



Modification Request Impact Study for Generator Interconnection Requests

GEN-2011-022

April 2015
Generator Interconnection



Executive Summary

<OMITTED TEXT> (Customer) has requested a modification to Generation Interconnection Request GEN 2011-022 in accordance with Section 4.4 of the Generator Interconnection Procedures (GIP) of the Southwest Power Pool Open Access Transmission Tariff (OATT). Customer has requested to drop its request for Network Resource Interconnection Service (NRIS) and to be designated as Energy Resource Interconnection Service (ERIS) only. SPP has undertaken this Modification Request Impact Study (MRIS) to determine the impacts on other Interconnection Requests for accommodating the modification request.

The results of the Initial Analysis and the Powerflow Analysis indicate that Interconnection Customer request to drop NRIS to be a Material Modification. The Interconnection Customer has requested for SPP to determine if NRIS can be dropped under the condition that the Interconnection Customer continues to agree to fund the FPL-Woodward 138kV line upgrade in accordance with its GIA. The results of this analysis indicate that if the Interconnection Customer continues to agree to fund its portion of the FPL-Woodward 138kV line upgrade, then its request to drop NRIS will not be considered a Material Modification.

Stability Analysis was not performed for this study.

Nothing in this study should be construed as a guarantee of transmission service. If the customer wishes to sell power from the facility, a separate request for transmission service shall be requested on Southwest Power Pool's OASIS by the Customer.

This study fulfills SPP's requirements in accordance with GIP 4.4.3 to evaluate the Customer's modification. In accordance, with GIP 4.4.2, the Customer may choose to withdraw its request for modification.

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Introduction

<OMITTED TEXT> (Customer) has requested a modification to Generation Interconnection Request, GEN 2011-022, in accordance with Section 4.4 of the Generator Interconnection Procedures (GIP) of the Southwest Power Pool Open Access Transmission Tariff (OATT). The Interconnection Customer has requested to drop its request for Network Resource Interconnection Service (NRIS) and to be designated as Energy Resource Interconnection Service (ERIS) only. SPP has undertaken this Modification Request Impact Study (MRIS) to determine the impacts to the transmission system of accommodating the modification request.

In the latest iteration of DISIS-2011-001-6 posted in July 2014, GEN-2011-022 was assigned the following upgrades for NRIS.

- FPL-Woodward 138kV line upgrade
- Tuco-New Deal Stanton 345/115kV projects
- Wolfforth Interchange 230/115kV transformer replacement

The MRIS will determine if these upgrades are still required for equally queued or lower queued Interconnection Customers if GEN-2011-022 drops its request for NRIS. If the equally or lower queued Interconnection Requests have their costs go up or are determined to need the upgrades, the request will be considered a Material Modification.

Purpose

The purpose of this Modification Request Impact Study (MRIS) is to evaluate the impact of the proposed modification to other interconnection customers. The MRIS considers the Base Case as well as all Generating Facilities (and with respect to (b) below, any identified Network Upgrades associated with such higher queued interconnection) that, on the date the MRIS is commenced:

- a) are directly interconnected to the Transmission System;
- b) are interconnected to Affected Systems and may have an impact on the Interconnection Request;
- c) have a pending higher queued Interconnection Request to interconnect to the Transmission System; or
- d) have no Queue Position but have executed an LGIA or requested that an unexecuted LGIA be filed with FERC.
- e) Lower queued interconnection customers that may be impacted.

Nothing in this System Impact Study constitutes a request for transmission service or confers upon the Interconnection Customer any right to receive transmission service

Initial Analysis

The Initial Analysis consists of an evaluation of whether the Network Upgrades assigned to GEN-2011-022 are used for other Interconnection Requests.

FPL-Woodward 138kV – Two other Interconnection Requests from DISIS-2011-001 were cost allocated this Network Upgrade. These requests were studied in Group 1 of DISIS-2011-001. A powerflow analysis for DISIS-2011-001 Group 1 NRIS will be performed to determine if this upgrade is still required for each of those Interconnection Requests.

Additionally, it was observed that GEN-2014-026 (Interconnection Queue Position #IFS-2014-002-06) requires the FPL-Woodward 138kV line for Energy Resource Interconnection Service. An analysis will also be performed for ERIS to determine if the upgrade is required for GEN-2014-026.

Tuco-New Deal- Stanton 345/115kV – No lower queued Interconnection Request were observed to require this Network Upgrade.

Wolfforth 230/115kV – No lower queued Interconnection Request were observed to require this Network Upgrade.

Power Flow Analysis

A power flow analysis was conducted for the Interconnection Customer's facility using a modified version of the 2015 summer and 2015 winter seasonal models. The output of the Interconnection Customer's facility was offset in the model by a reduction in output of existing online SPP generation. This method allows the request to be studied as an Energy Resource (ERIS) Interconnection Request.

The ACCC function of PSS/E was used to simulate single contingencies in portions of or all of the control area of SPS, OG&E, and other control areas within SPP and the resulting data analyzed. This satisfies the "more probable" contingency testing criteria mandated by NERC and the SPP criteria.

The analysis consisted of performing the power flow analysis for all remaining NRIS interconnection requests in Woodward and Hitchland groups for DISIS-2011-001, DISIS-2011-002, DISIS-2012-001, and DISIS-2012-002, DISIS-2013-001, DISIS-2013-002, DISIS-2014-001 and DISIS-2014-002. These NRIS requests included in the analysis are listed in Table 1 below.

In addition, the DISIS-2014-002-1 ERIS models were analyzed to determine if any of these upgrades are required to mitigate ERIS constraints in DISIS-2014-002-1.

The Interconnection Requests analyzed are listed in Table 1 and Table 2.

Table 1: NRIS Request included in the Analysis

Request	MW	Point of Interconnection
GEN-2011-019	299	Woodward 345kV
GEN-2011-020	299	Woodward 345kV
GEN-2011-051	105	Woodward 345kV

Table 2: ERIS Request included in the Analysis

Request
All Interconnection Requests in Woodward and Hitchland groups (Group 1 and Group 2) through DISIS-2014-002

Results

ACCC analysis shows that FPL – Woodward 138kV is still needed for Group 1 NRIS generators GEN 2011-019 and GEN 2011-020 and for Group 2 ERIS generator GEN 2014-026. The results can be seen in Table 3.

Table 3: Generator Impacts on FPL Switch -Woodward

Source	Season	Group	Constraint	TDF	TC Loading	Contingency
GEN-2011-019	15G	01NR	FPL SWITCH - WOODWARD 138KV CKT 1	0.1327	174.34	NORTHWEST - TATONGA7 345.00 345KV CKT 1
GEN-2011-020	15G	01NR	FPL SWITCH - WOODWARD 138KV CKT 1	0.1327	174.34	NORTHWEST - TATONGA7 345.00 345KV CKT 1
GEN-2014-026	15G	02ALL	FPL SWITCH - WOODWARD 138KV CKT 1	0.0577	195.82	BASE CASE

Determination

The results of the Initial Analysis and the Powerflow Analysis indicate that Interconnection Customer request to drop NRIS to be a Material Modification. The Interconnection Customer has requested for SPP to determine if NRIS can be dropped under the condition that the Interconnection Customer continues to agree to fund the FPL-Woodward 138kV per its GIA. The results of this analysis indicate that if the Interconnection Customer continues to agree to fund its portion of the FPL-Woodward 138kV line, then its request to drop NRIS will not be considered a Material Modification.

Stability Analysis

Stability Analysis was not performed for this study.

Conclusion

<OMITTED TEXT> (Customer) has requested a modification to Generation Interconnection Request GEN-2011-022, in accordance with Section 4.4 of the Generator Interconnection Procedures (GIP) of the Southwest Power Pool Open Access Transmission Tariff (OATT). Customer has requested to withdraw its request to be studied for NRIS and to only be studied for ERIS.

The results of the Initial Analysis and the Powerflow Analysis indicate that Interconnection Customer request to drop NRIS to be a Material Modification. The Interconnection Customer has requested for SPP to determine if NRIS can be dropped under the condition that the Interconnection Customer continues to agree to fund the FPL-Woodward 138kV per its GIA. The results of this analysis indicate that if the Interconnection Customer continues to agree to fund its portion of the FPL-Woodward 138kV line, then its request to drop NRIS will not be considered a Material Modification.

Stability Analysis was not performed for this study.

This study does not include any constraints associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer requests transmission service through Southwest Power Pool's OASIS. It should be noted that the models used for simulation do not contain all SPP transmission service.

This study fulfills SPP's requirements in accordance with GIP 4.4.3 to evaluate the Customer's modification. In accordance, with GIP 4.4.2, the Customer may choose to withdraw its request for modification