



Lubbock Load Integration Study

RPG Meeting

December 15, 2015

Introduction

- ❑ Lubbock Power & Light (LP&L) is considering connecting to the ERCOT Grid as early as 2019 (<http://www.lpandl.com/energy-services/2019/>)
- ❑ LP&L performed their own study & identified preferred options
- ❑ PUCT instructed ERCOT to study the integration of LP&L into the ERCOT Grid
- ❑ Objective to identify transmission facilities that will be required to integrate the LP&L load and transmission network into the ERCOT Grid and satisfy ERCOT and NERC Transmission Planning reliability standards in the most cost effective way possible
- ❑ ERCOT study will be informed by but not necessarily limited to preferred options identified in LP&L study

Assumptions

- ❑ ERCOT will study expected 2021 Summer Peak Conditions
- ❑ Study region will include LP&L, Panhandle, and West, Far-West and North Weather Zones
- ❑ LP&L load integration study will take into account the ERCOT N-1-1 contingency and other N-1 maintenance outage conditions

Study Case

Steady-State

- Constructed from the final 15RTP 2021 Summer Peak Case developed for WFW
- Transmission Projects expected to be in-service within the study region by 2021 at the time of the study will be added to the case
- Generator additions that meet Planning Guide Section 6.9 criteria at time of study will be added to the case
- North Weather Zone loads will be set to the higher of the SSWG or the ERCOT 90TH Percentile forecast per the 2015 RTP scope
- Load outside of North, West and Far-West Weather Zones will be scaled down as necessary to balance any load-generator imbalance

Study Case (cont.)

Dynamics

- Constructed from most recently approved DWG 2021 Summer Peak case (Base case approved in May 2015) and DWG 2018 High Wind Low Load (Base case approved in September 2015)

Production Cost

- Final 2021 UPLAN model from 2015 RTP will be used for economic analysis

LP&L model data requested

- LP&L will provide their network data (steady state, dynamics & economics) and LP&L contingencies

Contingencies and Criteria

Steady-State Reliability Analysis

Contingencies

TPL-001-4 and ERCOT Planning Criteria

(http://www.ercot.com/content/wcm/current_guides/53526/04_050115.doc):

P0

P1 and P7

P3: G-1 + P1*/P7 (G-1 worst case only)

P6: X-1 + P1/P7 (X-1 is 345 kV Auto outages)

P2, P4, and P5

Thermal and voltage Criteria:

Will be consistent with 2015 RTP assumptions

Study Procedure

Step 1 Steady-State Analysis

- Iterate on these steps until no unresolved violations are present:
 - Model potential interconnection options
 - Set SCOPF dispatch (wind limited per RTP Guides)
 - Run all contingencies to identify unresolved reliability violations

Step 2 Dynamic Stability Analysis

- Test short-listed options for compliance with Dynamics requirements of NERC TPL and ERCOT Planning Criteria
- Perform SSR Frequency Scan on the short-listed options
- Determine Panhandle Transfer Limits for short-listed options

Study Procedure (cont.)

❑ **Step 3 Economic Analysis**

- ❑ Compare economics for short-listed options based on project capital cost and production costs (lowest net costs)

❑ **Step 4 Sensitivity**

- ❑ Additional analysis to test future LP&L load growth/integration
- ❑ Cost-Benefit analysis for the recommended options accounting for avoided costs for future upgrades deemed not required by virtue of the LP&L integration, if any

Tentative Schedule

- ❑ Dec. 2016
 - ❑ Stakeholders comment on the LP&L scope document
 - Please send any comment to ERCOT at ggnanam@ercot.com before Dec. 25, 2015
 - ❑ ERCOT/LP&L study cases preparation

- ❑ January – Feb. 2016
 - ❑ Conduct reliability analysis and evaluate LP&L integration options

- ❑ March – April 2016
 - ❑ Conduct economic analysis and other sensitivity studies

- ❑ May 2016
 - ❑ Prepare final report for PUCT and present to RPG

- **Regular updates will be provided at monthly RPG meetings**

Questions

