CPS Omicron Reliability Project - ERCOT Independent Review Study Scope

Sarah Gunasekera

RPG Meeting
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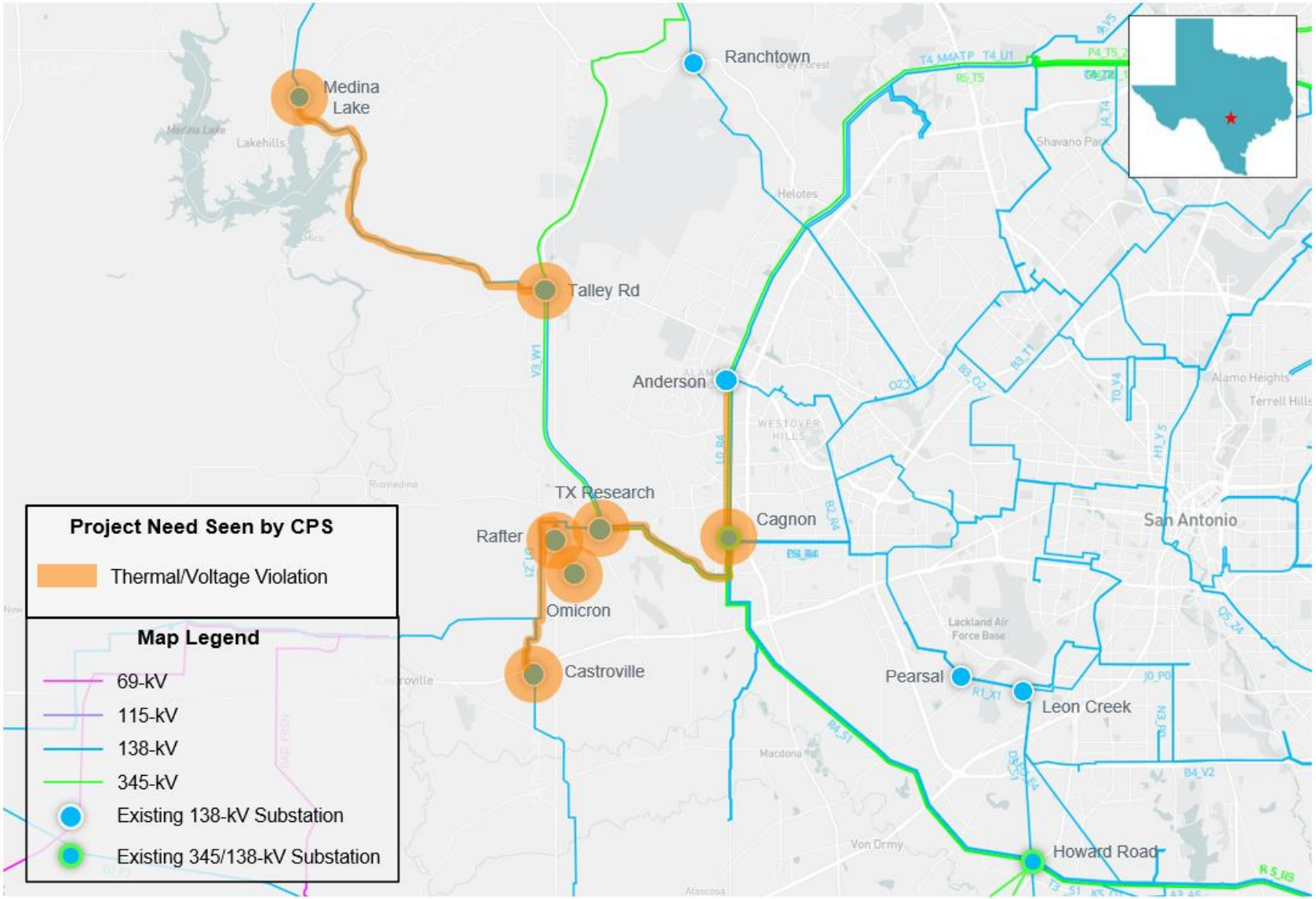
Introduction

- CPS Energy (CPS) submitted the Omicron Reliability Project for Reginal Planning Group (RPG) review in February 2024
  - This Tier 2 project is estimated at $42.5 million and will require a Convenience and Necessity (CCN)
  - Estimated completion date is June 2027
  - Addresses both thermal and voltage violations associated with the new customer load at Omicron 138-kV substation
- This project is currently under ERCOT Independent Review (EIR)

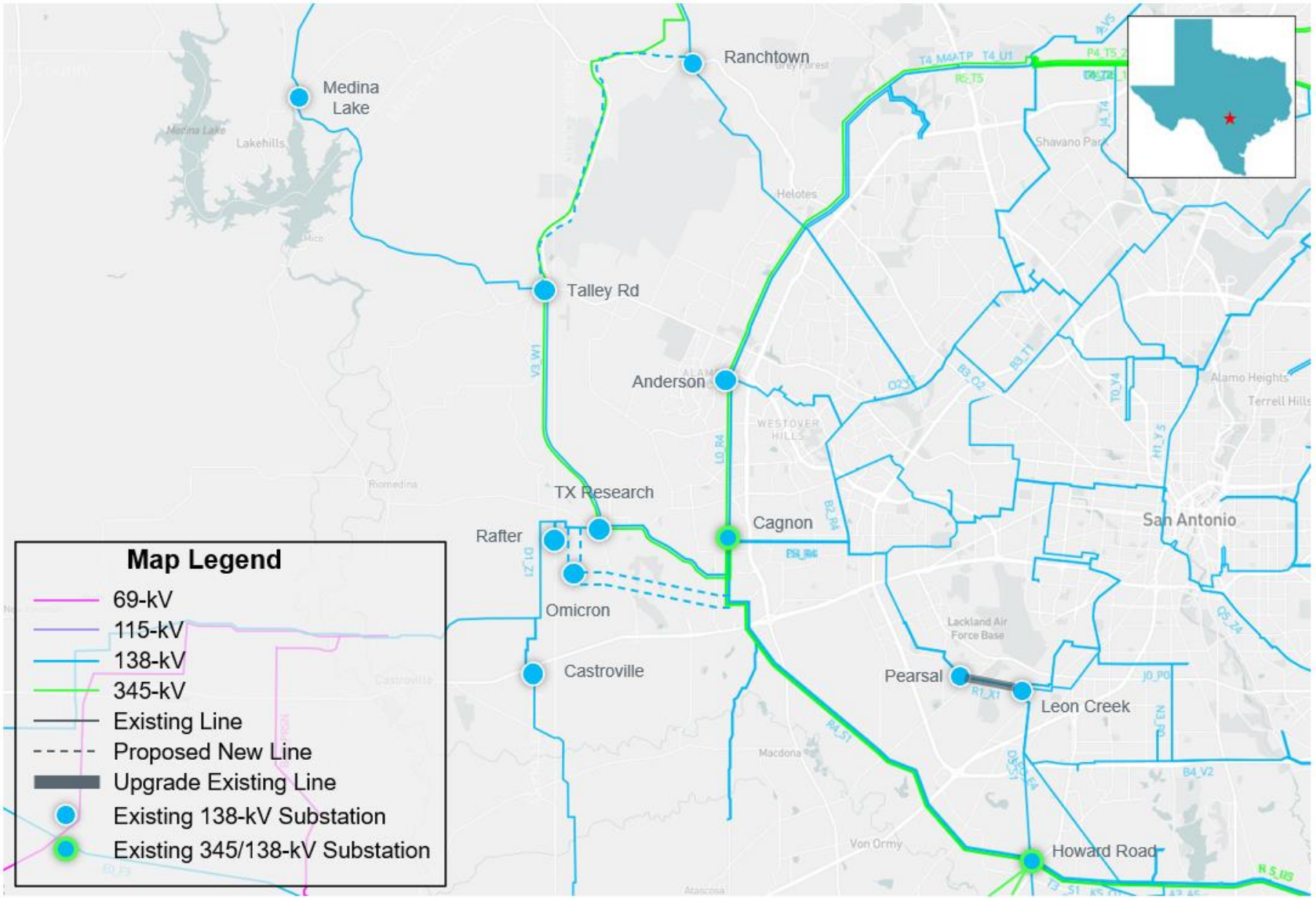
Study Area Map with Project Need Seen by CPS



Project Proposed by CPS

- Construct a new approximately 5-mile line extension with ratings of 698 MVA from the new Omicron 138-kV substation to the existing Cagnon to Howard 138-kV transmission line. This creates a new Cagnon to Omicron 138-kV transmission line and a new Howard to Omicron 138-kV transmission line
- Construct a new approximately 14.3-mile Talley Rd to Ranchtown 138-kV transmission line with ratings of at least 570 MVA
- Rebuild approximately 1.7-mile Leon Creek to Pearsal 138-kV transmission line with ratings of at least 468 MVA

Project Proposed by CPS



Study Assumptions – Base Case

- Study Area
  - Southern and South Central Weather Zones, focusing on transmission in the San Antonio area in Bexar, Bandera, and Medina counties
  - Monitor surrounding counties that are electrically close to the area
- Steady-State Base Case
  - Final 2023 Regional Transmission Planning (RTP) 2029 summer peak case for South-South Central Weather Zones will be updated to construct the South-South Central (SSC) study base case posted in Market Information System (MIS)
    - Case: 2023RTP_2029_SUM_SSC_12222023
    - Link: https://mis.ercot.com/secure/data-products/grid/regional-planning

Study Assumption - Transmission

- Based on the Transmission Project and Information Tracking (TPIT) published on MIS in February 2024, Tier 2, 3, and 4 projects 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 Appendix A for the list of transmission projects added
- Transmission projects identified in the 2023 RTP in the study area that have not been approved by RPG will be removed from the study base case
  - See Appendix B for the list transmission projects that have been backed out

Study Assumptions – Generation

- New generation that met Planning Guide Section 6.9(1) condition with Commercial Operation Date (COD) before the June 2027 in the study area at the time of the study, but not already modeled in the RTP cases, will be added to the case based on Generator Interconnection Status (GIS) report published in MIS in February 2024
  - Link: https://www.ercot.com/gridinfo/resource
  - See Appendix C for the list of generation projects added to the case
- All generation will be dispatched consistent with the 2024 RTP methodology
- All recent retired/indefinitely mothballed units will be reviewed and turned off, if not already reflected in the 2023 RTP Final cases

Study Assumptions – Load & Reserve

- Loads in study area
  - Load level in the study area will be maintained consistent with the 2023 RTP case
  - Newly approved loads in the study area will be added to the study base case
- Reserve
  - Load outside of SSC Weather Zones may be adjusted to maintain the reserve consistent with the 2023 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: Leon Creek, San Miguel U1, Sunray Solar U1)
    - P6: X-1+N-1 (X-1: 345/138-kV transformers at Cagnon, Howard Rd, Hill Country)
- 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 Antionio and the surrounding 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
  - The TSP will provide the Cost Estimate and Feasibility Assessment
- 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 the future RPG meetings
  - Final Recommendation – Q2 2024

Thank you!

Stakeholder comments also welcomed through:

sarah.gunasekera@ercot.com

robert.golen@ercot.com

Appendix A – Transmission Projects Added

TPIT/RPG No	Project Name	Tier	Project ISD	TSP	County(s)
22RPG026	Wimberley Loop project	Tier 2	5/1/2027	PEC	Blanco, Hays
23RPG003	Eagle Ford Large Load Interconnection Project	Tier 3	12/4/2025	GVEC	DeWitt
23RPG004	Lockhart to Luling 69-kV Transmission Line Overhaul Project	Tier 4	6/30/2025	LCRA	Caldwell
23RPG015	Cuero Substation Upgrade Project	Tier 4	5/15/2024	LCRA	DeWitt
23RPG028	Rio Medina Project	Tier 2	1/1/2027	STEC	Medina
72500	Rio Lago - New 138kV Substation	Tier 4	11/30/2024	BEC	Bandera
72268	CPSE_New Ingram Rd Substation	Tier 4	5/1/2025	CPS	Bexar
73098	Castroville Cut-in 138 kV	Tier 2	5/30/2025	ETT TCC	Medina
71873	CPSE_Hill Country Auto# 2 Impedance Upgrade	Tier 3	6/1/2025	CPS	Bexar
73063	Big Foot to Lytle: Convert to 138 kV	Tier 4	9/20/2025	AEP TCC	Medina, Frio
76242	Lytle: Build new 138 kV terminal	Tier 4	9/20/2025	AEP TCC	Medina
76768	Upgrade Pearson -Pearsall	Tier 4	12/1/2025	STEC	Frio, Medina
67992D	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	1/31/2026	CPS	Bexar
72502	Tarpley Substation Upgrades	Tier 4	12/30/2026	BEC	Bandera
76790	Upgrade Pearsall Auto	Tier 4	5/1/2027	STEC	Frio
73417	LCRATSC_Schumansville_SheriffsPosse_StormHardening	Tier 4	15/5/2025	LCRA	Guadalupe, Comal
73793	LCRATSC_McCartyLaneEast_Zorn_TL_Storm_Hardening	Tier 4	15/5/2025	LCRA	Hays, Guadalupe

Appendix B – Transmission Backed Out

RTP Project ID	Project Name	TSP	County(s)
2023-SC10	Wiseman 138-kV Substation Addition and CPS Multiple Cap Bank Additions	CPS	Bexar, Comal
2023-SC16	Hondo to Hondo Creek Switching Station 138-kV Line Upgrade	CPS, STEC	Medina
2023-SC19	South to Central Texas 345-kV Double-Circuit Line Additions	AEN, AEP, LCRA, ONCOR	San Patricio, Bee, Karnes, Wilson, Guadalupe, Comal, Hays, Travis, Williamson
2023-SC20	Pearson - Natalia - Devine - Moore - Pearsall 69-kV Line Rebuild	STEC	Frio, Medina
2023-SC21	Big Foot to Lytle 69-kV to 138-kV Line Conversion	AEP	Frio, Medina
2022-S3	Pearsall 138/69-kV Transformer Upgrade	STEC	Frio
2023-S3	Oaks Sub 138/69-kV Transformer Upgrade	STEC	Atascosa
2023-S4	Poteet Sub to Oaks Sub 69-kV Line Upgrade	STEC	Atascosa
2023-S5	Poteet Sub to Pearsall Switching Station 69-kV Line Upgrade	STEC	Atascosa, Frio
2023-S6	Rossville Substation Cap Bank Addition	STEC	Atascosa

Appendix C – Generation Added

GINR	Project Name	Fuel	Project COD	Capacity (MW)	County
22INR0366	LIBRA BESS	Other	3/30/2024	206.21	Guadalupe
22INR0422	Ferdinand Grid BESS	Other	5/31/2026	202.65	Bexar
23INR0154	Ebony Energy Storage	Other	4/30/2024	203.50	Comal
23INR0381	Soportar ESS	Other	3/15/2025	102.11	Bexar
23INR0483	Rio Nogales CT1 Rotor Replacement	Gas	6/8/2023	3.10	Guadalupe
24INR0427	CPS AvR CT1 Rotor Replacement	Gas	2/15/2024	11.30	Bexar