LCRA TSC Hays Energy – Kendall Corridor Transmission Line Rehabilitation Projects – ERCOT Independent Review Scope

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Introduction

- **LCRA TSC submitted the Hays Energy – Kendall Corridor Transmission Line Rehabilitation Projects for Regional Planning Group review and comment in March 2022. The projects are submitted as Tier 3 with the estimated cost of $399.9 million**
  - The Hays Energy – Kendall Corridor Transmission Line Rehabilitation Projects consist of
    - Hays Energy – Bergheim – Kendall 61.4-mile 345-kV circuits
    - Kendall – Henne 62-mile 138-kV circuits with nine intermediate load-serving substations
  - Addresses the need to rehabilitate aging/obsolete conductor
  - Proposed project completion dates range from May 2024 to May 2025

- **ERCOT determined to categorize this as a Tier 1 project**
  - It is more appropriately considered to a single project
  - The estimated costs of these projects exceed $100 million

- **This submittal is currently under ERCOT independent review**

Study Area


Existing 345-kV Substation
Existing 345-kV Line
Existing 138-kV Substation
Existing 138-kV Line
Existing 69-kV Line
Kendall
To Horse Hollow Generation Tie
To Big Hill
Welfare
To Austrop and Hutto
Esperanza
Fair Oaks
Bergheim
Boerne
Antler
Highway 46
River Oaks
Hays Energy
Zorn
Henne
Fair Oaks Ranch
Comal
To Cagnon
Clear Springs
Hill Country
Marion
Skyline
Kendall County
Blanco County
Kerr County
Comal County
Camp Bullis

Study Assumptions

- **Study Base Case**
  - Steady-state case will be constructed from the following final 2021 Regional Transmission Plan (RTP) case posted on the MIS on December 23, 2021:
    - 2021RTP_2027_SUM_SSC_12232021
    - Study Region: ERCOT South Central Weather Zone, focusing on the transmission elements near the Kendall - Hays Energy area
  - Economic study case will be constructed from the following 2021 RTP economic study case:
    - 2021RTP Economic Final Case 2026

Study Assumptions

- **Transmission Updates**
  - Transmission Projects expected to be in-service within the study area by summer 2027 (February 2022 TPIT report) will be added to the study case, including the following Tier 4 projects:
    - Hunter to McCarty Lane Storm Hardening (TPIT 61262A)
    - Harper Road - Jack Furman Transmission Line Storm Hardening (TPIT 61440)
    - Ingram - Jack Furman Transmission Line Storm Hardening (TPIT 61453)
    - Hunt - Ingram Transmission Line Storm Hardening (TPIT 61455)
    - EC MORNHINWEG Substation Upgrade (TPIT 61593)
    - Clear Springs AT2 Autotransformer Upgrade (TPIT 61849)
    - Marion AT2 Autotransformer Upgrade (TPIT 61851)
    - T340 T-Line Upgrade (TPIT 66023)
- **Loads**
  - Loads will remain the same as in the RTP case

Study Assumptions (cont.)

- **Generation Updates**
  - New Generation Addition
    - Generator additions that meet Planning Guide Section 6.9(1) requirements with projected Commercial Operation Date (COD) before the study year in the South Central weather zone (March 2022 GIS report posted on April 1) will be added to the study case

GINR Number	Project Name	County	Capacity (MW)	Fuel	Projected COD
20INR0290	River Valley Storage 1	Williamson	51.5	Battery	11/1/2022
20INR0293	River Valley Storage 2	Williamson	51.5	Battery	11/1/2022
21INR0469	Big Star Storage	Bastrop	80	Battery	12/1/2022
21INR0541	Bastrop Energy Center AGP repower Phase I	Bastrop	21	Gas	4/30/2022
22INR0535	Bastrop Energy Center AGP repower Phase II	Bastrop	21	Gas	4/30/2022
23INR0027	Cachena Solar SLF	Wilson	440	Solar	6/1/2024

  - New generation will be dispatched consistent with the 2021RTP methodology
  - All recent retired or indefinitely mothballed units will be reviewed and turned off, if not already reflected in the 2021RTP Final case
    - Ray Olinger Unit 1

Contingencies and Criteria

- **Contingencies for Study Region**
  - NERC TPL-001-4 and ERCOT Planning Criteria (http://www.ercot.com/content/wcm/current_guides/53526/04_050115.doc):
    - Normal system condition (P0)
    - N-1 conditions (P1, P2-1, P7)
    - P2, P4, and P5 (EHV only)
    - X-1 + N-1 (X-1: Bergheim, Kendall 345/138-kV transformer outages)
    - G-1 + N-1 (G-1: Rio Nogales generator train outage)
- **Criteria**
  - Thermal
    - Monitor all transmission lines and transformers in study region
    - Use Rate A for pre-contingency conditions
    - Use Rate B for post-contingency conditions
  - Voltages
    - Monitor all busses 60 kV and above in the study region
    - Voltages exceeding their pre-contingency and post-contingency limits
    - Voltage deviations exceeding 8% on non-radial load busses

Study Procedure

- **Reliability Analysis**
  - Reliability analysis will be performed to identify if any reliability issues exist
- **Project Evaluation**
  - Alternatives will be evaluated to address the project need driver
- **Congestion Analysis**
  - Congestion analysis may be performed to assess economic benefit of alternatives
- **Additional Studies Required by Protocol and Planning Guide for Tier 1 Project**
  - SSR vulnerability assessment
  - Generation and load scaling sensitivity analyses

Deliverables

- **Tentative Timeline**
  - Status updates at RPG meetings
    - June 2022
    - July 2022
  - Final recommendation – August 2022

Stakeholder Comments Also Welcomed to Sun Wook Kang:
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