Report on

GEN-2024-SR7 and GEN-2024-SR9 Surplus Interconnection Service Impact Study

Revision R1 November 27, 2024

Submitted to
Southwest Power Pool

anedenconsulting.com

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

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 Surplus Interconnection Service Impact Study (Study) for both GEN-2024-SR7 and GEN-2024-SR9 to utilize the Surplus Interconnection Service being made available by the GEN-2010-001 at its existing Point of Interconnection (POI), the Beaver County 345 kV Substation in the Oklahoma Gas & Electric (OG&E) transmission system.

GEN-2024-SR7 and GEN-2024-SR9 are both proposed Surplus Generating Facilities (SGF) that will connect to the existing GEN-2010-001 main collection substations and share its main power transformers.

GEN-2010-001, the Existing Generating Facility (EGF), has an effective Generator Interconnection Agreement (GIA) with a POI capacity of 300 MW and is making Surplus Interconnection Service available at its POI. GEN-2010-001 is making up to 200 MW of Surplus Interconnection Service available to GEN-2024-SR7 and up to 150 MW available to GEN-2024-SR9. Per the SPP Open Access Transmission Tariff (SPP Tariff), the amount of Surplus Interconnection Service available to each individual SGF is limited by the amount of Interconnection Service granted to the EGF at the same POI. In addition, the Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring Network Upgrades except those specified in the SPP Tariff[1].

The proposed GEN-2024-SR7 configuration consists of 52 x SG4400UD-MV solar inverters operating at 3.9131 MW for a total assumed dispatch of 203.4812 MW. The proposed GEN-2024-SR9 configuration consists of 32 x SC5000 UD-MV Battery Energy Storage System (BESS) inverters operating at 4.7336 MW for a total assumed dispatch of 151.4752 MW. The inverters for both projects are rated higher than their requested MW, thus the generating capability of GEN-2024-SR7 and GEN-2024-SR9 exceeds the requested Surplus Interconnection Service of 200 MW and 150 MW, respectively. The injection amount of GEN-2024-SR7 and GEN-2024-SR9 must be limited to 200 MW and 150 MW, respectively, at the POI. The combined generation from the EGF, GEN-2024-SR7, and GEN-2024-SR9 may not exceed 300 MW at the POI. GEN-2024-SR7 and GEN-2024-SR9 both include the use of a Power Plant Controller (PPC) to limit the power injection as required. The EGF, GEN-2024-SR7, and GEN-2024-SR9 information is shown in Table ES-1 below.

Table ES-1: EGF & SGF Configuration

Request	Interconnection Queue Capacity (MW)	Generator Fuel Type	Point of Interconnection
GEN-2024-SR7	200	Solar	Beaver County 345 kV Substation (515554)
GEN-2024-SR9	150	Battery/Storage	Beaver County 345 kV Substation (515554)
GEN-2010-001 (EGF)	300	Wind	Beaver County 345 kV Substation (515554)

[1] Allowed Network Upgrades detailed in SPP Open Access Transmission Tariff Attachment V Section 3.3

The detailed GEN-2024-SR7 configuration is captured in Table ES-2 below.

Table ES-2: GEN-2024-SR7 Interconnection Configuration

Facility	GEN-2024-SR7 Configuration	
Point of Interconnection	Beaver County 345 kV Substation (515554)	
Configuration/Capacity	52 x SG4400UD-MV 3.9131 MW (solar) = 203.4812 MW [dispatch] Units are rated at 4.4 MVA, PPC to limit GEN-2024-SR7 to 200 MW at the POI and total POI injection w/ GEN-2010-001 & GEN-2024-SR9 to 300 MW	
Generation Interconnection Line (Shared with the EGF and GEN-2024-SR9 and unchanged)	Length = 4.76 miles R = 0.000240 pu X = 0.002550 pu B = 0.037810 pu Rating MVA = 717 MVA	
Main Substation Transformer[1] (Shared with the EGF and GEN-2024-SR9 and unchanged)	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA
Equivalent GSU Transformer[1]	Gen 1 Equivalent Qty: 26 X = 7.96%, R = 0.796%, Winding MVA = 114.4 MVA, Rating MVA = 114.4 MVA	Gen 2 Equivalent Qty: 26 X = 7.96%, R = 0.796%, Winding MVA = 114.4 MVA, Rating MVA = 114.4 MVA
Equivalent Collector Line[2]	R = 0.006162 pu X = 0.009677 pu B = 0.000164 pu	R = 0.006162 pu X = 0.009677 pu B = 0.000164 pu
Load (Shared with the EGF and GEN-2024-SR9 and unchanged)	0.8 MW + 0.387 MVAr on 34.5 kV bus	0.8 MW + 0.387 MVAr on 34.5 kV bus
Load (GEN-2024-SR7)	0.03 MW + 0 MVAr on 34.5 kV bus	0.03 MW + 0 MVAr on 34.5 kV bus
Generator Dynamic Model[3] & Power Factor	26 x SG4400UD-MV 4.4 MVA (REGCA1)[3] Leading: 0.89 Lagging: 0.89	26 x SG4400UD-MV 4.4 MVA (REGCA1)[3] Leading: 0.89 Lagging: 0.89
Reactive Power Devices (Shared with the EGF and GEN-2024-SR9 and unchanged)	1 x 11 MVAR 34.5 kV Reactor 1 x 15 MVAR 34.5 kV Capacitor Bank	1 x 15 MVAR 34.5 kV Capacitor Bank

1) X and R based on Winding MVA, 2) All pu are on 100 MVA Base 3) DYR stability model name

The detailed GEN-2024-SR9 configuration is captured in Table ES-3 below.

Table ES-3: GEN-2024-SR9 Interconnection Configuration

Facility	GEN-2024-SR9 Configuration	
Point of Interconnection	Beaver County 345 kV Substation (515554)	
Configuration/Capacity	32 x SC5000 UD-MV 4.7336 MW (BESS) = 151.4752 MW [dispatch] Units are rated at 5 MVA, PPC to limit GEN-2024-SR9 to 150 MW at the POI and total POI injection w/ GEN-2010-001 & GEN-2024-SR7 to 300 MW	
Generation Interconnection Line (Shared with the EGF and GEN-2024-SR7 and unchanged)	Length = 4.76 miles R = 0.000240 pu X = 0.002550 pu B = 0.037810 pu Rating MVA = 717 MVA	
Main Substation Transformer[1] (Shared with the EGF and GEN-2024-SR7 and unchanged)	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA
Equivalent GSU Transformer[1]	Gen 1 Equivalent Qty: 16 X = 5.706%, R = 0.713%, Winding MVA = 80 MVA, Rating MVA = 80 MVA	Gen 2 Equivalent Qty: 16 X = 5.706%, R = 0.713%, Winding MVA = 80 MVA, Rating MVA = 80 MVA
Equivalent Collector Line[2]	R = 0.000657 pu X = 0.000373 pu B = 0.000003 pu	R = 0.000657 pu X = 0.000373 pu B = 0.000003 pu
Load (Shared with the EGF and GEN-2024-SR7 and unchanged)	0.8 MW + 0.387 MVAr on 34.5 kV bus	0.8 MW + 0.387 MVAr on 34.5 kV bus
Load (GEN-2024-SR9)	0.0225 MW + 0 MVAr on 34.5 kV bus	0.0225 MW + 0 MVAr on 34.5 kV bus
Generator Dynamic Model[3] & Power Factor	16 x SC5000 UD-MV 5 MVA (REGCA1)[3] Leading: 0.94672 Lagging: 0.94672	16 x SC5000 UD-MV 5 MVA (REGCA1)[3] Leading: 0.94672 Lagging: 0.94672
Reactive Power Devices (Shared with the EGF and GEN-2024-SR7 and unchanged)	1 x 11 MVAR 34.5 kV Reactor 1 x 15 MVAR 34.5 kV Capacitor Bank	1 x 15 MVAR 34.5 kV Capacitor Bank

1) X and R based on Winding MVA, 2) All pu are on 100 MVA Base 3) DYR stability model name

SPP determined that steady-state analysis was not required because the addition of the SGFs does not increase the maximum active power output of 300 MW. In addition, the EGF was previously studied at maximum Interconnection Service under all necessary reliability conditions.

The scope of this study included reactive power analysis, short circuit analysis, and dynamic stability analysis. All analyses were performed using the Siemens PTI PSS/E[2] version 34 software.

Aneden performed the analyses using the study data provided for GEN-2024-SR7 and GEN-2024-SR9 and the DISIS-2018-002/2019-001 stability study models:

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

[2] Power System Simulator for Engineering

The results of the reactive power analysis using the 25SP model showed that both GEN-2024-SR7 and GEN-2024-SR9 did not need a shunt reactor at the project substation to reduce the POI MVAr to zero when the EGF project had a shunt compensating for its charging effects. No additional compensation was necessary to offset the capacitive effect on the transmission network caused by the project 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 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 six dispatch scenarios. 134 fault events were simulated, which included three-phase faults and single-line-to-ground stuck breaker faults.

GEN-2024-SR7 and GEN-2024-SR9 were studied both individually and together, and the results are summarized below in Table ES-4.

Table ES-4: **Results Summary**

Scenario	EGF (GEN-2010-001) Dispatch	GEN-2024-SR7 Dispatch	GEN-2024-SR9 Dispatch	Short Circuit Analysis Results	Dynamic Stability Analysis Results
1	0 (Offline)	203.4812	Disconnected	N/A	No Impacts Attributed to GEN-2024-SR7
2	96.5188	203.4812	Disconnected	Max Increase: 0.33 kA Max Overall Current: 43.3 kA	No Impacts Attributed to GEN-2024-SR7
3	0 (Offline)	Disconnected	151.4752	N/A	No Impacts Attributed to GEN-2024-SR9
4	148.5248	Disconnected	151.4752	Max Increase: 0.2 kA Max Overall Current: 43.3 kA	No Impacts Attributed to GEN-2024-SR9
5	0 (Offline)	171.43	128.57	N/A	No Impacts Attributed to GEN-2024-SR7 and GEN-2024-SR9
6	138.46	92.31	69.23	Max Increase: 0.48 kA Max Overall Current: 43.4 kA	No Impacts Attributed to GEN-2024-SR7 and GEN-2024-SR9

Conclusions

The results of the study showed that the Surplus Interconnection Service Requests GEN-2024-SR7 and GEN-2024-SR9 did not negatively impact the reliability of the Transmission System either individually or when studied together. There were no additional Interconnection Facilities or Network Upgrades identified by the analyses.

SPP has determined that GEN-2024-SR7 may utilize the requested 200 MW of Surplus Interconnection Service and GEN-2024-SR9 may utilize the requested 150 MW of Surplus Interconnection Service being made available by the EGF. The combined generation from the EGF, GEN-2024-SR7 and GEN-2024-SR9 may not exceed 300 MW at the POI.

The customer must install monitoring and control equipment as needed to ensure that GEN-2024-SR7 and GEN-2024-SR9 do not exceed the granted surplus amount and to ensure that combination of the EGF, GEN-2024-SR7 and GEN-2024-SR9 power injected at the POI does not exceed the Interconnection Service amount listed in the EGF's GIA. The monitoring and control scheme may be reviewed by the TO and documented in Appendix C of the GEN-2024-SR7 and GEN-2024-SR9 GIAs.

In accordance with FERC Order No. 827, EGF, GEN-2024-SR7 and GEN-2024-SR9 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 Surplus Service Impact Study (Study) for GEN-2024-SR7 and GEN-2024-SR9, two Surplus Generating Facilities (SGF). A Surplus Service Impact Study is performed to identify the impact of the Surplus Interconnection Service on the transmission system reliability and any additional Interconnection Facilities necessary pursuant to the SPP Generator Interconnection Procedures ("GIP") contained in Attachment V Section 3.3 of the SPP Open Access Transmission Tariff (SPP Tariff). The amount of Surplus Interconnection Service available to the SGFs is limited by the amount of Interconnection Service granted to the existing interconnection customer for the Existing Generating Facility (EGF) at the same POI. The Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring additional Network Upgrades except those specified in the SPP Tariff[3]. The required scope of the study is dependent upon the EGF and SGF specifications. The criteria sections below include the basis of the analyses included in 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 added capacitive effect at the POI caused by the project's collection system and transmission line's capacitance. A shunt reactor size was determined for each SGF to offset its capacitive effect and maintain zero (0) MVAr injection at the POI while the plant's generators and capacitors were offline, and the EGF project had a shunt compensating for its charging effects. This analysis was performed twice, once each with GEN-2024-SR7 and GEN-2024-SR9 individually.

1.2 Short Circuit Analysis

SPP requires that a short circuit analysis be performed to determine the maximum available fault current requiring interruption by protective equipment with both the SGF and EGF online, along with the amount of increase in maximum fault current due to the addition of the SGF. The analysis was performed on two scenarios, with the EGF in service and SGF offline, and the modified model with both EGF and SGF in service. This analysis was performed three times, once each with GEN-2024-SR7 and GEN-2024-SR9 individually, and with both projets together.

1.3 Stability Analysis

SPP requires that a dynamic stability analysis be performed to determine whether the SGF, EGF, and the transmission system will remain stable and within applicable criteria. Dynamic stability analysis was performed on two dispatch scenarios, the first where the SGF was online at 100% of the assumed dispatch with the EGF offline and disconnected, and the second where the SGF was online at 100% of the assumed dispatch and the EGF was picking up the remaining EGF GIA capacity. The stability analyses will identify any additional Interconnection Facilities and Network Upgrades necessary. This analysis was performed three times, once each with GEN-2024-SR7 and GEN-2024-SR9 individually, and with both projects together. The six scenario dispatches are described in Section 5.1.

[3] Allowed Network Upgrades detailed in SPP Open Access Transmission Tariff Attachment V Section 3.3

1.4 Steady-State Analysis

The steady-state (thermal/voltage) analyses may be performed as necessary to ensure that all required reliability conditions are studied. If the EGF was not studied under off-peak conditions, off-peak steady state analyses shall be performed to the required level necessary to demonstrate reliable operation of the Surplus Interconnection Service. If the original system impact study is not available for the Interconnection Service, both off-peak and peak analysis may need to be performed for the EGF associated with the request.

An SGF that includes a fuel type (synchronous/non-synchronous) different from the EGF may require a steady-state analysis to study impacts resultant from changes in dispatch to all equal and lower queued requests. The steady-state analyses will identify any additional Interconnection Facilities and Network Upgrades necessary.

1.5 Necessary Interconnection Facilities & Network Upgrades

The SPP Tariff[4] states that the reactive power, short circuit/fault duty, stability, and steady-state analyses (where applicable) for the Surplus Interconnection Service will identify any additional Interconnection Facilities necessary. In addition, the analyses will determine if any Network Upgrades are required for mitigation. The Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring additional Network Upgrades unless (a) those additional Network Upgrades are either (1) located at the Point of Interconnection substation and at the same voltage level as the Generating Facility with an effective GIA, or (2) are System Protection Facilities; and (b) there are no material adverse impacts on the cost or timing of any Interconnection Requests pending at the time the Surplus Interconnection Service request is submitted.

1.6 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.

[4] SPP Open Access Transmission Tariff Section 3.3.4.1

2.0 Surplus Interconnection Service Request

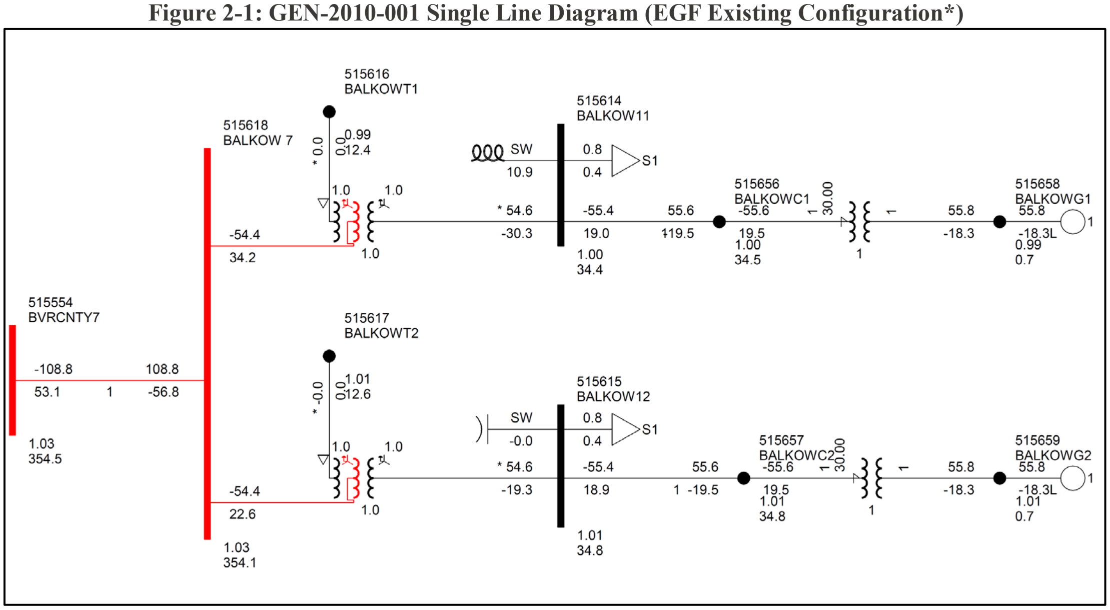
The Interconnection Customer has requested a Surplus Interconnection Service Impact Study (Study) for both GEN-2024-SR7 and GEN-2024-SR9 to utilize the Surplus Interconnection Service being made available by GEN-2010-001 at its existing Point of Interconnection (POI), the Beaver County 345 kV Substation in the Oklahoma Gas & Electric (OG&E) transmission system.

GEN-2024-SR7 and GEN-2024-SR9 are both proposed SGFs that will connect to the existing GEN-2010-001 main collection substations and share its main power transformers.

GEN-2010-001, the EGF, has an effective Generator Interconnection Agreement (GIA) with a POI capacity of 300 MW and is making Surplus Interconnection Service available at its POI. GEN-2010-001 is making up to 200 MW of Surplus Interconnection Service available to GEN-2024-SR7 and up to 150 MW available to GEN-2024-SR9. Per the SPP Tariff, the amount of Surplus Interconnection Service available to each individual SGF is limited by the amount of Interconnection Service granted to the EGF at the same POI. In addition, the Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring Network Upgrades except those specified in the SPP Tariff[5].

At the time of the posting of this report, GEN-2010-001 (EGF) is an active existing generator at the same POI (Beaver County 345 kV) with a queue status of "IA FULLY EXECUTED/COMMERCIAL OPERATION". GEN-2010-001 is a wind generation plant, has a maximum summer and winter queue capacity of 300 MW, and has Energy Resource Interconnection Service (ERIS). The EGF was originally studied in the DISIS-2010-002 cluster study. Figure 2-1 shows the power flow model single line diagram for the EGF configuration.

Figure 2-1: GEN-2010-001 Single Line Diagram (EGF Existing Configuration*)



*based on the DISIS-2018-002/2019-001 25SP stability models

The proposed GEN-2024-SR7 configuration consists of 52 x SG4400UD-MV solar inverters operating at 3.9131 MW for a total assumed dispatch of 203.4812 MW. The proposed GEN-2024-SR9 configuration

[5] Allowed Network Upgrades detailed in SPP Open Access Transmission Tariff Attachment V Section 3.3

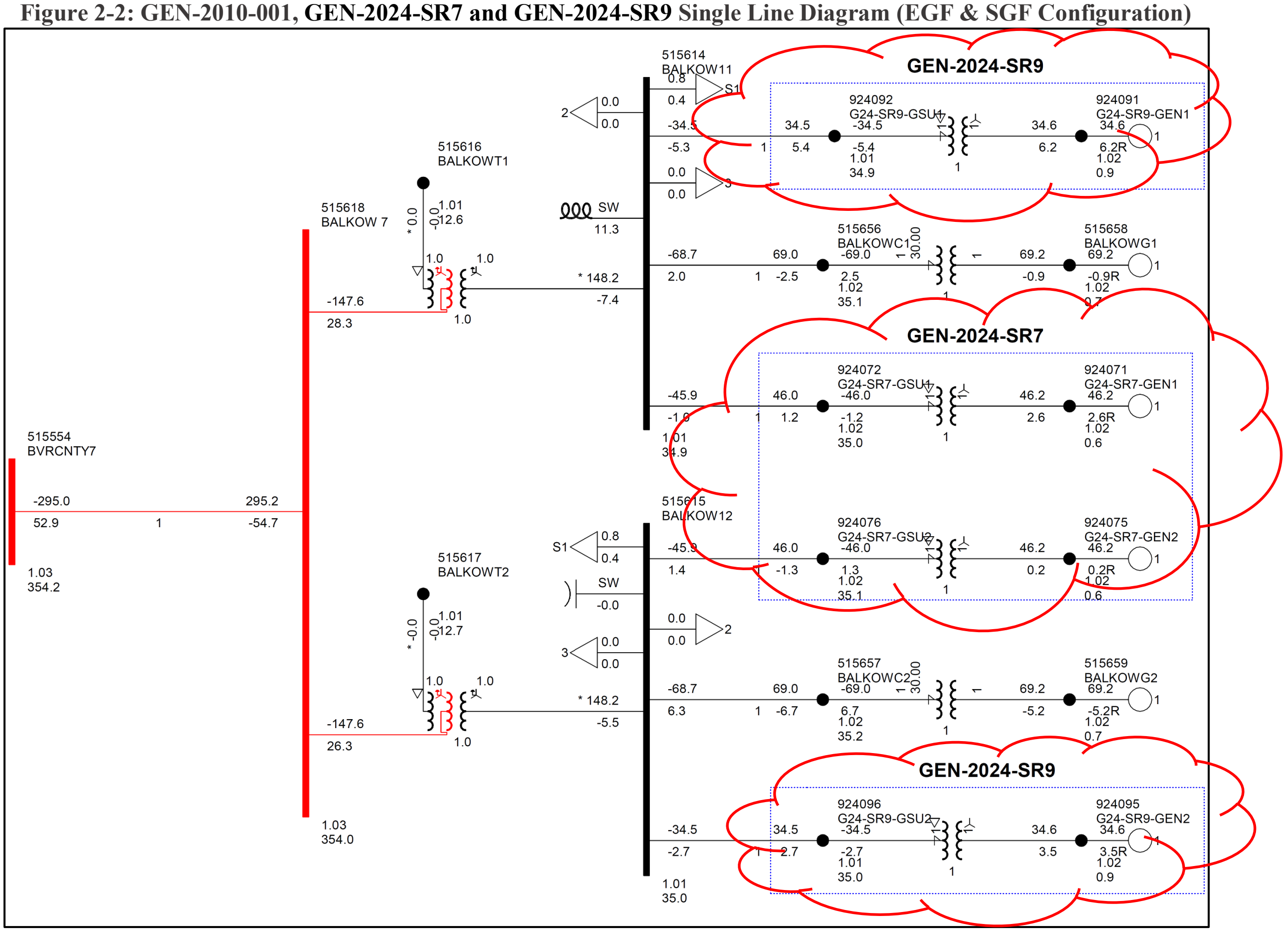
consists of 32 x SC5000 UD-MV Battery Energy Storage System (BESS) inverters operating at 4.7336 MW for a total assumed dispatch of 151.4752 MW. The inverters for both projects are rated higher than their requested MW, thus the generating capability of GEN-2024-SR7 and GEN-2024-SR9 exceeds the requested Surplus Interconnection Service of 200 MW and 150 MW, respectively. The injection amount of GEN-2024-SR7 and GEN-2024-SR9 must be limited to 200 MW and 150 MW, respectively, at the POI. The combined generation from the EGF, GEN-2024-SR7, and GEN-2024-SR9 may not exceed 300 MW at the POI. GEN-2024-SR7 and GEN-2024-SR9 both include the use of a Power Plant Controller (PPC) to limit the power injection as required. The EGF, GEN-2024-SR7, and GEN-2024-SR9 information is shown in Table 2-1 below.

Table 2-1: EGF & SGF Configuration

Request	Interconnection Queue Capacity (MW)	Generator Fuel Type	Point of Interconnection
GEN-2024-SR7	200	Solar	Beaver County 345 kV Substation (515554)
GEN-2024-SR9	150	Battery/Storage	Beaver County 345 kV Substation (515554)
GEN-2010-001 (EGF)	300	Wind	Beaver County 345 kV Substation (515554)

The detailed GEN-2024-SR7 and GEN-2024-SR9 configuration is captured in Figure 2-2.

Figure 2-2: GEN-2010-001, GEN-2024-SR7 and GEN-2024-SR9 Single Line Diagram (EGF & SGF Configuration)



The detailed GEN-2024-SR7 configuration is captured in Table 2-2 below.

Table 2-2: GEN-2024-SR7 Interconnection Configuration

Facility	GEN-2024-SR7 Configuration	
Point of Interconnection	Beaver County 345 kV Substation (515554)	
Configuration/Capacity	52 x SG4400UD-MV 3.9131 MW (solar) = 203.4812 MW [dispatch] Units are rated at 4.4 MVA, PPC to limit GEN-2024-SR7 to 200 MW at the POI and total POI injection w/ GEN-2010-001 & GEN-2024-SR9 to 300 MW	
Generation Interconnection Line (Shared with the EGF and GEN-2024-SR9 and unchanged)	Length = 4.76 miles R = 0.000240 pu X = 0.002550 pu B = 0.037810 pu Rating MVA = 717 MVA	
Main Substation Transformer[1] (Shared with the EGF and GEN-2024-SR9 and unchanged)	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA
Equivalent GSU Transformer[1]	Gen 1 Equivalent Qty: 26 X = 7.96%, R = 0.796%, Winding MVA = 114.4 MVA, Rating MVA = 114.4 MVA	Gen 2 Equivalent Qty: 26 X = 7.96%, R = 0.796%, Winding MVA = 114.4 MVA, Rating MVA = 114.4 MVA
Equivalent Collector Line[2]	R = 0.006162 pu X = 0.009677 pu B = 0.000164 pu	R = 0.006162 pu X = 0.009677 pu B = 0.000164 pu
Load (Shared with the EGF and GEN-2024-SR9 and unchanged)	0.8 MW + 0.387 MVAr on 34.5 kV bus	0.8 MW + 0.387 MVAr on 34.5 kV bus
Load (GEN-2024-SR7)	0.03 MW + 0 MVAr on 34.5 kV bus	0.03 MW + 0 MVAr on 34.5 kV bus
Generator Dynamic Model[3] & Power Factor	26 x SG4400UD-MV 4.4 MVA (REGCA1)[3] Leading: 0.89 Lagging: 0.89	26 x SG4400UD-MV 4.4 MVA (REGCA1)[3] Leading: 0.89 Lagging: 0.89
Reactive Power Devices (Shared with the EGF and GEN-2024-SR9 and unchanged)	1 x 11 MVAR 34.5 kV Reactor 1 x 15 MVAR 34.5 kV Capacitor Bank	1 x 15 MVAR 34.5 kV Capacitor Bank

1) X and R based on Winding MVA, 2) All pu are on 100 MVA Base 3) DYR stability model name

The detailed GEN-2024-SR9 configuration is captured in Table 2-3 below.

Table 2-3: GEN-2024-SR9 Interconnection Configuration

Facility	GEN-2024-SR9 Configuration	
Point of Interconnection	Beaver County 345 kV Substation (515554)	
Configuration/Capacity	32 x SC5000 UD-MV 4.7336 MW (BESS) = 151.4752 MW [dispatch] Units are rated at 5 MVA, PPC to limit GEN-2024-SR9 to 150 MW at the POI and total POI injection w/ GEN-2010-001 & GEN-2024-SR7 to 300 MW	
Generation Interconnection Line (Shared with the EGF and GEN-2024-SR7 and unchanged)	Length = 4.76 miles R = 0.000240 pu X = 0.002550 pu B = 0.037810 pu Rating MVA = 717 MVA	
Main Substation Transformer[1] (Shared with the EGF and GEN-2024-SR7 and unchanged)	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA	X12 = 9.743% R12 = 0.254%, X23 = 1.435% R23 = 0.122%, X13 = 5.268% R13 = 0.137%, Winding 1-2 MVA = 100 MVA, Winding 2-3/3-1 MVA = 35 MVA, Winding 1 & 2 Rating MVA = 166 MVA Winding 3 Rating MVA = 53.3 MVA
Equivalent GSU Transformer[1]	Gen 1 Equivalent Qty: 16 X = 5.706%, R = 0.713%, Winding MVA = 80 MVA, Rating MVA = 80 MVA	Gen 2 Equivalent Qty: 16 X = 5.706%, R = 0.713%, Winding MVA = 80 MVA, Rating MVA = 80 MVA
Equivalent Collector Line[2]	R = 0.000657 pu X = 0.000373 pu B = 0.000003 pu	R = 0.000657 pu X = 0.000373 pu B = 0.000003 pu
Load (Shared with the EGF and GEN-2024-SR7 and unchanged)	0.8 MW + 0.387 MVAr on 34.5 kV bus	0.8 MW + 0.387 MVAr on 34.5 kV bus
Load (GEN-2024-SR9)	0.0225 MW + 0 MVAr on 34.5 kV bus	0.0225 MW + 0 MVAr on 34.5 kV bus
Generator Dynamic Model[3] & Power Factor	16 x SC5000 UD-MV 5 MVA (REGCA1)[3] Leading: 0.94672 Lagging: 0.94672	16 x SC5000 UD-MV 5 MVA (REGCA1)[3] Leading: 0.94672 Lagging: 0.94672
Reactive Power Devices (Shared with the EGF and GEN-2024-SR7 and unchanged)	1 x 11 MVAR 34.5 kV Reactor 1 x 15 MVAR 34.5 kV Capacitor Bank	1 x 15 MVAR 34.5 kV Capacitor Bank

1) X and R based on Winding MVA, 2) All pu are on 100 MVA Base 3) DYR stability model name

3.0 Reactive Power Analysis

The reactive power analysis was performed individually for GEN-2024-SR7 and GEN-2024-SR9 to determine the capacitive charging effects due to each SGF 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.

3.1 Methodology and Criteria

To determine the shunt reactor size required to compensate for the current charging attributed to each SGF collection system, the SGF not under study was disconnected and the reactive power analysis for the EGF was completed first. Once the shunt size for the EGF was determined, the SGF incremental shunt reactor size was then calculated.

For each of the shunt reactor sizes calculated, all project generators, reactive devices, and auxiliary/station service loads were switched offline while other collector system elements remained in-service. For each SGF reactor size calculation, the other project generators were also switched offline. A shunt reactor was tested at the project's collection substation 34.5 kV buses to reduce the MVAr injection at the POI to zero. The size of the shunt reactors 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 SGF data based on the 25SP DISIS-2018-002/2019-001 stability study model.

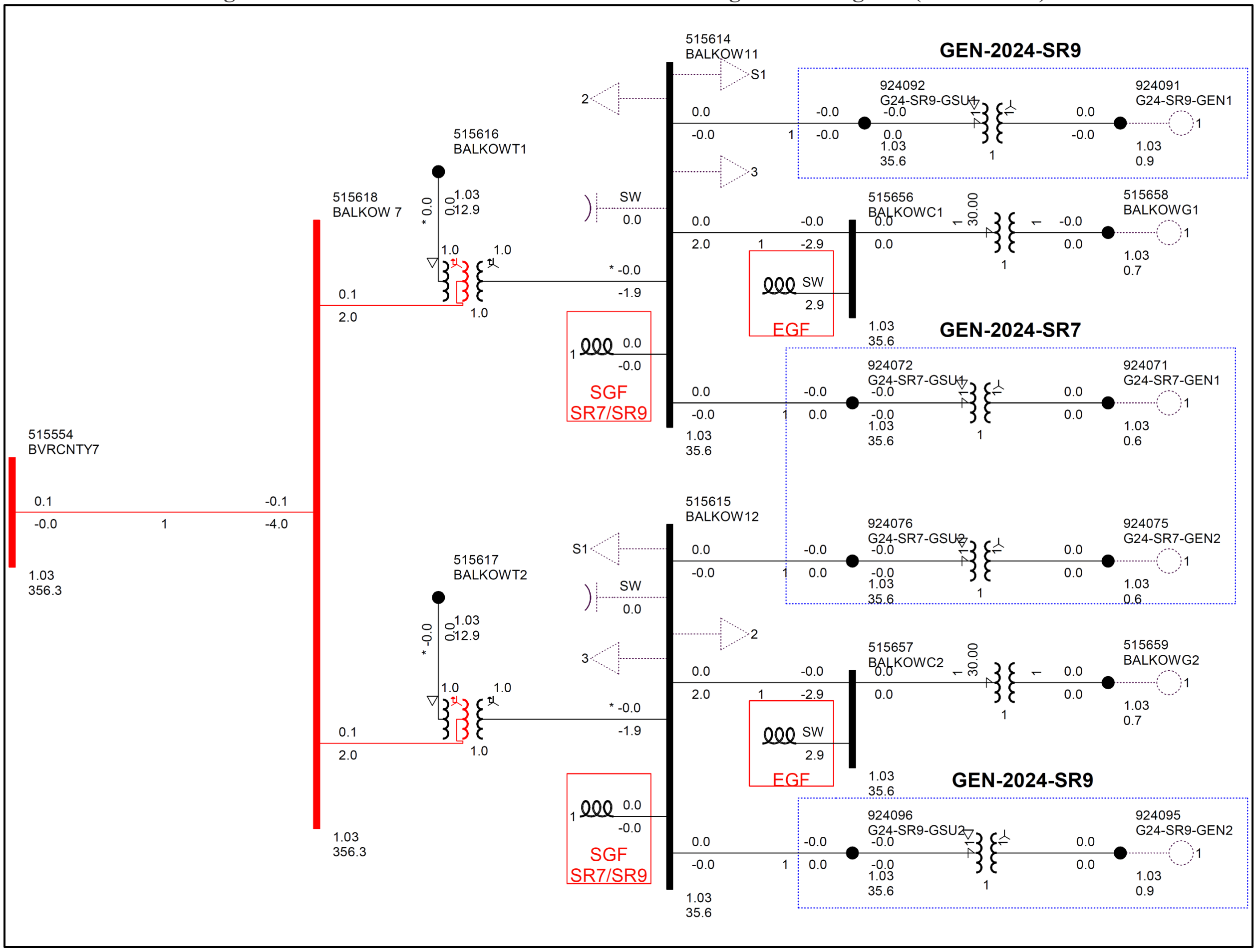
3.2 Results

Per the methodology described above, the shunt size was determined for the EGF prior to calculating the shunt reactor size for the SGF. The shunt size was found to be a 5.5 MVAr reactor for the EGF to reduce the MVAr injection at the POI to zero. Note that the EGF shunt value is for the SGF reactive size determination only and not for sizing the predetermined EGF reactive requirements.

The results from the analysis showed that both GEN-2024-SR7 and GEN-2024-SR9 did not need a shunt reactor at the project substation to reduce the POI MVAr to zero with the pre-determined shunt for the EGF in-service. Figure 3-1 illustrates that no additional compensation was necessary to offset the capacitive effect on the transmission network caused by GEN-2024-SR7 and GEN-2024-SR9 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.

Figure 3-1: GEN-2024-SR7 and GEN-2024-SR9 Single Line Diagram (Shunt Sizes)



4.0 Short Circuit Analysis

A short circuit study was performed using the 25SP model to determine the maximum available fault current requiring interruption by protective equipment with both the SGF and EGF online for each bus in the relevant subsystem, and the amount of increase in maximum fault current due to the addition of the SGF. This analysis was performed three times, once each with GEN-2024-SR7 and GEN-2024-SR9 individually, and with both projects together. The detailed results of the short circuit analysis are provided in Appendix B.

4.1 Methodology

The short circuit analysis included applying a 3-phase fault on buses up to 5 levels away from the 345 kV POI bus. The PSS/E "Automatic Sequence Fault Calculation (ASCC)" fault analysis module was used to calculate the fault current levels in the transmission system with and without the SGF under study online. The first scenario was studied with both the SGF under study and EGF in service. In the second scenario the SGF under study was disconnected while the EGF was online to determine the impact of the SGF under study. For both scenarios, the SGF not under study was disconnected for the analysis.

Aneden created the short circuit models using the 25SP DISIS-2018-002/2019-001 stability study model by adjusting the GEN-2024-SR7 and GEN-2024-SR9 short circuit parameters consistent with the submitted data. The adjusted parameters used in the short circuit analysis are shown in Table 4-1 below. No other changes were made to the model.

Table 4-1: Short Circuit Model Parameters*

Parameter	Value by Generator Bus#			
	GEN-2024-SR7		GEN-2024-SR9	
	924071	924075	924091	924095
Machine MVA Base	114.4	114.4	80	80
R (pu)	0.0	0.0	0.0	0.0
X'' (pu)	0.64218	0.64218	0.84111	0.84111

*pu values based on Machine MVA Base

4.2 GEN-2024-SR7 Results

The results of the short circuit analysis compared the 25SP model with the EGF online and GEN-2024-SR7 not connected to the stability Scenario 2 dispatch model with both the EGF and GEN-2024-SR7 in service. GEN-2024-SR9 was disconnected for this analysis. The GEN-2024-SR7 POI bus (Beaver County 345 kV) fault current magnitudes for the comparison cases are provided in Table 4-2 showing a fault current of 14.79 kA with the EGF and GEN-2024-SR7 online. The addition of the GEN-2024-SR7 configuration increased the POI bus fault current by 0.33 kA. Table 4-3 shows the maximum fault current magnitudes and fault current increases with GEN-2024-SR7 online.

The maximum fault current calculated within 5 buses of the POI was 43.3 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA. These buses are highlighted in Appendix B. The maximum contribution to three-phase fault currents due to the addition of GEN-2024-SR7 was about 2.3% and 0.33 kA.

Table 4-2: **GEN-2024-SR7** POI Short Circuit Comparison Results

Case	EGF Only Current (kA)	GEN-2024-SR7 & EGF Current (kA)	kA Change	%Change
25SP	14.46	14.79	0.33	2.3%

Table 4-3: **GEN-2024-SR7** 25SP Short Circuit Comparison Results

Voltage (kV)	Max. Current (EGF & GEN-2024-SR7) (kA)	Max kA Change	Max %Change
69	10.8	0.01	0.1%
115	20.5	0.04	0.3%
138	43.3	0.05	0.2%
230	32.7	0.09	0.6%
345	30.8	0.33	2.3%
Max	**43.3**	**0.33**	**2.3%**

4.3 GEN-2024-SR9 Results

The results of the short circuit analysis compared the 25SP model with the EGF online and GEN-2024-SR9 not connected to the stability Scenario 4 dispatch model with both the EGF and GEN-2024-SR9 in service. GEN-2024-SR7 was disconnected for this analysis. The GEN-2024-SR9 POI bus (Beaver County 345 kV) fault current magnitudes for the comparison cases are provided in Table 4-4 showing a fault current of 14.66 kA with the EGF and GEN-2024-SR9 online. The addition of the GEN-2024-SR9 configuration increased the POI bus fault current by 0.2 kA. Table 4-5 shows the maximum fault current magnitudes and fault current increases with GEN-2024-SR9 online.

The maximum fault current calculated within 5 buses of the POI was 43.3 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA. These buses are highlighted in Appendix B. The maximum contribution to three-phase fault currents due to the addition of GEN-2024-SR9 was about 1.4% and 0.2 kA.

Table 4-4: GEN-2024-SR9 POI Short Circuit Comparison Results

Case	EGF Only Current (kA)	GEN-2024-SR9 & EGF Current (kA)	kA Change	%Change
25SP	14.46	14.66	0.20	1.4%

Table 4-5: GEN-2024-SR9 25SP Short Circuit Comparison Results

Voltage (kV)	Max. Current (EGF & GEN-2024-SR9) (kA)	Max kA Change	Max %Change
69	10.8	0.00	0.0%
115	20.5	0.02	0.2%
138	43.3	0.03	0.1%
230	32.7	0.05	0.4%
345	30.8	0.20	1.4%
Max	**43.3**	**0.20**	**1.4%**

4.4 GEN-2024-SR7 and GEN-2024-SR9 Combined Results

The results of the short circuit analysis compared the 25SP model with the EGF online and both GEN-2024-SR7 and GEN-2024-SR9 not connected to the stability Scenario 6 dispatch model with the EGF, GEN-2024-SR7 and GEN-2024-SR9 in service. The POI bus (Beaver County 345 kV) fault current magnitudes for the comparison cases are provided in Table 4-6 showing a fault current of 14.94 kA with the EGF, GEN-2024-SR7 and GEN-2024-SR9 online. The addition of the GEN-2024-SR7 and GEN-2024-SR9 configurations increased the POI bus fault current by 0.48 kA. Table 4-7 shows the maximum fault current magnitudes and fault current increases with both GEN-2024-SR7 and GEN-2024-SR9 online.

The maximum fault current calculated within 5 buses of the POI was 43.4 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA. These buses are highlighted in Appendix B. The maximum contribution to three-phase fault currents due to the addition of GEN-2024-SR7 and GEN-2024-SR9 was about 3.3% and 0.48 kA.

Table 4-6: GEN-2024-SR7 and GEN-2024-SR9 POI Short Circuit Comparison Results

Case	EGF Only Current (kA)	EGF, GEN-2024-SR7, and GEN-2024-SR9 Current (kA)	kA Change	%Change
25SP	14.46	14.94	0.48	3.3%

Table 4-7: GEN-2024-SR7 and GEN-2024-SR9 25SP Short Circuit Comparison Results

Voltage (kV)	Max. Current (EGF, GEN-2024-SR7, and GEN-2024-SR9) (kA)	Max kA Change	Max %Change
69	10.8	0.01	0.1%
115	20.5	0.06	0.4%
138	43.4	0.08	0.3%
230	32.7	0.13	0.9%
345	30.8	0.48	3.3%
Max	**43.4**	**0.48**	**3.3%**

5.0 Dynamic Stability Analysis

Aneden performed a dynamic stability analysis to identify the impact of the SGF projects. The analysis was performed according to SPP's Disturbance Performance Requirements[6]. The GEN-2024-SR7 and GEN-2024-SR9 project details are described in Section 2.0 above and the dynamic modeling data is provided in Appendix A. This analysis was performed three times, once each with GEN-2024-SR7 and GEN-2024-SR9 individually, and with both projects together. The existing base case issues and simulation plots can be found in Appendix C.

5.1 Methodology and Criteria

The dynamic stability analysis was performed using models developed with the GEN-2024-SR7 configuration of 52 x SG4400UD-MV solar inverters operating at 3.9131 MW (REGCA1) and the GEN-2024-SR9 configuration of 32 x SC5000 UD-MV Battery Energy Storage System (BESS) inverters operating at 4.7336 MW (REGCA1) included in the models. This stability analysis was performed using Siemens PTI's PSS/E version 34.8.0 software.

The GEN-2024-SR7 and GEN-2024-SR9 project details 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)

Six stability model scenarios were developed using these models. Each SGF had a scenario comprised of the SGF under study online at 100% of the assumed dispatch while the EGF generator was offline and disconnected and the SGF not under study was not included.

Each SGF also had a scenario comprised of the SGF at 100% of the assumed dispatch while the EGF generator picked up the remaining EGF GIA capacity and the SGF not under study was not included.

Both GEN-2024-SR7 and GEN-2024-SR9 were also studied together in the remaining two scenarios, with the online projects dispatched proportionally. The study scenarios are shown in Table 5-1.

Table 5-1: Study Scenarios (Generator Dispatch MW)

Scenario	GEN-2010-001 EGF [300 MW] (MW)	GEN-2024-SR7 SGF [200 MW Requested] (MW)	GEN-2024-SR9 SGF [150 MW Requested] (MW)	EGF + SGFs (MW)
1	0 (Offline)	203.4812	Disconnected	203.4812
2	96.5188	203.4812	Disconnected	300
3	0 (Offline)	Disconnected	151.4752	151.4752
4	148.5248	Disconnected	151.4752	300
5	0 (Offline)	171.43	128.57	300
6	138.46	92.31	69.23	300

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

The dynamic model data for both GEN-2024-SR7 and GEN-2024-SR9 is provided in Appendix A. The power flow models and associated dynamic database were initialized (no-fault test) to confirm that there were no errors in the initial conditions of the system and the dynamic data.

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

- The voltage protective relays at 763309 and 763530 were disabled to avoid generator tripping due to an instantaneous over voltage spike after fault clearing.
- The PSSE dynamic simulation iterations and acceleration factor were adjusted as needed to resolve PSSE dynamic simulation crashes.
- The WTDTA1 drive train model was disabled at bus 515395 to resolve PSSE dynamic simulation crashes.
- The acceleration factor for REGCA1 model at buses 515395, 588563, 763530, 924071, 924075, 924091, and 924095 was changed to 0.01 to resolve PSSE dynamic simulation crashes.
- The under-voltage protective relays at bus 523812 were disabled to avoid its generator tripping due to an undervoltage of less than 0.85 pu or 0.9 pu for longer than 0.05 seconds.

During the fault simulations, the active power (PELEC), reactive power (QELEC), and terminal voltage (ETERM) were monitored for the EGF and SGF and other current and prior queued projects in Group 5. In addition, voltages of five (5) buses away from the POI of the SGF were monitored and plotted. The machine rotor angle for synchronous machines and speed for asynchronous machines within the study areas including 520 (AEPW), 524 (OKGE), 526 (SPS), 534 (SUNC), and 652 (WAPA) were monitored. The voltages of all 100 kV and above buses within the study area were monitored as well.

5.2 Fault Definitions

Aneden developed fault events as required to study GEN-2024-SR7 and GEN-2024-SR9. 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 5-2 below. These contingencies were applied to the modified 25SP and 25WP models.

Table 5-2: Fault Definitions

Fault ID	Planning Event	Fault Descriptions
FLT1000-SB	P4	Stuck Breaker on BVRCNTY7 (515554) 345 kV Bus a. Apply single phase fault at the BVRCNTY7 (515554) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the BVRCNTY7 (515554) 345 kV to HITCHLAND 7 (523097) 345 kV line CKT 1. b.2.Trip the BVRCNTY7 (515554) 345 kV to PALDR2W7 (515590) 345 kV line CKT 1. Trip generator(s) on the Bus G08-047-GEN1 (515905) 0.7 kV Trip generator(s) on the Bus G08-047-GEN2 (573510) 0.7 kV
FLT1001-SB	P4	Stuck Breaker on BVRCNTY7 (515554) 345 kV Bus a. Apply single phase fault at the BVRCNTY7 (515554) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the BVRCNTY7 (515554) 345 kV to BADGER 7 (515677) 345 kV line CKT 2. b.2.Trip the BVRCNTY7 (515554) 345 kV to BALKOW 7 (515618) 345 kV line CKT 1. Trip generator(s) on the Bus BALKOWG1 (515658) 0.7 kV Trip generator(s) on the Bus BALKOWG2 (515659) 0.7 kV Trip generator(s) on the Bus G24-SR7-GEN1 (924071) 0.6 kV Trip generator(s) on the Bus G24-SR7-GEN2 (924075) 0.6 kV Trip generator(s) on the Bus G24-SR9-GEN1 (924091) 0.9 kV Trip generator(s) on the Bus G24-SR9-GEN2 (924095) 0.9 kV
FLT1002-SB	P4	Stuck Breaker on BADGER 7 (515677) 345 kV Bus a. Apply single phase fault at the BADGER 7 (515677) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the BADGER 7 (515677) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 2. b.2.Trip the BADGER 7 (515677) 345 kV to GEN-2015-082 (585190) 345 kV line CKT 1. Trip generator(s) on the Bus G15-082-GEN1 (585193) 0.7 kV
FLT1003-SB	P4	Stuck Breaker on BADGER 7 (515677) 345 kV Bus a. Apply single phase fault at the BADGER 7 (515677) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the BADGER 7 (515677) 345 kV to BOBCAT 7 (516106) 345 kV line CKT 2. b.2.Trip the BADGER 7 (515677) 345 kV to BLUWND 7 (515686) 345 kV line CKT 1. Trip generator(s) on the Bus BLUWDG11 (515678) 0.7 kV Trip generator(s) on the Bus BLUWDG21 (515682) 0.7 kV
FLT1004-SB	P4	Stuck Breaker on WWRDEHV7 (515375) 345 kV Bus a. Apply single phase fault at the WWRDEHV7 (515375) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the WWRDEHV7 (515375) 345 kV to TATONGA7 (515407) 345 kV line CKT 2. b.2.Trip the WWRDEHV7 (515375) 345 kV / WWRDEHV4 (515376) 138 kV / WWDEHV31 (515795) 13.8 kV XFMR CKT 1.
FLT1005-SB	P4	Stuck Breaker on WWRDEHV7 (515375) 345 kV Bus a. Apply single phase fault at the WWRDEHV7 (515375) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the WWRDEHV7 (515375) 345 kV to TATONGA7 (515407) 345 kV line CKT 1. b.2.Trip the WWRDEHV7 (515375) 345 kV / WWRDEHV4 (515376) 138 kV / WWDEHV21 (515799) 13.8 kV XFMR CKT 2.
FLT1006-SB	P4	Stuck Breaker on WWRDEHV7 (515375) 345 kV Bus a. Apply single phase fault at the WWRDEHV7 (515375) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the WWRDEHV7 (515375) 345 kV to BOBCAT 7 (516106) 345 kV line CKT 2. b.2.Trip the WWRDEHV7 (515375) 345 kV to GUTHRIE7 (515961) 345 kV line CKT 1. Trip generator(s) on the Bus GRTWSG21 (515821) 0.7 kV Trip generator(s) on the Bus GRTWSG11 (515859) 0.7 kV Trip generator(s) on the Bus PRSMNG11 (515955) 0.7 kV

Table 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1007-SB	P4	Stuck Breaker on WWRDEHV4 (515376) 138 kV Bus a. Apply single phase fault at the WWRDEHV4 (515376) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the WWRDEHV4 (515376) 138 kV to WWDPST 4 (515425) 138 kV line CKT 1. b.2.Trip the WWRDEHV4 (515376) 138 kV to OUSPRT 4 (515398) 138 kV line CKT 1. Trip generator(s) on the Bus OUSPRTG1 (515399) 0.7 kV
FLT1008-SB	P4	Stuck Breaker on WWRDEHV4 (515376) 138 kV Bus a. Apply single phase fault at the WWRDEHV4 (515376) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the WWRDEHV4 (515376) 138 kV to WOODWRD4 (514785) 138 kV line CKT 2. b.2.Trip the WWRDEHV4 (515376) 138 kV / WWRDEHV7 (515375) 345 kV / WWDEHV31 (515795) 13.8 kV XFMR CKT 1.
FLT1009-SB	P4	Stuck Breaker on WWRDEHV4 (515376) 138 kV Bus a. Apply single phase fault at the WWRDEHV4 (515376) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the WWRDEHV4 (515376) 138 kV to IODINE-4 (514796) 138 kV line CKT 1. b.2.Trip the WWRDEHV4 (515376) 138 kV / WWRDEHV7 (515375) 345 kV / WWDEHV21 (515799) 13.8 kV XFMR CKT 2.
FLT1010-SB	P4	Stuck Breaker on HITCHLAND 7 (523097) 345 kV Bus a. Apply single phase fault at the HITCHLAND 7 (523097) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the HITCHLAND 7 (523097) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 2. b.2.Trip the HITCHLAND 7 (523097) 345 kV to NOVUS1 7 (523112) 345 kV line CKT 1. Trip generator(s) on the Bus G06-44-2 (560584) 4.2 kV Trip generator(s) on the Bus G06-44-3 (560585) 4.2 kV Trip generator(s) on the Bus G06-44-4 (560586) 4.2 kV Trip generator(s) on the Bus NOVUS_WND 1 (523107) 4.2 kV
FLT1011-SB	P4	Stuck Breaker on HITCHLAND 7 (523097) 345 kV Bus a. Apply single phase fault at the HITCHLAND 7 (523097) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the HITCHLAND 7 (523097) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 1. b.2.Trip the HITCHLAND 7 (523097) 345 kV to G10014G11022 (576397) 345 kV line CKT 1. Trip generator(s) on the Bus G10-014-GEN1 (576410) 0.7 kV Trip generator(s) on the Bus G10-014-GEN2 (576400) 0.7 kV Trip generator(s) on the Bus G11-022-GEN1 (599148) 0.7 kV Trip generator(s) on the Bus G11-022-GEN2 (599150) 0.7 kV
FLT1012-SB	P4	Stuck Breaker on HITCHLAND 7 (523097) 345 kV Bus a. Apply single phase fault at the HITCHLAND 7 (523097) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the HITCHLAND 7 (523097) 345 kV to POTTER_CO 7 (523961) 345 kV line CKT 1. b.2.Trip the HITCHLAND 7 (523097) 345 kV to NOBLE_WND 7 (523101) 345 kV line CKT 1. Trip generator(s) on the Bus NBLWND-WTG11 (523122) 0.7 kV Trip generator(s) on the Bus GRPLNS-WT2-1 (523123) 0.6 kV Trip generator(s) on the Bus GRPLNS-WT4-1 (523121) 0.6 kV
FLT1013-SB	P4	Stuck Breaker on HITCHLAND 3 (523093) 115 kV Bus a. Apply single phase fault at the HITCHLAND 3 (523093) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the HITCHLAND 3 (523093) 115 kV to TEXAS_CNTY 3 (523090) 115 kV line CKT 1. b.2.Trip the HITCHLAND 3 (523093) 115 kV to FRISCO_WND 3 (523160) 115 kV line CKT 1. Trip generator(s) on the Bus FRISCO_WND 3 (523160) 115 kV
FLT1014-SB	P4	Stuck Breaker on HITCHLAND 3 (523093) 115 kV Bus a. Apply single phase fault at the HITCHLAND 3 (523093) 115 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the HITCHLAND 3 (523093) 115 kV to TEXAS_CNTY 3 (523090) 115 kV line CKT 2. b.2.Trip the HITCHLAND 3 (523093) 115 kV to HANSFORD 3 (523195) 115 kV line CKT 1.
FLT1015-SB	P4	Stuck Breaker on PALDR2W7 (515590) 345 kV Bus a. Apply single phase fault at the PALDR2W7 (515590) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the PALDR2W7 (515590) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 1. b.2.Trip bus PALDR2W7 (515590) 345 kV. Trip generator(s) on the Bus G08-047-GEN1 (515905) 0.7 kV Trip generator(s) on the Bus G08-047-GEN2 (573510) 0.7 kV

Table 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1016-SB	P4	Stuck Breaker on BALKOW 7 (515618) 345 kV Bus a. Apply single phase fault at the BALKOW 7 (515618) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the BALKOW 7 (515618) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 1. b.2.Trip bus BALKOW 7 (515618) 345 kV. Trip generator(s) on the Bus BALKOWG1 (515658) 0.7 kV Trip generator(s) on the Bus BALKOWG2 (515659) 0.7 kV Trip generator(s) on the Bus G24-SR7-GEN1 (924071) 0.6 kV Trip generator(s) on the Bus G24-SR9-GEN1 (924091) 0.9 kV Trip generator(s) on the Bus G24-SR7-GEN2 (924075) 0.6 kV Trip generator(s) on the Bus G24-SR9-GEN2 (924095) 0.9 kV
FLT9000-3PH	P1	3 Phase fault on BVRCNTY7 (515554) 345 kV to BADGER 7 (515677) 345 kV line CKT 1, near BVRCNTY7 (515554) 345 kV. a. Apply fault at the BVRCNTY7 (515554) 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.
FLT9001-3PH	P1	3 Phase fault on BVRCNTY7 (515554) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 1, near BVRCNTY7 (515554) 345 kV. a. Apply fault at the BVRCNTY7 (515554) 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.
FLT9002-3PH	P1	3 Phase fault on BVRCNTY7 (515554) 345 kV to HITCHLAND 7 (523097) 345 kV line CKT 1, near BVRCNTY7 (515554) 345 kV. a. Apply fault at the BVRCNTY7 (515554) 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.
FLT9003-3PH	P1	3 Phase fault on BVRCNTY7 (515554) 345 kV to PALDR2W7 (515590) 345 kV line CKT 1, near BVRCNTY7 (515554) 345 kV. a. Apply fault at the BVRCNTY7 (515554) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G08-047-GEN1 (515905) 0.7 kV Trip generator(s) on the Bus G08-047-GEN2 (573510) 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.
FLT9004-3PH	P1	3 Phase fault on BVRCNTY7 (515554) 345 kV to BALKOW 7 (515618) 345 kV line CKT 1, near BVRCNTY7 (515554) 345 kV. a. Apply fault at the BVRCNTY7 (515554) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus BALKOWG1 (515658) 0.7 kV Trip generator(s) on the Bus BALKOWG2 (515659) 0.7 kV Trip generator(s) on the Bus G24-SR7-GEN1 (924071) 0.6 kV Trip generator(s) on the Bus G24-SR7-GEN2 (924075) 0.6 kV Trip generator(s) on the Bus G24-SR9-GEN1 (924091) 0.9 kV Trip generator(s) on the Bus G24-SR9-GEN2 (924095) 0.9 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.
FLT9005-3PH	P1	3 Phase fault on BADGER 7 (515677) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 1, near BADGER 7 (515677) 345 kV. a. Apply fault at the BADGER 7 (515677) 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.
FLT9006-3PH	P1	3 Phase fault on BADGER 7 (515677) 345 kV to BOBCAT 7 (516106) 345 kV line CKT 1, near BADGER 7 (515677) 345 kV. a. Apply fault at the BADGER 7 (515677) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9007-3PH	P1	3 Phase fault on BADGER 7 (515677) 345 kV to BLUWND 7 (515686) 345 kV line CKT 1, near BADGER 7 (515677) 345 kV. a. Apply fault at the BADGER 7 (515677) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus BLUWDG11 (515678) 0.7 kV Trip generator(s) on the Bus BLUWDG21 (515682) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9008-3PH	P1	3 Phase fault on BADGER 7 (515677) 345 kV to GEN-2015-082 (585190) 345 kV line CKT 1, near BADGER 7 (515677) 345 kV. a. Apply fault at the BADGER 7 (515677) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G15-082-GEN1 (585193) 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.
FLT9009-3PH	P1	3 Phase fault on BOBCAT 7 (516106) 345 kV to BADGER 7 (515677) 345 kV line CKT 1, near BOBCAT 7 (516106) 345 kV. a. Apply fault at the BOBCAT 7 (516106) 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.
FLT9010-3PH	P1	3 Phase fault on BOBCAT 7 (516106) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 2, near BOBCAT 7 (516106) 345 kV. a. Apply fault at the BOBCAT 7 (516106) 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.
FLT9011-3PH	P1	3 Phase fault on BOBCAT 7 (516106) 345 kV to 25MILE 7 (516146) 345 kV line CKT 1, near BOBCAT 7 (516106) 345 kV. a. Apply fault at the BOBCAT 7 (516106) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus 25MILG11 (516150) 0.7 kV Trip generator(s) on the Bus 25MILG21 (516151) 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.
FLT9012-3PH	P1	3 Phase fault on BOBCAT 7 (516106) 345 kV to GEN-2017-011 (588560) 345 kV line CKT 1, near BOBCAT 7 (516106) 345 kV. a. Apply fault at the BOBCAT 7 (516106) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-011-GEN1 (588563) 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.
FLT9013-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 1, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9014-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to BOBCAT 7 (516106) 345 kV line CKT 2, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9015-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to GEN-2019-012 (763527) 345 kV line CKT 1, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G19-012-GEN1 (763530) 0.5 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9016-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to G07621119-20 (515599) 345 kV line CKT , near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus PC2_WTG1 (585443) 0.7 kV Trip generator(s) on the Bus PC2_WTG2 (585446) 0.7 kV Trip generator(s) on the Bus CB_WTG1 (585423) 0.7 kV Trip generator(s) on the Bus CB_WTG2 (585426) 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.
FLT9017-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to GUTHRIE7 (515961) 345 kV line CKT 1, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus GRTWSG21 (515821) 0.7 kV Trip generator(s) on the Bus GRTWSG11 (515859) 0.7 kV Trip generator(s) on the Bus PRSMNG11 (515955) 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.
FLT9018-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to WWDBORDT (755000) 345 kV line CKT 1, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 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.
FLT9019-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to TATONGA7 (515407) 345 kV line CKT 2, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 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.
FLT9020-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV to DGRASSE7 (515852) 345 kV line CKT 1, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 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.
FLT9021-3PH	P1	3 Phase fault on WWRDEHV7 (515375) 345 kV / WWRDEHV4 (515376) 138 kV / WWDEHV21 (515799) 13.8 kV XFMR CKT 2, near WWRDEHV7 (515375) 345 kV. a. Apply fault at the WWRDEHV7 (515375) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9022-3PH	P1	3 Phase fault on G07621119-20 (515599) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 1, near G07621119-20 (515599) 345 kV. a. Apply fault at the G07621119-20 (515599) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus PC2_WTG1 (585443) 0.7 kV Trip generator(s) on the Bus PC2_WTG2 (585446) 0.7 kV Trip generator(s) on the Bus CB_WTG1 (585423) 0.7 kV Trip generator(s) on the Bus CB_WTG2 (585426) 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.
FLT9023-3PH	P1	3 Phase fault on G07621119-20 (515599) 345 kV to PRSIMN_CRK1 (585430) 345 kV line CKT 1, near G07621119-20 (515599) 345 kV. a. Apply fault at the G07621119-20 (515599) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus PC2_WTG1 (585443) 0.7 kV Trip generator(s) on the Bus PC2_WTG2 (585446) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9024-3PH	P1	3 Phase fault on G07621119-20 (515599) 345 kV to GREAT_WESTRN (585410) 345 kV line CKT 1, near G07621119-20 (515599) 345 kV. a. Apply fault at the G07621119-20 (515599) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus CB_WTG1 (585423) 0.7 kV Trip generator(s) on the Bus CB_WTG2 (585426) 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.
FLT9025-3PH	P1	3 Phase fault on GUTHRIE7 (515961) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 1, near GUTHRIE7 (515961) 345 kV. a. Apply fault at the GUTHRIE7 (515961) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus GRTWSG21 (515821) 0.7 kV Trip generator(s) on the Bus GRTWSG11 (515859) 0.7 kV Trip generator(s) on the Bus PRSMNG11 (515955) 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.
FLT9026-3PH	P1	3 Phase fault on GUTHRIE7 (515961) 345 kV to GRTWSRN7 (515825) 345 kV line CKT 1, near GUTHRIE7 (515961) 345 kV. a. Apply fault at the GUTHRIE7 (515961) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus GRTWSG21 (515821) 0.7 kV Trip generator(s) on the Bus GRTWSG11 (515859) 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.
FLT9027-3PH	P1	3 Phase fault on GUTHRIE7 (515961) 345 kV to PERSIMN7 (515951) 345 kV line CKT 1, near GUTHRIE7 (515961) 345 kV. a. Apply fault at the GUTHRIE7 (515961) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus PRSMNG11 (515955) 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.
FLT9028-3PH	P1	3 Phase fault on WWDBORDT (755000) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 1, near WWDBORDT (755000) 345 kV. a. Apply fault at the WWDBORDT (755000) 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.
FLT9029-3PH	P1	3 Phase fault on WWDBORDT (755000) 345 kV to CHISHOLM7 (511553) 345 kV line CKT 1, near WWDBORDT (755000) 345 kV. a. Apply fault at the WWDBORDT (755000) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9030-3PH	P1	3 Phase fault on WWDBORDT (755000) 345 kV to BORDER 7 (515458) 345 kV line CKT 1, near WWDBORDT (755000) 345 kV. a. Apply fault at the WWDBORDT (755000) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9031-3PH	P1	3 Phase fault on TATONGA7 (515407) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 1, near TATONGA7 (515407) 345 kV. a. Apply fault at the TATONGA7 (515407) 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.
FLT9032-3PH	P1	3 Phase fault on TATONGA7 (515407) 345 kV to MATHWSN7 (515497) 345 kV line CKT 1, near TATONGA7 (515407) 345 kV. a. Apply fault at the TATONGA7 (515407) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9033-3PH	P1	3 Phase fault on TATONGA7 (515407) 345 kV to CRSRDSW7 (515448) 345 kV line CKT 1, near TATONGA7 (515407) 345 kV. a. Apply fault at the TATONGA7 (515407) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus CRSRD-WTG2 (515910) 0.7 kV Trip generator(s) on the Bus CRSRD-WTG1 (515911) 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.
FLT9034-3PH	P1	3 Phase fault on TATONGA7 (515407) 345 kV to SLNGWND7 (515582) 345 kV line CKT 1, near TATONGA7 (515407) 345 kV. a. Apply fault at the TATONGA7 (515407) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus SILNGWG1 (515587) 0.7 kV Trip generator(s) on the Bus SILNGWG2 (515898) 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.
FLT9035-3PH	P1	3 Phase fault on TATONGA7 (515407) 345 kV to MAMTHPW7 (515585) 345 kV line CKT 1, near TATONGA7 (515407) 345 kV. a. Apply fault at the TATONGA7 (515407) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MMTHPWG1 (515903) 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.
FLT9036-3PH	P1	3 Phase fault on DGRASSE7 (515852) 345 kV to WWRDEHV7 (515375) 345 kV line CKT 1, near DGRASSE7 (515852) 345 kV. a. Apply fault at the DGRASSE7 (515852) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9037-3PH	P1	3 Phase fault on DGRASSE7 (515852) 345 kV to THISTLE7 (539801) 345 kV line CKT 1, near DGRASSE7 (515852) 345 kV. a. Apply fault at the DGRASSE7 (515852) 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.
FLT9038-3PH	P1	3 Phase fault on DGRASSE7 (515852) 345 kV / DGRASSE4 (515853) 138 kV / DGRASSE1 (515854) 13.8 kV XFMR CKT 1, near DGRASSE7 (515852) 345 kV. a. Apply fault at the DGRASSE7 (515852) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9039-3PH	P1	3 Phase fault on DGRASSE4 (515853) 138 kV / DGRASSE7 (515852) 345 kV / DGRASSE1 (515854) 13.8 kV XFMR CKT 1, near DGRASSE4 (515853) 138 kV. a. Apply fault at the DGRASSE4 (515853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9040-3PH	P1	3 Phase fault on DGRASSE4 (515853) 138 kV to MOORLND4 (520999) 138 kV line CKT 1, near DGRASSE4 (515853) 138 kV. a. Apply fault at the DGRASSE4 (515853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9041-3PH	P1	3 Phase fault on DGRASSE4 (515853) 138 kV to ROSEVLY4 (520436) 138 kV line CKT 1, near DGRASSE4 (515853) 138 kV. a. Apply fault at the DGRASSE4 (515853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9042-3PH	P1	3 Phase fault on DGRASSE4 (515853) 138 kV to KNOBHIL4 (514795) 138 kV line CKT 1, near DGRASSE4 (515853) 138 kV. a. Apply fault at the DGRASSE4 (515853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9043-3PH	P1	3 Phase fault on DGRASSE4 (515853) 138 kV to GEN-2019-045 (763769) 138 kV line CKT 1, near DGRASSE4 (515853) 138 kV. a. Apply fault at the DGRASSE4 (515853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus G19-045-GEN1 (763772) 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.
FLT9044-3PH	P1	3 Phase fault on DGRASSE4 (515853) 138 kV to GEN-2015-095 (585300) 138 kV line CKT 1, near DGRASSE4 (515853) 138 kV. a. Apply fault at the DGRASSE4 (515853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus G15-095-GEN1 (585303) 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.
FLT9045-3PH	P1	3 Phase fault on WWRDEHV4 (515376) 138 kV / WWRDEHV7 (515375) 345 kV / WWDEHV21 (515799) 13.8 kV XFMR CKT 2, near WWRDEHV4 (515376) 138 kV. a. Apply fault at the WWRDEHV4 (515376) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9046-3PH	P1	3 Phase fault on WWRDEHV4 (515376) 138 kV to WWDPST 4 (515425) 138 kV line CKT 1, near WWRDEHV4 (515376) 138 kV. a. Apply fault at the WWRDEHV4 (515376) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9047-3PH	P1	3 Phase fault on WWRDEHV4 (515376) 138 kV to KEENAN 4 (515394) 138 kV line CKT 1, near WWRDEHV4 (515376) 138 kV. a. Apply fault at the WWRDEHV4 (515376) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus KEENANG1 (515395) 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.
FLT9048-3PH	P1	3 Phase fault on WWRDEHV4 (515376) 138 kV to OUSPRT 4 (515398) 138 kV line CKT 1, near WWRDEHV4 (515376) 138 kV. a. Apply fault at the WWRDEHV4 (515376) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus OUSPRTG1 (515399) 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.
FLT9049-3PH	P1	3 Phase fault on WWRDEHV4 (515376) 138 kV to IODINE-4 (514796) 138 kV line CKT 1, near WWRDEHV4 (515376) 138 kV. a. Apply fault at the WWRDEHV4 (515376) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9050-3PH	P1	3 Phase fault on IODINE-4 (514796) 138 kV to WWRDEHV4 (515376) 138 kV line CKT 1, near IODINE-4 (514796) 138 kV. a. Apply fault at the IODINE-4 (514796) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9051-3PH	P1	3 Phase fault on IODINE-4 (514796) 138 kV to REDCLFT4 (515533) 138 kV line CKT 1, near IODINE-4 (514796) 138 kV. a. Apply fault at the IODINE-4 (514796) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9052-3PH	P1	3 Phase fault on WOODWRD4 (514785) 138 kV to WWDPST 4 (515425) 138 kV XFMR CKT 1, near WOODWRD4 (514785) 138 kV. a. Apply fault at the WOODWRD4 (514785) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.

Table 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9053-3PH	P1	3 Phase fault on WOODWRD4 (514785) 138 kV to CENT 4 (515363) 138 kV line CKT 1, near WOODWRD4 (514785) 138 kV. a. Apply fault at the WOODWRD4 (514785) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus CENT G11 (515424) 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.
FLT9054-3PH	P1	3 Phase fault on WOODWRD4 (514785) 138 kV / WODWRD 2 (514782) 69 kV / WOODWR21 (515771) 13.2 kV XFMR CKT 1, near WOODWRD4 (514785) 138 kV. a. Apply fault at the WOODWRD4 (514785) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9055-3PH	P1	3 Phase fault on WOODWRD4 (514785) 138 kV to WINDFRM4 (515785) 138 kV line CKT 1, near WOODWRD4 (514785) 138 kV. a. Apply fault at the WOODWRD4 (514785) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9056-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV to BVRCNTY7 (515554) 345 kV line CKT 1, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 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.
FLT9057-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV to NOBLE_WND 7 (523101) 345 kV line CKT 1, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus NBLWND-WTG11 (523122) 0.7 kV Trip generator(s) on the Bus GRPLNS-WT2-1 (523123) 0.6 kV Trip generator(s) on the Bus GRPLNS-WT4-1 (523121) 0.6 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9058-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV to NOVUS1 7 (523112) 345 kV line CKT 1, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G06-44-3 (560585) 4.2 kV Trip generator(s) on the Bus G06-44-4 (560586) 4.2 kV Trip generator(s) on the Bus NOVUS_WND 1 (523107) 4.2 kV Trip generator(s) on the Bus G06-44-2 (560584) 4.2 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.
FLT9059-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV to CARPENTER 7 (523823) 345 kV line CKT 1, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 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.
FLT9060-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV to G10014G11022 (576397) 345 kV line CKT 1, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G10-014-GEN1 (576410) 0.7 kV Trip generator(s) on the Bus G10-014-GEN2 (576400) 0.7 kV Trip generator(s) on the Bus G11-022-GEN1 (599148) 0.7 kV Trip generator(s) on the Bus G11-022-GEN2 (599150) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9061-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV / HITCHLAND 6 (523095) 230 kV / HITCHLD_TR21 (523094) 13.2 kV XFMR CKT 2, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9062-3PH	P1	3 Phase fault on HITCHLAND 7 (523097) 345 kV to POTTER_CO 7 (523961) 345 kV line CKT 1, near HITCHLAND 7 (523097) 345 kV. a. Apply fault at the HITCHLAND 7 (523097) 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.
FLT9063-3PH	P1	3 Phase fault on NOVUS1 7 (523112) 345 kV to HITCHLAND 7 (523097) 345 kV line CKT 1, near NOVUS1 7 (523112) 345 kV. a. Apply fault at the NOVUS1 7 (523112) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G06-44-3 (560585) 4.2 kV Trip generator(s) on the Bus G06-44-4 (560586) 4.2 kV Trip generator(s) on the Bus NOVUS_WND 1 (523107) 4.2 kV Trip generator(s) on the Bus G06-44-2 (560584) 4.2 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.
FLT9064-3PH	P1	3 Phase fault on NOVUS1 7 (523112) 345 kV / G06-44 (560577) 115 kV / NOVUS1_TR2 2 (560578) 13.8 kV XFMR CKT 2, near NOVUS1 7 (523112) 345 kV. a. Apply fault at the NOVUS1 7 (523112) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer. Trip generator(s) on the Bus G06-44-3 (560585) 4.2 kV Trip generator(s) on the Bus G06-44-4 (560586) 4.2 kV
FLT9065-3PH	P1	3 Phase fault on NOVUS1 7 (523112) 345 kV / NOVUS1 3 (523111) 115 kV / NOVUS1_TR1 1 (523110) 13.8 kV XFMR CKT 1, near NOVUS1 7 (523112) 345 kV. a. Apply fault at the NOVUS1 7 (523112) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer. Trip generator(s) on the Bus NOVUS_WND 1 (523107) 4.2 kV Trip generator(s) on the Bus G06-44-2 (560584) 4.2 kV
FLT9066-3PH	P1	3 Phase fault on CARPENTER 7 (523823) 345 kV to HITCHLAND 7 (523097) 345 kV line CKT 1, near CARPENTER 7 (523823) 345 kV. a. Apply fault at the CARPENTER 7 (523823) 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 CARPENTER 7 (523823) 345 kV to FINNEY 7 (523853) 345 kV line CKT 1, near CARPENTER 7 (523823) 345 kV. a. Apply fault at the CARPENTER 7 (523823) 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.
FLT9068-3PH	P1	3 Phase fault on CARPENTER 7 (523823) 345 kV to HARBNGR7 (531512) 345 kV line CKT Z1, near CARPENTER 7 (523823) 345 kV. a. Apply fault at the CARPENTER 7 (523823) 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 G10014G11022 (576397) 345 kV to HITCHLAND 7 (523097) 345 kV line CKT 1, near G10014G11022 (576397) 345 kV. a. Apply fault at the G10014G11022 (576397) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G10-014-GEN1 (576410) 0.7 kV Trip generator(s) on the Bus G10-014-GEN2 (576400) 0.7 kV Trip generator(s) on the Bus G11-022-GEN1 (599148) 0.7 kV Trip generator(s) on the Bus G11-022-GEN2 (599150) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9070-3PH	P1	3 Phase fault on G10014G11022 (576397) 345 kV to GEN-2010-014 (576395) 345 kV line CKT 1, near G10014G11022 (576397) 345 kV. a. Apply fault at the G10014G11022 (576397) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G10-014-GEN1 (576410) 0.7 kV Trip generator(s) on the Bus G10-014-GEN2 (576400) 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.
FLT9071-3PH	P1	3 Phase fault on G10014G11022 (576397) 345 kV to GEN-2011-022 (523215) 345 kV line CKT 1, near G10014G11022 (576397) 345 kV. a. Apply fault at the G10014G11022 (576397) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G11-022-GEN1 (599148) 0.7 kV Trip generator(s) on the Bus G11-022-GEN2 (599150) 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.
FLT9072-3PH	P1	3 Phase fault on POTTER_CO 7 (523961) 345 kV to HITCHLAND 7 (523097) 345 kV line CKT 1, near POTTER_CO 7 (523961) 345 kV. a. Apply fault at the POTTER_CO 7 (523961) 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 POTTER_CO 7 (523961) 345 kV to SPNSPUR_WND7 (524296) 345 kV line CKT 1, near POTTER_CO 7 (523961) 345 kV. a. Apply fault at the POTTER_CO 7 (523961) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus SPNSPUR_GEN1 (524295) 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.
FLT9074-3PH	P1	3 Phase fault on POTTER_CO 7 (523961) 345 kV / POTTER_CO 6 (523959) 230 kV / POTTER_TR 1 (523957) 13.2 kV XFMR CKT 1, near POTTER_CO 7 (523961) 345 kV. a. Apply fault at the POTTER_CO 7 (523961) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted transformer.
FLT9075-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV / POTTER_CO 7 (523961) 345 kV / POTTER_TR 1 (523957) 13.2 kV XFMR CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9076-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV to HARRNG_EST 6 (523979) 230 kV line CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 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.
FLT9077-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV to ROLLHILLS 6 (524010) 230 kV line CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 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.
FLT9078-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV to NEWHART 6 (525461) 230 kV line CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9079-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV to BUSHLAND 6 (524267) 230 kV line CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 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.
FLT9080-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV to CHAN+TASCOS6 (523869) 230 kV line CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 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.
FLT9081-3PH	P1	3 Phase fault on POTTER_CO 6 (523959) 230 kV to MCDWL_CREEK6 (523323) 230 kV line CKT 1, near POTTER_CO 6 (523959) 230 kV. a. Apply fault at the POTTER_CO 6 (523959) 230 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.
FLT9082-3PH	P1	3 Phase fault on HITCHLAND 6 (523095) 230 kV / HITCHLAND 7 (523097) 345 kV / HITCHLD_TR21 (523094) 13.2 kV XFMR CKT 2, near HITCHLAND 6 (523095) 230 kV. a. Apply fault at the HITCHLAND 6 (523095) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9083-3PH	P1	3 Phase fault on HITCHLAND 6 (523095) 230 kV / HITCHLAND 3 (523093) 115 kV / HITCHLD_TR11 (523092) 13.2 kV XFMR CKT 1, near HITCHLAND 6 (523095) 230 kV. a. Apply fault at the HITCHLAND 6 (523095) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9084-3PH	P1	3 Phase fault on HITCHLAND 6 (523095) 230 kV to MOORE_CNTY 6 (523309) 230 kV line CKT 1, near HITCHLAND 6 (523095) 230 kV. a. Apply fault at the HITCHLAND 6 (523095) 230 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.
FLT9085-3PH	P1	3 Phase fault on HITCHLAND 6 (523095) 230 kV to OCHILTREE 6 (523155) 230 kV line CKT 1, near HITCHLAND 6 (523095) 230 kV. a. Apply fault at the HITCHLAND 6 (523095) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9087-3PH	P1	3 Phase fault on OCHILTREE 6 (523155) 230 kV to HITCHLAND 6 (523095) 230 kV line CKT 1, near OCHILTREE 6 (523155) 230 kV. a. Apply fault at the OCHILTREE 6 (523155) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9088-3PH	P1	3 Phase fault on OCHILTREE 6 (523155) 230 kV / OCHILTREE 3 (523154) 115 kV / OCHLTRE_TR11 (523151) 13.2 kV XFMR CKT 1, near OCHILTREE 6 (523155) 230 kV. a. Apply fault at the OCHILTREE 6 (523155) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9089-3PH	P1	3 Phase fault on OCHILTREE 3 (523154) 115 kV / OCHILTREE 6 (523155) 230 kV / OCHLTRE_TR11 (523151) 13.2 kV XFMR CKT 1, near OCHILTREE 3 (523154) 115 kV. a. Apply fault at the OCHILTREE 3 (523154) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9090-3PH	P1	3 Phase fault on OCHILTREE 3 (523154) 115 kV to TXFARMS 3 (523140) 115 kV line CKT 1, near OCHILTREE 3 (523154) 115 kV. a. Apply fault at the OCHILTREE 3 (523154) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9091-3PH	P1	3 Phase fault on OCHILTREE 3 (523154) 115 kV to COLE 3 (523120) 115 kV line CKT 1, near OCHILTREE 3 (523154) 115 kV. a. Apply fault at the OCHILTREE 3 (523154) 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.
FLT9092-3PH	P1	3 Phase fault on OCHILTREE 3 (523154) 115 kV to WADE_TP 3 (523145) 115 kV line CKT 1, near OCHILTREE 3 (523154) 115 kV. a. Apply fault at the OCHILTREE 3 (523154) 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.
FLT9093-3PH	P1	3 Phase fault on OCHILTREE 3 (523154) 115 kV to PERRYTON 3 (523158) 115 kV line CKT 1, near OCHILTREE 3 (523154) 115 kV. a. Apply fault at the OCHILTREE 3 (523154) 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.
FLT9094-3PH	P1	3 Phase fault on MOORE_CNTY 6 (523309) 230 kV to HITCHLAND 6 (523095) 230 kV line CKT 1, near MOORE_CNTY 6 (523309) 230 kV. a. Apply fault at the MOORE_CNTY 6 (523309) 230 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 MOORE_CNTY 6 (523309) 230 kV to MCDWL_CREEK6 (523323) 230 kV line CKT 1, near MOORE_CNTY 6 (523309) 230 kV. a. Apply fault at the MOORE_CNTY 6 (523309) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9096-3PH	P1	3 Phase fault on MOORE_CNTY 6 (523309) 230 kV / MOORE_E 3 (523308) 115 kV / MOORE_TR1 1 (523302) 13.2 kV XFMR CKT 1, near MOORE_CNTY 6 (523309) 230 kV. a. Apply fault at the MOORE_CNTY 6 (523309) 230 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9097-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV / MOORE_CNTY 6 (523309) 230 kV / MOORE_TR1 1 (523302) 13.2 kV XFMR CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9098-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV to MOORE_W 3 (523304) 115 kV line CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 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.
FLT9099-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV to VALERO 3 (523277) 115 kV line CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 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.
FLT9100-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV to ETTER 3 (523256) 115 kV line CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9101-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV to RB-KEMP 3 (523217) 115 kV line CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 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.
FLT9102-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV to RB-SPURLCK+3 (523177) 115 kV line CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 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.
FLT9103-3PH	P1	3 Phase fault on MOORE_E 3 (523308) 115 kV to MOORE_E 1 (523301) 12.5 kV XFMR CKT 1, near MOORE_E 3 (523308) 115 kV. a. Apply fault at the MOORE_E 3 (523308) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer. Trip generator(s) on the Bus MOORE_E 1 (523301) 12.5 kV
FLT9104-3PH	P1	3 Phase fault on HITCHLAND 3 (523093) 115 kV / HITCHLAND 6 (523095) 230 kV / HITCHLD_TR11 (523092) 13.2 kV XFMR CKT 1, near HITCHLAND 3 (523093) 115 kV. a. Apply fault at the HITCHLAND 3 (523093) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9105-3PH	P1	3 Phase fault on HITCHLAND 3 (523093) 115 kV to GOODWELLWND3 (523174) 115 kV line CKT 1, near HITCHLAND 3 (523093) 115 kV. a. Apply fault at the HITCHLAND 3 (523093) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus GOODWELL_1 1 (523170) 0.7 kV Trip generator(s) on the Bus GOODWELL_2 1 (523171) 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.
FLT9106-3PH	P1	3 Phase fault on HITCHLAND 3 (523093) 115 kV to FRISCO_WND 3 (523160) 115 kV line CKT 1, near HITCHLAND 3 (523093) 115 kV. a. Apply fault at the HITCHLAND 3 (523093) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus FRISCO_WND 3 (523160) 115 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.
FLT9107-3PH	P1	3 Phase fault on HITCHLAND 3 (523093) 115 kV to HANSFORD 3 (523195) 115 kV line CKT 1, near HITCHLAND 3 (523093) 115 kV. a. Apply fault at the HITCHLAND 3 (523093) 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.
FLT9108-3PH	P1	3 Phase fault on HITCHLAND 3 (523093) 115 kV to TEXAS_CNTY 3 (523090) 115 kV line CKT 1, near HITCHLAND 3 (523093) 115 kV. a. Apply fault at the HITCHLAND 3 (523093) 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.
FLT9109-3PH	P1	3 Phase fault on HANSFORD 3 (523195) 115 kV to HITCHLAND 3 (523093) 115 kV line CKT 1, near HANSFORD 3 (523195) 115 kV. a. Apply fault at the HANSFORD 3 (523195) 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 5-2 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9110-3PH	P1	3 Phase fault on HANSFORD 3 (523195) 115 kV to SPEARMAN 3 (523186) 115 kV line CKT 1, near HANSFORD 3 (523195) 115 kV. a. Apply fault at the HANSFORD 3 (523195) 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.
FLT9111-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV to HITCHLAND 3 (523093) 115 kV line CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 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.
FLT9112-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV to TXPHSF 3 (523106) 115 kV line CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 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.
FLT9113-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV to GEN-2017-100 (589380) 115 kV line CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-100-GEN1 (589383) 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.
FLT9114-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV to TC-TXCOUNTY1 (523087) 34.5 kV XFMR CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.
FLT9115-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV to TC-MCMURRY 3 (523113) 115 kV line CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 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.
FLT9116-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV to Y ROAD 3 (522912) 115 kV line CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 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.
FLT9117-3PH	P1	3 Phase fault on TEXAS_CNTY 3 (523090) 115 kV / TC-TXCOUNTY2 (523089) 69 kV / TC-TXCN_TR11 (523085) 13.2 kV XFMR CKT 1, near TEXAS_CNTY 3 (523090) 115 kV. a. Apply fault at the TEXAS_CNTY 3 (523090) 115 kV Bus. b. Clear fault after 7 cycles by tripping the faulted transformer.

5.3 Scenario 1 Results

Table 5-3 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 5-3: Scenario 1 Dynamic Stability Results (EGF = 0 MW, GEN-2024-SR7 = 203.4812 MW, GEN-2024-SR9 = Disconnected)

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
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 5-3 continued

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

Table 5-3 continued

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

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 and the models with GEN-2024-SR7 included. These issues were not attributed to the GEN-2024-SR7 surplus request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2024-SR7 surplus 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.

5.4 Scenario 2 Results

Table 5-4 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 5-4: Scenario 2 Dynamic Stability Results (EGF = 96.5188 MW, GEN-2024-SR7 = 203.4812 MW, GEN-2024-SR9 = Disconnected)

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
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 5-4 continued

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

Table 5-4 continued

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

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 and the models with GEN-2024-SR7 included. These issues were not attributed to the GEN-2024-SR7 surplus request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2024-SR7 surplus 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.

5.5 Scenario 3 Results

Table 5-5 shows the relevant results of the fault events simulated for each of the modified models in Scenario 3. Existing DISIS base case issues are documented separately in Appendix C. The associated stability plots are also provided in Appendix C.

Table 5-5: Scenario 3 Dynamic Stability Results (EGF = 0 MW, GEN-2024-SR7 = Disconnected, GEN-2024-SR9 = 151.4752 MW)

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
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
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 5-5 continued

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

Table 5-5 continued

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

The results of the Scenario 3 dynamic stability showed several existing base case issues that were found in both the original DISIS-2018-002/2019-001 models and the models with GEN-2024-SR9 included. These issues were not attributed to the GEN-2024-SR9 surplus request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2024-SR9 surplus 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.

5.6 Scenario 4 Results

Table 5-6 shows the relevant results of the fault events simulated for each of the modified models in Scenario 4. Existing DISIS base case issues are documented separately in Appendix C. The associated stability plots are also provided in Appendix C.

Table 5-6: Scenario 4 Dynamic Stability Results (EGF = 148.5248 MW, GEN-2024-SR7 = Disconnected, GEN-2024-SR9 = 151.4752 MW)

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
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
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 5-6 continued

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

Table 5-6 continued

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

The results of the Scenario 4 dynamic stability showed several existing base case issues that were found in both the original DISIS-2018-002/2019-001 models and the models with GEN-2024-SR9 included. These issues were not attributed to the GEN-2024-SR9 surplus request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2024-SR9 surplus 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.

5.7 Scenario 5 Results

Table 5-5 shows the relevant results of the fault events simulated for each of the modified models in Scenario 5. Existing DISIS base case issues are documented separately in Appendix C. The associated stability plots are also provided in Appendix C.

Table 5-7: Scenario 5 Dynamic Stability Results (EGF = 0 MW, GEN-2024-SR7 = 171.43 MW, GEN-2024-SR9 = 128.57 MW)

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
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
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 5-5 continued

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

Table 5-5 continued

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

The results of the Scenario 5 dynamic stability showed several existing base case issues that were found in both the original DISIS-2018-002/2019-001 models and the models with GEN-2024-SR7 and GEN-2024-SR9 included. These issues were not attributed to the GEN-2024-SR7 and GEN-2024-SR9 surplus requests and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2024-SR7 and GEN-2024-SR9 surplus requests observed during the simulated faults. Additionally, the projects were 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.

5.8 Scenario 6 Results

Table 5-6 shows the relevant results of the fault events simulated for each of the modified models in Scenario 6. Existing DISIS base case issues are documented separately in Appendix C. The associated stability plots are also provided in Appendix C.

Table 5-8: Scenario 6 Dynamic Stability Results (EGF = 138.46 MW, GEN-2024-SR7 = 92.31 MW, GEN-2024-SR9 = 69.23 MW)

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
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
FLT9000-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9001-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9002-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9003-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9004-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9005-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9006-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 5-6 continued

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

Table 5-6 continued

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

The results of the Scenario 6 dynamic stability showed several existing base case issues that were found in both the original DISIS-2018-002/2019-001 models and the models with GEN-2024-SR7 and GEN-2024-SR9 included. These issues were not attributed to the GEN-2024-SR7 and GEN-2024-SR9 surplus requests and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2024-SR7 and GEN-2024-SR9 surplus requests observed during the simulated faults. Additionally, the projects were 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.

6.0 Necessary Interconnection Facilities and Network Upgrades

This study identified the impact of the Surplus Interconnection Service on the transmission system reliability and any additional Interconnection Facilities or Network Upgrades necessary. The Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring additional Network Upgrades unless (a) those additional Network Upgrades are either (1) located at the Point of Interconnection substation and at the same voltage level as the Generating Facility with an effective GIA, or (2) are System Protection Facilities; and (b) there are no material adverse impacts on the cost or timing of any Interconnection Requests pending at the time the Surplus Interconnection Service request is submitted.

6.1 Interconnection Facilities

This study did not identify any additional Interconnection Facilities required by the addition of GEN-2024-SR7 and GEN-2024-SR9, either individually or together.

6.2 Network Upgrades

This study did not identify any Network Upgrades required by the addition of GEN-2024-SR7 and GEN-2024-SR9, either individually or together. SPP will reach out to the TO and/or TOP to determine if there are any additional Network Upgrades that are either (1) located at the Point of Interconnection substation and at the same voltage level as the Generating Facility with an effective GIA, or (2) are System Protection Facilities.

7.0 Surplus Interconnection Service Determination and Requirements

In accordance with Attachment V of the SPP Tariff, SPP shall evaluate the request for Surplus Interconnection Service and inform the Interconnection Customer in writing of whether the Surplus Interconnection Service can be utilized without negatively impacting the reliability of the Transmission System and without any additional Network Upgrades necessary except those specified in the SPP Tariff.

7.1 Surplus Service Determination

SPP determined the request for Surplus Interconnection Service does not negatively impact the reliability of the Transmission System and no required Network Upgrades or Interconnection Facilities were identified by this Surplus Interconnection Service Impact Study performed by Aneden. Aneden evaluated the impact of the requested Surplus Interconnection Service on the prior study results and determined that the requested Surplus Interconnection Service resulted in similar dynamic stability and short circuit analyses and that the prior study steady-state results are not negatively impacted.

SPP has determined that GEN-2024-SR7 may utilize the requested 200 MW of Surplus Interconnection Service being made available by GEN-2010-001. SPP has determined that GEN-2024-SR9 may utilize the requested 150 MW of Surplus Interconnection Service being made available by GEN-2010-001.

7.2 Surplus Service Requirements

The amount of Surplus Interconnection Service available to be used is limited by the amount of Interconnection Service granted to the existing interconnection customer at the same POI. The combined generation from the EGF, GEN-2024-SR7, and GEN-2024-SR9 may not exceed 300 MW at the POI, which is the total Interconnection Service amount currently granted to the EGF.

The customer must install monitoring and control equipment as needed to ensure that each SGF does not exceed the granted surplus amount and to ensure that combination of the EGF, GEN-2024-SR7, and GEN-2024-SR9 power injected at the POI does not exceed the Interconnection Service amount listed in the EGF's GIA. The monitoring and control scheme may be reviewed by the TO and documented in Appendix C of the SGF GIA.

SPP will reach out to the TO and/or TOP to determine if there are any additional Network Upgrades that are either (1) located at the Point of Interconnection substation and at the same voltage level as the Generating Facility with an effective GIA, or (2) are System Protection Facilities.