LGE-GIS-2017-005
Generation Interconnection Request
Feasibility Study Report
Executive Summary

Project #492

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Table of Contents

1. Executive Summary

TranServ International, Inc. (TranServ), as an Independent Transmission Organization (ITO) of Louisville Gas & Electric/Kentucky Utilities (LG&E and KU), has received the following Generation Interconnection (GI) Request to provide Energy Resource Interconnection Service (ERIS) to the LG&E and KU Transmission Network. After the scoping meeting, the customer decided to proceed with a Feasibility Study (FeS). TranServ has performed the GI FeS to evaluate the impact of the addition of the new solar generation on the LG&E and KU Transmission Network. TranServ has evaluated the GI Request listed in Table 1-1. This report contains the FeS results for Generation Interconnection Request LGE-GIS-2017-005.

Table 1-1
Request Details

Queue Position	Queue Date	County	State	Max Output (MW) S/W	Point of Inter-connection	In-Service Date	Inter-connection Service Type	Generator Type
LGE-GIS-2017-005	08/04/2017	Harrison	KY	10/10	Cynthiana SW to Renaker 69 kV	10/01/2018	ERIS	Solar

As shown in Table 1-1, LGE-GIS-2017-005 request seeks to interconnect a solar generator by tapping into the existing Cynthiana Switching Station to Renaker 69 kV line. The customer may choose to proceed with the GI System Impact Study (SIS) on completion of the Feasibility Study (FeS) and their review of the results. The in-service date of the LGE-GIS-2017-005 request is October 01, 2019. A one-line diagram of the proposed interconnection is given in Figure 1-1. This FeS analyzed the impact of this addition, located in Harrison County, in accordance with the LG&E and KU Large Generator Interconnection Study Criteria and LG&E and KU Planning Guidelines. Both of these documents are posted on the LG&E and KU OASIS. An Ad Hoc Study Group was not involved in the FeS study process as is consistent with the FeS study procedure given in the LG&E and KU Large Generator Interconnection Study Criteria document.

The GI request, LGE-GIS-2017-005, was sourced from the new solar generation interconnected tapping into the existing Cynthiana Switching Station to Renaker 69 kV line and then was sunk beyond the LG&E and KU BA equally in four directions (North, South, East, and West). TranServ performed this FeS to determine the impact of this GI on the transmission network. This analysis considered the subject request's impact on system intact (P0 Events), single-event (P1, P2 EHV, and P4 EHV Events) and selected double-event (P3 Events) contingency conditions.

This study included the effect of all earlier queued LG&E and KU GI requests. This study also included the effect of all confirmed Transmission Service Requests (TSRs) except confirmed TSRs which are associated with lower queued GI requests. Representation of these GI and TSR requests may also necessitate representation of associated planned transmission improvements. Thus, it is important to realize that if the planned improvements do not come to fruition, the subject request's impact on the transmission system as identified by this study may become invalid and a revised study may become necessary before GI service can be granted.

1.1. Steady-State Analysis Results

No thermal or voltage constraints due to the subject request were found in the Steady-State Analysis.

1.2. Flowgate Analysis Results

No non-LG&E and KU flowgate constraints to providing the requested service were found.

1.3. Short Circuit Analysis Results

The Short Circuit Analysis results indicate that the transmission system has adequate interrupting capabilities to accommodate the addition of the 10 MW Solar generator.

1.4. Stability Analysis Results

Since this is a FeS, stability analysis was not a part of the scope of the study. If the customer decides to proceed with the SIS, a stability analysis will be a part of that SIS.

1.5. Conclusion

No thermal, voltage, flowgate, or short circuit constraints due to the subject request were found.

LG&E and KU has provided a good faith estimate of interconnection costs. A summary of LG&E and KU's non-binding planning level cost estimate is given below:

- Generator Owner Facilities: Customer to Determine
- Transmission Interconnection Facilities: $1,602,500 USD.
- Network Facilities: $1,557,500 USD.
- Distribution Facilities: $0 USD.

LG&E and KU's good faith estimate of the total cost for all facilities is **$3,160,000 USD**. A detailed non-binding planning level cost estimate is given in Section 6 of the Full Report.

The full report is available on the LG&E and KU Critical Energy Infrastructure Information (CEII) File Transfer Protocol (FTP) site. See study report title posting on OASIS for instructions for accessing LG&E and KU CEII FTP site. The LG&E and KU secure CEII FTP site URL is: https://eft.lge-ku.com/EFTClient/Account/Login.htm.