South Texas Electric Cooperative (STEC) – Hondo Creek to Pearson 69-kV Transmission Line Rebuild Project ERCOT Independent Review Study Scope

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RPG Meeting
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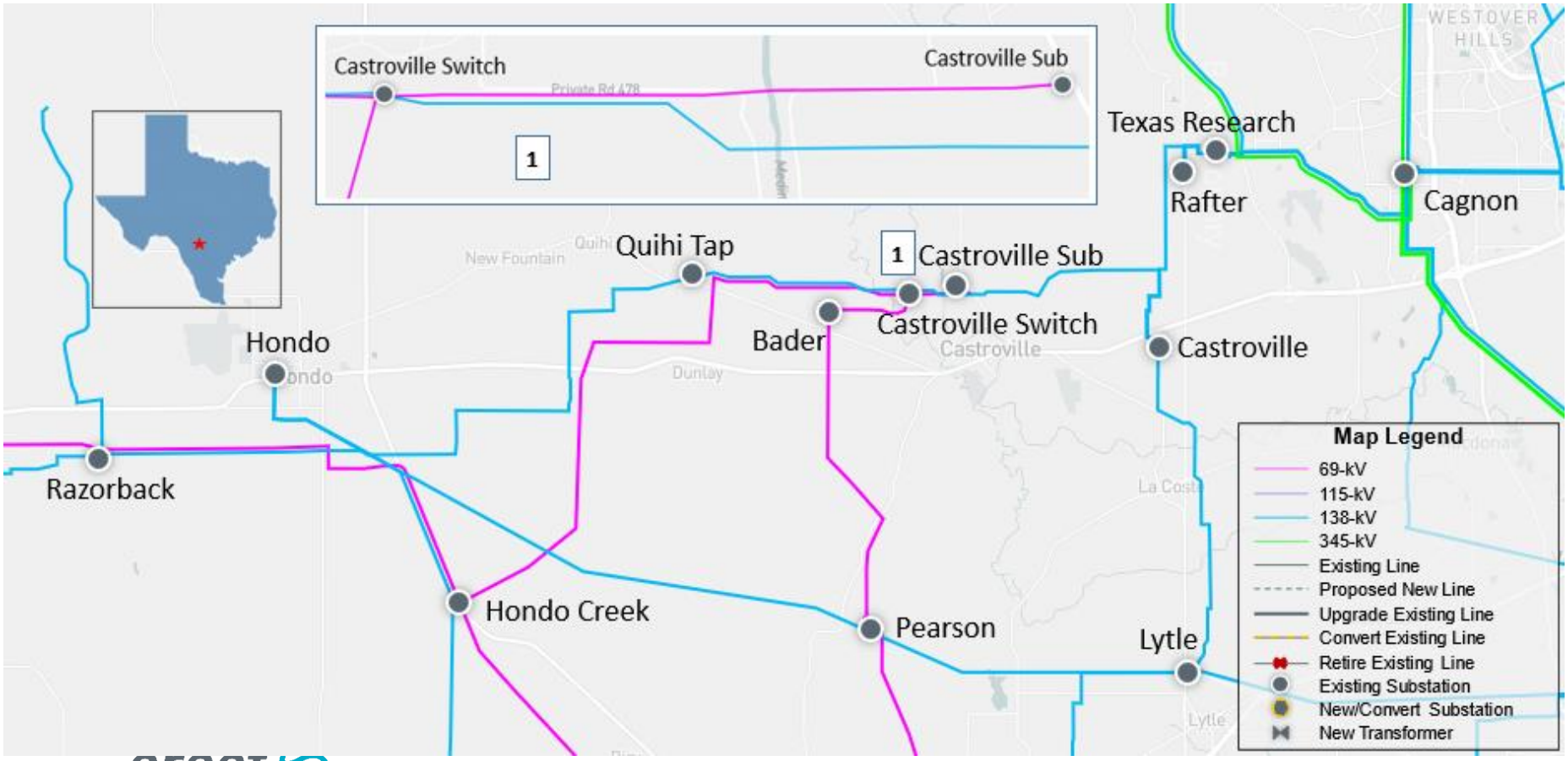
Introduction

- South Texas Electric Cooperative (STEC) submitted the Hondo Creek to Pearson 69-kV Transmission Line Rebuild Project for Regional Planning Group (RPG) review in August 2022
  - Submitted as a Tier 2 project that is estimated at $37.5 million and may require a Certificate of Convenience and Necessity (CCN)
  - Addresses
    - Reliability need (both thermal overloads and low voltages) along the Hondo Creek – Castroville Switch – Pearson 69-kV line
    - STEC's Planning criteria violation
      - ✓ A 69-kV radial line should be considered for looping if the combined substation load served is greater than 15 MW or any one of the substation loads is greater than 10 MW
      - ✓ A 138-kV radial line should be considered for looping if the combined substation load served is greater than 25 MW or any one of the substation loads is greater than 20 MW
    - Aging transmission infrastructure
  - Estimated in-service date
    - December 2023 for the line rebuild
    - May 2024 for the 138-kV conversion
- This project is currently under ERCOT Independent Review

Study Area Map

- STEC proposed solution
  - Rebuild the Hondo Creek to Castroville Sub to Bader to Pearson 69-kV line to 138-kV
  - Remove the pole mounted switch of Castroville Switch
  - The 1.5-mile of 69-kV radial line from the Castroville Switch to Castroville Sub will be upgraded to a double-circuit 138-kV line to form a loop



Study Assumptions – Base Case

- Study Area
  - South Central weather zone, focusing on the transmission elements near the Hondo Creek – Pearson area
  - West and South weather zones electrically close to the project location are also monitored
- Steady-State Base Case
  - Final 2021 Regional Transmission Plan (RTP) 2024 summer peak case for South and South Central (SSC) weather zones, posted in Market Information System (MIS), will be updated to construct the study base case :
    - Case: 2021RTP_2024_SUM_SSC_12232021
    - Link: https://www.ercot.com/misapp/GetReports.do?reportTypeId=15933

Study Assumptions - Transmission

- New projects added
  - Based on the June 2022 Transmission Project and Information Tracking (TPIT) published in July 2022, the following projects within the study area will be added to the study base case if not already modeled in the case
    - Link: https://www.ercot.com/gridinfo/planning

TPIT Number	Project Name	Projected In-Service Date	County	Tier
61440	Harper Road - Jack Furman Transmission Line Storm Hardening	May-23	Kerr	Tier 4
61453	Ingram - Jack Furman Transmission Line Storm Hardening	May-23	Kerr	Tier 4
61455	Hunt - Ingram Transmission Line Storm Hardening	May-23	Kerr	Tier 4

Study Assumptions - Generation

- New generation that met Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before the June 2024 in the study area at the time of the study, but not already modeled in the RTP cases, will be added to the study case based on August 2022 Generator Interconnection Status (GIS) report published in August 2022
  - Link: https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER

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	8/5/2022
22INR0535	Bastrop Energy Center AGP repower Phase II	Bastrop	21	Gas	8/5/2022
23INR0027	Cachena Solar SLF	Wilson	440	Solar	6/1/2024
21INR0395	SunRay	Uvalde	204.09	Solar	8/1/2023
22INR0368	Padua Grid BESS	Bexar	202.6	Battery	3/31/2024

  - All new generation added will be dispatched consistent with the 2021 RTP methodology
  - All recent retired/indefinitely mothballed units will be reviewed and turned off, if not already reflected in the 2021RTP Final case

Study Assumptions – Load & Reserve

- Loads in the study area
  - Load level in the study area will be maintained consistent with the Final RTP case
  - Additional new approved loads in the study area will be added to the study base case
    - 32 MW

- Reserve
  - If necessary, load outside of study weather zone will be adjusted to make up the reserve to be consistent with the 2021 RTP

Contingencies and Criteria

- Contingencies for Study Region
  - NERC TPL-001-5 and ERCOT Planning Criteria
  - Link: https://www.ercot.com/mktrules/guides/planning/current
    - P0 (System Intact)
    - P1, P2-1, P7 (N-1 condition)
    - P2-2, P2-3, P4, and P5 (EHV only)
    - P3-1: G-1 + N-1 (G-1: SunRay Solar, San Miguel U1 generator outages)
    - P6-2: X-1 + N-1 (X-1: Cagnon 345/138-kV transformer outage)
- Criteria
  - Monitor all 60-kV and above buses, transmission lines, and transformers in the study area (excluding generator step-up transformers)
    - Thermal
      - ✓ Use Rate A for pre-contingency conditions
      - ✓ Use Rate B for post-contingency conditions
    - Voltage
      - ✓ Voltages exceeding their pre-contingency and post-contingency limits
      - ✓ Voltage deviations exceeding 8% on non-radial load busses
  - STEC Planning Criteria

Study Procedure

- Need Analysis
  - The reliability analysis will be performed to identify the need to serve the projected area load using the study base case
- Project Evaluation
  - Project alternatives will be tested to satisfy the NERC and ERCOT reliability requirements
  - ERCOT may also perform the following study:
    - Long-term Load Serving Capability Assessment
    - Congestion analysis may be performed based on the recommended transmission upgrades

Next Step

- Tentative Timelines
  - Status updates at the future RPG meetings
  - Final recommendation – Q4 2022

Thank you!

Stakeholder comments also welcomed through:

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