SPP-ERCOT Coordinated Rayburn Country Electric Cooperative ERCOT Integration Study Scope

1. Overview

In 2016, Rayburn Country Electric Cooperative (RCEC) announced their intention to move the remainder of their load from the Southwest Power Pool (SPP) grid into the Electric Reliability Council of Texas (ERCOT) grid. At the request of the Public Utility Commission of Texas (PUCT), ERCOT conducted an integration study and filed it with the PUCT in June, 2017. This study was narrowly focused on identifying the best and most cost effective way to integrate the RCEC system into the ERCOT grid. The study concluded that "Option 2" was the preferred integration alternative should the remainder of the RCEC system move to ERCOT.

SPP and ERCOT will perform separate, but coordinated, studies to analyze the impacts of RCEC's load transition. The studies will be performed such that the assumptions and methodologies used by SPP and ERCOT will be as consistent as reasonably possible, though it is understood that market and regulatory differences may prevent absolute consistency.

2. Assumptions

The following transmission topology assumptions shall be used:

2.1. SPP will use the following base cases as the basis for its analysis:
   a. 2021 summer peak scenario 0 model from the 2017 Integrated Transmission Planning-Near Term (ITPNT) study
   b. 2020 and 2025 production cost models from 2017 Integrated Transmission Planning-10 Year Assessment (ITP10) reference case

2.2. ERCOT will use the following base cases as the basis for its analysis:
   a. The latest NNC 2022 summer peak case from the 2017 Regional Transmission Plan (RTP) will be used for reliability analysis.
   b. The latest 2026 UPLAN model from the 2016 Long-Term System Assessment (LTSA) Current Trends scenario will be used for long-term production cost modeling and the latest 2020 UPLAN model from the 2017 Regional Transmission Plan (RTP) will be used for the near-term production cost modeling. The 2026 UPLAN model will be modified to create a 2025 Scenario and the 2020 UPLAN model with be used to create a 2020 Scenario as described in sections below.

2.3. SPP and ERCOT will use the same representation of the RCEC system as provided by RCEC.

The following load assumptions shall be used:

2.4. SPP will use the following load assumptions:
   a. 2021 summer peak load from 2017 ITPNT cases

2.5. ERCOT will use the following load assumptions:

a. The load assumptions from the latest NNC 2022 summer peak case from the 2017 RTP will be used for reliability analysis. The East Weather Zone load will be scaled up to its forecasted 2022 peak for this analysis.
b. The latest 2026 UPLAN model from the 2016 Long-Term System Assessment (LTSA) Current Trends scenario will be used for long-term production cost modeling with loads scaled down per 2016 LTSA Scope to match 2016 LTSA forecast for 2025. The load forecast and profile are based on 2006 weather year pattern. The latest 2020 UPLAN model from the 2017 RTP will be used for the near-term production cost modeling. The load forecast and profile are based on 2009 weather year pattern.

2.6. SPP and ERCOT will use the same representation of the RCEC load as provided by RCEC. The hourly load profile will be the same for SPP and ERCOT production cost analyses.

The following generation assumptions shall be used:

2.7. SPP will use the following generation assumptions:
a. The reliability analyses will use generation assumptions per Integrated Transmission Planning Manual Section 3.3.1.2.
b. The production cost analyses will use generation assumptions per ITP10 reference case (Future 3).
c. Wind and solar profiles will be used in the production cost analysis.

2.8. ERCOT will use the following generation assumptions:
a. The 2022 reliability analyses will include all existing generation plus planned generation meeting the conditions of Planning Guide Section 6.9. Known generation retirements will be turned off in the models.
b. The 2025 production cost analyses will use generation assumptions from the Current Trends scenario based on the 2016 LTSA Scope. And, the 2020 production cost analysis will use generation assumptions per the 2017 RTP Scope.
c. Wind and solar profiles will be used in the production cost analysis. The profiles will be based on 2006 and 2009 weather year pattern for the years 2025 and 2020 respectively.

2.9. ERCOT and SPP will use consistent natural gas price forecast

2.10. Wind and solar will be modeled as $0 marginal cost in the production cost analysis.

2.11. In the production cost analysis:
a. SPP will perform the analysis with and without generation forced outages.
b. ERCOT will perform the analysis without generation forced outages.

2.12. For reliability analysis, the North and East DC tie import/ export assumptions will be consistent. ERCOT and SPP will review the production cost results with respect to North and East DC tie imports/ exports for reasonability and consistency.

The following assumptions shall be used by SPP in regards to the Lubbock Power & Light (LP&L) system addition into their cases:

2.13. SPP will use the transmission topology for LP&L as used for the LP&L Exit Study Comprehensive Assessment for the scenario in which LP&L does not transfer a portion of its load to ERCOT.

2.14. For the reliability analysis, SPP will serve LP&L load as served in the LP&L Exit Study Comprehensive Assessment.

2.15. For the economic analysis, SPP will serve the LP&L load using the "SPP Fleet Option" as noted in the LP&L Exit Study Comprehensive Assessment.

3. Scope

The following are the analyses to be performed:

3.1. SPP reliability analysis

a. SPP will perform a reliability analysis to determine what transmission improvements will be needed or deferred as a consequence of the RCEC system moving to ERCOT. The analysis may include a net present value (NPV) analysis to determine the cost/ benefit of accelerating/ deferring a project. For consistency, SPP and ERCOT will use the same inflation rate (2.5%) and discount rates (8.0%) for NPV calculations.
b. The reliability analysis will be performed for 2021 summer peak conditions.

3.2. SPP and ERCOT avoided or new projects analysis

a. SPP will investigate projects in the area that were approved and have not yet gone into service to determine if those projects are no longer needed if the RCEC system moves to ERCOT. SPP will report the list of projects along with their estimated cost.
b. SPP will assess the need of any new transmission as a result of the RCEC system moving to ERCOT. SPP will report the list of potential projects along with their estimated cost.
c. ERCOT will take into account the results of the RCEC Integration Study and the 2017 RTP and 2016 LTSA to determine if there are any avoided or new transmission improvement projects as a result of the RCEC system moving to ERCOT. ERCOT will report the list of projects along with their estimated cost.
d. The above analyses may include a net present value (NPV) analysis to determine the cost/ benefit of accelerating/ deferring a project. For consistency, SPP and ERCOT will use the same inflation rate (2.5%) and discount rates (8.0%) for NPV calculations.

3.3. SPP and ERCOT production cost analysis

a. SPP will perform a production cost analysis with and without the RCEC system (taking into account the results from 3.1). SPP will report the regional production cost difference and the adjusted production cost differences.
b. ERCOT will perform a production cost analysis without and with the RCEC system (taking into account the results from the RCEC Integration Study and 3.2). ERCOT will report the production cost difference.
c. The production cost analysis will be performed for years 2020 and 2025 with loads and generation modeled as described in previous sections of this document. The 2025

transmission topology will remain the same as the topology in the 2016 LTSA Current Trends 2026 UPLAN case.

d. SPP and ERCOT will report total production cost difference as a result of the RCEC system moving to ERCOT.
    i. SPP and ERCOT will report total adjusted production cost impact for Texas

4. Deliverable

SPP and ERCOT will file a joint report to the PUCT by March 2018.