to the Interconnection Customer and Transmission Owner (TO) and/or Transmission Operator (TOP). The applicable reactive power requirements will be further reviewed by the TO and/or TOP.

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

Machine	POI Bus Number	POI Bus Name	Reactor Size (MVAr)
			25SP
GEN-2013-002 & GEN-2013-019	640591	MONOLITH 7	1.1

[3] GEN-2024-SR10 Surplus Service Impact Study - August 14, 2024
[4] GEN-2013-002 & GEN-2013-019 Modification Request Impact Study– June 7, 2023

Figure 4-1: GEN-2013-002 and GEN-2013-019 Single Line Diagram (Shunt Sizes)



5.0 Short Circuit Analysis

Aneden performed a short circuit study using the 25SP model for GEN-2013-002 and GEN-2013-019 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 115 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-2013-002 and GEN-2013-019 online. The existing SGF, GEN-2024-SR10, was left online for this analysis.

Aneden created a short circuit model using the 25SP DISIS-2018-002/2019-001 stability study model by adjusting the GEN-2013-002 and GEN-2013-019 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#
	770015
Machine MVA Base	140.35
R (pu)	0.0
X'' (pu)	0.852

*pu values based on Machine MVA Base

5.2 Results

The results of the short circuit analysis compared the 25SP model with GEN-2024-SR10 online and the GEN-2013-002 and GEN-2013-019 modification not connected to the stability Scenario 2 dispatch model with both the existing SGF and GEN-2013-002 and GEN-2013-019 in service as described in Section 6.1. The GEN-2013-002 and GEN-2013-019 POI bus (Monolith 115 kV) fault current magnitudes for the comparison cases are provided in Table 5-2 showing a fault current of 41.51 kA with the GEN-2013-002 and GEN-2013-019 project online. Table 5-3 shows the maximum fault current magnitudes and fault current increases with the GEN-2013-002 and GEN-2013-019 project online.

The maximum fault current calculated within 5 buses of the POI was 42.5 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA for both of the cases. These buses are highlighted in Appendix B. The maximum GEN-2013-002 and GEN-2013-019 contribution to three-phase fault currents was about 1.5% and 0.61 kA.

Table 5-2: POI Short Circuit Comparison Results

Case	GEN-OFF Current (kA)	GEN-ON Current (kA)	kA Change	%Change
25SP	40.90	41.51	0.61	1.5%

Table 5-3: 25SP Short Circuit Comparison Results[4]

Voltage (kV)	Max. Current (kA)	Max kA Change	Max %Change
69	5.5	0.00	0.0%
115	42.5	0.61	1.5%
161	41.6	0.01	0.0%
230	16.7	0.01	0.0%
345	32.5	0.12	0.5%
Max	**42.5**	**0.61**	**1.5%**

6.0 Dynamic Stability Analysis

Aneden performed a dynamic stability analysis to identify the impact of the modifications to GEN-2013-002 and GEN-2013-019. The analysis was performed according to SPP's Disturbance Performance Requirements[5]. 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-2013-002 and GEN-2013-019 configuration of 35 x PE FS 4010M inverters operating at 3.5485 MW (REGCAU1). This stability analysis was performed using Siemens PTI's PSS/E version 34.8.0 software.

The modifications requested for the GEN-2013-002 and GEN-2013-019 project were used to create modified stability models for this impact study based on the DISIS-2018-002/2019-001 stability study models:

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

Aneden reviewed GIRs that shared the same POI, Monolith 115 kV, and updated their models as applicable based on SPP's confirmation of the latest project configurations. The modification under study, GEN-2013-002 and GEN-2013-019, is the EGF for the GEN-2024-SR10 SGF project. As a result, Aneden included the accepted GEN-2024-SR10 surplus project in the base models and created two stability scenarios to accommodate the status of GEN-2024-SR10.

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-2013-002 and GEN-2013-019 online at 100% of the assumed dispatch (124.2 MW) while the GEN-2024-SR10 generator was offline and disconnected.

The second scenario (Scenario 2) was comprised of GEN-2024-SR10 at 100% of the studied dispatch (80.08 MW) while the GEN-2013-002 and GEN-2013-019 generator picked up the remaining EGF GIA capacity (44.12 MW). The study scenarios are shown in Table 4-1.

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

Scenario	GEN-2013-002 & GEN-2013-019 (EGF) (MW)	GEN-2024-SR10 (SGF) (MW)	EGF + SGF (MW)
1	124.2	0 (offline)	124.2
2	44.12	80.08	124.2

The dynamic model data for the GEN-2013-002 and GEN-2013-019 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.

[5] SPP Disturbance Performance Requirements: https://www.spp.org/documents/28859/spp%20disturbance%20performance%20requirements%20(twg%20approved).pdf

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

- The frequency protective relay at bus 585248 was disabled after observing the generator tripping during initial three phase fault simulations. This frequency tripping issue is a known PSS/E limitation when calculating bus frequency as it relates to non-conventional type devices.
- The voltage protective relays at buses 585248, 635020, 541546, 541549, 541550, 587683, 541549, 585248, 587683, & 800103 were disabled to avoid generator tripping due to an instantaneous over voltage spike after fault clearing.
- The WTDTA1 drive train model was disabled at buses 532957 and 534023 to resolve PSSE dynamic simulation crashes.
- The REGCA1 acceleration factor parameter was reduced at buses 585248, 761211, 761214, and 924101 to resolve PSSE dynamic simulation crashes.
- The PSSE dynamic simulation iterations and acceleration factor were adjusted as needed to resolve PSSE dynamic simulation crashes.
- The under-voltage protective relay at bus 635020 was disabled to avoid nearby generator tripping due to an undervoltage of less than 0.15 pu for longer than 0.02 seconds.
- The over-voltage protective relays at buses 541514, 541549, 541550, and 541551 were disabled to avoid generator tripping due to extended terminal over-voltages.

During the fault simulations, the active power (PELEC), reactive power (QELEC), and terminal voltage (ETERM) were monitored for GEN-2013-002 and GEN-2013-019 and other current and prior queued projects in Group 2. In addition, voltages of five (5) buses away from the POI of the GEN-2013-002 and GEN-2013-019 were monitored and plotted. The machine rotor angle for synchronous machines and speed for asynchronous machines within the study areas including 330 (AECI), 531 (MIDW), 534 (SUNC), 536 (WERE), 541 (KCPL), 635 (MEC), 640 (NPPD), 641 (HAST), 642 (GRIS), 645 (OPPD), 650 (LES), 652 (WAPA), and 659 (BEPC-SPP) 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 Description
FLT1000-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to TOBIAS 3 (640525) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV to NW68HOLDRG3 (650114) 345 kV line CKT 1.
FLT1001-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to NW68HOLDRG3 (650114) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV to MCCOOL 3 (640271) 345 kV line CKT 1.
FLT1002-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to MCCOOL 3 (640271) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV to 103&ROKEBY3 (650189) 345 kV line CKT 1.
FLT1003-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to 103&ROKEBY3 (650189) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV to MONOLITH 3 (640590) 345 kV line CKT 1.
FLT1004-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to TOBIAS 3 (640525) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV / SHELDON7 (640278) 115 kV / MOORE 9 (640280) 13.8 kV XFMR CKT 1.
FLT1005-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to MONOLITH 3 (640590) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV / SHELDON7 (640278) 115 kV / MOORE 9 (640280) 13.8 kV XFMR CKT 1.
FLT1006-SB	P4	Stuck Breaker on COOPER 3 (640139) 345 kV Bus a. Apply single phase fault at the COOPER 3 (640139) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 3 (640139) 345 kV to ATCHSN 3 (635017) 345 kV line CKT 1. b.2.Trip the COOPER 3 (640139) 345 kV to ST JOE 7 (541199) 345 kV line CKT 1.
FLT1007-SB	P4	Stuck Breaker on COOPER 3 (640139) 345 kV Bus a. Apply single phase fault at the COOPER 3 (640139) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 3 (640139) 345 kV to S3458 3 (645458) 345 kV line CKT 1. b.2.Trip the COOPER 3 (640139) 345 kV / COOPER 5 (640140) 161 kV / COOPER T2 9 (640142) 13.8 kV XFMR CKT 1.
FLT1008-SB	P4	Stuck Breaker on COOPER 3 (640139) 345 kV Bus a. Apply single phase fault at the COOPER 3 (640139) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 3 (640139) 345 kV to 7FAIRPT (300039) 345 kV line CKT 1. b.2.Trip the COOPER 3 (640139) 345 kV / COOPER 5 (640140) 161 kV / COOPER T5 9 (643172) 13.8 kV XFMR CKT 1.

Table 6-2 Continued

Fault ID	Planning Event	Fault Description
FLT1009-SB	P4	Stuck Breaker on COOPER 3 (640139) 345 kV Bus a. Apply single phase fault at the COOPER 3 (640139) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 3 (640139) 345 kV to MONOLITH 3 (640590) 345 kV line CKT 1. b.2.Trip the COOPER 3 (640139) 345 kV / COOPER1G (640009) 22 kV XFMR CKT 1. Trip generator on the Bus COOPER1G (640009) 22 kV
FLT1010-SB	P4	Stuck Breaker on COOPER 5 (640140) 161 kV Bus a. Apply single phase fault at the COOPER 5 (640140) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 5 (640140) 161 kV to S1280 5 (646280) 161 kV line CKT 1. b.2.Trip the COOPER 5 (640140) 161 kV / COOPER 3 (640139) 345 kV / COOPER T2 9 (640142) 13.8 kV XFMR CKT 1.
FLT1011-SB	P4	Stuck Breaker on COOPER 5 (640140) 161 kV Bus a. Apply single phase fault at the COOPER 5 (640140) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 5 (640140) 161 kV to S1280 5 (646280) 161 kV line CKT 1. b.2.Trip the COOPER 5 (640140) 161 kV / COOPER 8 (640446) 69 kV / COOPER T6 9 (643173) 13.8 kV XFMR CKT 1.
FLT1012-SB	P4	Stuck Breaker on COOPER 5 (640140) 161 kV Bus a. Apply single phase fault at the COOPER 5 (640140) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 5 (640140) 161 kV / COOPER 3 (640139) 345 kV / COOPER T5 9 (643172) 13.8 kV XFMR CKT 1. b.2.Trip the COOPER 5 (640140) 161 kV / COOPER 8 (640446) 69 kV / COOPER T6 9 (643173) 13.8 kV XFMR CKT 1.
FLT1013-SB	P4	Stuck Breaker on SHELDON7 (640278) 115 kV Bus a. Apply single phase fault at the SHELDON7 (640278) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the SHELDON7 (640278) 115 kV to SW7&BENNET7 (650246) 115 kV line CKT 1. b.2.Trip the SHELDON7 (640278) 115 kV / HALLAM3G (640021) 13.8 kV XFMR CKT 1. Trip generator on the Bus HALLAM3G (640021) 13.8 kV
FLT1014-SB	P4	Stuck Breaker on SHELDON7 (640278) 115 kV Bus a. Apply single phase fault at the SHELDON7 (640278) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the SHELDON7 (640278) 115 kV to CRETE__7 (640153) 115 kV line CKT 1. b.2.Trip the SHELDON7 (640278) 115 kV to CLATONA7 (640111) 115 kV line CKT 1.
FLT1015-SB	P4	Stuck Breaker on SHELDON7 (640278) 115 kV Bus a. Apply single phase fault at the SHELDON7 (640278) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the SHELDON7 (640278) 115 kV / MOORE 3 (640277) 345 kV / MOORE 9 (640280) 13.8 kV XFMR CKT 1. b.2.Trip the SHELDON7 (640278) 115 kV to FOLSM&PHIL7 (650242) 115 kV line CKT 1.
FLT1016-SB	P4	Stuck Breaker on SHELDON7 (640278) 115 kV Bus a. Apply single phase fault at the SHELDON7 (640278) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the SHELDON7 (640278) 115 kV to BPS SUB7 (640088) 115 kV line CKT 1. b.2.Trip the SHELDON7 (640278) 115 kV / SHELDN1G (640019) 13.8 kV XFMR CKT 1. Trip generator on the Bus SHELDN1G (640019) 13.8 kV
FLT1017-SB	P4	Stuck Breaker on SHELDON7 (640278) 115 kV Bus a. Apply single phase fault at the SHELDON7 (640278) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the SHELDON7 (640278) 115 kV to MONOLITH 7 (640591) 115 kV line CKT 1. b.2.Trip the SHELDON7 (640278) 115 kV / SHELDN2G (640020) 13.8 kV XFMR CKT 1. Trip generator on the Bus SHELDN2G (640020) 13.8 kV
FLT1019-SB	P4	Stuck Breaker on MONOLITH 7 (640591) 115 kV Bus a. Apply single phase fault at the MONOLITH 7 (640591) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MONOLITH 7 (640591) 115 kV to FIRTH 7 (640171) 115 kV line CKT 1. b.2.Trip the MONOLITH 7 (640591) 115 kV / MONOLITH 3 (640590) 345 kV / MONOLITHT1 9 (640596) 13.8 kV XFMR CKT 1.

Table 6-2 Continued

Fault ID	Planning Event	Fault Description
FLT1020-SB	P4	Stuck Breaker on SHELDON7 (640278) 115 kV Bus a. Apply single phase fault at the SHELDON7 (640278) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the SHELDON7 (640278) 115 kV to FOLSM&PHIL7 (650242) 115 kV line CKT 1. b.2.Trip the SHELDON7 (640278) 115 kV to SW7&BENNET7 (650246) 115 kV line CKT 1.
FLT1021-SB	P4	Stuck Breaker on FIRTH 7 (640171) 115 kV Bus a. Apply single phase fault at the FIRTH 7 (640171) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the FIRTH 7 (640171) 115 kV to MONOLITH 7 (640591) 115 kV line CKT 1. b.2.Trip the FIRTH 7 (640171) 115 kV to STERLNG7 (640362) 115 kV line CKT 1.
FLT1022-SB	P4	Stuck Breaker on MONOLITH 3 (640590) 345 kV Bus a. Apply single phase fault at the MONOLITH 3 (640590) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MONOLITH 3 (640590) 345 kV to MOORE 3 (640277) 345 kV line CKT 1. b.2.Trip the MONOLITH 3 (640590) 345 kV to COOPER 3 (640139) 345 kV line CKT 1.
FLT1023-SB	P4	Stuck Breaker on COOPER 3 (640139) 345 kV Bus a. Apply single phase fault at the COOPER 3 (640139) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the COOPER 3 (640139) 345 kV to ST JOE 7 (541199) 345 kV line CKT 1. b.2.Trip the COOPER 3 (640139) 345 kV to 7FAIRPT (300039) 345 kV line CKT 1.
FLT1024-SB	P4	Stuck Breaker on MOORE 3 (640277) 345 kV Bus a. Apply single phase fault at the MOORE 3 (640277) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MOORE 3 (640277) 345 kV to TOBIAS 3 (640525) 345 kV line CKT 1. b.2.Trip the MOORE 3 (640277) 345 kV to MCCOOL 3 (640271) 345 kV line CKT 1.
FLT9000-3PH	P1	3 Phase fault on MONOLITH 7 (640591) 115 kV to GEN-2013-002 (770021) 115 kV line CKT 1, near MONOLITH 7 (640591) 115 kV. a. Apply fault at the MONOLITH 7 (640591) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator on the Bus G24-SR10-GEN (924101) 0.7 kV Trip generator on the Bus G13-002-GEN1 (770015) 0.7 kV Trip generator on the Bus G13-002-GEN2 (770016) 0.7 kV Trip generator on the Bus G13-002-GEN3 (770018) 0.6 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.
FLT9001-3PH	P1	3 Phase fault on MONOLITH 7 (640591) 115 kV to GEN-2019-041 (763725) 115 kV line CKT 1, near MONOLITH 7 (640591) 115 kV. a. Apply fault at the MONOLITH 7 (640591) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator on the Bus G19-041-GEN1 (763728) 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.
FLT9002-3PH	P1	3 Phase fault on MONOLITH 7 (640591) 115 kV to FIRTH 7 (640171) 115 kV line CKT 1, near MONOLITH 7 (640591) 115 kV. a. Apply fault at the MONOLITH 7 (640591) 115 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.
FLT9003-3PH	P1	3 Phase fault on MONOLITH 7 (640591) 115 kV to SHELDON7 (640278) 115 kV line CKT 1, near MONOLITH 7 (640591) 115 kV. a. Apply fault at the MONOLITH 7 (640591) 115 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.
FLT9004-3PH	P1	3 Phase fault on MONOLITH 7 (640591) 115 kV / MONOLITH 3 (640590) 345 kV / MONOLITHT1 9 (640596) 13.8 kV XFMR CKT 1, near MONOLITH 7 (640591) 115 kV. a. Apply fault at the MONOLITH 7 (640591) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.

Table 6-2 Continued

Fault ID	Planning Event	Fault Description
FLT9005-3PH	P1	3 Phase fault on FIRTH 7 (640171) 115 kV to MONOLITH 7 (640591) 115 kV line CKT 1, near FIRTH 7 (640171) 115 kV. a. Apply fault at the FIRTH 7 (640171) 115 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.
FLT9006-3PH	P1	3 Phase fault on FIRTH 7 (640171) 115 kV to STERLNG7 (640362) 115 kV line CKT 1, near FIRTH 7 (640171) 115 kV. a. Apply fault at the FIRTH 7 (640171) 115 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.
FLT9007-3PH	P1	3 Phase fault on STERLNG7 (640362) 115 kV to FIRTH 7 (640171) 115 kV line CKT 1, near STERLNG7 (640362) 115 kV. a. Apply fault at the STERLNG7 (640362) 115 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.
FLT9008-3PH	P1	3 Phase fault on STERLNG7 (640362) 115 kV / S974 8 (647974) 69 kV / STERLING T19 (643144) 13.8 kV XFMR CKT 1, near STERLNG7 (640362) 115 kV. a. Apply fault at the STERLNG7 (640362) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9009-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to MONOLITH 7 (640591) 115 kV line CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 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.
FLT9010-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to SHELDN2G (640020) 13.8 kV XFMR CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator on the Bus SHELDN2G (640020) 13.8 kV
FLT9011-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to SHELDN1G (640019) 13.8 kV XFMR CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator on the Bus SHELDN1G (640019) 13.8 kV
FLT9012-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to BPS SUB7 (640088) 115 kV line CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 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.
FLT9013-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to CLATONA7 (640111) 115 kV line CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 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.
FLT9014-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to FOLSM&PHIL7 (650242) 115 kV line CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 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.
FLT9015-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to SW7&BENNET7 (650246) 115 kV line CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 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 Description
FLT9016-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV to CRETE__7 (640153) 115 kV line CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 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.
FLT9017-3PH	P1	3 Phase fault on SHELDON7 (640278) 115 kV / MOORE 3 (640277) 345 kV / MOORE 9 (640280) 13.8 kV XFMR CKT 1, near SHELDON7 (640278) 115 kV. a. Apply fault at the SHELDON7 (640278) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9018-3PH	P1	3 Phase fault on BPS SUB7 (640088) 115 kV to SHELDON7 (640278) 115 kV line CKT 1, near BPS SUB7 (640088) 115 kV. a. Apply fault at the BPS SUB7 (640088) 115 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.
FLT9019-3PH	P1	3 Phase fault on BPS SUB7 (640088) 115 kV to BPS GT1G (640022) 13.8 kV XFMR CKT 1, near BPS SUB7 (640088) 115 kV. a. Apply fault at the BPS SUB7 (640088) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer. Trip generator on the Bus BPS GT1G (640022) 13.8 kV
FLT9020-3PH	P1	3 Phase fault on BPS SUB7 (640088) 115 kV to BPS GT2G (640023) 13.8 kV XFMR CKT 1, near BPS SUB7 (640088) 115 kV. a. Apply fault at the BPS SUB7 (640088) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer. Trip generator on the Bus BPS GT2G (640023) 13.8 kV
FLT9021-3PH	P1	3 Phase fault on BPS SUB7 (640088) 115 kV to BPS ST3G (640024) 13.8 kV XFMR CKT 1, near BPS SUB7 (640088) 115 kV. a. Apply fault at the BPS SUB7 (640088) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer. Trip generator on the Bus BPS ST3G (640024) 13.8 kV
FLT9022-3PH	P1	3 Phase fault on BPS SUB7 (640088) 115 kV to BEATRCE7 (640076) 115 kV line CKT 2, near BPS SUB7 (640088) 115 kV. a. Apply fault at the BPS SUB7 (640088) 115 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 BPS SUB7 (640088) 115 kV to CLATONA7 (640111) 115 kV line CKT 1, near BPS SUB7 (640088) 115 kV. a. Apply fault at the BPS SUB7 (640088) 115 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 CLATONA7 (640111) 115 kV to BPS SUB7 (640088) 115 kV line CKT 1, near CLATONA7 (640111) 115 kV. a. Apply fault at the CLATONA7 (640111) 115 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 CLATONA7 (640111) 115 kV to SHELDON7 (640278) 115 kV line CKT 1, near CLATONA7 (640111) 115 kV. a. Apply fault at the CLATONA7 (640111) 115 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 FOLSM&PHIL7 (650242) 115 kV to SHELDON7 (640278) 115 kV line CKT 1, near FOLSM&PHIL7 (650242) 115 kV. a. Apply fault at the FOLSM&PHIL7 (650242) 115 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 Description
FLT9027-3PH	P1	3 Phase fault on FOLSM&PHIL7 (650242) 115 kV to 20PIONEERS7 (650238) 115 kV line CKT 1, near FOLSM&PHIL7 (650242) 115 kV. a. Apply fault at the FOLSM&PHIL7 (650242) 115 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.
FLT9028-3PH	P1	3 Phase fault on FOLSM&PHIL7 (650242) 115 kV to ROKEBY 7 (650290) 115 kV line CKT 1, near FOLSM&PHIL7 (650242) 115 kV. a. Apply fault at the FOLSM&PHIL7 (650242) 115 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.
FLT9029-3PH	P1	3 Phase fault on FOLSM&PHIL7 (650242) 115 kV to SW7&BENNET7 (650246) 115 kV line CKT 1, near FOLSM&PHIL7 (650242) 115 kV. a. Apply fault at the FOLSM&PHIL7 (650242) 115 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.
FLT9030-3PH	P1	3 Phase fault on SW7&BENNET7 (650246) 115 kV to FOLSM&PHIL7 (650242) 115 kV line CKT 1, near SW7&BENNET7 (650246) 115 kV. a. Apply fault at the SW7&BENNET7 (650246) 115 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.
FLT9031-3PH	P1	3 Phase fault on SW7&BENNET7 (650246) 115 kV to 40&BENNET 7 (650247) 115 kV line CKT 1, near SW7&BENNET7 (650246) 115 kV. a. Apply fault at the SW7&BENNET7 (650246) 115 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.
FLT9032-3PH	P1	3 Phase fault on SW7&BENNET7 (650246) 115 kV to SHELDON7 (640278) 115 kV line CKT 1, near SW7&BENNET7 (650246) 115 kV. a. Apply fault at the SW7&BENNET7 (650246) 115 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.
FLT9033-3PH	P1	3 Phase fault on CRETE__7 (640153) 115 kV to SHELDON7 (640278) 115 kV line CKT 1, near CRETE__7 (640153) 115 kV. a. Apply fault at the CRETE__7 (640153) 115 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.
FLT9034-3PH	P1	3 Phase fault on CRETE__7 (640153) 115 kV to FRIEND 7 (640174) 115 kV line CKT 1, near CRETE__7 (640153) 115 kV. a. Apply fault at the CRETE__7 (640153) 115 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.
FLT9035-3PH	P1	3 Phase fault on CRETE__7 (640153) 115 kV / CRETE G (640154) 34.5 kV / CRETE T1 9 (643048) 13.8 kV XFMR CKT 1, near CRETE__7 (640153) 115 kV. a. Apply fault at the CRETE__7 (640153) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9036-3PH	P1	3 Phase fault on MONOLITH 3 (640590) 345 kV / MONOLITH 7 (640591) 115 kV / MONOLITHT1 9 (640596) 13.8 kV XFMR CKT 1, near MONOLITH 3 (640590) 345 kV. a. Apply fault at the MONOLITH 3 (640590) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9037-3PH	P1	3 Phase fault on MONOLITH 3 (640590) 345 kV to MOORE 3 (640277) 345 kV line CKT 1, near MONOLITH 3 (640590) 345 kV. a. Apply fault at the MONOLITH 3 (640590) 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 Description
FLT9038-3PH	P1	3 Phase fault on MONOLITH 3 (640590) 345 kV to COOPER 3 (640139) 345 kV line CKT 1, near MONOLITH 3 (640590) 345 kV. a. Apply fault at the MONOLITH 3 (640590) 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.
FLT9039-3PH	P1	3 Phase fault on MOORE 3 (640277) 345 kV / SHELDON7 (640278) 115 kV / MOORE 9 (640280) 13.8 kV XFMR CKT 1, near MOORE 3 (640277) 345 kV. a. Apply fault at the MOORE 3 (640277) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9040-3PH	P1	3 Phase fault on MOORE 3 (640277) 345 kV to MONOLITH 3 (640590) 345 kV line CKT 1, near MOORE 3 (640277) 345 kV. a. Apply fault at the MOORE 3 (640277) 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.
FLT9041-3PH	P1	3 Phase fault on MOORE 3 (640277) 345 kV to TOBIAS 3 (640525) 345 kV line CKT 1, near MOORE 3 (640277) 345 kV. a. Apply fault at the MOORE 3 (640277) 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.
FLT9042-3PH	P1	3 Phase fault on MOORE 3 (640277) 345 kV to MCCOOL 3 (640271) 345 kV line CKT 1, near MOORE 3 (640277) 345 kV. a. Apply fault at the MOORE 3 (640277) 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.
FLT9043-3PH	P1	3 Phase fault on MOORE 3 (640277) 345 kV to NW68HOLDRG3 (650114) 345 kV line CKT 1, near MOORE 3 (640277) 345 kV. a. Apply fault at the MOORE 3 (640277) 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.
FLT9044-3PH	P1	3 Phase fault on MOORE 3 (640277) 345 kV to 103&ROKEBY3 (650189) 345 kV line CKT 1, near MOORE 3 (640277) 345 kV. a. Apply fault at the MOORE 3 (640277) 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.
FLT9045-3PH	P1	3 Phase fault on TOBIAS 3 (640525) 345 kV to MOORE 3 (640277) 345 kV line CKT 1, near TOBIAS 3 (640525) 345 kV. a. Apply fault at the TOBIAS 3 (640525) 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.
FLT9046-3PH	P1	3 Phase fault on TOBIAS 3 (640525) 345 kV to GEN-2017-181 (761292) 345 kV line CKT 1, near TOBIAS 3 (640525) 345 kV. a. Apply fault at the TOBIAS 3 (640525) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator on the Bus G17-181GEN1 (761295) 0.7 kV Trip generator on the Bus G17-182GEN1 (761316) 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 Description
FLT9047-3PH	P1	3 Phase fault on TOBIAS 3 (640525) 345 kV to GEN-2015-088 (585241) 345 kV line CKT 1, near TOBIAS 3 (640525) 345 kV. a. Apply fault at the TOBIAS 3 (640525) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator on the Bus G15-088-GEN1 (585245) 0.7 kV Trip generator on the Bus G15-088-GEN2 (585246) 0.7 kV Trip generator on the Bus G15-088-GEN3 (585247) 0.7 kV Trip generator on the Bus G15-088-GEN4 (585248) 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.
FLT9048-3PH	P1	3 Phase fault on TOBIAS 3 (640525) 345 kV to PAULINE3 (640312) 345 kV line CKT 1, near TOBIAS 3 (640525) 345 kV. a. Apply fault at the TOBIAS 3 (640525) 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.
FLT9049-3PH	P1	3 Phase fault on MCCOOL 3 (640271) 345 kV to MOORE 3 (640277) 345 kV line CKT 1, near MCCOOL 3 (640271) 345 kV. a. Apply fault at the MCCOOL 3 (640271) 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.
FLT9050-3PH	P1	3 Phase fault on MCCOOL 3 (640271) 345 kV to GEN-2017-210 (761208) 345 kV line CKT 1, near MCCOOL 3 (640271) 345 kV. a. Apply fault at the MCCOOL 3 (640271) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator on the Bus G17-210-GEN1 (761211) 0.7 kV Trip generator on the Bus G17-210-GEN2 (761214) 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.
FLT9051-3PH	P1	3 Phase fault on MCCOOL 3 (640271) 345 kV to GR ISLD3 (653571) 345 kV line CKT 1, near MCCOOL 3 (640271) 345 kV. a. Apply fault at the MCCOOL 3 (640271) 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 MCCOOL 3 (640271) 345 kV / MCCOOL 7 (640272) 115 kV / MCCOOL19 (640274) 13.8 kV XFMR CKT 1, near MCCOOL 3 (640271) 345 kV. a. Apply fault at the MCCOOL 3 (640271) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9053-3PH	P1	3 Phase fault on MCCOOL 7 (640272) 115 kV / MCCOOL 3 (640271) 345 kV / MCCOOL19 (640274) 13.8 kV XFMR CKT 1, near MCCOOL 7 (640272) 115 kV. a. Apply fault at the MCCOOL 7 (640272) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9054-3PH	P1	3 Phase fault on MCCOOL 7 (640272) 115 kV to GENEVA 7 (640178) 115 kV line CKT 1, near MCCOOL 7 (640272) 115 kV. a. Apply fault at the MCCOOL 7 (640272) 115 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.
FLT9055-3PH	P1	3 Phase fault on MCCOOL 7 (640272) 115 kV to YORK SW7 (640413) 115 kV line CKT 1, near MCCOOL 7 (640272) 115 kV. a. Apply fault at the MCCOOL 7 (640272) 115 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.
FLT9056-3PH	P1	3 Phase fault on NW68HOLDRG3 (650114) 345 kV to MOORE 3 (640277) 345 kV line CKT 1, near NW68HOLDRG3 (650114) 345 kV. a. Apply fault at the NW68HOLDRG3 (650114) 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 Description
FLT9057-3PH	P1	3 Phase fault on NW68HOLDRG3 (650114) 345 kV to WAGENER 3 (650185) 345 kV line CKT 1, near NW68HOLDRG3 (650114) 345 kV. a. Apply fault at the NW68HOLDRG3 (650114) 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.
FLT9058-3PH	P1	3 Phase fault on NW68HOLDRG3 (650114) 345 kV to COLMB.E3 (640125) 345 kV line CKT 1, near NW68HOLDRG3 (650114) 345 kV. a. Apply fault at the NW68HOLDRG3 (650114) 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.
FLT9059-3PH	P1	3 Phase fault on NW68HOLDRG3 (650114) 345 kV / NW68HOLDRG7 (650214) 115 kV / NW68HOL1 9 (650314) 13.8 kV XFMR CKT 1, near NW68HOLDRG3 (650114) 345 kV. a. Apply fault at the NW68HOLDRG3 (650114) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9060-3PH	P1	3 Phase fault on NW68HOLDRG7 (650214) 115 kV / NW68HOLDRG3 (650114) 345 kV / NW68HOL1 9 (650314) 13.8 kV XFMR CKT 1, near NW68HOLDRG7 (650214) 115 kV. a. Apply fault at the NW68HOLDRG7 (650214) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9061-3PH	P1	3 Phase fault on NW68HOLDRG7 (650214) 115 kV to ROKEBY 7 (650290) 115 kV line CKT 1, near NW68HOLDRG7 (650214) 115 kV. a. Apply fault at the NW68HOLDRG7 (650214) 115 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 NW68HOLDRG7 (650214) 115 kV to SW27&F 7 (650216) 115 kV line CKT 1, near NW68HOLDRG7 (650214) 115 kV. a. Apply fault at the NW68HOLDRG7 (650214) 115 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 NW68HOLDRG7 (650214) 115 kV to NW70FAIRFD7 (650210) 115 kV line CKT 1, near NW68HOLDRG7 (650214) 115 kV. a. Apply fault at the NW68HOLDRG7 (650214) 115 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 NW68HOLDRG7 (650214) 115 kV to PAWNEEL7 (640316) 115 kV line CKT 1, near NW68HOLDRG7 (650214) 115 kV. a. Apply fault at the NW68HOLDRG7 (650214) 115 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 103&ROKEBY3 (650189) 345 kV to MOORE 3 (640277) 345 kV line CKT 1, near 103&ROKEBY3 (650189) 345 kV. a. Apply fault at the 103&ROKEBY3 (650189) 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.
FLT9066-3PH	P1	3 Phase fault on 103&ROKEBY3 (650189) 345 kV to WAGENER 3 (650185) 345 kV line CKT 1, near 103&ROKEBY3 (650189) 345 kV. a. Apply fault at the 103&ROKEBY3 (650189) 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.
FLT9067-3PH	P1	3 Phase fault on 103&ROKEBY3 (650189) 345 kV to S3458 3 (645458) 345 kV line CKT 1, near 103&ROKEBY3 (650189) 345 kV. a. Apply fault at the 103&ROKEBY3 (650189) 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 Description
FLT9068-3PH	P1	3 Phase fault on S3458 3 (645458) 345 kV to 103&ROKEBY3 (650189) 345 kV line CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 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.
FLT9069-3PH	P1	3 Phase fault on S3458 3 (645458) 345 kV to S3456 3 (645456) 345 kV line CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 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 S3458 3 (645458) 345 kV to S3740 3 (645740) 345 kV line CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 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 S3458 3 (645458) 345 kV to HOLT 7 (541510) 345 kV line CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 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.
FLT9072-3PH	P1	3 Phase fault on S3458 3 (645458) 345 kV to COOPER 3 (640139) 345 kV line CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 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.
FLT9073-3PH	P1	3 Phase fault on S3458 3 (645458) 345 kV to NEBCTY1G (645011) 18 kV XFMR CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer. Trip generator on the Bus NEBCTY1G (645011) 18 kV
FLT9074-3PH	P1	3 Phase fault on S3458 3 (645458) 345 kV to NEBCTY2G (645012) 23 kV XFMR CKT 1, near S3458 3 (645458) 345 kV. a. Apply fault at the S3458 3 (645458) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer. Trip generator on the Bus NEBCTY2G (645012) 23 kV
FLT9075-3PH	P1	3 Phase fault on COOPER 3 (640139) 345 kV to MONOLITH 3 (640590) 345 kV line CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 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.
FLT9076-3PH	P1	3 Phase fault on COOPER 3 (640139) 345 kV to S3458 3 (645458) 345 kV line CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 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.
FLT9077-3PH	P1	3 Phase fault on COOPER 3 (640139) 345 kV to ATCHSN 3 (635017) 345 kV line CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 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.
FLT9078-3PH	P1	3 Phase fault on COOPER 3 (640139) 345 kV to ST JOE 7 (541199) 345 kV line CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 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 Description
FLT9079-3PH	P1	3 Phase fault on COOPER 3 (640139) 345 kV to 7FAIRPT (300039) 345 kV line CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 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 COOPER 3 (640139) 345 kV / COOPER 5 (640140) 161 kV / COOPER T2 9 (640142) 13.8 kV XFMR CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9081-3PH	P1	3 Phase fault on COOPER 3 (640139) 345 kV to COOPER1G (640009) 22 kV XFMR CKT 1, near COOPER 3 (640139) 345 kV. a. Apply fault at the COOPER 3 (640139) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer. Trip generator on the Bus COOPER1G (640009) 22 kV
FLT9082-3PH	P1	3 Phase fault on ATCHSN 3 (635017) 345 kV to COOPER 3 (640139) 345 kV line CKT 1, near ATCHSN 3 (635017) 345 kV. a. Apply fault at the ATCHSN 3 (635017) 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 ATCHSN 3 (635017) 345 kV to HOLT 7 (541510) 345 kV line CKT 1, near ATCHSN 3 (635017) 345 kV. a. Apply fault at the ATCHSN 3 (635017) 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.
FLT9084-3PH	P1	3 Phase fault on ATCHSN 3 (635017) 345 kV to WESTBORO 3 (635018) 345 kV line CKT 1, near ATCHSN 3 (635017) 345 kV. a. Apply fault at the ATCHSN 3 (635017) 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.
FLT9085-3PH	P1	3 Phase fault on ST JOE 7 (541199) 345 kV to COOPER 3 (640139) 345 kV line CKT 1, near ST JOE 7 (541199) 345 kV. a. Apply fault at the ST JOE 7 (541199) 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.
FLT9086-3PH	P1	3 Phase fault on ST JOE 7 (541199) 345 kV to 7FAIRPT (300039) 345 kV line CKT 1, near ST JOE 7 (541199) 345 kV. a. Apply fault at the ST JOE 7 (541199) 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.
FLT9087-3PH	P1	3 Phase fault on ST JOE 7 (541199) 345 kV to EASTOWN7 (541400) 345 kV line CKT 1, near ST JOE 7 (541199) 345 kV. a. Apply fault at the ST JOE 7 (541199) 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.
FLT9088-3PH	P1	3 Phase fault on ST JOE 7 (541199) 345 kV to G17-183-TAP (761383) 345 kV line CKT 1, near ST JOE 7 (541199) 345 kV. a. Apply fault at the ST JOE 7 (541199) 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.
FLT9089-3PH	P1	3 Phase fault on ST JOE 7 (541199) 345 kV / ST JOE 5 (541253) 161 kV / STJOE 1T (541370) 13.8 kV XFMR CKT 22, near ST JOE 7 (541199) 345 kV. a. Apply fault at the ST JOE 7 (541199) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.

Table 6-2 Continued

Fault ID	Planning Event	Fault Description
FLT9090-3PH	P1	3 Phase fault on ST JOE 5 (541253) 161 kV / ST JOE 7 (541199) 345 kV / STJOE 1T (541370) 13.8 kV XFMR CKT 22, near ST JOE 5 (541253) 161 kV. a. Apply fault at the ST JOE 5 (541253) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9091-3PH	P1	3 Phase fault on ST JOE 5 (541253) 161 kV to AVENUECTY 5 (541394) 161 kV line CKT 1, near ST JOE 5 (541253) 161 kV. a. Apply fault at the ST JOE 5 (541253) 161 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 ST JOE 5 (541253) 161 kV to WOODBIN5 (541258) 161 kV line CKT 1, near ST JOE 5 (541253) 161 kV. a. Apply fault at the ST JOE 5 (541253) 161 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 ST JOE 5 (541253) 161 kV to COOK 5 (541257) 161 kV line CKT 1, near ST JOE 5 (541253) 161 kV. a. Apply fault at the ST JOE 5 (541253) 161 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 ST JOE 5 (541253) 161 kV to ST JOE_CAP5 (541147) 161 kV line CKT R, near ST JOE 5 (541253) 161 kV. a. Apply fault at the ST JOE 5 (541253) 161 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 COOPER 5 (640140) 161 kV / COOPER 3 (640139) 345 kV / COOPER T2 9 (640142) 13.8 kV XFMR CKT 1, near COOPER 5 (640140) 161 kV. a. Apply fault at the COOPER 5 (640140) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9096-3PH	P1	3 Phase fault on COOPER 5 (640140) 161 kV / COOPER 8 (640446) 69 kV / COOPER T6 9 (643173) 13.8 kV XFMR CKT 1, near COOPER 5 (640140) 161 kV. a. Apply fault at the COOPER 5 (640140) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9097-3PH	P1	3 Phase fault on COOPER 5 (640140) 161 kV to S1280 5 (646280) 161 kV line CKT 1, near COOPER 5 (640140) 161 kV. a. Apply fault at the COOPER 5 (640140) 161 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 S1280 5 (646280) 161 kV to COOPER 5 (640140) 161 kV line CKT 1, near S1280 5 (646280) 161 kV. a. Apply fault at the S1280 5 (646280) 161 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 S1280 5 (646280) 161 kV to HUMBOLT5 (640234) 161 kV line CKT 1, near S1280 5 (646280) 161 kV. a. Apply fault at the S1280 5 (646280) 161 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.
FLT9100-3PH	P1	3 Phase fault on S1280 5 (646280) 161 kV to S1263 5 (646263) 161 kV line CKT 1, near S1280 5 (646280) 161 kV. a. Apply fault at the S1280 5 (646280) 161 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 Description
FLT9101-3PH	P1	3 Phase fault on 7FAIRPT (300039) 345 kV to COOPER 3 (640139) 345 kV line CKT 1, near 7FAIRPT (300039) 345 kV. a. Apply fault at the 7FAIRPT (300039) 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.
FLT9102-3PH	P1	3 Phase fault on 7FAIRPT (300039) 345 kV to ST JOE 7 (541199) 345 kV line CKT 1, near 7FAIRPT (300039) 345 kV. a. Apply fault at the 7FAIRPT (300039) 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.
FLT9103-3PH	P1	3 Phase fault on 7FAIRPT (300039) 345 kV to 5FAIRPTXF3 (301559) 161 kV XFMR CKT 3, near 7FAIRPT (300039) 345 kV. a. Apply fault at the 7FAIRPT (300039) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9104-3PH	P1	3 Phase fault on 5FAIRPTB2 (300076) 161 kV to 5FAIRPTXF3 (301559) 161 kV line CKT 1, near 5FAIRPTB2 (300076) 161 kV. a. Apply fault at the 5FAIRPTB2 (300076) 161 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 5FAIRPTB2 (300076) 161 kV to 5FAIRPTB1 (301564) 161 kV line CKT Z1, near 5FAIRPTB2 (300076) 161 kV. a. Apply fault at the 5FAIRPTB2 (300076) 161 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 5FAIRPTB2 (300076) 161 kV to 2FAIRPT (300249) 69 kV XFMR CKT 2, near 5FAIRPTB2 (300076) 161 kV. a. Apply fault at the 5FAIRPTB2 (300076) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9107-3PH	P1	3 Phase fault on 5FAIRPTB2 (300076) 161 kV to 5GENTRY (300073) 161 kV line CKT 1, near 5FAIRPTB2 (300076) 161 kV. a. Apply fault at the 5FAIRPTB2 (300076) 161 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.
FLT9108-3PH	P1	3 Phase fault on 5FAIRPTB2 (300076) 161 kV to 5WINSLOW (301347) 161 kV line CKT 1, near 5FAIRPTB2 (300076) 161 kV. a. Apply fault at the 5FAIRPTB2 (300076) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator on the Bus 1WINSLOWG1 (301358) 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.
FLT9109-3PH	P1	3 Phase fault on 5FAIRPTB1 (301564) 161 kV to 5FAIRPTB2 (300076) 161 kV line CKT Z1, near 5FAIRPTB1 (301564) 161 kV. a. Apply fault at the 5FAIRPTB1 (301564) 161 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.
FLT9110-3PH	P1	3 Phase fault on 5FAIRPTB1 (301564) 161 kV to 5OSBORN (300107) 161 kV line CKT 1, near 5FAIRPTB1 (301564) 161 kV. a. Apply fault at the 5FAIRPTB1 (301564) 161 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.
FLT9111-3PH	P1	3 Phase fault on 5FAIRPTB1 (301564) 161 kV to 5HICKCK (300087) 161 kV line CKT 1, near 5FAIRPTB1 (301564) 161 kV. a. Apply fault at the 5FAIRPTB1 (301564) 161 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 Description
FLT9112-3PH	P1	3 Phase fault on 5FAIRPTB1 (301564) 161 kV to 2FAIRPT (300249) 69 kV XFMR CKT 1, near 5FAIRPTB1 (301564) 161 kV. a. Apply fault at the 5FAIRPTB1 (301564) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9113-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 5FAIRPTB2 (300076) 161 kV XFMR CKT 2, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9114-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 5FAIRPTB1 (301564) 161 kV XFMR CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9115-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 2KIDDER (300203) 69 kV line CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 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.
FLT9116-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 2KINGCT (300257) 69 kV line CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 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.
FLT9117-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 2DRLNGT (300248) 69 kV line CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 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.
FLT9118-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 2PATBRG (300209) 69 kV line CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 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.
FLT9119-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 2JAMESN (300202) 69 kV line CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 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.
FLT9120-3PH	P1	3 Phase fault on 2FAIRPT (300249) 69 kV to 2MAYSVL (300259) 69 kV line CKT 1, near 2FAIRPT (300249) 69 kV. a. Apply fault at the 2FAIRPT (300249) 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.

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-2013-002 and GEN-2013-019 = 124.2, GEN-2024-SR10 = 0)

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
FLT1003-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1004-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1005-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
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
FLT1014-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1015-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1016-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1017-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1019-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1020-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1021-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1022-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1023-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1024-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

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
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

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
FLT9060-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9061-3PH	Pass	Pass	Stable	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

Table 6-3 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
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
FLT9116-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9117-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9118-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9119-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9120-3PH	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-2018-002/2019-001 models (without GEN-2024-SR10) and in the models with the GEN-2013-002 and GEN-2013-019 modification. These issues were not attributed to the GEN-2013-002 and GEN-2013-019 modification request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2013-002 and GEN-2013-019 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.

6.1 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-2013-002 and GEN-2013-019 = 44.12, GEN-2024-SR10 = 80.08)

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
FLT1003-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1004-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1005-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
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
FLT1014-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1015-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1016-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1017-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1019-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1020-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1021-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1022-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1023-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1024-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

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
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

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
FLT9060-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9061-3PH	Pass	Pass	Stable	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

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
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

Table 6-4 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9114-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9115-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9116-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9117-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9118-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9119-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9120-3PH	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-2018-002/2019-001 models (without GEN-2024-SR10) and in the models with the GEN-2013-002 and GEN-2013-019 modification (and GEN-2024-SR10) included. These issues were not attributed to the GEN-2013-002 and GEN-2013-019 modification request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2013-002 and GEN-2013-019 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 combined modified generating capacity of GEN-2013-002 and GEN-2013-019 (140.35 MW) exceeds the GIA Interconnection Service amount, 124.2 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-2013-002 and GEN-2013-019 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.