



CPS Energy – San Antonio South Reliability Project ERCOT Independent Review Scope

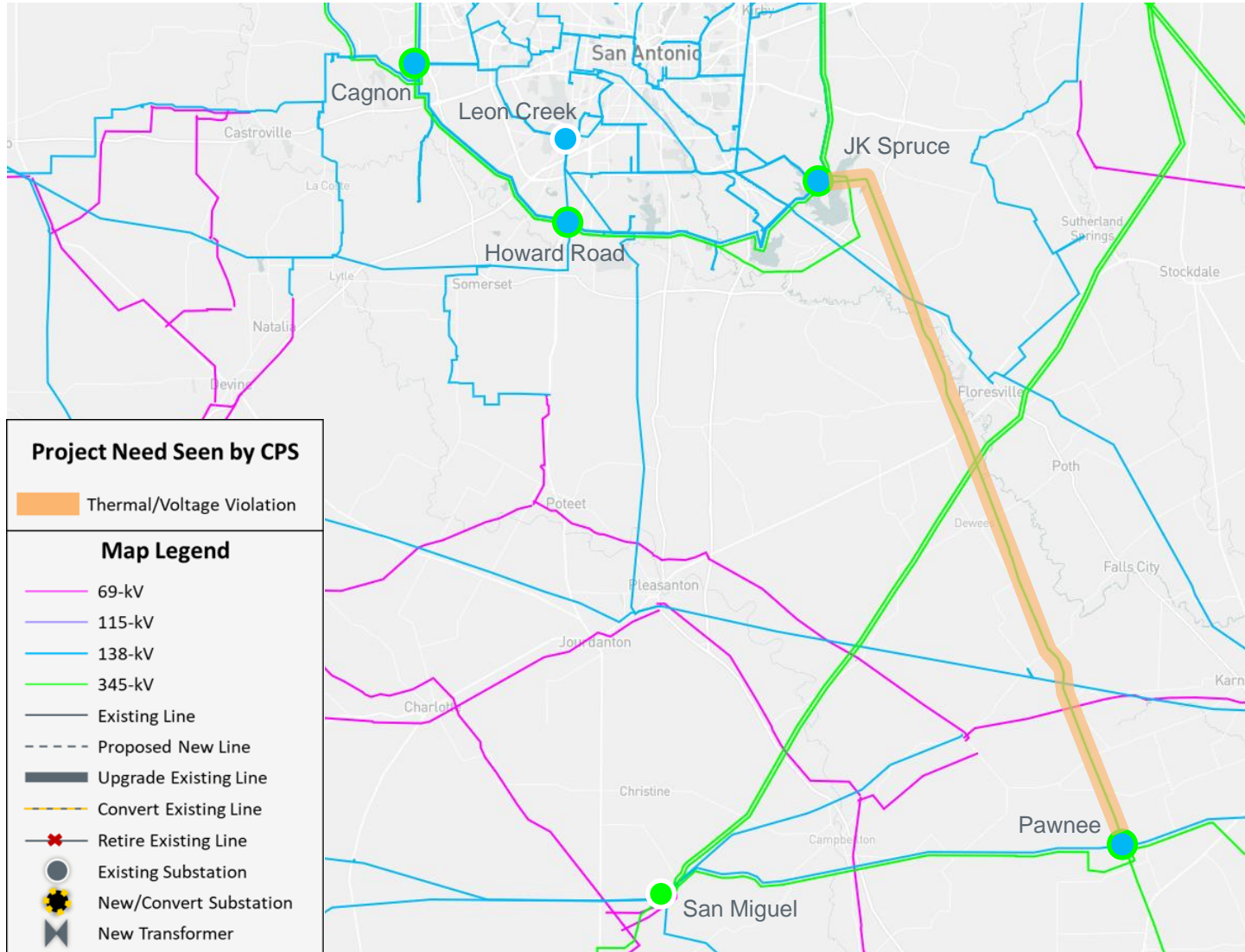
Caleb Holland

RPG Meeting
February 14, 2023

Introduction

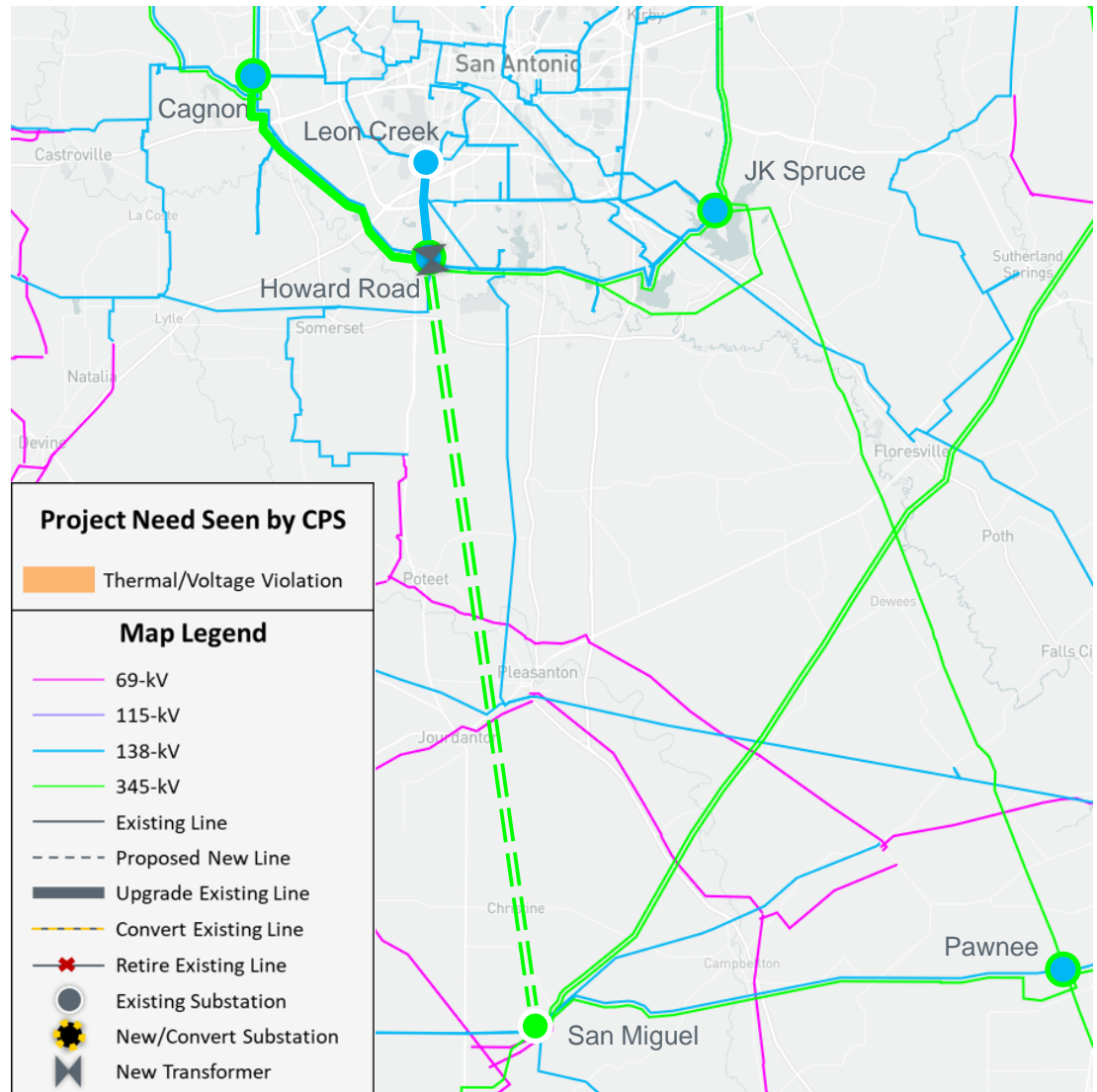
- CPS Energy (CPS) submitted the San Antonio South Reliability Project for Regional Planning Group (RPG) review in December 2022
 - This Tier 1 project is estimated to cost \$281 million and will require a Certificate of Convenience and Necessity (CCN)
 - Estimated in-service date
 - June 2027
 - Addresses thermal overloads in the San Antonio South area
 - CPS has expressed need for “critical status designation”
- This project is currently under ERCOT Independent Review (EIR)

Study Area Map



Proposed Project by CPS

- Construct new Howard Road – San Miguel 345-kV double circuit transmission line (~50 miles)
- Rebuild the existing Cagnon to Howard Road 345-kV double circuit transmission line (~15 miles)
- Rebuild the existing Howard Road to Leon Creek 138-kV transmission line (~5 miles)
- Add a third 345/138-kV Autotransformer at Howard Road substation



Study Assumptions – Base Case

- Study Region
 - South Central Weather Zone (WZ), focusing on the transmission elements near the South San Antonio Area in Bexar and Atascosa Counties
 - Monitor surrounding counties that are electrically close to the area
- Steady-State Base Case
 - Final 2022 Regional Transmission Planning (RTP) 2027 summer peak case for South-South Central (SSC) WZs, posted in Market Information System (MIS), was updated to construct the summer peak load study base case
 - Case: 2022RTP_2027_SUM_SSC_12222022
 - Link: <https://mis.ercot.com/secure/data-products/grid/regional-planning>

Study Assumption - Transmission

- Based on the October 2022 Transmission Project and Information Tracking (TPIT) posted on MIS, Tier 3 and Tier 4 projects with in-service dates on or before June 2027 within the study area were added to the study base case if not already modeled in the case
 - TPIT Link: <https://www.ercot.com/gridinfo/planning>
 - See table on the next slide for the list of transmission projects added
- All other Tier projects approved by RPG are already modeled in the RTP cases
- Transmission projects identified in the 2022 RTP as placeholders for CPS San Antonio South Reliability project were removed to develop the study base case

RTP Project ID	Project Name	TSP	County
2022-SC6	Howard - San Miguel 345-kV Double Circuit Line Addition and Beck Road 345/138-kV Substation Expansion	CPS, STEC	Bexar, Atascosa

Study Assumption – Transmission (cont.)

- List of Tier 3 and Tier 4 transmission projects added to study base case

TPIT No	Project Name	Tier	Project ISD	TSP	County
45084B	Braunig to Highland Rebuild	Tier 4	Jul-23	CPS	Bexar
70536	New 138 kV Verde Circle Substation	Tier 4	Oct-24	CPS	Bexar
45029	Grandview Highland Hills Rebuild	Tier 4	Jun-25	CPS	Bexar
45084A	Braunig to Highland Rebuild	Tier 4	Jun-25	CPS	Bexar
67992B	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	Jun-25	CPS	Bexar
67992C	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	Jun-25	CPS	Bexar
67992A	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	Jun-25	CPS	Bexar
15TPIT0031	Chavaneaux_Chavaneaux Tap Rebuild (Brooks to Chavaneaux ckt)	Tier 4	Jun-26	CPS	Bexar
4320	CPSE_Brooks to Chavaneaux MLSE	Tier 4	Dec-26	CPS	Bexar
4323	CPSE_Braunig to Brooks_MLSE	Tier 4	Jun-27	CPS	Bexar

Study Assumptions – Generation

- New generation that met Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before June 2027 in the study area at the time of the study, but not already modeled in the RTP cases, was added to the case based on the December 2022 Generator Interconnection Status (GIS) report posted in MIS in January 2023
 - GIS Link: <https://www.ercot.com/gridinfo/resource>

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
22INR0368	Padua Grid BESS	OTH	Mar-24	202.6	Bexar

- All new generation added was dispatched consistent with the 2022 RTP methodology
- All recent retired/indefinitely mothballed units were reviewed and turned off, if not already reflected in the 2022 RTP Final case

Study Assumptions – Load & Reserve

- Load in study area
 - Load level will be consistent with the 2022 RTP
- Reserve
 - Load outside of study weather zone(s) may be adjusted to maintain the reserve consistent with the 2022 RTP

Contingencies & Criteria

- Contingencies for Study Region
 - NERC TPL-001-5.1 and ERCOT Planning Criteria
 - Link: <http://www.ercot.com/mktrules/guides/planning/current>
 - P0 (System Intact)
 - P1, P2-1, P7 (N-1 conditions)
 - P2-2, P2-3, P4, and P5 (EHV only)
 - P3 (G-1+N-1: G-1 represents generator outage)
 - P6 (X-1+N-1: X-1 represents 345/138-kV transformer outage)
- Criteria
 - Monitor all 60 kV and above busses, transmission lines, and transformers in the study region (excluding generator step-up transformers)
 - Thermal
 - Use Rate A for normal conditions
 - Use Rate B for emergency conditions
 - Voltage
 - Voltages exceeding their pre-contingency and post-contingency limits
 - Voltage deviations exceeding 8% on non-radial load buses

Study Procedure

- Need Analysis
 - The reliability analysis will be performed to identify the need to serve the projected San Antonio South 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 studies:
 - Planned maintenance outage
 - Long-term Load Serving Capability Assessment
 - Dynamic stability impact
- Generation and Load Scaling Sensitivity Analyses
 - Planning Guide Section 3.1.3(4)
- Subsynchronous Resonance (SSR) Assessment
 - Nodal Protocol Section 3.22.1.3(2)
- Congestion Analysis
 - Congestion analysis may be performed based on the recommended transmission upgrades to ensure that the identified transmission upgrades do not result in new congestion within the study area

Deliverables

- Tentative Timelines
 - Status updates at future RPG meetings
 - Final recommendation – Q2 2023

Thank you!



Stakeholder comments also welcomed through:

Tanzila.Ahmed@ercot.com
Caleb.Holland2@ercot.com
Robert.Golen@ercot.com