

Report on

# GEN-2025-SR11

## Surplus Interconnection Service Impact Study

**Revision R1      September 22, 2026**

Submitted to  
**SPP**

## TABLE OF CONTENTS

|                                                                          |      |
|--------------------------------------------------------------------------|------|
| Revision History .....                                                   | R-1  |
| Executive Summary .....                                                  | ES-1 |
| 1.0 Scope of Study .....                                                 | 1    |
| 1.1 Reactive Power Analysis .....                                        | 1    |
| 1.2 Short Circuit Analysis .....                                         | 1    |
| 1.3 Stability Analysis .....                                             | 1    |
| 1.4 Steady-State Analysis .....                                          | 1    |
| 1.5 Necessary Interconnection Facilities & Network Upgrades .....        | 2    |
| 1.6 Study Limitations .....                                              | 2    |
| 2.0 Surplus Interconnection Service Request .....                        | 3    |
| 3.0 Steady-State Analysis .....                                          | 6    |
| 3.1 Modeling .....                                                       | 6    |
| 3.2 Methodology and Criteria .....                                       | 6    |
| 3.3 Results .....                                                        | 7    |
| 4.0 Reactive Power Analysis .....                                        | 8    |
| 4.1 Methodology and Criteria .....                                       | 8    |
| 4.2 Results .....                                                        | 8    |
| 5.0 Short Circuit Analysis .....                                         | 10   |
| 5.1 Methodology .....                                                    | 10   |
| 5.2 Results .....                                                        | 10   |
| 6.0 Dynamic Stability Analysis .....                                     | 12   |
| 6.1 Methodology and Criteria .....                                       | 12   |
| 6.2 Fault Definitions .....                                              | 14   |
| 6.3 Scenario 1 Results .....                                             | 28   |
| 6.4 Scenario 2 Results .....                                             | 32   |
| 7.0 Necessary Interconnection Facilities and Network Upgrades .....      | 37   |
| 7.1 Interconnection Facilities .....                                     | 37   |
| 7.2 Network Upgrades .....                                               | 37   |
| 8.0 Surplus Interconnection Service Determination and Requirements ..... | 38   |
| 8.1 Surplus Service Determination .....                                  | 38   |
| 8.2 Surplus Service Requirements .....                                   | 38   |

## LIST OF TABLES

|                                                                                      |      |
|--------------------------------------------------------------------------------------|------|
| Table ES-1: EGF & SGF Configuration .....                                            | ES-1 |
| Table ES-2: SGF Interconnection Configuration.....                                   | ES-2 |
| Table 2-1: EGF & SGF Configuration.....                                              | 3    |
| Table 2-2: SGF Interconnection Configuration .....                                   | 5    |
| Table 4-1: Shunt Reactor Size for Reactive Power Analysis.....                       | 8    |
| Table 5-1: Short Circuit Model Parameters* .....                                     | 10   |
| Table 5-2: POI Short Circuit Comparison Results.....                                 | 10   |
| Table 5-3: 25SP Short Circuit Comparison Results.....                                | 11   |
| Table 6-1: Study Scenarios (Generator Dispatch MW) .....                             | 12   |
| Table 6-2: Fault Definitions.....                                                    | 14   |
| Table 6-3: Scenario 1 Dynamic Stability Results (EGF = 0 MW, SGF = 122.32 MW).....   | 28   |
| Table 6-4: Scenario 2 Dynamic Stability Results (EGF = 541 MW, SGF = 122.32 MW)..... | 32   |

## LIST OF FIGURES

|                                                                                                      |   |
|------------------------------------------------------------------------------------------------------|---|
| Figure 2-1: Sooner 345 kV Unit 2 Single Line Diagram (EGF Existing Configuration*) .....             | 4 |
| Figure 2-2: Sooner 345 kV Unit 2 & GEN-2025-SR11 Single Line Diagram (EGF & SGF Configuration) ..... | 4 |
| Figure 4-1: GEN-2025-SR11 Single Line Diagram (Shunt Sizes) .....                                    | 9 |

## APPENDICES

APPENDIX A: GEN-2025-SR11 Generator Dynamic Model

APPENDIX B: Short Circuit Results

APPENDIX C: Dynamic Stability Results with Existing Base Case Issues & Simulation Plots

## Revision History

| DATE OR VERSION NUMBER | AUTHOR            | CHANGE DESCRIPTION    |
|------------------------|-------------------|-----------------------|
| 9/22/2026              | Aneden Consulting | Initial Report Issued |
|                        |                   |                       |
|                        |                   |                       |

## Executive Summary

Aneden Consulting (Aneden) was retained by SPP to perform a Surplus Interconnection Service Impact Study (Study) for GEN-2025-SR11 to utilize the Surplus Interconnection Service being made available by the Sooner 345 kV Unit 2 at its existing Point of Interconnection (POI), the Sooner 345 kV Substation in the Oklahoma Gas & Electric (OG&E) control area.

GEN-2025-SR11, the proposed Surplus Generating Facility (SGF), will connect to the existing Sooner 345 kV Unit 2 POI via a separate generation interconnection line.

Sooner 345 kV Unit 2, the Existing Generating Facility (EGF), has a nameplate POI capacity of 632 MW and is making 112 MW of Surplus Interconnection Service available at its POI. Per the SPP Open Access Transmission Tariff (SPP Tariff), the amount of Surplus Interconnection Service available to the SGF is limited by the amount of Interconnection Service granted to the EGF at the same POI. In addition, the Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring Network Upgrades except those specified in the SPP Tariff<sup>1</sup>.

The proposed SGF configuration consists of 32 x Power Electronics FP4390K4 Battery Energy Storage System (BESS) inverters operating at 3.8225 MW for a total assumed dispatch of 122.32 MW. The generating capability of the SGF exceeds its requested Surplus Interconnection Service of 112 MW. The injection amount of the SGF must be limited to 112 MW at the POI. The combined generation from both the SGF and the EGF may not exceed 632 MW at the POI. GEN-2025-SR11 includes the use of a Power Plant Controller (PPC) to limit the power injection as required. The SGF and EGF information is shown in Table ES-1 below.

The detailed SGF configuration is captured in Table ES-2 below.

**Table ES-1: EGF & SGF Configuration**

| Request                           | Interconnection Queue Capacity (MW) | Generator Fuel Type                  | Point of Interconnection |
|-----------------------------------|-------------------------------------|--------------------------------------|--------------------------|
| <b>GEN-2025-SR11 (SGF)</b>        | 112                                 | Battery Energy Storage System (BESS) | Sooner 345 kV (514803)   |
| <b>Sooner 345 kV Unit 2 (EGF)</b> | 632                                 | Combustion Turbine                   | Sooner 345 kV (514803)   |

<sup>1</sup> Allowed Network Upgrades detailed in SPP Open Access Transmission Tariff Attachment V Section 3.3

**Table ES-2: SGF Interconnection Configuration**

| Facility                                            | GEN-2025-SR11 (SGF) Configuration                                                                                                                                                                                                       |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Point of Interconnection                            | Sooner 345 kV (514803)                                                                                                                                                                                                                  |
| Configuration/Capacity                              | 32 x Power Electronics FP4390K4 Inverters 3.8225 MW (Battery/Storage) = 122.32 MW [dispatch]<br>Units are rated at 4.39 MVA, GEN-2025-SR11 limited to 112 MW at the POI and total POI injection w/ Sooner 345 kV unit limited to 632 MW |
| Generation Interconnection Line                     | Length = 0.5 miles<br>R = 0.000049 pu<br>X = 0.000344 pu<br>B = 0.002190 pu<br>Rating MVA = 298.7 MVA                                                                                                                                   |
| Main Substation Transformer <sup>1</sup>            | X12 = 10.7963% R12 = 0.2841%, X23 = 4.3185% R23 = 0.1136%, X13 = 16.1944% R13 = 0.4262%,<br>Winding MVA = 108 MVA,<br>Winding 1, 2, & 3 Rating A/B/C MVA = 180/180/180 MVA                                                              |
| Equivalent GSU Transformer <sup>1</sup>             | Gen 1 Equivalent Qty: 32<br>X = 5.9771%, R = 0.5238%,<br>Winding MVA = 96 MVA,<br>Rating MVA = 128 MVA                                                                                                                                  |
| Equivalent Collector Line <sup>2</sup>              | R = 0.000883 pu<br>X = 0.000954 pu<br>B = 0.001601 pu                                                                                                                                                                                   |
| Station Service Load                                | 9.03 MW + 6.77 MVAR                                                                                                                                                                                                                     |
| Reactive Power Devices                              | 1 x 20 MVAR Cap Bank at 34.5 kV                                                                                                                                                                                                         |
| Generator Dynamic Model <sup>3</sup> & Power Factor | 32 x Power Electronics FP4390K4 4.39 MVA (REGCA1) <sup>3</sup><br>Leading: 0.870729<br>Lagging: 0.870729                                                                                                                                |

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 required because the combined dispatch of the EGF and SGF exceeded what has been modeled and studied in the previous Definitive Interconnection System Impact Studies (DISIS) study models. The addition of the SGF increased the maximum active power output above what is currently modeled for the EGF in the DISIS-2022-001-1 High Variable Energy Resource (HVER) steady state models. The HVER models were used based on the fuel type of the SGF (BESS).

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

Aneden performed the analyses using the study data provided for the SGF and the DISIS-2022-001-1 study models.

All analyses were performed using the Siemens PTI PSS/E<sup>2</sup> version 34 and PowerGEM TARA software. The results are summarized below.

The steady-state analysis was performed using powerflow models derived from the 24SP, 27SP, and 27WP SPP DISIS-2022-001-1 Transfer Case (TC) HVER model set.

The results of the steady-state analysis showed that there were no non-convergence, thermal, or voltage criteria impacts in the study system due to the addition of GEN-2025-SR11.

The results of the reactive power analysis using the 25SP stability model showed that the SGF project needed a 0.4 MVar shunt reactor at the project substation to reduce the POI MVar to zero. 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 compared the 25SP model with the EGF online and SGF not connected to the SGF study model (EGF and SGF online). The maximum contribution to three-phase fault currents in the immediate transmission systems due to the addition of the SGF was not greater than 0.19 kA. The maximum three-phase fault current level within 5 buses of the POI with the EGF and SGF generators online 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, each with two dispatch scenarios. 147 fault events were simulated, which included three-phase faults and single-line-to-ground stuck breaker faults.

- Scenario 1: SGF at maximum assumed dispatch, 122.32 MW, and EGF disconnected.
- Scenario 2: SGF at maximum assumed dispatch, 122.32 MW, and EGF dispatched with the remaining 541 MW for a total combination of 663.32 MW. With the station service loads, the net POI injection is below the limit of 632 MW.

The results of the dynamic stability analysis showed several existing base case issues that were found in both the original DISIS-2022-001-1 model and in the model with GEN-2025-SR11 included. These issues were not attributed to the GEN-2025-SR11 surplus request and are detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2025-SR11 surplus request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

The results of the study showed that the Surplus Interconnection Service Request by GEN-2025-SR11 did not negatively impact the reliability of the Transmission System. There were no additional Interconnection Facilities or Network Upgrades identified by the analyses.

---

<sup>2</sup> Power System Simulator for Engineering

SPP has determined that GEN-2025-SR11 may utilize the requested 112 MW of Surplus Interconnection Service being made available by the EGF. The combined generation from both the SGF and the EGF may not exceed 632 MW at the POI.

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

In accordance with FERC Order No. 827, the SGF 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 Surplus Service Impact Study (Study) for GEN-2025-SR11, the Surplus Generating Facility (SGF). A Surplus Service Impact Study is performed to identify the impact of the Surplus Interconnection Service on the transmission system reliability and any additional Interconnection Facilities necessary pursuant to the SPP Generator Interconnection Procedures (“GIP”) contained in Attachment V Section 3.3 of the SPP Open Access Transmission Tariff (SPP Tariff). The amount of Surplus Interconnection Service available to the SGF is limited by the amount of Interconnection Service granted to the existing interconnection customer for the Existing Generating Facility (EGF) at the same POI. The Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring additional Network Upgrades except those specified in the SPP Tariff<sup>3</sup>. The required scope of the study is dependent upon the EGF and SGF specifications. The criteria sections below include the basis of the analyses included in the scope of study.

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

### 1.1 Reactive Power Analysis

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

### 1.2 Short Circuit Analysis

SPP requires that a short circuit analysis be performed to determine the maximum available fault current requiring interruption by protective equipment with both the SGF and EGF online, along with the amount of increase in maximum fault current due to the addition of the SGF. The analysis was performed on two scenarios, with the EGF in service and SGF offline, and the modified model with both EGF and SGF in service.

### 1.3 Stability Analysis

SPP requires that a dynamic stability analysis be performed to determine whether the SGF, EGF, and the transmission system will remain stable and within applicable criteria. Dynamic stability analysis was performed on two dispatch scenarios, the first where the SGF was online at 100% of the assumed dispatch with the EGF offline and disconnected, and the second where the SGF was online at 100% of the assumed dispatch and the EGF was picking up the remaining EGF capacity up to its modeled capacity. The stability analysis will identify any additional Interconnection Facilities and Network Upgrades necessary.

### 1.4 Steady-State Analysis

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

---

<sup>3</sup> Allowed Network Upgrades detailed in SPP Open Access Transmission Tariff Attachment V Section 3.3

Interconnection Service, both off-peak and peak analysis may need to be performed for the EGF associated with the request.

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

SPP determined that steady-state analysis was required because the combined dispatch of the EGF and SGF exceeded what has been modeled and studied in the previous Definitive Interconnection System Impact Studies (DISIS) study models. The addition of the SGF increased the maximum active power output above what is currently modeled for the EGF in the DISIS-2022-001-1 High Variable Energy Resource (HVER) steady-state models. The HVER models were used based on the fuel type of the SGF (BESS).

### **1.5 Necessary Interconnection Facilities & Network Upgrades**

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

### **1.6 Study Limitations**

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

---

<sup>4</sup> SPP Open Access Transmission Tariff Section 3.3.4.1

## 2.0 Surplus Interconnection Service Request

The GEN-2025-SR11 Interconnection Customer has requested a Surplus Interconnection Service Impact Study (Study) for GEN-2025-SR11 to utilize the Surplus Interconnection Service being made available by Sooner 345 kV Unit 2 at its existing Point of Interconnection (POI), the Sooner 345 kV Substation in the Oklahoma Gas & Electric (OG&E) control area.

GEN-2025-SR11, the proposed Surplus Generating Facility (SGF), will connect to the existing Sooner 345 kV Unit 2 POI via a separate generation interconnection line.

Sooner 345 kV Unit 2, the EGF, has an effective nameplate POI capacity of 632 MW and is making 112 MW of Surplus Interconnection Service available at its POI. Per the SPP Tariff the amount of Surplus Interconnection Service available to the SGF is limited by the amount of Interconnection Service granted to the EGF at the same POI. In addition, the Surplus Interconnection Service is only available up to the amount that can be accommodated without requiring additional Network Upgrades except those specified in the SPP Tariff.

At the time of the posting of this report, Sooner 345 kV Unit 2 (EGF) is an active existing generator at the same POI (Sooner 345 kV) that is a legacy unit and as such does not have a Generation Interconnection Agreements (GIA). Figure 2-1 shows the power flow model single line diagram for the EGF configuration.

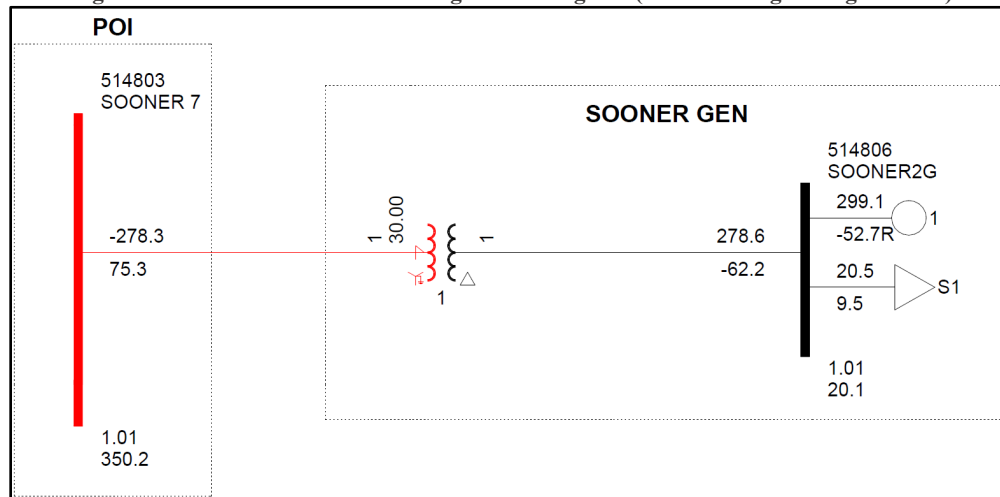
The proposed SGF configuration consists of 32 x Power Electronics FP4390K4 Battery Energy Storage System (BESS) inverters operating at 3.8225 MW for a total assumed dispatch of 122.32 MW. The generating capability of the SGF exceeds its requested Surplus Interconnection Service of 112 MW. The injection amount of the SGF must be limited to 112 MW at the POI. The combined generation from both the SGF and the EGF may not exceed 632 MW at the POI. GEN-2025-SR11 includes the use of a Power Plant Controller (PPC) to limit the power injection as required. The SGF and EGF information is shown in Table 2-1 below.

**Table 2-1: EGF & SGF Configuration**

| Request                           | Interconnection Queue Capacity (MW) | Generator Fuel Type                  | Point of Interconnection |
|-----------------------------------|-------------------------------------|--------------------------------------|--------------------------|
| <b>GEN-2025-SR11 (SGF)</b>        | 112                                 | Battery Energy Storage System (BESS) | Sooner 345 kV (514803)   |
| <b>Sooner 345 kV Unit 2 (EGF)</b> | 632                                 | Combustion Turbine                   | Sooner 345 kV (514803)   |

The proposed detailed SGF configuration is captured in Figure 2-2 and Table 2-2 below.

Figure 2-1: Sooner 345 kV Unit 2 Single Line Diagram (EGF Existing Configuration\*)



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

Figure 2-2: Sooner 345 kV Unit 2 &amp; GEN-2025-SR11 Single Line Diagram (EGF &amp; SGF Configuration)

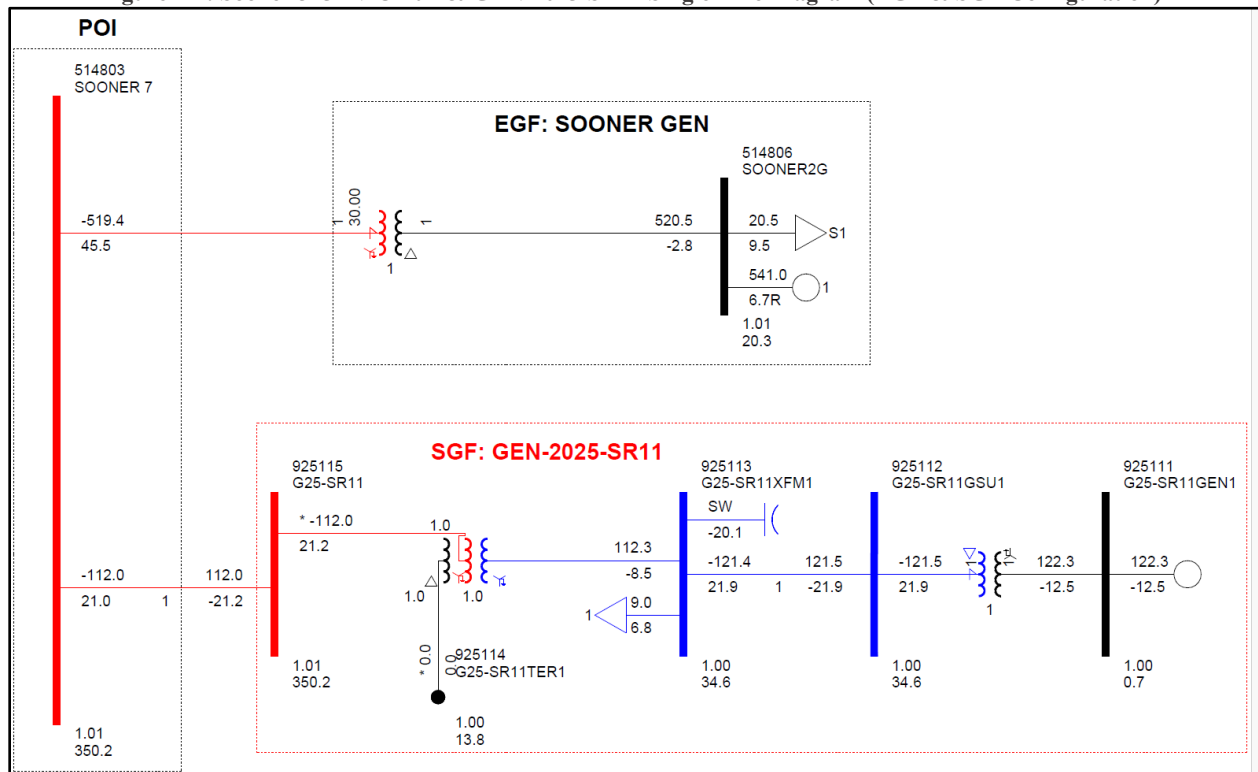


Table 2-2: SGF Interconnection Configuration

| Facility                                            | GEN-2025-SR11 (SGF) Configuration                                                                                                                                                                                                       |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Point of Interconnection                            | Sooner 345 kV (514803)                                                                                                                                                                                                                  |
| Configuration/Capacity                              | 32 x Power Electronics FP4390K4 Inverters 3.8225 MW (Battery/Storage) = 122.32 MW [dispatch]<br>Units are rated at 4.39 MVA, GEN-2025-SR11 limited to 112 MW at the POI and total POI injection w/ Sooner 345 kV unit limited to 632 MW |
| Generation Interconnection Line                     | Length = 0.5 miles<br>R = 0.000049 pu<br>X = 0.000344 pu<br>B = 0.002190 pu<br>Rating MVA = 298.7 MVA                                                                                                                                   |
| Main Substation Transformer <sup>1</sup>            | X12 = 10.7963% R12 = 0.2841%, X23 = 4.3185% R23 = 0.1136%, X13 = 16.1944% R13 = 0.4262%,<br>Winding MVA = 108 MVA,<br>Winding 1, 2, & 3 Rating A/B/C MVA = 180/180/180 MVA                                                              |
| Equivalent GSU Transformer <sup>1</sup>             | Gen 1 Equivalent Qty: 32<br>X = 5.9771%, R = 0.5238%,<br>Winding MVA = 96 MVA,<br>Rating MVA = 128 MVA                                                                                                                                  |
| Equivalent Collector Line <sup>2</sup>              | R = 0.000883 pu<br>X = 0.000954 pu<br>B = 0.001601 pu                                                                                                                                                                                   |
| Station Service Load                                | 9.03 MW + 6.77 MVAR                                                                                                                                                                                                                     |
| Reactive Power Devices                              | 1 x 20 MVAR Cap Bank at 34.5 kV                                                                                                                                                                                                         |
| Generator Dynamic Model <sup>3</sup> & Power Factor | 32 x Power Electronics FP4390K4 4.39 MVA (REGCA1) <sup>3</sup><br>Leading: 0.870729<br>Lagging: 0.870729                                                                                                                                |

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

## 3.0 Steady-State Analysis

Aneden performed a steady-state contingency analysis using PowerGEM TARA to evaluate the non-convergence, thermal, and voltage impacts of interconnecting GEN-2025-SR11 in the existing SPP transmission system. The methodology, criteria, and results of the steady-state contingency analysis are presented in the following sections.

### 3.1 Modeling

The steady-state analysis was performed using power flow models derived from the SPP DISIS-2022-001-1 Transfer Case (TC) HVER model set. These models were updated to include the GEN-2025-SR11 surplus project.

The following study cases were evaluated:

- Year 2 Summer Peak (24SP)
- Year 5 Light Load (27L)
- Year 5 Summer Peak (27SP)
- Year 5 Winter Peak (27WP)

A set of Pre-Project and Post-Project models were created from these models as shown below:

- Pre-Project Models: DISIS-2022-001-1 TC HVER models with the EGF and any renewable Electrically Equivalent (EE) units dispatched to their modeled maximum
- Post-Project Models: Pre-Project models with the GEN-2025-SR11 unit added and modeled online at 100% of its assumed dispatch

Dispatch of the additional generation was performed in accordance with SPP DISIS load-ratio share methodologies. Must-run resources were excluded from sink adjustments. Where necessary, the sink definition was expanded consistent with SPP procedures to resolve system imbalances.

Steady-state analysis was performed for system intact and contingency conditions using SPP contingency definitions and methodology consistent with the DISIS-2022-001-1 ERIS steady-state analysis as laid out in the DISIS Manual<sup>5</sup>.

Constraint identification and impact assessment were based on the Post-Project model set, with comparison to the Pre-Project model set to determine incremental impacts associated with the Surplus Interconnection request.

### 3.2 Methodology and Criteria

TARA was used to simulate system intact conditions and contingencies provided by SPP. The system facilities were monitored for non-convergence, thermal, and voltage impacts on all 69 kV lines and above.

Network constraints were found using a Transfer Distribution Factor (TDF) analysis.

---

<sup>5</sup> GENERATOR INTERCONNECTION MANUAL (DISIS MANUAL) Version 4.4 - October 17, 2025

For ERIS, thermal overloads are defined as being greater than 100% of Rate A for system intact conditions, and greater than 100% of Rate B for contingencies. These impacts were then analyzed to determine if they meet any of the following three criteria:

- At least 3% TDF impact where the constraint is identified under System-Intact conditions,
- At least 20% TDF impact where the constraint is identified under contingency conditions,
- or 3% PTDF on contingent elements that resulted in a non-converged solution.

TARA was also used to determine voltage constraints in accordance with the DISIS Manual and Transmission Owner planning criteria. The identified voltage constraints were analyzed to determine if they met the following ERIS criteria:

- At least 3% PTDF on contingent elements that resulted in a voltage constraint or on the line with the largest system intact MW flow into the bus experiencing the system intact voltage constraint
- and 2% change in pu voltage.

### 3.3 Results

The results of the steady-state analysis showed that there were no non-convergence, thermal, or voltage criteria impacts in the study system due to the addition of GEN-2025-SR11.

## 4.0 Reactive Power Analysis

The reactive power analysis was performed for GEN-2025-SR11 to determine the capacitive charging effects due to the SGF during reduced generation conditions (unsuitable wind speeds, unsuitable solar irradiance, insufficient state of charge, idle conditions, curtailment, etc.) at the generation site, and to size shunt reactors that would reduce the project reactive power contribution to the POI to approximately zero.

### 4.1 Methodology and Criteria

For the shunt reactor size calculation, all project generators, capacitors and station service loads were switched offline while other collector system elements remained in-service. A shunt reactor was tested at the project's collection substation 34.5 kV bus to 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 SGF data based on the 25SP DISIS-2022-001-1 stability study model.

### 4.2 Results

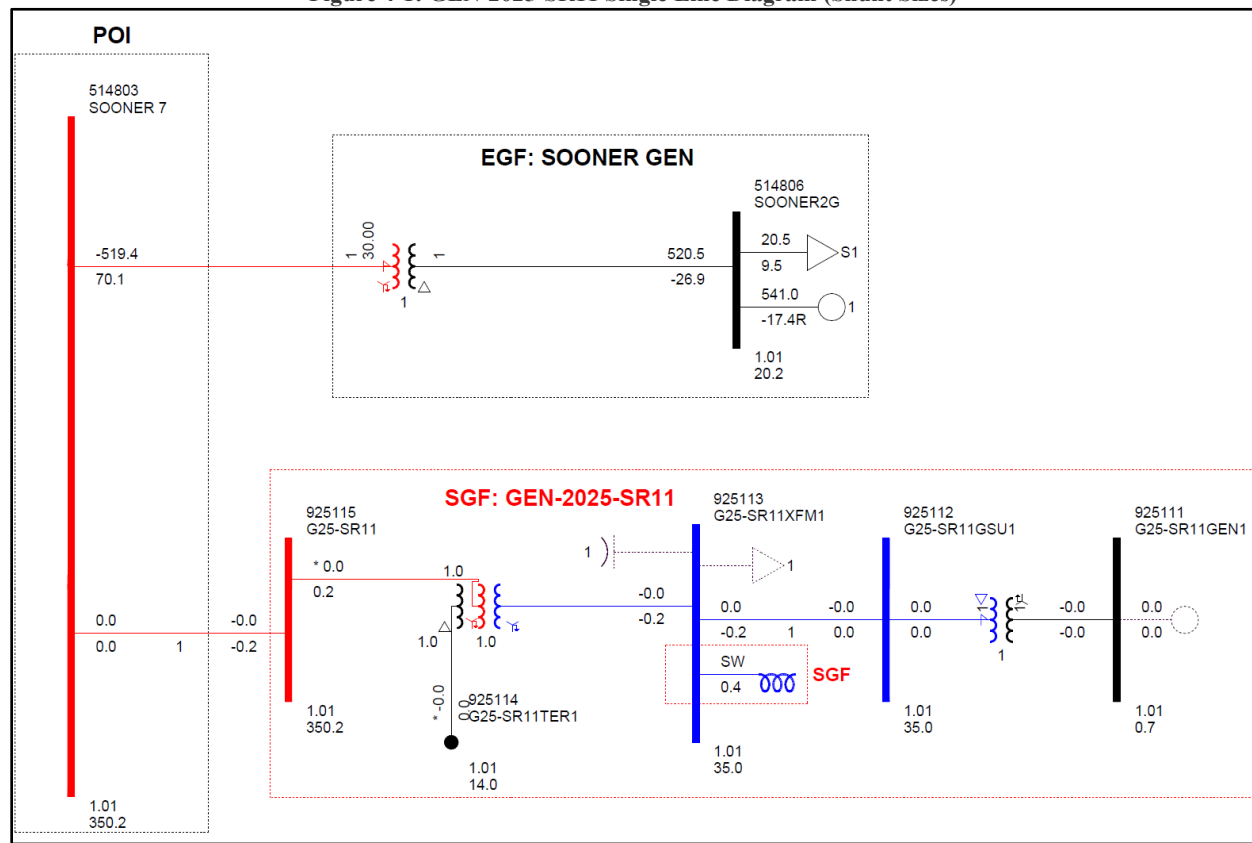
The results from the analysis showed that the SGF needed an approximately 0.4 MVar shunt reactor at the SGF substation, to reduce the MVar injection at the POI to zero. The final shunt reactor requirements are shown in Table 4-1. Figure 4-1 illustrates the shunt reactor size needed to reduce the POI MVar to approximately zero.

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-2025-SR11<br>(SGF) | 514803         | SOONER 7 345 kV | 0.4                 |

Figure 4-1: GEN-2025-SR11 Single Line Diagram (Shunt Sizes)



## 5.0 Short Circuit Analysis

A short circuit study was performed using the 25SP model to determine the maximum available fault current requiring interruption by protective equipment with both the SGF and EGF online for each bus in the relevant subsystem, and the amount of increase in maximum fault current due to the addition of the SGF. 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 the SGF online. The first scenario was studied with both the SGF and EGF in service. In the second scenario the SGF was disconnected while the EGF was online to determine the impact of the SGF.

Aneden created a short circuit model using the 25SP DISIS-2022-001-1 stability study model by adjusting the SGF 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# |
|------------------|-------------------------|
|                  | 925111                  |
| Machine MVA Base | 140.48                  |
| R (pu)           | 0.0                     |
| X'' (pu)         | 1.0                     |

\*pu values based on Machine MVA Base

### 5.2 Results

The results of the short circuit analysis compared the 25SP model with the EGF online and SGF not connected to the stability Scenario 2 dispatch model with both the EGF and SGF in service as described in Section 6.1. The GEN-2025-SR11 POI bus (Sooner 345 kV) fault current magnitudes for the comparison cases are provided in Table 5-2 showing a fault current of 29.96 kA with the EGF and SGF online. The addition of the SGF configuration increased the POI bus fault current by 0.19 kA. Table 5-3 shows the maximum fault current magnitudes and fault current increases with the SGF 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 contribution to three-phase fault currents due to the addition of the SGF was about 0.6% and 0.19 kA.

**Table 5-2: POI Short Circuit Comparison Results**

| Case | EGF Only Current (kA) | SGF & EGF Current (kA) | kA Change | %Change |
|------|-----------------------|------------------------|-----------|---------|
| 25SP | 29.77                 | 29.96                  | 0.19      | 0.6%    |

Table 5-3: 25SP Short Circuit Comparison Results

| Voltage (kV) | Max. Current (EGF & SGF) (kA) | Max kA Change | Max %Change |
|--------------|-------------------------------|---------------|-------------|
| 69           | 16.9                          | 0.00          | 0.0%        |
| 138          | 62.9                          | 0.02          | 0.1%        |
| 161          | 21.6                          | 0.00          | 0.0%        |
| 345          | 36.3                          | 0.19          | 0.6%        |
| <b>Max</b>   | <b>62.9</b>                   | <b>0.19</b>   | <b>0.6%</b> |

## 6.0 Dynamic Stability Analysis

Aneden performed a dynamic stability analysis to identify the impact of the SGF project. The analysis was performed according to SPP's Disturbance Performance Requirements<sup>6</sup>. The project 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 32 x Power Electronics FP4390K4 operating at 3.8225 MW (REGCA1) SGF generating facility configuration included in the models. This stability analysis was performed using Siemens PTI's PSS/E version 34.8.1 software.

Two stability model scenarios were developed using the models from DISIS-2022-001-1. The first scenario (Scenario 1) was comprised of the SGF online at 100% of the assumed dispatch (SGF = 122.32 MW) while the EGF generator was offline and disconnected.

The second scenario (Scenario 2) was comprised of the SGF at 100% of the assumed dispatch (SGF = 122.32 MW) while the EGF generator picked up the remaining EGF capacity (EGF = 541 MW) up to its modeled capacity. The study scenarios are shown in Table 4-1.

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

| Scenario | Sooner 345 kV unit EGF (MW) | GEN-2025-SR11 SGF (MW) | EGF + SGF (MW) |
|----------|-----------------------------|------------------------|----------------|
| 1        | 0 (Offline)                 | 122.32                 | 122.32         |
| 2        | 541                         | 122.32                 | 663.32         |

The GEN-2025-SR11 project details 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-2025-SR11 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 surplus request:

- The simulation acceleration factor was reduced, and the iteration limit was increased as needed to resolve stability simulation crashes.
- Voltage protective relays were disabled to avoid generator trips due to temporary over voltage after fault cleared for generators on bus 587953 and 587958.
- Frequency protective relays were disabled to avoid generator trips due to PSSE bus frequency calculation deficiencies for the generators on bus 587953 and 587958.

<sup>6</sup> SPP Disturbance Performance Requirements:

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

- The WTDTA1 drive train model was disabled at bus 515886, 515887, 516013, 516014, 587953, 515651, 515652, 516060, 516061, and 587958 to mitigate PSSE crashing.
- The acceleration factor for REGCA1 model at buses 515886, 515887, 516013, 516014, 587953, 515651, 515652, 516060, 516061, 587958, 762324, 762345, 763068, and 763079 was changed to 0.01 to help mitigate PSSE crashing.

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

## 6.2 Fault Definitions

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

**Table 6-2: Fault Definitions**

| Fault ID   | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT1000-SB | P4             | Stuck Breaker on SOONER 7 (514803) 345 kV Bus<br>a. Apply single phase fault at the SOONER 7 (514803) 345 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 7 (514803) 345 kV to THUNDER7 (515894) 345 kV line CKT 1.<br>b.2.Trip the SOONER 7 (514803) 345 kV to PINTAIL7 (516010) 345 kV line CKT 1.<br>Trip generator(s) on the Bus THNDRG11 (515886) 0.7 kV<br>Trip generator(s) on the Bus THNDRG21 (515887) 0.7 kV<br>Trip generator(s) on the Bus G21-019-GEN1 (765482) 0.7 kV<br>Trip generator(s) on the Bus G21-018-GEN1 (765472) 0.6 kV |
| FLT1001-SB | P4             | Stuck Breaker on SOONER 7 (514803) 345 kV Bus<br>a. Apply single phase fault at the SOONER 7 (514803) 345 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 7 (514803) 345 kV to RANCHRD7 (515576) 345 kV line CKT 1.<br>b.2.Trip the SOONER 7 (514803) 345 kV to WEKIWA-7 (509755) 345 kV line CKT 1.                                                                                                                                                                                                                                             |
| FLT1002-SB | P4             | Stuck Breaker on SOONER 7 (514803) 345 kV Bus<br>a. Apply single phase fault at the SOONER 7 (514803) 345 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 7 (514803) 345 kV / SOONER2G (514806) 20 kV XFMR CKT 1.<br>b.2.Trip the SOONER 7 (514803) 345 kV to G16-119-TAP (587804) 345 kV line CKT 1.<br>Trip generator(s) on the Bus SOONER2G (514806) 20 kV                                                                                                                                                                                    |
| FLT1003-SB | P4             | Stuck Breaker on SOONER 7 (514803) 345 kV Bus<br>a. Apply single phase fault at the SOONER 7 (514803) 345 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 7 (514803) 345 kV / SOONER 4 (514802) 138 kV / SOONER 1 (515760) 13.8 kV XFMR CKT 1.<br>b.2.Trip the SOONER 7 (514803) 345 kV to G15-066T (560056) 345 kV line CKT 1.                                                                                                                                                                                                                  |
| FLT1004-SB | P4             | Stuck Breaker on SOONER 7 (514803) 345 kV Bus<br>a. Apply single phase fault at the SOONER 7 (514803) 345 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 7 (514803) 345 kV to G25-SR11 (925115) 345 kV line CKT 1.<br>Trip generator(s) on the Bus G25-SR11GEN1 (925111) 0.7 kV                                                                                                                                                                                                                                                                 |
| FLT1005-SB | P4             | Stuck Breaker on SOONER 4 (514802) 138 kV Bus<br>a. Apply single phase fault at the SOONER 4 (514802) 138 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 4 (514802) 138 kV to SNRPMPT4 (514798) 138 kV line CKT 1.<br>b.2.Trip the SOONER 4 (514802) 138 kV to MILLERT4 (514704) 138 kV line CKT 1.                                                                                                                                                                                                                                             |
| FLT1007-SB | P4             | Stuck Breaker on SOONER 4 (514802) 138 kV Bus<br>a. Apply single phase fault at the SOONER 4 (514802) 138 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 4 (514802) 138 kV to PERRY 4 (514707) 138 kV line CKT 1.                                                                                                                                                                                                                                                                                                                               |
| FLT1008-SB | P4             | Stuck Breaker on SOONER 4 (514802) 138 kV Bus<br>a. Apply single phase fault at the SOONER 4 (514802) 138 kV Bus<br>b. Clear fault after 16 cycles and trip the following elements:<br>b.1.Trip the SOONER 4 (514802) 138 kV to MORISNT4 (515447) 138 kV line CKT 1.<br>b.2.Trip the SOONER 4 (514802) 138 kV / SOONER1G (514805) 22 kV XFMR CKT 1.<br>Trip generator(s) on the Bus SOONER1G (514805) 22 kV                                                                                                                                                                                       |

Table 6-2 Continued

| Fault ID   | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT1009-SB | P4             | <p>Stuck Breaker on WEKIWA-7 (509755) 345 kV Bus</p> <p>a. Apply single phase fault at the WEKIWA-7 (509755) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the WEKIWA-7 (509755) 345 kV to T.NO.--7 (509852) 345 kV line CKT 1.</p> <p>b.2.Trip the WEKIWA-7 (509755) 345 kV to SOONER 7 (514803) 345 kV line CKT 1.</p>                                                                                                                                                                                                                                                                                                                              |
| FLT1010-SB | P4             | <p>Stuck Breaker on WEKIWA-7 (509755) 345 kV Bus</p> <p>a. Apply single phase fault at the WEKIWA-7 (509755) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the WEKIWA-7 (509755) 345 kV to SOONER 7 (514803) 345 kV line CKT 1.</p> <p>b.2.Trip the WEKIWA-7 (509755) 345 kV / WEKIWA-4 (509757) 138 kV / WEKIWA-1 (509879) 34.5 kV XFMR CKT 1.</p>                                                                                                                                                                                                                                                                                                   |
| FLT1011-SB | P4             | <p>Stuck Breaker on WEKIWA-7 (509755) 345 kV Bus</p> <p>a. Apply single phase fault at the WEKIWA-7 (509755) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the WEKIWA-7 (509755) 345 kV / WEKIWA-4 (509757) 138 kV / WEKIWA-1 (509879) 34.5 kV XFMR CKT 1.</p> <p>b.2.Trip the WEKIWA-7 (509755) 345 kV to SAPLPRD7 (509870) 345 kV line CKT 1.</p>                                                                                                                                                                                                                                                                                                   |
| FLT1012-SB | P4             | <p>Stuck Breaker on WEKIWA-7 (509755) 345 kV Bus</p> <p>a. Apply single phase fault at the WEKIWA-7 (509755) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the WEKIWA-7 (509755) 345 kV to SAPLPRD7 (509870) 345 kV line CKT 1.</p> <p>b.2.Trip the WEKIWA-7 (509755) 345 kV to T.NO.--7 (509852) 345 kV line CKT 1.</p>                                                                                                                                                                                                                                                                                                                              |
| FLT1013-SB | P4             | <p>Stuck Breaker on G15-066T (560056) 345 kV Bus</p> <p>a. Apply single phase fault at the G15-066T (560056) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip bus G15-066T (560056) 345 kV.</p> <p>Trip generator(s) on the Bus G15-066-GEN1 (563022) 0.7 kV</p>                                                                                                                                                                                                                                                                                                                                                                                         |
| FLT1014-SB | P4             | <p>Stuck Breaker on THUNDER7 (515894) 345 kV Bus</p> <p>a. Apply single phase fault at the THUNDER7 (515894) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip bus THUNDER7 (515894) 345 kV.</p> <p>Trip generator(s) on the Bus THNDRG11 (515886) 0.7 kV</p> <p>Trip generator(s) on the Bus THNDRG21 (515887) 0.7 kV</p> <p>Trip generator(s) on the Bus G21-019-GEN1 (765482) 0.7 kV</p> <p>Trip generator(s) on the Bus G21-018-GEN1 (765472) 0.6 kV</p>                                                                                                                                                                                              |
| FLT1015-SB | P4             | <p>Stuck Breaker on RANCHRD7 (515576) 345 kV Bus</p> <p>a. Apply single phase fault at the RANCHRD7 (515576) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the RANCHRD7 (515576) 345 kV to OPENSKY7 (515621) 345 kV line CKT 1.</p> <p>b.2.Trip the RANCHRD7 (515576) 345 kV to G18-071_TAP (763069) 345 kV line CKT 1.</p> <p>Trip generator(s) on the Bus FRNT2G11 (516060) 0.7 kV</p> <p>Trip generator(s) on the Bus FRNT2G21 (516061) 0.7 kV</p> <p>Trip generator(s) on the Bus G18-071-GEN1 (763068) 0.6 kV</p> <p>Trip generator(s) on the Bus G18-072-GEN1 (763079) 0.6 kV</p>                                                               |
| FLT1016-SB | P4             | <p>Stuck Breaker on RANCHRD7 (515576) 345 kV Bus</p> <p>a. Apply single phase fault at the RANCHRD7 (515576) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the RANCHRD7 (515576) 345 kV to OMCDLEC7 (529200) 345 kV line CKT 1.</p> <p>b.2.Trip the RANCHRD7 (515576) 345 kV to G18-071_TAP (763069) 345 kV line CKT 1.</p> <p>Trip generator(s) on the Bus FRNT2G11 (516060) 0.7 kV</p> <p>Trip generator(s) on the Bus FRNT2G21 (516061) 0.7 kV</p> <p>Trip generator(s) on the Bus G18-071-GEN1 (763068) 0.6 kV</p> <p>Trip generator(s) on the Bus G18-072-GEN1 (763079) 0.6 kV</p> <p>Trip generator(s) on the Bus OMCDLEC1 (529201) 13.8 kV</p> |
| FLT1017-SB | P4             | <p>Stuck Breaker on RANCHRD7 (515576) 345 kV Bus</p> <p>a. Apply single phase fault at the RANCHRD7 (515576) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1.Trip the RANCHRD7 (515576) 345 kV to OMCDLEC7 (529200) 345 kV line CKT 1.</p> <p>b.2.Trip the RANCHRD7 (515576) 345 kV to SOONER 7 (514803) 345 kV line CKT 1.</p> <p>Trip generator(s) on the Bus OMCDLEC1 (529201) 13.8 kV</p>                                                                                                                                                                                                                                                                |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT1018-SB  | P4             | <p>Stuck Breaker on RANCHRD7 (515576) 345 kV Bus</p> <p>a. Apply single phase fault at the RANCHRD7 (515576) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip the RANCHRD7 (515576) 345 kV to SOONER 7 (514803) 345 kV line CKT 1.</p> <p>b.2. Trip the RANCHRD7 (515576) 345 kV to FRNTWWD7 (515688) 345 kV line CKT 1.</p> <p>Trip generator(s) on the Bus FRNTWDG1 (515691) 0.7 kV</p>                                                |
| FLT1019-SB  | P4             | <p>Stuck Breaker on RANCHRD7 (515576) 345 kV Bus</p> <p>a. Apply single phase fault at the RANCHRD7 (515576) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip the RANCHRD7 (515576) 345 kV to OPENSKY7 (515621) 345 kV line CKT 1.</p> <p>b.2. Trip the RANCHRD7 (515576) 345 kV to FRNTWWD7 (515688) 345 kV line CKT 1.</p> <p>Trip generator(s) on the Bus FRNTWDG1 (515691) 0.7 kV</p>                                                |
| FLT1020-SB  | P4             | <p>Stuck Breaker on G16-119-TAP (587804) 345 kV Bus</p> <p>a. Apply single phase fault at the G16-119-TAP (587804) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus G16-119-TAP (587804) 345 kV.</p> <p>Trip generator(s) on the Bus G16-119-GEN1 (587953) 0.7 kV</p> <p>Trip generator(s) on the Bus G16-119-GEN2 (587958) 0.7 kV</p>                                                                                               |
| FLT1021-SB  | P4             | <p>Stuck Breaker on G25-SR11 (925115) 345 kV Bus</p> <p>a. Apply single phase fault at the G25-SR11 (925115) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus G25-SR11 (925115) 345 kV.</p> <p>Trip generator(s) on the Bus G25-SR11GEN1 (925111) 0.7 kV</p>                                                                                                                                                                         |
| FLT1022-SB  | P4             | <p>Stuck Breaker on PINTAIL7 (516010) 345 kV Bus</p> <p>a. Apply single phase fault at the PINTAIL7 (516010) 345 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus PINTAIL7 (516010) 345 kV.</p> <p>Trip generator(s) on the Bus KNGWDG11 (516013) 0.7 kV</p> <p>Trip generator(s) on the Bus KNGWDG21 (516014) 0.7 kV</p>                                                                                                                |
| FLT1023-SB  | P4             | <p>Stuck Breaker on MORISNT4 (515447) 138 kV Bus</p> <p>a. Apply single phase fault at the MORISNT4 (515447) 138 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus MORISNT4 (515447) 138 kV.</p> <p>b.2. Trip bus MORRISN4 (515006) 138 kV.</p>                                                                                                                                                                                           |
| FLT1024-SB  | P4             | <p>Stuck Breaker on PERRY 4 (514707) 138 kV Bus</p> <p>a. Apply single phase fault at the PERRY 4 (514707) 138 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus PERRY 4 (514707) 138 kV.</p>                                                                                                                                                                                                                                             |
| FLT1025-SB  | P4             | <p>Stuck Breaker on SNRPMPT4 (514798) 138 kV Bus</p> <p>a. Apply single phase fault at the SNRPMPT4 (514798) 138 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus SNRPMPT4 (514798) 138 kV.</p>                                                                                                                                                                                                                                          |
| FLT1026-SB  | P4             | <p>Stuck Breaker on MILLERT4 (514704) 138 kV Bus</p> <p>a. Apply single phase fault at the MILLERT4 (514704) 138 kV Bus</p> <p>b. Clear fault after 16 cycles and trip the following elements:</p> <p>b.1. Trip bus MILLERT4 (514704) 138 kV.</p>                                                                                                                                                                                                                                          |
| FLT9000-3PH | P1             | <p>3 Phase fault on SOONER 7 (514803) 345 kV to G25-SR11 (925115) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.</p> <p>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.</p> <p>b. Clear fault after 6 cycles by tripping the faulted line.</p> <p>Trip generator(s) on the Bus G25-SR11GEN1 (925111) 0.7 kV</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.</p> |
| FLT9002-3PH | P1             | <p>3 Phase fault on SOONER 7 (514803) 345 kV to G16-119-TAP (587804) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.</p> <p>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.</p> <p>b. Clear fault after 6 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.</p>                                                               |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9003-3PH | P1             | 3 Phase fault on G16-119-TAP (587804) 345 kV to SOONER 7 (514803) 345 kV line CKT 1, near G16-119-TAP (587804) 345 kV.<br>a. Apply fault at the G16-119-TAP (587804) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                 |
| FLT9004-3PH | P1             | 3 Phase fault on G16-119-TAP (587804) 345 kV to GEN-2016-119 (587950) 345 kV line CKT 1, near G16-119-TAP (587804) 345 kV.<br>a. Apply fault at the G16-119-TAP (587804) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus G16-119-GEN1 (587953) 0.7 kV<br>Trip generator(s) on the Bus G16-119-GEN2 (587958) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.   |
| FLT9005-3PH | P1             | 3 Phase fault on GEN-2016-119 (587950) 345 kV to G16-119-TAP (587804) 345 kV line CKT 1, near GEN-2016-119 (587950) 345 kV.<br>a. Apply fault at the GEN-2016-119 (587950) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus G16-119-GEN1 (587953) 0.7 kV<br>Trip generator(s) on the Bus G16-119-GEN2 (587958) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9006-3PH | P1             | 3 Phase fault on GEN-2016-119 (587950) 345 kV to GEN2016-119B (587955) 345 kV line CKT 1, near GEN-2016-119 (587950) 345 kV.<br>a. Apply fault at the GEN-2016-119 (587950) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus G16-119-GEN2 (587958) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                             |
| FLT9007-3PH | P1             | 3 Phase fault on GEN2016-119B (587955) 345 kV to GEN-2016-119 (587950) 345 kV line CKT 1, near GEN2016-119B (587955) 345 kV.<br>a. Apply fault at the GEN2016-119B (587955) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus G16-119-GEN2 (587958) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                             |
| FLT9008-3PH | P1             | 3 Phase fault on G16-119-TAP (587804) 345 kV to SPRNGCK7 (514881) 345 kV line CKT 1, near G16-119-TAP (587804) 345 kV.<br>a. Apply fault at the G16-119-TAP (587804) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                 |
| FLT9009-3PH | P1             | 3 Phase fault on SPRNGCK7 (514881) 345 kV to G16-119-TAP (587804) 345 kV line CKT 1, near SPRNGCK7 (514881) 345 kV.<br>a. Apply fault at the SPRNGCK7 (514881) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                       |
| FLT9010-3PH | P1             | 3 Phase fault on SPRNGCK7 (514881) 345 kV to NORTHST7 (514880) 345 kV line CKT 1, near SPRNGCK7 (514881) 345 kV.<br>a. Apply fault at the SPRNGCK7 (514881) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                          |
| FLT9011-3PH | P1             | 3 Phase fault on NORTHST7 (514880) 345 kV to SPRNGCK7 (514881) 345 kV line CKT 1, near NORTHST7 (514880) 345 kV.<br>a. Apply fault at the NORTHST7 (514880) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                          |
| FLT9012-3PH | P1             | 3 Phase fault on SPRNGCK7 (514881) 345 kV to SPGCK1&2 (514882) 13.8 kV XFMR CKT 1, near SPRNGCK7 (514881) 345 kV.<br>a. Apply fault at the SPRNGCK7 (514881) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus SPGCK1&2 (514882) 13.8 kV                                                                                                                                                                                                                                           |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9013-3PH | P1             | 3 Phase fault on SPRNGCK7 (514881) 345 kV to SPGCK3&4 (514883) 13.8 kV XFMR CKT 1, near SPRNGCK7 (514881) 345 kV.<br>a. Apply fault at the SPRNGCK7 (514881) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus SPGCK3&4 (514883) 13.8 kV                                                                                                                                                                                                                                                                                                                                                 |
| FLT9014-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV to RANCHRD7 (515576) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                                |
| FLT9015-3PH | P1             | 3 Phase fault on RANCHRD7 (515576) 345 kV to SOONER 7 (514803) 345 kV line CKT 1, near RANCHRD7 (515576) 345 kV.<br>a. Apply fault at the RANCHRD7 (515576) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                                |
| FLT9016-3PH | P1             | 3 Phase fault on RANCHRD7 (515576) 345 kV to OMCDLEC7 (529200) 345 kV line CKT 1, near RANCHRD7 (515576) 345 kV.<br>a. Apply fault at the RANCHRD7 (515576) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus OMCDLEC1 (529201) 13.8 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                      |
| FLT9017-3PH | P1             | 3 Phase fault on RANCHRD7 (515576) 345 kV to G18-071_TAP (763069) 345 kV line CKT 1, near RANCHRD7 (515576) 345 kV.<br>a. Apply fault at the RANCHRD7 (515576) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus FRNT2G11 (516060) 0.7 kV<br>Trip generator(s) on the Bus FRNT2G21 (516061) 0.7 kV<br>Trip generator(s) on the Bus G18-071-GEN1 (763068) 0.6 kV<br>Trip generator(s) on the Bus G18-072-GEN1 (763079) 0.6 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9018-3PH | P1             | 3 Phase fault on FRNT2WD7 (516066) 345 kV to G18-071_TAP (763069) 345 kV line CKT 1, near FRNT2WD7 (516066) 345 kV.<br>a. Apply fault at the FRNT2WD7 (516066) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus FRNT2G21 (516061) 0.7 kV<br>Trip generator(s) on the Bus FRNT2G11 (516060) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                           |
| FLT9019-3PH | P1             | 3 Phase fault on RANCHRD7 (515576) 345 kV to FRNTWND7 (515688) 345 kV line CKT 1, near RANCHRD7 (515576) 345 kV.<br>a. Apply fault at the RANCHRD7 (515576) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus FRNTWDG1 (515691) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                       |
| FLT9020-3PH | P1             | 3 Phase fault on FRNTWND7 (515688) 345 kV to RANCHRD7 (515576) 345 kV line CKT 1, near FRNTWND7 (515688) 345 kV.<br>a. Apply fault at the FRNTWND7 (515688) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus FRNTWDG1 (515691) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                       |
| FLT9021-3PH | P1             | 3 Phase fault on RANCHRD7 (515576) 345 kV to OPENSKY7 (515621) 345 kV line CKT 1, near RANCHRD7 (515576) 345 kV.<br>a. Apply fault at the RANCHRD7 (515576) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                                |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9022-3PH | P1             | 3 Phase fault on OPENSKY7 (515621) 345 kV to RANCHRD7 (515576) 345 kV line CKT 1, near OPENSKY7 (515621) 345 kV.<br>a. Apply fault at the OPENSKY7 (515621) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                             |
| FLT9023-3PH | P1             | 3 Phase fault on OPENSKY7 (515621) 345 kV to KAYWIND7 (514825) 345 kV line CKT 1, near OPENSKY7 (515621) 345 kV.<br>a. Apply fault at the OPENSKY7 (515621) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus KAYWINDG2 (515652) 0.7 kV<br>Trip generator(s) on the Bus KAYWINDG1 (515651) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                         |
| FLT9024-3PH | P1             | 3 Phase fault on OPENSKY7 (515621) 345 kV to G15052_T (560053) 345 kV line CKT 1, near OPENSKY7 (515621) 345 kV.<br>a. Apply fault at the OPENSKY7 (515621) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                             |
| FLT9025-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV to THUNDER7 (515894) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus THNDRG11 (515886) 0.7 kV<br>Trip generator(s) on the Bus THNDRG21 (515887) 0.7 kV<br>Trip generator(s) on the Bus G21-019-GEN1 (765482) 0.7 kV<br>Trip generator(s) on the Bus G21-018-GEN1 (765472) 0.6 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9026-3PH | P1             | 3 Phase fault on THUNDER7 (515894) 345 kV to SOONER 7 (514803) 345 kV line CKT 1, near THUNDER7 (515894) 345 kV.<br>a. Apply fault at the THUNDER7 (515894) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus THNDRG11 (515886) 0.7 kV<br>Trip generator(s) on the Bus THNDRG21 (515887) 0.7 kV<br>Trip generator(s) on the Bus G21-019-GEN1 (765482) 0.7 kV<br>Trip generator(s) on the Bus G21-018-GEN1 (765472) 0.6 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9027-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV to G15-066T (560056) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                             |
| FLT9028-3PH | P1             | 3 Phase fault on G15-066T (560056) 345 kV to SOONER 7 (514803) 345 kV line CKT 1, near G15-066T (560056) 345 kV.<br>a. Apply fault at the G15-066T (560056) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                             |
| FLT9029-3PH | P1             | 3 Phase fault on G15-066T (560056) 345 kV to CLEVLND7 (512694) 345 kV line CKT 1, near G15-066T (560056) 345 kV.<br>a. Apply fault at the G15-066T (560056) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                             |
| FLT9030-3PH | P1             | 3 Phase fault on CLEVLND7 (512694) 345 kV to G15-066T (560056) 345 kV line CKT 1, near CLEVLND7 (512694) 345 kV.<br>a. Apply fault at the CLEVLND7 (512694) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                                                                                                                                             |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9031-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV to WEKIWA-7 (509755) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.    |
| FLT9032-3PH | P1             | 3 Phase fault on WEKIWA-7 (509755) 345 kV to SOONER 7 (514803) 345 kV line CKT 1, near WEKIWA-7 (509755) 345 kV.<br>a. Apply fault at the WEKIWA-7 (509755) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.    |
| FLT9033-3PH | P1             | 3 Phase fault on WEKIWA-7 (509755) 345 kV to T.NO.--7 (509852) 345 kV line CKT 1, near WEKIWA-7 (509755) 345 kV.<br>a. Apply fault at the WEKIWA-7 (509755) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.    |
| FLT9034-3PH | P1             | 3 Phase fault on T.NO.--7 (509852) 345 kV to WEKIWA-7 (509755) 345 kV line CKT 1, near T.NO.--7 (509852) 345 kV.<br>a. Apply fault at the T.NO.--7 (509852) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.    |
| FLT9035-3PH | P1             | 3 Phase fault on T.NO.--7 (509852) 345 kV to CLEVELND7 (512694) 345 kV line CKT 1, near T.NO.--7 (509852) 345 kV.<br>a. Apply fault at the T.NO.--7 (509852) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.   |
| FLT9036-3PH | P1             | 3 Phase fault on CLEVELND7 (512694) 345 kV to T.NO.--7 (509852) 345 kV line CKT 1, near CLEVELND7 (512694) 345 kV.<br>a. Apply fault at the CLEVELND7 (512694) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9037-3PH | P1             | 3 Phase fault on T.NO.--7 (509852) 345 kV to N.E.S.-7 (510406) 345 kV line CKT 1, near T.NO.--7 (509852) 345 kV.<br>a. Apply fault at the T.NO.--7 (509852) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.    |
| FLT9038-3PH | P1             | 3 Phase fault on T.NO.--7 (509852) 345 kV to G21-047-TAP (765721) 345 kV line CKT 1, near T.NO.--7 (509852) 345 kV.<br>a. Apply fault at the T.NO.--7 (509852) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9039-3PH | P1             | 3 Phase fault on T.NO.--7 (509852) 345 kV / T.NO.2-4 (509895) 138 kV / TNO2-1 (509894) 34.5 kV XFMR CKT 1, near T.NO.--7 (509852) 345 kV.<br>a. Apply fault at the T.NO.--7 (509852) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.                                                                                                                                       |
| FLT9040-3PH | P1             | 3 Phase fault on CLEVELND7 (512694) 345 kV / CLEVELND 4 (512729) 138 kV / CLEVELND1 (512817) 13.8 kV XFMR CKT 1, near CLEVELND7 (512694) 345 kV.<br>a. Apply fault at the CLEVELND7 (512694) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.                                                                                                                               |
| FLT9041-3PH | P1             | 3 Phase fault on 4CLEVLND (300138) 138 kV to 2CLEVLND (300927) 69 kV XFMR CKT 2, near 4CLEVLND (300138) 138 kV.<br>a. Apply fault at the 4CLEVLND (300138) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                                                 |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9042-3PH | P1             | 3 Phase fault on 4CLEVLND (300138) 138 kV to 4SILVCTY (300140) 138 kV line CKT 1, near 4CLEVLND (300138) 138 kV.<br>a. Apply fault at the 4CLEVLND (300138) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.   |
| FLT9043-3PH | P1             | 3 Phase fault on 4SILVCTY (300140) 138 kV to 4CLEVLND (300138) 138 kV line CKT 1, near 4SILVCTY (300140) 138 kV.<br>a. Apply fault at the 4SILVCTY (300140) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.   |
| FLT9044-3PH | P1             | 3 Phase fault on 4CLEVLND (300138) 138 kV to G1105_GEN1 (910514) 20 kV XFMR CKT 1, near 4CLEVLND (300138) 138 kV.<br>a. Apply fault at the 4CLEVLND (300138) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus G1105_GEN1 (910514) 20 kV                                                                                                    |
| FLT9045-3PH | P1             | 3 Phase fault on 4CLEVLND (300138) 138 kV to 4JAVINE (300996) 138 kV line CKT 1, near 4CLEVLND (300138) 138 kV.<br>a. Apply fault at the 4CLEVLND (300138) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9046-3PH | P1             | 3 Phase fault on 4CLEVLND (300138) 138 kV to PAWNSW4 (512749) 138 kV line CKT 1, near 4CLEVLND (300138) 138 kV.<br>a. Apply fault at the 4CLEVLND (300138) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9047-3PH | P1             | 3 Phase fault on WEKIWA-7 (509755) 345 kV to SAPLPRD7 (509870) 345 kV line CKT 1, near WEKIWA-7 (509755) 345 kV.<br>a. Apply fault at the WEKIWA-7 (509755) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.   |
| FLT9048-3PH | P1             | 3 Phase fault on SAPLPRD7 (509870) 345 kV to WEKIWA-7 (509755) 345 kV line CKT 1, near SAPLPRD7 (509870) 345 kV.<br>a. Apply fault at the SAPLPRD7 (509870) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.   |
| FLT9049-3PH | 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.<br>a. Apply fault at the SAPLPRD7 (509870) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.                                                                                                                                    |
| FLT9050-3PH | 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.<br>a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                    |
| FLT9051-3PH | P1             | 3 Phase fault on SAPLPRD4 (509871) 138 kV to DENV_WTAP4 (509896) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV.<br>a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9052-3PH | P1             | 3 Phase fault on SAPLPRD4 (509871) 138 kV to 72ELWOD4 (509888) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV.<br>a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.   |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9053-3PH | P1             | 3 Phase fault on SAPLPRD4 (509871) 138 kV to OAKSWTP4 (509848) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV.<br>a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                     |
| FLT9054-3PH | P1             | 3 Phase fault on SAPLPRD4 (509871) 138 kV to JENKS--4 (509759) 138 kV line CKT 1, near SAPLPRD4 (509871) 138 kV.<br>a. Apply fault at the SAPLPRD4 (509871) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                     |
| FLT9055-3PH | 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.<br>a. Apply fault at the SAPLPRD7 (509870) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                     |
| FLT9056-3PH | P1             | 3 Phase fault on WEKIWA-7 (509755) 345 kV / WEKIWA-4 (509757) 138 kV / WEKIW1-1 (509879) 34.5 kV XFMR CKT 1, near WEKIWA-7 (509755) 345 kV.<br>a. Apply fault at the WEKIWA-7 (509755) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.                                                                                                                                                                                                      |
| FLT9057-3PH | P1             | 3 Phase fault on WEKIWA-7 (509755) 345 kV / WEKIWA-4 (509757) 138 kV / WEKIW1-1 (509879) 34.5 kV XFMR CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                                                                                      |
| FLT9058-3PH | P1             | 3 Phase fault on WEKIWA-4 (509757) 138 kV to GEN-2010-055 (560389) 138 kV line CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Trip generator(s) on the Bus G10-055-GEN1 (560391) 4.2 kV<br>d. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>e. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9059-3PH | P1             | 3 Phase fault on WEKIWA-4 (509757) 138 kV to SILVCTYGR4 (512726) 138 kV line CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                   |
| FLT9060-3PH | P1             | 3 Phase fault on SILVCTYGR4 (512726) 138 kV to WEKIWA-4 (509757) 138 kV line CKT 1, near SILVCTYGR4 (512726) 138 kV.<br>a. Apply fault at the SILVCTYGR4 (512726) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                               |
| FLT9061-3PH | P1             | 3 Phase fault on 4SILVCTY (300140) 138 kV to 2SILVCTY (300943) 69 kV XFMR CKT 2, near 4SILVCTY (300140) 138 kV.<br>a. Apply fault at the 4SILVCTY (300140) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                                                                                                                  |
| FLT9062-3PH | P1             | 3 Phase fault on 4SILVCTY (300140) 138 kV to 4BRISTOW (300137) 138 kV line CKT 1, near 4SILVCTY (300140) 138 kV.<br>a. Apply fault at the 4SILVCTY (300140) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                     |
| FLT9063-3PH | P1             | 3 Phase fault on 4SILVCTY (300140) 138 kV to 4STILWTR (300141) 138 kV line CKT 1, near 4SILVCTY (300140) 138 kV.<br>a. Apply fault at the 4SILVCTY (300140) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                     |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9064-3PH | P1             | 3 Phase fault on WEKIWA-4 (509757) 138 kV to P&P WTP4 (509851) 138 kV line CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9065-3PH | P1             | 3 Phase fault on P&P WTP4 (509851) 138 kV to WEKIWA-4 (509757) 138 kV line CKT 1, near P&P WTP4 (509851) 138 kV.<br>a. Apply fault at the P&P WTP4 (509851) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9066-3PH | P1             | 3 Phase fault on P&P WTP4 (509851) 138 kV to T.NO.--4 (509817) 138 kV line CKT 1, near P&P WTP4 (509851) 138 kV.<br>a. Apply fault at the P&P WTP4 (509851) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9067-3PH | P1             | 3 Phase fault on WEKIWA-4 (509757) 138 kV to KEYSTON4 (505610) 138 kV line CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9068-3PH | P1             | 3 Phase fault on KEYSTON4 (505610) 138 kV to WEKIWA-4 (509757) 138 kV line CKT 1, near KEYSTON4 (505610) 138 kV.<br>a. Apply fault at the KEYSTON4 (505610) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9069-3PH | P1             | 3 Phase fault on KEYSTON4 (505610) 138 kV / KEY1&2 1 (505612) 13.8 kV / KEYSTON5 (505609) 161 kV XFMR CKT 1, near KEYSTON4 (505610) 138 kV.<br>a. Apply fault at the KEYSTON4 (505610) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus KEY1&2 1 (505612) 13.8 kV                                                                         |
| FLT9070-3PH | P1             | 3 Phase fault on KEYSTON4 (505610) 138 kV to 4FISHERTP (300131) 138 kV line CKT 1, near KEYSTON4 (505610) 138 kV.<br>a. Apply fault at the KEYSTON4 (505610) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9071-3PH | P1             | 3 Phase fault on 4SILVCTY (300140) 138 kV to 4FISHERTP (300131) 138 kV line CKT 1, near 4SILVCTY (300140) 138 kV.<br>a. Apply fault at the 4SILVCTY (300140) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9072-3PH | P1             | 3 Phase fault on WEKIWA-4 (509757) 138 kV to SHEFFD-4 (509812) 138 kV line CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9073-3PH | P1             | 3 Phase fault on SHEFFD-4 (509812) 138 kV to WEKIWA-4 (509757) 138 kV line CKT 1, near SHEFFD-4 (509812) 138 kV.<br>a. Apply fault at the SHEFFD-4 (509812) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9074-3PH | P1             | 3 Phase fault on SHEFFD-4 (509812) 138 kV to S.S.---4 (509815) 138 kV line CKT 1, near SHEFFD-4 (509812) 138 kV.<br>a. Apply fault at the SHEFFD-4 (509812) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9075-3PH | P1             | 3 Phase fault on WEKIWA-4 (509757) 138 kV to WED-TAP4 (509823) 138 kV line CKT 1, near WEKIWA-4 (509757) 138 kV.<br>a. Apply fault at the WEKIWA-4 (509757) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9076-3PH | P1             | 3 Phase fault on WED-TAP4 (509823) 138 kV to WEKIWA-4 (509757) 138 kV line CKT 1, near WED-TAP4 (509823) 138 kV.<br>a. Apply fault at the WED-TAP4 (509823) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9077-3PH | P1             | 3 Phase fault on WED-TAP4 (509823) 138 kV to CARSONT4 (509865) 138 kV line CKT 1, near WED-TAP4 (509823) 138 kV.<br>a. Apply fault at the WED-TAP4 (509823) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9078-3PH | P1             | 3 Phase fault on WED-TAP4 (509823) 138 kV to S.S.---4 (509815) 138 kV line CKT 1, near WED-TAP4 (509823) 138 kV.<br>a. Apply fault at the WED-TAP4 (509823) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9079-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV to PINTAIL7 (516010) 345 kV line CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9080-3PH | P1             | 3 Phase fault on PINTAIL7 (516010) 345 kV to SOONER 7 (514803) 345 kV line CKT 1, near PINTAIL7 (516010) 345 kV.<br>a. Apply fault at the PINTAIL7 (516010) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9081-3PH | P1             | 3 Phase fault on PINTAIL7 (516010) 345 kV to KINGWD 7 (516019) 345 kV line CKT Z1, near PINTAIL7 (516010) 345 kV.<br>a. Apply fault at the PINTAIL7 (516010) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus KNGWDG21 (516014) 0.7 kV<br>Trip generator(s) on the Bus KNGWDG11 (516013) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.          |
| FLT9082-3PH | P1             | 3 Phase fault on PINTAIL7 (516010) 345 kV to WOODRNG7 (514715) 345 kV line CKT 1, near PINTAIL7 (516010) 345 kV.<br>a. Apply fault at the PINTAIL7 (516010) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9083-3PH | P1             | 3 Phase fault on WOODRNG7 (514715) 345 kV to PINTAIL7 (516010) 345 kV line CKT 1, near WOODRNG7 (514715) 345 kV.<br>a. Apply fault at the WOODRNG7 (514715) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                             |
| FLT9084-3PH | P1             | 3 Phase fault on WOODRNG7 (514715) 345 kV to GEN-2017-164 (762321) 345 kV line CKT 1, near WOODRNG7 (514715) 345 kV.<br>a. Apply fault at the WOODRNG7 (514715) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus G17-178GEN1 (762345) 0.7 kV<br>Trip generator(s) on the Bus G17-164GEN1 (762324) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9085-3PH | P1             | 3 Phase fault on WOODRNG7 (514715) 345 kV to SKELTON7 (515990) 345 kV line CKT 1, near WOODRNG7 (514715) 345 kV.<br>a. Apply fault at the WOODRNG7 (514715) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus SKELTG11 (515994) 0.7 kV<br>Trip generator(s) on the Bus G16-128-GEN1 (588193) 0.7 kV<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault. |
| FLT9086-3PH | P1             | 3 Phase fault on WOODRNG7 (514715) 345 kV to REDNGTN7 (515875) 345 kV line CKT 1, near WOODRNG7 (514715) 345 kV.<br>a. Apply fault at the WOODRNG7 (514715) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                       |
| FLT9087-3PH | P1             | 3 Phase fault on WOODRNG7 (514715) 345 kV to HUNTERS7 (515476) 345 kV line CKT 1, near WOODRNG7 (514715) 345 kV.<br>a. Apply fault at the WOODRNG7 (514715) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 6 cycles, then trip the line in (b) and remove fault.                                                                                                                       |
| FLT9088-3PH | P1             | 3 Phase fault on WOODRNG7 (514715) 345 kV / WOODRNG4 (514714) 138 kV / WOODRNG1 (515770) 13.8 kV XFMR CKT 1, near WOODRNG7 (514715) 345 kV.<br>a. Apply fault at the WOODRNG7 (514715) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.                                                                                                                                                                                                                                                        |
| FLT9089-3PH | P1             | 3 Phase fault on WOODRNG4 (514714) 138 kV to MARSHL 4 (514733) 138 kV line CKT 1, near WOODRNG4 (514714) 138 kV.<br>a. Apply fault at the WOODRNG4 (514714) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                       |
| FLT9090-3PH | P1             | 3 Phase fault on WOODRNG4 (514714) 138 kV to WAUKOT4 (514711) 138 kV line CKT 1, near WOODRNG4 (514714) 138 kV.<br>a. Apply fault at the WOODRNG4 (514714) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                        |
| FLT9091-3PH | P1             | 3 Phase fault on WOODRNG4 (514714) 138 kV to OTTER 4 (514708) 138 kV line CKT 1, near WOODRNG4 (514714) 138 kV.<br>a. Apply fault at the WOODRNG4 (514714) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                        |
| FLT9092-3PH | P1             | 3 Phase fault on WOODRNG4 (514714) 138 kV to FRMNTAP4 (514709) 138 kV line CKT 1, near WOODRNG4 (514714) 138 kV.<br>a. Apply fault at the WOODRNG4 (514714) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.                                                                                                                       |
| FLT9093-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV to SOONER2G (514806) 20 kV XFMR CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus SOONER2G (514806) 20 kV                                                                                                                                                                                                                            |
| FLT9094-3PH | P1             | 3 Phase fault on SOONER 7 (514803) 345 kV / SOONER 4 (514802) 138 kV / SOONER 1 (515760) 13.8 kV XFMR CKT 1, near SOONER 7 (514803) 345 kV.<br>a. Apply fault at the SOONER 7 (514803) 345 kV Bus.<br>b. Clear fault after 6 cycles by tripping the faulted line.                                                                                                                                                                                                                                                        |
| FLT9095-3PH | P1             | 3 Phase fault on SOONER 4 (514802) 138 kV / SOONER 7 (514803) 345 kV / SOONER 1 (515760) 13.8 kV XFMR CKT 1, near SOONER 4 (514802) 138 kV.<br>a. Apply fault at the SOONER 4 (514802) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                                                                                                                                        |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9096-3PH | P1             | 3 Phase fault on SOONER 4 (514802) 138 kV to SOONER1G (514805) 22 kV XFMR CKT 1, near SOONER 4 (514802) 138 kV.<br>a. Apply fault at the SOONER 4 (514802) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>Trip generator(s) on the Bus SOONER1G (514805) 22 kV                                                                                                      |
| FLT9097-3PH | P1             | 3 Phase fault on SOONER 4 (514802) 138 kV to MORISNT4 (515447) 138 kV line CKT 1, near SOONER 4 (514802) 138 kV.<br>a. Apply fault at the SOONER 4 (514802) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9098-3PH | P1             | 3 Phase fault on MORISNT4 (515447) 138 kV to SOONER 4 (514802) 138 kV line CKT 1, near MORISNT4 (515447) 138 kV.<br>a. Apply fault at the MORISNT4 (515447) 138 kV Bus.<br>b. Clear fault after 7 cycles by taking the bus out.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.        |
| FLT9100-3PH | P1             | 3 Phase fault on STILWTR4 (515011) 138 kV to MORISNT4 (515447) 138 kV line CKT 1, near STILWTR4 (515011) 138 kV.<br>a. Apply fault at the STILWTR4 (515011) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9101-3PH | P1             | 3 Phase fault on STILWTR4 (515011) 138 kV to SPGVLLY4 (515574) 138 kV line CKT 1, near STILWTR4 (515011) 138 kV.<br>a. Apply fault at the STILWTR4 (515011) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9102-3PH | P1             | 3 Phase fault on STILWTR4 (515011) 138 kV to MCELROY4 (515009) 138 kV line CKT 1, near STILWTR4 (515011) 138 kV.<br>a. Apply fault at the STILWTR4 (515011) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9104-3PH | P1             | 3 Phase fault on COWCRK 4 (514706) 138 kV to MORRISN4 (515006) 138 kV line CKT 1, near COWCRK 4 (514706) 138 kV.<br>a. Apply fault at the COWCRK 4 (514706) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9105-3PH | P1             | 3 Phase fault on SOONER 4 (514802) 138 kV to PERRY 4 (514707) 138 kV line CKT 1, near SOONER 4 (514802) 138 kV.<br>a. Apply fault at the SOONER 4 (514802) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |
| FLT9106-3PH | P1             | 3 Phase fault on PERRY 4 (514707) 138 kV to SOONER 4 (514802) 138 kV line CKT 1, near PERRY 4 (514707) 138 kV.<br>a. Apply fault at the PERRY 4 (514707) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9107-3PH | P1             | 3 Phase fault on PERRY 4 (514707) 138 kV to COWCRK 4 (514706) 138 kV line CKT 1, near PERRY 4 (514707) 138 kV.<br>a. Apply fault at the PERRY 4 (514707) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9108-3PH | P1             | 3 Phase fault on COWCRK 4 (514706) 138 kV to PERRY 4 (514707) 138 kV line CKT 1, near COWCRK 4 (514706) 138 kV.<br>a. Apply fault at the COWCRK 4 (514706) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.  |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9109-3PH | P1             | 3 Phase fault on COWCRK 4 (514706) 138 kV / COWCRK 2 (514705) 69 kV / COWCRK 1 (515717) 13.8 kV XFMR CKT 1, near COWCRK 4 (514706) 138 kV.<br>a. Apply fault at the COWCRK 4 (514706) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                   |
| FLT9110-3PH | P1             | 3 Phase fault on COWCRK 2 (514705) 69 kV / COWCRK 4 (514706) 138 kV / COWCRK 1 (515717) 13.8 kV XFMR CKT 1, near COWCRK 2 (514705) 69 kV.<br>a. Apply fault at the COWCRK 2 (514705) 69 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                     |
| FLT9111-3PH | P1             | 3 Phase fault on SOONER 4 (514802) 138 kV to SNRPMPT4 (514798) 138 kV line CKT 1, near SOONER 4 (514802) 138 kV.<br>a. Apply fault at the SOONER 4 (514802) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9112-3PH | P1             | 3 Phase fault on SNRPMPT4 (514798) 138 kV to SOONER 4 (514802) 138 kV line CKT 1, near SNRPMPT4 (514798) 138 kV.<br>a. Apply fault at the SNRPMPT4 (514798) 138 kV Bus.<br>b. Clear fault after 7 cycles by taking the bus out.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.        |
| FLT9114-3PH | P1             | 3 Phase fault on OSAGE 4 (514743) 138 kV to SNRPMPT4 (514798) 138 kV line CKT 1, near OSAGE 4 (514743) 138 kV.<br>a. Apply fault at the OSAGE 4 (514743) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9115-3PH | P1             | 3 Phase fault on OSAGE 4 (514743) 138 kV to MARLNDT4 (514770) 138 kV line CKT 1, near OSAGE 4 (514743) 138 kV.<br>a. Apply fault at the OSAGE 4 (514743) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9116-3PH | P1             | 3 Phase fault on OSAGE 4 (514743) 138 kV / OSAGE 2 (514742) 69 kV / OSAGE 31 (515744) 13.2 kV XFMR CKT 1, near OSAGE 4 (514743) 138 kV.<br>a. Apply fault at the OSAGE 4 (514743) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                       |
| FLT9117-3PH | P1             | 3 Phase fault on OSAGE 2 (514742) 69 kV / OSAGE 4 (514743) 138 kV / OSAGE 31 (515744) 13.2 kV XFMR CKT 1, near OSAGE 2 (514742) 69 kV.<br>a. Apply fault at the OSAGE 2 (514742) 69 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.                                                                                                                                         |
| FLT9118-3PH | P1             | 3 Phase fault on OSAGE 4 (514743) 138 kV to WEBBTAP4 (510376) 138 kV line CKT 1, near OSAGE 4 (514743) 138 kV.<br>a. Apply fault at the OSAGE 4 (514743) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9119-3PH | P1             | 3 Phase fault on OSAGE 4 (514743) 138 kV to STDBEAR4 (514758) 138 kV line CKT 1, near OSAGE 4 (514743) 138 kV.<br>a. Apply fault at the OSAGE 4 (514743) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9120-3PH | P1             | 3 Phase fault on OSAGE 4 (514743) 138 kV to WHEAGLE4 (514761) 138 kV line CKT 1, near OSAGE 4 (514743) 138 kV.<br>a. Apply fault at the OSAGE 4 (514743) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.    |
| FLT9121-3PH | P1             | 3 Phase fault on DMNCRKT4 (515412) 138 kV to WHEAGLE4 (514761) 138 kV line CKT 1, near DMNCRKT4 (515412) 138 kV.<br>a. Apply fault at the DMNCRKT4 (515412) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |

Table 6-2 Continued

| Fault ID    | Planning Event | Fault Descriptions                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLT9123-3PH | P1             | 3 Phase fault on DMNCRKT4 (515412) 138 kV to MILLERT4 (514704) 138 kV line CKT 1, near DMNCRKT4 (515412) 138 kV.<br>a. Apply fault at the DMNCRKT4 (515412) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9125-3PH | P1             | 3 Phase fault on SOONER 4 (514802) 138 kV to MILLERT4 (514704) 138 kV line CKT 1, near SOONER 4 (514802) 138 kV.<br>a. Apply fault at the SOONER 4 (514802) 138 kV Bus.<br>b. Clear fault after 7 cycles by tripping the faulted line.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault. |
| FLT9126-3PH | P1             | 3 Phase fault on MILLERT4 (514704) 138 kV to SOONER 4 (514802) 138 kV line CKT 1, near MILLERT4 (514704) 138 kV.<br>a. Apply fault at the MILLERT4 (514704) 138 kV Bus.<br>b. Clear fault after 7 cycles by taking the bus out.<br>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.<br>d. Leave Fault on for 7 cycles, then trip the line in (b) and remove fault.        |

### 6.3 Scenario 1 Results

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

Table 6-3: Scenario 1 Dynamic Stability Results (EGF = 0 MW, SGF = 122.32 MW)

| Fault ID   | 25SP              |                  |        | 25WP              |                  |        |
|------------|-------------------|------------------|--------|-------------------|------------------|--------|
|            | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | Stable |
| FLT1000-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1001-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1002-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1003-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1004-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1005-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| 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 |

Table 6-3 continued

| Fault ID    | 25SP              |                  |        | 25WP              |                  |        |
|-------------|-------------------|------------------|--------|-------------------|------------------|--------|
|             | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | 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 |
| FLT9000-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9002-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9003-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9004-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9005-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9006-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9007-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9008-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9009-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9010-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9011-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9012-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9013-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9014-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9015-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9016-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9017-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9018-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9019-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9020-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9021-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9022-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9023-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9024-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9025-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9026-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9027-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9028-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| 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 |

Table 6-3 continued

| Fault ID    | 25SP              |                  |        | 25WP              |                  |        |
|-------------|-------------------|------------------|--------|-------------------|------------------|--------|
|             | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | Stable |
| FLT9034-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9035-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9036-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9037-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9038-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9039-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9040-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9041-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9042-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9043-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9044-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9045-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9046-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9047-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9048-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9049-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9050-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9051-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9052-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9053-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9054-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9055-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9056-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9057-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9058-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9059-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9060-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9061-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9062-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9063-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9064-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9065-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9066-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9067-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9068-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9069-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9070-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9071-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9072-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |

Table 6-3 continued

| Fault ID    | 25SP              |                  |        | 25WP              |                  |        |
|-------------|-------------------|------------------|--------|-------------------|------------------|--------|
|             | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | Stable |
| FLT9073-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9074-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9075-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9076-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9077-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9078-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9079-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9080-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9081-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9082-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9083-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9084-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9085-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9086-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9087-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9088-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9089-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9090-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9091-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9092-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9093-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9094-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9095-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9096-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9097-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9098-3PH | 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 |
| 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 |
| FLT9114-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |

Table 6-3 continued

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

The results of the Scenario 1 dynamic stability showed several existing base case issues that were found in both the original DISIS-2022-001-1 model and the model with GEN-2025-SR11 included. These issues were not attributed to the GEN-2025-SR11 surplus request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2025-SR11 surplus request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

#### 6.4 Scenario 2 Results

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

Table 6-4: Scenario 2 Dynamic Stability Results (EGF = 541 MW, SGF = 122.32 MW)

| Fault ID   | 25SP              |                  |        | 25WP              |                  |        |
|------------|-------------------|------------------|--------|-------------------|------------------|--------|
|            | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | Stable |
| FLT1000-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1001-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1002-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1003-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1004-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT1005-SB | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| 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 |

Table 6-4 continued

| Fault ID    | 25SP              |                  |        | 25WP              |                  |        |
|-------------|-------------------|------------------|--------|-------------------|------------------|--------|
|             | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | 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 |
| FLT9000-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9002-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9003-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9004-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9005-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9006-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9007-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9008-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9009-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9010-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9011-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9012-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9013-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9014-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9015-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9016-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9017-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9018-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9019-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9020-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9021-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9022-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9023-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9024-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9025-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9026-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |

Table 6-4 continued

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

Table 6-4 continued

| Fault ID    | 25SP              |                  |        | 25WP              |                  |        |
|-------------|-------------------|------------------|--------|-------------------|------------------|--------|
|             | Voltage Violation | Voltage Recovery | Stable | Voltage Violation | Voltage Recovery | Stable |
| FLT9066-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9067-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9068-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9069-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9070-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9071-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9072-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9073-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9074-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9075-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9076-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9077-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9078-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9079-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9080-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9081-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9082-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9083-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9084-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9085-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9086-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9087-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9088-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9089-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9090-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9091-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9092-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9093-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9094-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9095-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9096-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9097-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9098-3PH | 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 |
| FLT9104-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9105-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |
| FLT9106-3PH | Pass              | Pass             | Stable | Pass              | Pass             | Stable |

Table 6-4 continued

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

The results of the Scenario 2 dynamic stability showed several existing base case issues that were found in both the original DISIS-2022-001-1 model and the model with GEN-2025-SR11 included. These issues were not attributed to the GEN-2025-SR11 surplus request and detailed in Appendix C.

There were no damping or voltage recovery violations attributed to the GEN-2025-SR11 surplus request observed during the simulated faults. Additionally, the project was found to stay connected during the contingencies that were studied and, therefore, will meet the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

---

## 7.0 Necessary Interconnection Facilities and Network Upgrades

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

### 7.1 Interconnection Facilities

This study did not identify any additional Interconnection Facilities required by the addition of the SGF.

### 7.2 Network Upgrades

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

## 8.0 Surplus Interconnection Service Determination and Requirements

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

### 8.1 Surplus Service Determination

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

SPP has determined that GEN-2025-SR11 may utilize the requested 112 MW of Surplus Interconnection Service being made available by Sooner 345 kV Unit 2.

### 8.2 Surplus Service Requirements

The amount of Surplus Interconnection Service available to be used is limited by the amount of Interconnection Service granted to the existing interconnection customer at the same POI. The combined generation from both the SGF and the EGF may not exceed 632 MW at the POI, which is the total Interconnection Service amount currently granted to the EGF.

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

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