

Report on

GEN-2021-053
Modification Request Impact Study

Revision R2 **October 16, 2026**

Submitted to
SPP

SPP
Powering Progress

anedenconsulting.com

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Revision History

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION
10/14/2026	Aneden Consulting	Initial Report Issued
10/16/2026	Aneden Consulting	Updated inverter description from MVA to MW per IC request

Executive Summary

Aneden Consulting (Aneden) was retained by SPP to perform a Modification Request Impact Study (Study) for GEN-2021-053, an active Generation Interconnection Request (GIR) with a Point of Interconnection (POI) at the Pecan 345 kV substation.

The GEN-2021-053 project interconnects in the Oklahoma Gas & Electric (OKGE) transmission system with a capacity of 300 MW. This Study has been requested to evaluate the modification of GEN-2021-053 to change the configuration to 338 x Tesla Megapack 2 XL Battery Energy Storage System (BESS) inverters operating at 0.8988 MW for a total assumed dispatch of 303.8113 MW. The inverters are rated at 1.075 MW, thus the generating capability exceeds its Generator Interconnection Agreement (GIA) Interconnection Service amount. The injection amount must be limited to 300 MW at the POI as listed in Appendix A of the GIA. As a result, the customer must ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA. The requested modification includes the use of a Power Plant Controller (PPC) to limit the total power injected into the POI.

In addition, the modification request included changes to the fuel type, collection system, generator step-up transformers, main substation transformers, and the generation interconnection line. The existing and modified configurations for GEN-2021-053 are shown in Table ES-1 below.

Table ES-1: GEN-2021-053 Modification Request

Facility	Existing Configuration		Modification Configuration	
Point of Interconnection	PECANCK7 345kV (515235)		PECANCK7 345kV (515235)	
Configuration/Capacity	84 x Power Electronics FS4200M 3.78 MW (Solar) = 317.52 MW Units are rated at 3.78 MW, PPC in place to limit POI to 300 MW		338 x Tesla Megapack 2XL 0.8988 MW (BESS) = 303.8113 MW [dispatch] Units are rated at 1.32 MVA/1.075 MW, PPC in place to limit POI to 300 MW	
Generation Interconnection Line[2]	Length = 5 miles R = 0.000399 pu X = 0.003138 pu B = 0.033855 pu Rating MVA = 360 MVA		Length = 6.7 miles R = 0.00024 pu X = 0.003218 pu B = 0.059364 pu Rating MVA = 1373 MVA (Summer) / 1516 MVA (Winter)	
Main Substation Transformer[1]	X = 8.9972%, R = 0.2249%, Winding MVA = 110.4 MVA, Rating MVA = 184 MVA	X = 8.9972%, R = 0.2249%, Winding MVA = 110.4 MVA, Rating MVA = 184 MVA	X = 8.997%, R = 0.2249%, Winding MVA = 110 MVA, Rating MVA = 184 MVA	X = 8.997%, R = 0.2249%, Winding MVA = 110 MVA, Rating MVA = 184 MVA
Equivalent GSU Transformer[1]	Gen 1 Equivalent Qty: 42 X = 5.6996%, R = 0.7599%, Winding MVA = 176.4 MVA, Rating MVA = 176.4 MVA	Gen 2 Equivalent Qty: 42 X = 5.6996%, R = 0.7599%, Winding MVA = 176.4 MVA, Rating MVA = 176.4 MVA	Gen 1 Equivalent Qty:43 X = 8.9516%, R = 0.9325%, Winding MVA = 227.04 MVA, Rating MVA = 227.04 MVA	Gen 2 Equivalent Qty: 43 X = 8.9516%, R = 0.9325%, Winding MVA = 227.04 MVA, Rating MVA = 227.04 MVA
Equivalent Collector Line[2]	R = 0.001235 pu X = 0.001418 pu B = 0.014420 pu	R = 0.001235 pu X = 0.001418 pu B = 0.014420 pu	R = 0.002057 pu X = 0.006179 pu B = 0.022955 pu	R = 0.002057 pu X = 0.006179 pu B = 0.022955 pu
Generator Dynamic Model[3] & Power Factor	42 x PE FS4200M 3.78 MW (REGCA1)[3] Leading: 0.9 Lagging: 0.9	42 x PE FS4200M 3.78 MW (REGCA1)[3] Leading: 0.9 Lagging: 0.9	169 x Tesla Megapack 2XL 0.8988 MW (REGCA1)[3] Leading: 0.761 Lagging: 0.761	169 x Tesla Megapack 2XL 0.8988 MW (REGCA1)[3] Leading: 0.761 Lagging: 0.761

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 modifications to the project were not significant enough to change the previously studied steady-state conclusions. However, SPP determined the need for short circuit and dynamic stability analysis due to a change in the fuel type from solar to BESS.

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

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

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

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

The results of the reactive power analysis using the 25SP model showed that the GEN-2021-053 project needed a 10.5 MVAr shunt reactor on the 34.5 kV bus of the project substation with the modifications in place, an increase from the 2.89 MVAr found in the DISIS-2021-001-1 study[2]. This is necessary to offset the capacitive effect on the transmission network caused by the project's transmission line and collector system during reduced generation conditions. The information gathered from the reactive power analysis is provided as information to the Interconnection Customer and Transmission Owner (TO) and/or Transmission Operator (TOP). The applicable reactive power requirements will be further reviewed by the TO and/or TOP.

The short circuit analysis was performed using the 25SP stability model modified for short circuit analysis. The results from the short circuit analysis with the updated topology showed that the maximum GEN-2021-053 contribution to three-phase fault currents in the immediate transmission systems at or near the GEN-2021-053 POI was 0.64 kA. The maximum three-phase fault current level within 5 buses of the POI was 62.9 kA for the 25SP model. There were several buses with a maximum three-phase fault current over 40 kA. These buses are highlighted in Appendix B.

The dynamic stability analysis was performed using Siemens PTI PSS/E version 34.8.1 software for the two modified study models: 25SP and 25WP. 158 fault events were simulated, which included three-phase faults and single-line-to-ground stuck breaker faults.

The results of the dynamic stability analysis showed several existing base case issues that were found in both the original DISIS-2022-001-1 models and in the models with the GEN-2021-053 modification included. These issues were not attributed to the GEN-2021-053 modification request and are detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2021-053 modification request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

[1] Power System Simulator for Engineering
[2] DISIS-2021-001-1 Sensitivity Analysis Report – January 30, 2026

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

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

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

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

1.0 Scope of Study

Aneden Consulting (Aneden) was retained by SPP to perform a Modification Request Impact Study (Study) for GEN-2021-053. A Modification Request Impact Study is a generation interconnection study performed to evaluate the impacts of modifying the DISIS study assumptions. The determination of the required scope of the study is dependent upon the specific modification requested and how it may impact the results of the DISIS study. Impacting the DISIS results could potentially affect the cost or timing of any Interconnection Request with a later Queue priority date, deeming the requested modification a Material Modification. The criteria sections below include reasoning as to why an analysis was either included or excluded from the scope of study.

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

1.1 Reactive Power Analysis

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

1.2 Short Circuit Analysis & Stability Analysis

To determine whether stability and short circuit analyses are required, SPP evaluates the difference between the stability models, the stability model parameters and, if needed, the equivalent collector system impedance between the existing configuration and the requested modification. Dynamic stability analysis and short circuit analysis would be required if the differences listed above were determined to have a significant impact on the most recently performed DISIS stability analysis.

1.3 Steady-State Analysis

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

1.4 Study Limitations

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

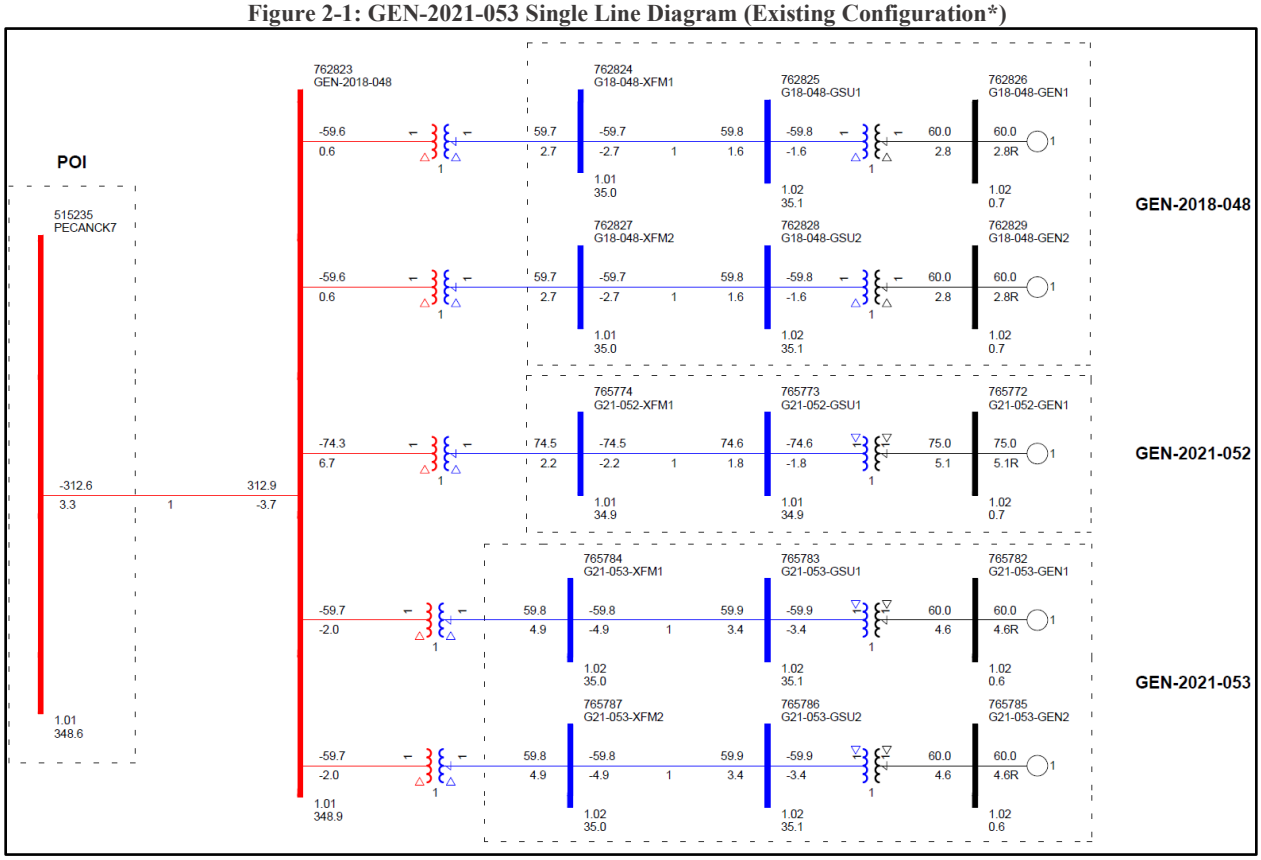
2.0 Project and Modification Request

The GEN-2021-053 Interconnection Customer requested a modification to its Generation Interconnection Request (GIR) with a Point of Interconnection (POI) at the Pecan 345 kV Substation in the Oklahoma Gas & Electric (OKGE) transmission system.

At the time of report posting, GEN-2021-053 is an active Interconnection Request with a queue status of "IA FULLY EXECUTED/ON SCHEDULE." GEN-2021-053 is a solar facility with a maximum summer and winter queue capacity of 300 MW with Energy Resource Interconnection Service (ERIS).

The GEN-2021-053 project is currently in the DISIS-2021-001 cluster. Figure 2-1 shows the power flow model single line diagram for the existing GEN-2021-053 configuration using the DISIS-2022-001-1 25SP stability model.

Figure 2-1: GEN-2021-053 Single Line Diagram (Existing Configuration*)



*based on the DISIS-2022-001-1 25SP stability models

This Study has been requested to evaluate the modification of GEN-2021-053 to change the fuel type and configuration to 338 x Tesla Megapack 2 XL Battery Energy Storage System (BESS) inverters operating at 0.8988 MW for a total assumed dispatch of 303.8113 MW. The inverters are rated at 1.075 MW, thus the generating capability exceeds its Generator Interconnection Agreement (GIA) Interconnection Service amount. The injection amount must be limited to 300 MW at the POI as listed in Appendix A of the GIA. As a result, the customer must ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA. The requested modification includes the use of a Power Plant Controller (PPC) to limit the total power injected into the POI.

In addition, the modification request included changes to the fuel type, collection system, generator step-up transformers, main substation transformers, and generation interconnection line.

Figure 2-2 shows the power flow model single line diagram for the GEN-2021-053 modification. The existing and modified configurations for GEN-2021-053 are shown in Table 2-1 below.

Figure 2-2: GEN-2021-053 Single Line Diagram (Modification Configuration)

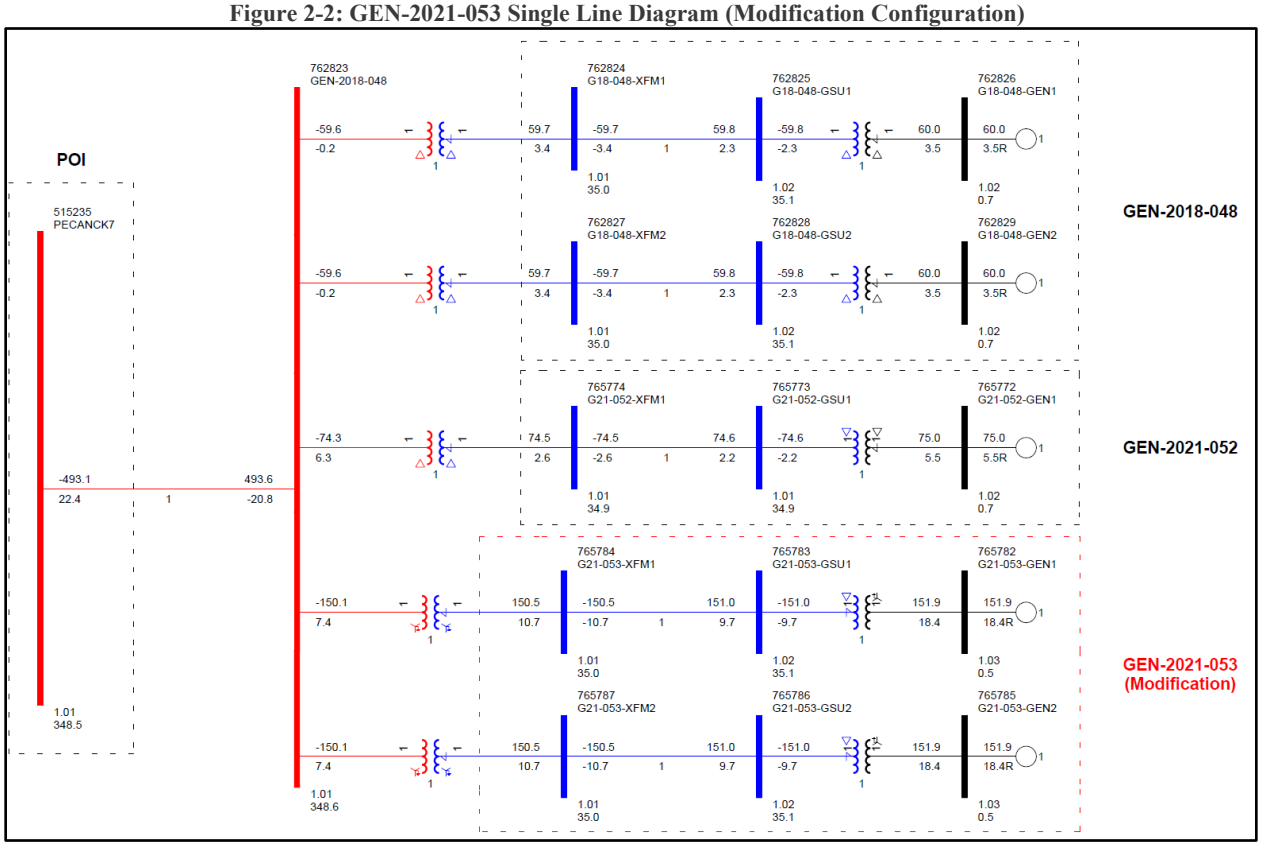


Table 2-1: GEN-2021-053 Modification Request

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Main Substation Transformer[1]	X = 8.9972%, R = 0.2249%, Winding MVA = 110.4 MVA, Rating MVA = 184 MVA	X = 8.9972%, R = 0.2249%, Winding MVA = 110.4 MVA, Rating MVA = 184 MVA	X = 8.997%, R = 0.2249%, Winding MVA = 110 MVA, Rating MVA = 184 MVA	X = 8.997%, R = 0.2249%, Winding MVA = 110 MVA, Rating MVA = 184 MVA
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Generator Dynamic Model[3] & Power Factor	42 x PE FS4200M 3.78 MW (REGCA1)[3] Leading: 0.9 Lagging: 0.9	42 x PE FS4200M 3.78 MW (REGCA1)[3] Leading: 0.9 Lagging: 0.9	169 x Tesla Megapack 2XL 0.8988 MW (REGCA1)[3] Leading: 0.761 Lagging: 0.761	169 x Tesla Megapack 2XL 0.8988 MW (REGCA1)[3] Leading: 0.761 Lagging: 0.761

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

3.0 Existing vs Modification Comparison

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

The methodology and results of the comparisons are described below.

3.1 Stability Model Parameters Comparison

SPP determined that short circuit and dynamic stability analyses were required because of the fuel type change from solar to BESS. This is because the short circuit contribution and stability responses of the existing configuration and the requested modification's configuration may differ. The generator dynamic model for the modification can be found in Appendix A.

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

3.2 Equivalent Impedance Comparison Calculation

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

4.0 Reactive Power Analysis

The reactive power analysis was performed for GEN-2021-053 to determine the capacitive charging effects during reduced generation conditions (unsuitable wind speeds, unsuitable solar irradiance, insufficient state of charge, idle conditions, curtailment, etc.) at the generation site and to size shunt reactors that would reduce the project reactive power contribution to the POI to approximately zero.

4.1 Methodology and Criteria

The GEN-2021-053 generators were switched out of service while other system elements remained in-service. 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 reactor is equivalent to the charging current value at unity voltage and the compensation provided is proportional to the voltage effects on the charging current (i.e., for voltages above unity, reactive compensation is greater than the size of the reactor).

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

4.2 Results

The results from the analysis showed that the GEN-2021-053 project needed approximately 10.5 MVAr of compensation at its collector substation to reduce the MVAr injection at the POI to zero. This is an increase from the 2.89 MVAr found in the DISIS-2021-001-1 study[3]. The final shunt reactor requirements are shown in Table 4-1. Figure 4-1 illustrates the shunt reactor size needed to reduce the POI MVAr to approximately zero with the updated topology.

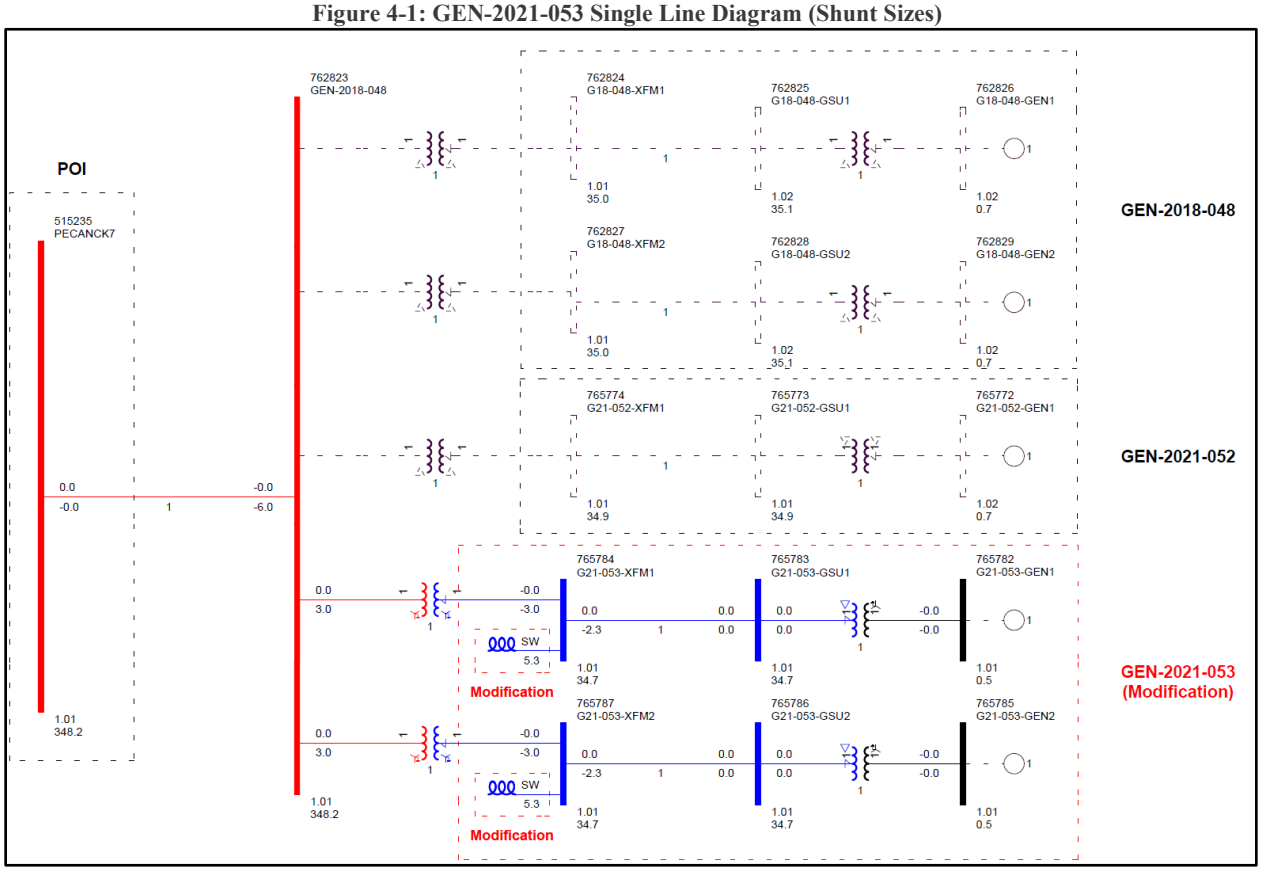
The information gathered from the reactive power analysis is provided as information to the Interconnection Customer and Transmission Owner (TO) and/or Transmission Operator (TOP). The applicable reactive power requirements will be further reviewed by the TO and/or TOP.

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

Machine	POI Bus Number	POI Bus Name	Reactor Size (MVAr)
			25SP
GEN-2021-053	515235	PECANCK7	10.5

[3] DISIS-2021-001-1 Sensitivity Analysis Report– January 30, 2026

Figure 4-1: GEN-2021-053 Single Line Diagram (Shunt Sizes)



5.0 Short Circuit Analysis

Aneden performed a short circuit study using the 25SP model for GEN-2021-053 to determine the maximum fault current requiring interruption by protective equipment for each bus in the relevant subsystem. The detailed results of the short circuit analysis are provided in Appendix B.

5.1 Methodology

The short circuit analysis included applying a 3-phase fault on buses up to 5 levels away from the 345 kV POI bus. The PSS/E "Automatic Sequence Fault Calculation (ASCC)" fault analysis module was used to calculate the fault current levels in the transmission system with and without GEN-2021-053 online.

Aneden created a short circuit model using the 25SP DISIS-2022-001-1 stability study model by adjusting the GEN-2021-053 short circuit parameters consistent with the submitted data. The adjusted parameters used in the short circuit analysis are shown in Table 5-1 below. No other changes were made to the model.

Table 5-1: Short Circuit Model Parameters*

Parameter	Value by Generator Bus#	
	765782	765785
Machine MVA Base	223.08	223.08
R (pu)	0.0	0.0
X'' (pu)	0.8333	0.8333

*pu values based on Machine MVA Base

5.2 Results

The results of the short circuit analysis for the 25SP model are summarized in Table 5-2 and Table 5-3. The GEN-2021-053 POI bus (Pecan 345 kV) fault current magnitudes for the comparison cases are provided in Table 5-2 showing a fault current of 22.38 kA with the GEN-2021-053 project online. Table 5-3 shows the maximum fault current magnitudes and fault current increases with the GEN-2021-053 project online.

The maximum fault current calculated within 5 buses of the POI was 62.9 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 GEN-2021-053 contribution to three-phase fault currents was about 3.0% and 0.64 kA.

Table 5-2: POI Short Circuit Comparison Results

Case	GEN-OFF Current (kA)	GEN-ON Current (kA)	kA Change	%Change
25SP	21.74	22.38	0.64	3.0%

Table 5-3: 25SP Short Circuit Comparison Results

Voltage (kV)	Max. Current (GEN-ON) (kA)	Max kA Change	Max %Change
69	14.4	0.02	0.2%
138	62.9	0.10	0.3%
161	23.3	0.17	0.8%
345	36.3	0.64	3.0%
500	25.1	0.00	0.1%
765	6.2	0.01	0.1%
Max	**62.9**	**0.64**	**3.0%**

6.0 Dynamic Stability Analysis

Aneden performed a dynamic stability analysis to identify the impact of the modifications to GEN-2021-053. The analysis was performed according to SPP's Disturbance Performance Requirements[4]. The modification details are described in Section 2.0 above and the dynamic modeling data is provided in Appendix A. The existing base case issues and simulation plots can be found in Appendix C.

6.1 Methodology and Criteria

The dynamic stability analysis was performed using models developed with the requested GEN-2021-053 configuration of 338 x Tesla Megapack 2 XL inverters operating at 0.8988 MW (REGCA1). This stability analysis was performed using Siemens PTI's PSS/E version 34.8.1 software.

The modifications requested for the GEN-2021-053 project were used to create modified stability models for this impact study based on the DISIS-2022-001-1 stability study models:

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

The dynamic model data for the GEN-2021-053 project is provided in Appendix A. The power flow models and associated dynamic database were initialized (no-fault test) to confirm that there were no errors in the initial conditions of the system and the dynamic data.

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

- The PSSE dynamic simulation iterations and acceleration factor were adjusted as needed to resolve PSSE dynamic simulation crashes.
- The frequency protective relays at buses 765782 and 765785 were disabled after observing the generators tripping due to the PSSE bus frequency calculation deficiencies. This is a known PSS/E limitation when calculating bus frequency as it relates to non-conventional type devices.
- The voltage protective relays at buses 765782, 765785, 760412, and 760392 were disabled to avoid generator tripping due to an instantaneous overvoltage spike after fault clearing.

During the fault simulations, the active power (PELEC), reactive power (QELEC), and terminal voltage (ETERM) were monitored for GEN-2021-053 and other current and prior queued projects in Group 4. In addition, voltages of five (5) buses away from the POI of the GEN-2021-053 were monitored and plotted. The machine rotor angle for synchronous machines and speed for asynchronous machines within the study areas including 327 (EES-EAI), 330 (AECI), 351 (EES), 356 (AMMO), 502 (CLEC), 515 (SWPA), 520 (AEPW), 523 (GRDA), 524 (OKGE), 525 (WFEC), 526 (SPS), 527 (OMPA), 534 (SUNC), 536 (WERE), 544 (EMDE), and 546 (SPRM) were monitored. The voltages of all 100 kV and above buses within the study area were monitored as well.

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

6.2 Fault Definitions

Aneden developed fault events as required to study the modification. The new set of faults was simulated using the modified study models. The fault events included three-phase faults and single-line-to-ground stuck breaker faults. Single-line-to-ground faults are approximated by applying a fault impedance to bring the faulted bus positive sequence voltage to 0.6 pu. The simulated faults are listed and described in Table 6-1 below. These contingencies were applied to the modified 25SP and 25WP models.

Table 6-1: Fault Definitions

Fault ID	Planning Event	Fault Descriptions
FLT1000-SB	P4	Stuck Breaker on PECANCK7 (515235) 345 kV Bus a. Apply single phase fault at the PECANCK7 (515235) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the PECANCK7 (515235) 345 kV to GEN-2018-048 (762823) 345 kV line CKT 1. b.2.Trip the PECANCK7 (515235) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 1. Trip generator(s) on the Bus G18-048-GEN1 (762826) 0.7 kV Trip generator(s) on the Bus G18-048-GEN2 (762829) 0.7 kV Trip generator(s) on the Bus G21-052-GEN1 (765772) 0.7 kV Trip generator(s) on the Bus G21-053-GEN1 (765782) 0.5 kV Trip generator(s) on the Bus G21-053-GEN2 (765785) 0.5 kV
FLT1001-SB	P4	Stuck Breaker on PECANCK7 (515235) 345 kV Bus a. Apply single phase fault at the PECANCK7 (515235) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.2.Trip the PECANCK7 (515235) 345 kV / PECANCK5 (515234) 161 kV / PECANC11 (515749) 13.8 kV XFMR CKT 1. b.2.Trip the PECANCK7 (515235) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 1.
FLT1002-SB	P4	Stuck Breaker on PECANCK7 (515235) 345 kV Bus a. Apply single phase fault at the PECANCK7 (515235) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.2.Trip the PECANCK7 (515235) 345 kV / PECANCK5 (515234) 161 kV / PECANC11 (515749) 13.8 kV XFMR CKT 1. b.2.Trip the PECANCK7 (515235) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 2.
FLT1003-SB	P4	Stuck Breaker on PECANCK7 (515235) 345 kV Bus a. Apply single phase fault at the PECANCK7 (515235) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.2.Trip the PECANCK7 (515235) 345 kV / PECANCK5 (515234) 161 kV / PECANC21 (515759) 13.8 kV XFMR CKT 2. b.2.Trip the PECANCK7 (515235) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 2.
FLT1004-SB	P4	Stuck Breaker on PECANCK7 (515235) 345 kV Bus a. Apply single phase fault at the PECANCK7 (515235) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the PECANCK7 (515235) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1. b.2.Trip the PECANCK7 (515235) 345 kV / PECANCK5 (515234) 161 kV / PECANC21 (515759) 13.8 kV XFMR CKT 2.
FLT1005-SB	P4	Stuck Breaker on PECANCK7 (515235) 345 kV Bus a. Apply single phase fault at the PECANCK7 (515235) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the PECANCK7 (515235) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1. b.2.Trip the PECANCK7 (515235) 345 kV to GEN-2018-048 (762823) 345 kV line CKT 1. Trip generator(s) on the Bus G18-048-GEN1 (762826) 0.7 kV Trip generator(s) on the Bus G18-048-GEN2 (762829) 0.7 kV Trip generator(s) on the Bus G21-052-GEN1 (765772) 0.7 kV Trip generator(s) on the Bus G21-053-GEN1 (765782) 0.5 kV Trip generator(s) on the Bus G21-053-GEN2 (765785) 0.5 kV
FLT1006-SB	P4	Stuck Breaker on PECANCK5 (515234) 161 kV Bus a. Apply single phase fault at the PECANCK5 (515234) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the PECANCK5 (515234) 161 kV to AGENCY 5 (515230) 161 kV line CKT 1. b.2.Trip the PECANCK5 (515234) 161 kV / PECANCK7 (515235) 345 kV / PECANC11 (515749) 13.8 kV XFMR CKT 1.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1007-SB	P4	Stuck Breaker on PECANCK5 (515234) 161 kV Bus a. Apply single phase fault at the PECANCK5 (515234) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the PECANCK5 (515234) 161 kV / PECANCK7 (515235) 345 kV / PECANC21 (515759) 13.8 kV XFMR CKT 2. b.2.Trip the PECANCK5 (515234) 161 kV to 5TRIBES5 (515228) 161 kV line CKT 1.
FLT1008-SB	P4	Stuck Breaker on PECANCK4 (515233) 138 kV Bus a. Apply single phase fault at the PECANCK4 (515233) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip bus PECANCK4 (515233) 138 kV.
FLT1009-SB	P4	Stuck Breaker on 5TRIBES5 (515228) 161 kV Bus a. Apply single phase fault at the 5TRIBES5 (515228) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip bus 5TRIBES5 (515228) 161 kV.
FLT1010-SB	P4	Stuck Breaker on AGENCY 5 (515230) 161 kV Bus a. Apply single phase fault at the AGENCY 5 (515230) 161 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip bus AGENCY 5 (515230) 161 kV.
FLT1011-SB	P4	Stuck Breaker on 5TRIBES2 (515227) 69 kV Bus a. Apply single phase fault at the 5TRIBES2 (515227) 69 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip bus 5TRIBES2 (515227) 69 kV.
FLT1012-SB	P4	Stuck Breaker on MUSKOGE7 (515224) 345 kV Bus a. Apply single phase fault at the MUSKOGE7 (515224) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MUSKOGE7 (515224) 345 kV to PECANCK7 (515235) 345 kV line CKT 2. b.2.Trip the MUSKOGE7 (515224) 345 kV to FIREWHL-TAP (588839) 345 kV line CKT 1.
FLT1013-SB	P4	Stuck Breaker on MUSKOGE7 (515224) 345 kV Bus a. Apply single phase fault at the MUSKOGE7 (515224) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MUSKOGE7 (515224) 345 kV to PECANCK7 (515235) 345 kV line CKT 1. b.2.Trip the MUSKOGE7 (515224) 345 kV to CLARKSV7 (509745) 345 kV line CKT 1.
FLT1014-SB	P4	Stuck Breaker on MUSKOGE7 (515224) 345 kV Bus a. Apply single phase fault at the MUSKOGE7 (515224) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MUSKOGE7 (515224) 345 kV to FTSMITH7 (515302) 345 kV line CKT 1. b.2.Trip the MUSKOGE7 (515224) 345 kV / MUSKOG5G (515225) 18 kV XFMR CKT 1. Trip generator(s) on the Bus MUSKOG5G (515225) 18 kV
FLT1015-SB	P4	Stuck Breaker on MUSKOGE7 (515224) 345 kV Bus a. Apply single phase fault at the MUSKOGE7 (515224) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MUSKOGE7 (515224) 345 kV to OKTAHA 7 (516091) 345 kV line CKT 1. b.2.Trip the MUSKOGE7 (515224) 345 kV / MUSKOG4G (515223) 18 kV XFMR CKT 1. Trip generator(s) on the Bus MUSKOG4G (515223) 18 kV
FLT1016-SB	P4	Stuck Breaker on MUSKOGE7 (515224) 345 kV Bus a. Apply single phase fault at the MUSKOGE7 (515224) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the MUSKOGE7 (515224) 345 kV / MUSKOG6G (515226) 24 kV XFMR CKT 1. Trip generator(s) on the Bus MUSKOG6G (515226) 24 kV
FLT1017-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV / RSS T1 4 (509773) 138 kV / RSST1 T1 (509882) 13.8 kV XFMR CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to COGENT 7 (509834) 345 kV line CKT 1. Trip generator(s) on the Bus COGEN G1 (511953) 18 kV Trip generator(s) on the Bus COGEN S1 (511954) 13.8 kV Trip generator(s) on the Bus COGEN G2 (511955) 18 kV Trip generator(s) on the Bus COGEN S2 (511956) 13.8 kV Trip generator(s) on the Bus COGEN G3 (511957) 18 kV Trip generator(s) on the Bus COGEN S3 (511958) 13.8 kV

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1018-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV / RSS T1 4 (509773) 138 kV / RSST1 T1 (509882) 13.8 kV XFMR CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to PECANCK7 (515235) 345 kV line CKT 1.
FLT1019-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV / RSS T1 4 (509773) 138 kV / RSST1 T1 (509882) 13.8 kV XFMR CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to SAPLPRD7 (509870) 345 kV line CKT 1.
FLT1020-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV / RSS T2 4 (509875) 138 kV / RSST2 T1 (509876) 13.8 kV XFMR CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to ONETA--7 (509807) 345 kV line CKT 1.
FLT1021-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV / RSS T2 4 (509875) 138 kV / RSST2 T1 (509876) 13.8 kV XFMR CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to PECANCK7 (515235) 345 kV line CKT 1.
FLT1022-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV / RSS T2 4 (509875) 138 kV / RSST2 T1 (509876) 13.8 kV XFMR CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to REDBUD 7 (514909) 345 kV line CKT 1.
FLT1023-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV to REDBUD 7 (514909) 345 kV line CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to SAPLPRD7 (509870) 345 kV line CKT 1.
FLT1024-SB	P4	Stuck Breaker on R.S.S.-7 (509782) 345 kV Bus a. Apply single phase fault at the R.S.S.-7 (509782) 345 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-7 (509782) 345 kV to COGENT 7 (509834) 345 kV line CKT 1. b.2.Trip the R.S.S.-7 (509782) 345 kV to ONETA--7 (509807) 345 kV line CKT 1. Trip generator(s) on the Bus COGEN G1 (511953) 18 kV Trip generator(s) on the Bus COGEN S1 (511954) 13.8 kV Trip generator(s) on the Bus COGEN G2 (511955) 18 kV Trip generator(s) on the Bus COGEN S2 (511956) 13.8 kV Trip generator(s) on the Bus COGEN G3 (511957) 18 kV Trip generator(s) on the Bus COGEN S3 (511958) 13.8 kV
FLT1025-SB	P4	Stuck Breaker on R.S.S.-4 (509783) 138 kV Bus a. Apply single phase fault at the R.S.S.-4 (509783) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-4 (509783) 138 kV to OAKSETP4 (509850) 138 kV line CKT 1. b.2.Trip the R.S.S.-4 (509783) 138 kV / RSS NG4 (511845) 13.8 kV / RSS NG3 (511844) 13.8 kV XFMR CKT 1. Trip generator(s) on the Bus RSS NG4 (511845) 13.8 kV Trip generator(s) on the Bus RSS NG3 (511844) 13.8 kV
FLT1026-SB	P4	Stuck Breaker on R.S.S.-4 (509783) 138 kV Bus a. Apply single phase fault at the R.S.S.-4 (509783) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-4 (509783) 138 kV to 52DELWT4 (509814) 138 kV line CKT 1. b.2.Trip the R.S.S.-4 (509783) 138 kV to 116JENK4 (509753) 138 kV line CKT 1.
FLT1027-SB	P4	Stuck Breaker on R.S.S.-4 (509783) 138 kV Bus a. Apply single phase fault at the R.S.S.-4 (509783) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-4 (509783) 138 kV to ORU-WTP4 (509853) 138 kV line CKT 1. b.2.Trip the R.S.S.-4 (509783) 138 kV to EXPGLNT4 (515473) 138 kV line CKT 1.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT1028-SB	P4	Stuck Breaker on R.S.S.-4 (509783) 138 kV Bus a. Apply single phase fault at the R.S.S.-4 (509783) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-4 (509783) 138 kV to ORU ETP4 (509849) 138 kV line CKT 1. b.2.Trip the R.S.S.-4 (509783) 138 kV to OKMULGE4 (510898) 138 kV line CKT 1.
FLT1029-SB	P4	Stuck Breaker on R.S.S.-4 (509783) 138 kV Bus a. Apply single phase fault at the R.S.S.-4 (509783) 138 kV Bus b. Clear fault after 16 cycles and trip the following elements: b.1.Trip the R.S.S.-4 (509783) 138 kV to EXP_OKM4 (510904) 138 kV line CKT 1. b.2.Trip the R.S.S.-4 (509783) 138 kV / RSS2-1 (511843) 22 kV XFMR CKT 1. Trip generator(s) on the Bus RSS2-1 (511843) 22 kV
FLT9000-3PH	P1	3 Phase fault on PECANCK7 (515235) 345 kV to GEN-2018-048 (762823) 345 kV line CKT 1, near PECANCK7 (515235) 345 kV. a. Apply fault at the PECANCK7 (515235) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G18-048-GEN1 (762826) 0.7 kV Trip generator(s) on the Bus G18-048-GEN2 (762829) 0.7 kV Trip generator(s) on the Bus G21-052-GEN1 (765772) 0.7 kV Trip generator(s) on the Bus G21-053-GEN1 (765782) 0.5 kV Trip generator(s) on the Bus G21-053-GEN2 (765785) 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.
FLT9001-3PH	P1	3 Phase fault on GEN-2018-048 (762823) 345 kV to PECANCK7 (515235) 345 kV line CKT 1, near GEN-2018-048 (762823) 345 kV. a. Apply fault at the GEN-2018-048 (762823) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G18-048-GEN1 (762826) 0.7 kV Trip generator(s) on the Bus G18-048-GEN2 (762829) 0.7 kV Trip generator(s) on the Bus G21-052-GEN1 (765772) 0.7 kV Trip generator(s) on the Bus G21-053-GEN1 (765782) 0.5 kV Trip generator(s) on the Bus G21-053-GEN2 (765785) 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.
FLT9002-3PH	P1	3 Phase fault on PECANCK7 (515235) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 2, near PECANCK7 (515235) 345 kV. a. Apply fault at the PECANCK7 (515235) 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 MUSKOGE7 (515224) 345 kV to PECANCK7 (515235) 345 kV line CKT 2, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9004-3PH	P1	3 Phase fault on MUSKOGE7 (515224) 345 kV to MUSKOG5G (515225) 18 kV XFMR CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MUSKOG5G (515225) 18 kV
FLT9005-3PH	P1	3 Phase fault on MUSKOGE7 (515224) 345 kV to MUSKOG4G (515223) 18 kV XFMR CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MUSKOG4G (515223) 18 kV
FLT9006-3PH	P1	3 Phase fault on MUSKOGE7 (515224) 345 kV to CLARKSV7 (509745) 345 kV line CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9007-3PH	P1	3 Phase fault on CLARKSV7 (509745) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 1, near CLARKSV7 (509745) 345 kV. a. Apply fault at the CLARKSV7 (509745) 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.
FLT9008-3PH	P1	3 Phase fault on MUSKOGE7 (515224) 345 kV to OKTAHA 7 (516091) 345 kV line CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 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.
FLT9009-3PH	P1	3 Phase fault on OKTAHA 7 (516091) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 1, near OKTAHA 7 (516091) 345 kV. a. Apply fault at the OKTAHA 7 (516091) 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 MUSKOGE7 (515224) 345 kV to FIREWHL-TAP (588839) 345 kV line CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 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 FIREWHL-TAP (588839) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 1, near FIREWHL-TAP (588839) 345 kV. a. Apply fault at the FIREWHL-TAP (588839) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9012-3PH	P1	3 Phase fault on MUSKOGE7 (515224) 345 kV to FTSMITH7 (515302) 345 kV line CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9013-3PH	P1	3 Phase fault on FTSMITH7 (515302) 345 kV to MUSKOGE7 (515224) 345 kV line CKT 1, near FTSMITH7 (515302) 345 kV. a. Apply fault at the FTSMITH7 (515302) 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 FTSMITH7 (515302) 345 kV / FTSMITH8 (515305) 500 kV / FTSMTH11 (515726) 13.8 kV XFMR CKT 1, near FTSMITH7 (515302) 345 kV. a. Apply fault at the FTSMITH7 (515302) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9015-3PH	P1	3 Phase fault on FTSMITH8 (515305) 500 kV / FTSMITH7 (515302) 345 kV / FTSMTH11 (515726) 13.8 kV XFMR CKT 1, near FTSMITH8 (515305) 500 kV. a. Apply fault at the FTSMITH8 (515305) 500 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9016-3PH	P1	3 Phase fault on FTSMITH7 (515302) 345 kV / FTSMTHW5 (515301) 161 kV / FTSMTH51 (515728) 13.8 kV XFMR CKT 5, near FTSMITH7 (515302) 345 kV. a. Apply fault at the FTSMITH7 (515302) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9017-3PH	P1	3 Phase fault on FTSMTHW5 (515301) 161 kV / FTSMITH7 (515302) 345 kV / FTSMTH51 (515728) 13.8 kV XFMR CKT 5, near FTSMTHW5 (515301) 161 kV. a. Apply fault at the FTSMTHW5 (515301) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9018-3PH	P1	3 Phase fault on FTSMITH8 (515305) 500 kV / FTSMTHW5 (515301) 161 kV / FTSMTH41 (515791) 13.8 kV XFMR CKT 4, near FTSMITH8 (515305) 500 kV. a. Apply fault at the FTSMITH8 (515305) 500 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9019-3PH	P1	3 Phase fault on FTSMTHW5 (515301) 161 kV / FTSMITH8 (515305) 500 kV / FTSMTH41 (515791) 13.8 kV XFMR CKT 4, near FTSMTHW5 (515301) 161 kV. a. Apply fault at the FTSMTHW5 (515301) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9020-3PH	P1	3 Phase fault on FTSMITH8 (515305) 500 kV / FTSMTHE5 (515300) 161 kV / FTSMTH31 (515727) 13.8 kV XFMR CKT 3, near FTSMITH8 (515305) 500 kV. a. Apply fault at the FTSMITH8 (515305) 500 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9021-3PH	P1	3 Phase fault on FTSMTHE5 (515300) 161 kV / FTSMITH8 (515305) 500 kV / FTSMTH31 (515727) 13.8 kV XFMR CKT 3, near FTSMTHE5 (515300) 161 kV. a. Apply fault at the FTSMTHE5 (515300) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9022-3PH	P1	3 Phase fault on FTSMITH8 (515305) 500 kV to 8ANO% (337909) 500 kV line CKT 1, near FTSMITH8 (515305) 500 kV. a. Apply fault at the FTSMITH8 (515305) 500 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.
FLT9023-3PH	P1	3 Phase fault on 8ANO% (337909) 500 kV to FTSMITH8 (515305) 500 kV line CKT 1, near 8ANO% (337909) 500 kV. a. Apply fault at the 8ANO% (337909) 500 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.
FLT9024-3PH	P1	3 Phase fault on FTSMTHE5 (515300) 161 kV to BEVYTAP5 (515299) 161 kV line CKT 1, near FTSMTHE5 (515300) 161 kV. a. Apply fault at the FTSMTHE5 (515300) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9025-3PH	P1	3 Phase fault on FTSMTHE5 (515300) 161 kV to QUANXTP5 (515310) 161 kV line CKT 1, near FTSMTHE5 (515300) 161 kV. a. Apply fault at the FTSMTHE5 (515300) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9026-3PH	P1	3 Phase fault on FTSMTHE5 (515300) 161 kV to COLONY 5 (515345) 161 kV line CKT 1, near FTSMTHE5 (515300) 161 kV. a. Apply fault at the FTSMTHE5 (515300) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9027-3PH	P1	3 Phase fault on FIREWHL-TAP (588839) 345 kV to C-RIVER7 (515422) 345 kV line CKT 1, near FIREWHL-TAP (588839) 345 kV. a. Apply fault at the FIREWHL-TAP (588839) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9028-3PH	P1	3 Phase fault on FIREWHL-TAP (588839) 345 kV to SEMINOL7 (515045) 345 kV line CKT 1, near FIREWHL-TAP (588839) 345 kV. a. Apply fault at the FIREWHL-TAP (588839) 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 FIREWHL-TAP (588839) 345 kV to G17-092-SWYD (588838) 345 kV line CKT 1, near FIREWHL-TAP (588839) 345 kV. a. Apply fault at the FIREWHL-TAP (588839) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-040-GEN1 (588813) 0.7 kV Trip generator(s) on the Bus G17-092-GEN1 (589303) 0.6 kV Trip generator(s) on the Bus G17-092-GEN2 (589307) 0.6 kV Trip generator(s) on the Bus G18-024GEN1 (762595) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9030-3PH	P1	3 Phase fault on FIREWHL-TAP (588839) 345 kV to OKTAHA 7 (516091) 345 kV line CKT 1, near FIREWHL-TAP (588839) 345 kV. a. Apply fault at the FIREWHL-TAP (588839) 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 OKTAHA 7 (516091) 345 kV to FIREWHL-TAP (588839) 345 kV line CKT 1, near OKTAHA 7 (516091) 345 kV. a. Apply fault at the OKTAHA 7 (516091) 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 OKTAHA 7 (516091) 345 kV / OKTAHA 5 (516092) 161 kV / OKTAHA61 (516094) 13.8 kV XFMR CKT 6, near OKTAHA 7 (516091) 345 kV. a. Apply fault at the OKTAHA 7 (516091) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9033-3PH	P1	3 Phase fault on OKTAHA 5 (516092) 161 kV / OKTAHA 7 (516091) 345 kV / OKTAHA61 (516094) 13.8 kV XFMR CKT 6, near OKTAHA 5 (516092) 161 kV. a. Apply fault at the OKTAHA 5 (516092) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9034-3PH	P1	3 Phase fault on OKTAHA 5 (516092) 161 kV / OKTAHA 2 (516093) 69 kV / OKTAHA71 (516095) 13.2 kV XFMR CKT 7, near OKTAHA 5 (516092) 161 kV. a. Apply fault at the OKTAHA 5 (516092) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9035-3PH	P1	3 Phase fault on OKTAHA 2 (516093) 69 kV / OKTAHA 5 (516092) 161 kV / OKTAHA71 (516095) 13.2 kV XFMR CKT 7, near OKTAHA 2 (516093) 69 kV. a. Apply fault at the OKTAHA 2 (516093) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9036-3PH	P1	3 Phase fault on CLARKSV7 (509745) 345 kV to GEN-2017-140 (760389) 345 kV line CKT 1, near CLARKSV7 (509745) 345 kV. a. Apply fault at the CLARKSV7 (509745) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G17-140-GEN1 (760392) 0.6 kV Trip generator(s) on the Bus G17-141-GEN1 (760412) 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.
FLT9037-3PH	P1	3 Phase fault on CLARKSV7 (509745) 345 kV to CHAMSPR7 (506945) 345 kV line CKT 1, near CLARKSV7 (509745) 345 kV. a. Apply fault at the CLARKSV7 (509745) 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 MUSKOGE7 (515224) 345 kV to MUSKOG6G (515226) 24 kV XFMR CKT 1, near MUSKOGE7 (515224) 345 kV. a. Apply fault at the MUSKOGE7 (515224) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus MUSKOG6G (515226) 24 kV
FLT9039-3PH	P1	3 Phase fault on PECANCK7 (515235) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1, near PECANCK7 (515235) 345 kV. a. Apply fault at the PECANCK7 (515235) 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.
FLT9040-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV to PECANCK7 (515235) 345 kV line CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9041-3PH	P1	3 Phase fault on PECANCK7 (515235) 345 kV / PECANCK5 (515234) 161 kV / PECANC21 (515759) 13.8 kV XFMR CKT 2, near PECANCK7 (515235) 345 kV. a. Apply fault at the PECANCK7 (515235) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9042-3PH	P1	3 Phase fault on PECANCK5 (515234) 161 kV / PECANCK7 (515235) 345 kV / PECANC21 (515759) 13.8 kV XFMR CKT 2, near PECANCK5 (515234) 161 kV. a. Apply fault at the PECANCK5 (515234) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9043-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV to ONETA--7 (509807) 345 kV line CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9044-3PH	P1	3 Phase fault on ONETA--7 (509807) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1, near ONETA--7 (509807) 345 kV. a. Apply fault at the ONETA--7 (509807) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9045-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV to REDBUD 7 (514909) 345 kV line CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9046-3PH	P1	3 Phase fault on REDBUD 7 (514909) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1, near REDBUD 7 (514909) 345 kV. a. Apply fault at the REDBUD 7 (514909) 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.
FLT9047-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV to COGENT 7 (509834) 345 kV line CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus COGEN G1 (511953) 18 kV Trip generator(s) on the Bus COGEN S1 (511954) 13.8 kV Trip generator(s) on the Bus COGEN G2 (511955) 18 kV Trip generator(s) on the Bus COGEN S2 (511956) 13.8 kV Trip generator(s) on the Bus COGEN G3 (511957) 18 kV Trip generator(s) on the Bus COGEN S3 (511958) 13.8 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9048-3PH	P1	3 Phase fault on COGENT 7 (509834) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1, near COGENT 7 (509834) 345 kV. a. Apply fault at the COGENT 7 (509834) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus COGEN G1 (511953) 18 kV Trip generator(s) on the Bus COGEN S1 (511954) 13.8 kV Trip generator(s) on the Bus COGEN G2 (511955) 18 kV Trip generator(s) on the Bus COGEN S2 (511956) 13.8 kV Trip generator(s) on the Bus COGEN G3 (511957) 18 kV Trip generator(s) on the Bus COGEN S3 (511958) 13.8 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9049-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV to G16133G16146 (588039) 345 kV line CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G9 0.69 (588057) 0.7 kV Trip generator(s) on the Bus G10 0.69 (588058) 0.7 kV Trip generator(s) on the Bus G1 0.69 (588067) 0.7 kV Trip generator(s) on the Bus G2 0.69 (588068) 0.7 kV Trip generator(s) on the Bus G3 0.69 (588077) 0.7 kV Trip generator(s) on the Bus G4 0.69 (588078) 0.7 kV Trip generator(s) on the Bus G5 0.69 (588087) 0.7 kV Trip generator(s) on the Bus G6 0.69 (588088) 0.7 kV Trip generator(s) on the Bus G7 0.69 (588097) 0.7 kV Trip generator(s) on the Bus G8 0.69 (588098) 0.7 kV Trip generator(s) on the Bus G11 0.69 (588107) 0.7 kV Trip generator(s) on the Bus G12 0.69 (588108) 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.
FLT9050-3PH	P1	3 Phase fault on G16133G16146 (588039) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1, near G16133G16146 (588039) 345 kV. a. Apply fault at the G16133G16146 (588039) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G9 0.69 (588057) 0.7 kV Trip generator(s) on the Bus G10 0.69 (588058) 0.7 kV Trip generator(s) on the Bus G1 0.69 (588067) 0.7 kV Trip generator(s) on the Bus G2 0.69 (588068) 0.7 kV Trip generator(s) on the Bus G3 0.69 (588077) 0.7 kV Trip generator(s) on the Bus G4 0.69 (588078) 0.7 kV Trip generator(s) on the Bus G5 0.69 (588087) 0.7 kV Trip generator(s) on the Bus G6 0.69 (588088) 0.7 kV Trip generator(s) on the Bus G7 0.69 (588097) 0.7 kV Trip generator(s) on the Bus G8 0.69 (588098) 0.7 kV Trip generator(s) on the Bus G11 0.69 (588107) 0.7 kV Trip generator(s) on the Bus G12 0.69 (588108) 0.7 kV c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9051-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV to SAPLPRD7 (509870) 345 kV line CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9052-3PH	P1	3 Phase fault on SAPLPRD7 (509870) 345 kV to R.S.S.-7 (509782) 345 kV line CKT 1, near SAPLPRD7 (509870) 345 kV. a. Apply fault at the SAPLPRD7 (509870) 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.
FLT9053-3PH	P1	3 Phase fault on R.S.S.-7 (509782) 345 kV / RSS T2 4 (509875) 138 kV / RSST2 T1 (509876) 13.8 kV XFMR CKT 1, near R.S.S.-7 (509782) 345 kV. a. Apply fault at the R.S.S.-7 (509782) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9054-3PH	P1	3 Phase fault on RSS T2 4 (509875) 138 kV / R.S.S.-7 (509782) 345 kV / RSST2 T1 (509876) 13.8 kV XFMR CKT 1, near RSS T2 4 (509875) 138 kV. a. Apply fault at the RSS T2 4 (509875) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9055-3PH	P1	3 Phase fault on ONETA--7 (509807) 345 kV / ONETA--4 (509806) 138 kV / ONETA5-1 (509874) 34.5 kV XFMR CKT 3, near ONETA--7 (509807) 345 kV. a. Apply fault at the ONETA--7 (509807) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9056-3PH	P1	3 Phase fault on ONETA--4 (509806) 138 kV / ONETA--7 (509807) 345 kV / ONETA5-1 (509874) 34.5 kV XFMR CKT 3, near ONETA--4 (509806) 138 kV. a. Apply fault at the ONETA--4 (509806) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9057-3PH	P1	3 Phase fault on ONETA--7 (509807) 345 kV to CLARKSV7 (509745) 345 kV line CKT 1, near ONETA--7 (509807) 345 kV. a. Apply fault at the ONETA--7 (509807) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9058-3PH	P1	3 Phase fault on CLARKSV7 (509745) 345 kV to ONETA--7 (509807) 345 kV line CKT 1, near CLARKSV7 (509745) 345 kV. a. Apply fault at the CLARKSV7 (509745) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9059-3PH	P1	3 Phase fault on ONETA--7 (509807) 345 kV to N.E.S.-7 (510406) 345 kV line CKT 1, near ONETA--7 (509807) 345 kV. a. Apply fault at the ONETA--7 (509807) 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 ONETA--7 (509807) 345 kV to OEC 7 (509836) 345 kV line CKT 2, near ONETA--7 (509807) 345 kV. a. Apply fault at the ONETA--7 (509807) 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.
FLT9061-3PH	P1	3 Phase fault on ONETA--4 (509806) 138 kV to BA101-N4 (509769) 138 kV line CKT 1, near ONETA--4 (509806) 138 kV. a. Apply fault at the ONETA--4 (509806) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9062-3PH	P1	3 Phase fault on ONETA--4 (509806) 138 kV to BA101ST4 (509768) 138 kV line CKT 1, near ONETA--4 (509806) 138 kV. a. Apply fault at the ONETA--4 (509806) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9063-3PH	P1	3 Phase fault on ONETA--4 (509806) 138 kV to BA_71ST4 (509891) 138 kV line CKT 1, near ONETA--4 (509806) 138 kV. a. Apply fault at the ONETA--4 (509806) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9064-3PH	P1	3 Phase fault on ONETA--4 (509806) 138 kV to BA.N-ST4 (509786) 138 kV line CKT 1, near ONETA--4 (509806) 138 kV. a. Apply fault at the ONETA--4 (509806) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9065-3PH	P1	3 Phase fault on ONETA--4 (509806) 138 kV to 121LYNN4 (509869) 138 kV line CKT 1, near ONETA--4 (509806) 138 kV. a. Apply fault at the ONETA--4 (509806) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9066-3PH	P1	3 Phase fault on REDBUD 7 (514909) 345 kV / REDBUD1S (514899) 18 kV / REDBUD1G (514910) 18 kV XFMR CKT 1, near REDBUD 7 (514909) 345 kV. a. Apply fault at the REDBUD 7 (514909) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus REDBUD1S (514899) 18 kV Trip generator(s) on the Bus REDBUD1G (514910) 18 kV

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9067-3PH	P1	3 Phase fault on REDBUD 7 (514909) 345 kV to ARCADIA7 (514908) 345 kV line CKT 3, near REDBUD 7 (514909) 345 kV. a. Apply fault at the REDBUD 7 (514909) 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 G16133G16146 (588039) 345 kV to G16133_345GS (588040) 345 kV line CKT 1, near G16133G16146 (588039) 345 kV. a. Apply fault at the G16133G16146 (588039) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. Trip generator(s) on the Bus G9 0.69 (588057) 0.7 kV Trip generator(s) on the Bus G10 0.69 (588058) 0.7 kV Trip generator(s) on the Bus G1 0.69 (588067) 0.7 kV Trip generator(s) on the Bus G2 0.69 (588068) 0.7 kV Trip generator(s) on the Bus G3 0.69 (588077) 0.7 kV Trip generator(s) on the Bus G4 0.69 (588078) 0.7 kV Trip generator(s) on the Bus G5 0.69 (588087) 0.7 kV Trip generator(s) on the Bus G6 0.69 (588088) 0.7 kV Trip generator(s) on the Bus G7 0.69 (588097) 0.7 kV Trip generator(s) on the Bus G8 0.69 (588098) 0.7 kV Trip generator(s) on the Bus G11 0.69 (588107) 0.7 kV Trip generator(s) on the Bus G12 0.69 (588108) 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.
FLT9069-3PH	P1	3 Phase fault on SAPLPRD7 (509870) 345 kV to WEKIWA-7 (509755) 345 kV line CKT 1, near SAPLPRD7 (509870) 345 kV. a. Apply fault at the SAPLPRD7 (509870) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.
FLT9070-3PH	P1	3 Phase fault on SAPLPRD7 (509870) 345 kV / SAPLPRD4 (509871) 138 kV / SAPLPRD1 (509872) 13.8 kV XFMR CKT 1, near SAPLPRD7 (509870) 345 kV. a. Apply fault at the SAPLPRD7 (509870) 345 kV Bus. b. Clear fault after 6 cycles by tripping the faulted line.
FLT9071-3PH	P1	3 Phase fault on SAPLPRD4 (509871) 138 kV / SAPLPRD7 (509870) 345 kV / SAPLPRD1 (509872) 13.8 kV XFMR CKT 1, near SAPLPRD4 (509871) 138 kV. a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9072-3PH	P1	3 Phase fault on SAPLPRD4 (509871) 138 kV to OAKSWTP4 (509848) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV. a. Apply fault at the SAPLPRD4 (509871) 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.
FLT9073-3PH	P1	3 Phase fault on SAPLPRD4 (509871) 138 kV to 72ELWOD4 (509888) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV. a. Apply fault at the SAPLPRD4 (509871) 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.
FLT9074-3PH	P1	3 Phase fault on SAPLPRD4 (509871) 138 kV to DENV_WTAP4 (509896) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV. a. Apply fault at the SAPLPRD4 (509871) 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.
FLT9075-3PH	P1	3 Phase fault on SAPLPRD4 (509871) 138 kV to JENKS--4 (509759) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV. a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9076-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to EXPGLNT4 (515473) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 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.
FLT9077-3PH	P1	3 Phase fault on EXPGLNT4 (515473) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near EXPGLNT4 (515473) 138 kV. a. Apply fault at the EXPGLNT4 (515473) 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.
FLT9078-3PH	P1	3 Phase fault on EXPGLNT4 (515473) 138 kV to BEELINE4 (515247) 138 kV line CKT 1, near EXPGLNT4 (515473) 138 kV. a. Apply fault at the EXPGLNT4 (515473) 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.
FLT9079-3PH	P1	3 Phase fault on EXPGLNT4 (515473) 138 kV to EXPLGLN4 (515248) 138 kV line CKT 1, near EXPGLNT4 (515473) 138 kV. a. Apply fault at the EXPGLNT4 (515473) 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.
FLT9080-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to 116JENK4 (509753) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 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.
FLT9081-3PH	P1	3 Phase fault on 116JENK4 (509753) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near 116JENK4 (509753) 138 kV. a. Apply fault at the 116JENK4 (509753) 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.
FLT9082-3PH	P1	3 Phase fault on 116JENK4 (509753) 138 kV to JENKS--4 (509759) 138 kV line CKT 1, near 116JENK4 (509753) 138 kV. a. Apply fault at the 116JENK4 (509753) 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.
FLT9083-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to RSS2-1 (511843) 22 kV XFMR CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus RSS2-1 (511843) 22 kV
FLT9084-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to OAKSETP4 (509850) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 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.
FLT9085-3PH	P1	3 Phase fault on OAKSETP4 (509850) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near OAKSETP4 (509850) 138 kV. a. Apply fault at the OAKSETP4 (509850) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9086-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to 52DELWT4 (509814) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9087-3PH	P1	3 Phase fault on 52DELWT4 (509814) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near 52DELWT4 (509814) 138 kV. a. Apply fault at the 52DELWT4 (509814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9088-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV / RSS NG3 (511844) 13.8 kV / RSS NG4 (511845) 13.8 kV XFMR CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. Trip generator(s) on the Bus RSS NG3 (511844) 13.8 kV Trip generator(s) on the Bus RSS NG4 (511845) 13.8 kV
FLT9089-3PH	P1	3 Phase fault on OAKSETP4 (509850) 138 kV to OAKS--E4 (509846) 138 kV line CKT 1, near OAKSETP4 (509850) 138 kV. a. Apply fault at the OAKSETP4 (509850) 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.
FLT9090-3PH	P1	3 Phase fault on OAKSETP4 (509850) 138 kV to T.P.S.-4 (509788) 138 kV line CKT 1, near OAKSETP4 (509850) 138 kV. a. Apply fault at the OAKSETP4 (509850) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9091-3PH	P1	3 Phase fault on 52DELWT4 (509814) 138 kV to T.P.S.-4 (509788) 138 kV line CKT 1, near 52DELWT4 (509814) 138 kV. a. Apply fault at the 52DELWT4 (509814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9092-3PH	P1	3 Phase fault on 52DELWT4 (509814) 138 kV to S HILLW4 (509859) 138 kV line CKT 1, near 52DELWT4 (509814) 138 kV. a. Apply fault at the 52DELWT4 (509814) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9093-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to 136YALE4 (509775) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9094-3PH	P1	3 Phase fault on 136YALE4 (509775) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near 136YALE4 (509775) 138 kV. a. Apply fault at the 136YALE4 (509775) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9095-3PH	P1	3 Phase fault on 136YALE4 (509775) 138 kV to KIMCLRK4 (509845) 138 kV line CKT 1, near 136YALE4 (509775) 138 kV. a. Apply fault at the 136YALE4 (509775) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9096-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to ORU ETP4 (509849) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9097-3PH	P1	3 Phase fault on ORU ETP4 (509849) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near ORU ETP4 (509849) 138 kV. a. Apply fault at the ORU ETP4 (509849) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9098-3PH	P1	3 Phase fault on ORU ETP4 (509849) 138 kV to WARNTAP4 (509858) 138 kV line CKT 1, near ORU ETP4 (509849) 138 kV. a. Apply fault at the ORU ETP4 (509849) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9099-3PH	P1	3 Phase fault on ORU ETP4 (509849) 138 kV to ORU E4 (509738) 138 kV line CKT 1, near ORU ETP4 (509849) 138 kV. a. Apply fault at the ORU ETP4 (509849) 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.
FLT9100-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to ORU-WTP4 (509853) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9101-3PH	P1	3 Phase fault on ORU-WTP4 (509853) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near ORU-WTP4 (509853) 138 kV. a. Apply fault at the ORU-WTP4 (509853) 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.
FLT9102-3PH	P1	3 Phase fault on ORU-WTP4 (509853) 138 kV to SHILETP4 (509813) 138 kV line CKT 1, near ORU-WTP4 (509853) 138 kV. a. Apply fault at the ORU-WTP4 (509853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9103-3PH	P1	3 Phase fault on ORU-WTP4 (509853) 138 kV to ORU W4 (509732) 138 kV line CKT 1, near ORU-WTP4 (509853) 138 kV. a. Apply fault at the ORU-WTP4 (509853) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9104-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to OKMULGE4 (510898) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9105-3PH	P1	3 Phase fault on OKMULGE4 (510898) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near OKMULGE4 (510898) 138 kV. a. Apply fault at the OKMULGE4 (510898) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9106-3PH	P1	3 Phase fault on R.S.S.-4 (509783) 138 kV to EXP_OKM4 (510904) 138 kV line CKT 1, near R.S.S.-4 (509783) 138 kV. a. Apply fault at the R.S.S.-4 (509783) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9107-3PH	P1	3 Phase fault on EXP_OKM4 (510904) 138 kV to R.S.S.-4 (509783) 138 kV line CKT 1, near EXP_OKM4 (510904) 138 kV. a. Apply fault at the EXP_OKM4 (510904) 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.
FLT9108-3PH	P1	3 Phase fault on EXP_OKM4 (510904) 138 kV to OKMULGE4 (510898) 138 kV line CKT 1, near EXP_OKM4 (510904) 138 kV. a. Apply fault at the EXP_OKM4 (510904) 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.
FLT9109-3PH	P1	3 Phase fault on OKMULGE4 (510898) 138 kV to EXP_OKM4 (510904) 138 kV line CKT 1, near OKMULGE4 (510898) 138 kV. a. Apply fault at the OKMULGE4 (510898) 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.
FLT9110-3PH	P1	3 Phase fault on OKMULGE4 (510898) 138 kV to KELCO 4 (510931) 138 kV line CKT 1, near OKMULGE4 (510898) 138 kV. a. Apply fault at the OKMULGE4 (510898) 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.
FLT9111-3PH	P1	3 Phase fault on OKMULGE4 (510898) 138 kV to EC.HEN-4 (510923) 138 kV line CKT 1, near OKMULGE4 (510898) 138 kV. a. Apply fault at the OKMULGE4 (510898) 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.
FLT9112-3PH	P1	3 Phase fault on PECANCK5 (515234) 161 kV to AGENCY 5 (515230) 161 kV line CKT 1, near PECANCK5 (515234) 161 kV. a. Apply fault at the PECANCK5 (515234) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9113-3PH	P1	3 Phase fault on AGENCY 5 (515230) 161 kV to PECANCK5 (515234) 161 kV line CKT 1, near AGENCY 5 (515230) 161 kV. a. Apply fault at the AGENCY 5 (515230) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9114-3PH	P1	3 Phase fault on AGENCY 5 (515230) 161 kV to EUCLID 5 (515251) 161 kV line CKT 1, near AGENCY 5 (515230) 161 kV. a. Apply fault at the AGENCY 5 (515230) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9115-3PH	P1	3 Phase fault on EUCLID 5 (515251) 161 kV to AGENCY 5 (515230) 161 kV line CKT 1, near EUCLID 5 (515251) 161 kV. a. Apply fault at the EUCLID 5 (515251) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9116-3PH	P1	3 Phase fault on EUCLID 5 (515251) 161 kV to MSKPTAP5 (515232) 161 kV line CKT 1, near EUCLID 5 (515251) 161 kV. a. Apply fault at the EUCLID 5 (515251) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9117-3PH	P1	3 Phase fault on AGENCY 5 (515230) 161 kV / AGENCY 2 (515229) 69 kV / AGENCY 1 (515701) 13.8 kV XFMR CKT 1, near AGENCY 5 (515230) 161 kV. a. Apply fault at the AGENCY 5 (515230) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.

Table 6-1 Continued

Fault ID	Planning Event	Fault Descriptions
FLT9118-3PH	P1	3 Phase fault on AGENCY 2 (515229) 69 kV / AGENCY 5 (515230) 161 kV / AGENCY 1 (515701) 13.8 kV XFMR CKT 1, near AGENCY 2 (515229) 69 kV. a. Apply fault at the AGENCY 2 (515229) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9119-3PH	P1	3 Phase fault on PECANCK5 (515234) 161 kV to 5TRIBES5 (515228) 161 kV line CKT 1, near PECANCK5 (515234) 161 kV. a. Apply fault at the PECANCK5 (515234) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9120-3PH	P1	3 Phase fault on 5TRIBES5 (515228) 161 kV to PECANCK5 (515234) 161 kV line CKT 1, near 5TRIBES5 (515228) 161 kV. a. Apply fault at the 5TRIBES5 (515228) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9121-3PH	P1	3 Phase fault on PECANCK5 (515234) 161 kV / PECANCK4 (515233) 138 kV / PECANC31 (515750) 13.2 kV XFMR CKT 1, near PECANCK5 (515234) 161 kV. a. Apply fault at the PECANCK5 (515234) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9122-3PH	P1	3 Phase fault on PECANCK4 (515233) 138 kV / PECANCK5 (515234) 161 kV / PECANC31 (515750) 13.2 kV XFMR CKT 1, near PECANCK4 (515233) 138 kV. a. Apply fault at the PECANCK4 (515233) 138 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9123-3PH	P1	3 Phase fault on 5TRIBES5 (515228) 161 kV to HANCOK-5 (515250) 161 kV line CKT 1, near 5TRIBES5 (515228) 161 kV. a. Apply fault at the 5TRIBES5 (515228) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9124-3PH	P1	3 Phase fault on HANCOK-5 (515250) 161 kV to 5TRIBES5 (515228) 161 kV line CKT 1, near HANCOK-5 (515250) 161 kV. a. Apply fault at the HANCOK-5 (515250) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9125-3PH	P1	3 Phase fault on HANCOK-5 (515250) 161 kV to THRERVR5 (515640) 161 kV line CKT 1, near HANCOK-5 (515250) 161 kV. a. Apply fault at the HANCOK-5 (515250) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.
FLT9126-3PH	P1	3 Phase fault on 5TRIBES5 (515228) 161 kV / 5TRIBES2 (515227) 69 kV / 5TRIBES1 (515723) 13.2 kV XFMR CKT 1, near 5TRIBES5 (515228) 161 kV. a. Apply fault at the 5TRIBES5 (515228) 161 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.
FLT9127-3PH	P1	3 Phase fault on 5TRIBES2 (515227) 69 kV / 5TRIBES5 (515228) 161 kV / 5TRIBES1 (515723) 13.2 kV XFMR CKT 1, near 5TRIBES2 (515227) 69 kV. a. Apply fault at the 5TRIBES2 (515227) 69 kV Bus. b. Clear fault after 7 cycles by tripping the faulted line.

6.3 Results

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

Table 6-2: GEN-2021-053 Dynamic Stability Results

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT1000-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1001-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1002-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1003-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1004-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1005-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1006-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1007-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1008-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1009-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1010-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1011-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1012-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1013-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1014-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1015-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1016-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1017-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1018-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1019-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1020-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1021-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1022-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1023-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1024-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1025-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1026-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1027-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1028-SB	Pass	Pass	Stable	Pass	Pass	Stable
FLT1029-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

Table 6-2 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9007-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9008-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9009-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9010-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9011-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9012-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9013-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9014-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9015-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9016-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9017-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9018-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9019-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9020-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9021-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9022-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9023-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9024-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9025-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9026-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9027-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9028-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9029-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9030-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9031-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9032-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9033-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9034-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9035-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9036-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9037-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9038-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9039-3PH	Pass	Pass	Stable	Pass	Pass	Stable
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

Table 6-2 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	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
FLT9081-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9082-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-2 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9083-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9084-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9085-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9086-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9087-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9088-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9089-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9090-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9091-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9092-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9093-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9094-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9095-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9096-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9097-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9098-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9099-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9100-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9101-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9102-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9103-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9104-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9105-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9106-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9107-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9108-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9109-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9110-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9111-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9112-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9113-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9114-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9115-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9116-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9117-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9118-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9119-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9120-3PH	Pass	Pass	Stable	Pass	Pass	Stable

Table 6-2 continued

Fault ID	25SP			25WP		
	Voltage Violation	Voltage Recovery	Stable	Voltage Violation	Voltage Recovery	Stable
FLT9121-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9122-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9123-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9124-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9125-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9126-3PH	Pass	Pass	Stable	Pass	Pass	Stable
FLT9127-3PH	Pass	Pass	Stable	Pass	Pass	Stable

The results of the dynamic stability showed several existing base case issues that were found in both the original DISIS-2022-001-1 models and the models with the GEN-2021-053 modification included. These issues were not attributed to the GEN-2021-053 modification request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2021-053 modification request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

7.0 Modified Capacity Exceeds GIA Capacity

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

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

The modified generating capacity of GEN-2021-053 exceeds the GIA Interconnection Service amount, 300 MW, as listed in Appendix A of the GIA.

The customer must install monitoring and control equipment as needed to ensure that the amount of power injected at the POI does not exceed the Interconnection Service amount listed in its GIA.

8.0 Material Modification Determination

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

8.1 Results

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

This determination implies that any network upgrades already required by GEN-2021-053 would not be negatively impacted and that no new upgrades are required due to the requested modification, thus not resulting in a material adverse impact on the cost or timing of any other Interconnection Request with a later Queue priority date.