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PROJECT NO. 55999

REPORTS OF THE ELECTRIC RELABILITY COUNCIL OF TEXAS	**§**	**PUBLIC UTILITY COMMISSION**
	§	
	§	**OF TEXAS**

ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.'S NOTICE OF ACCEPTANCE OF TWO TIER 3 TRANSMISSION PROJECTS

Pursuant to ERCOT Protocol Section 3.11.4.9(1), Electric Reliability Council of Texas, Inc. (ERCOT) files this Notice of the ERCOT Regional Planning Group (RPG)'s acceptance of two Tier 3 transmission projects.

The first project is submitted by Oncor Electric Delivery (Oncor) and the Lower Colorado River Authority Transmission Services Corporation (LCRA TSC), as reflected in Attachments A-B. Oncor and LCRA TSC are the ERCOT-registered Transmission Service Providers (TSPs) responsible for the transmission project. The second project is submitted by CPS Energy (CPS), as reflected in Attachments C-D. CPS is the ERCOT-registered Transmission Service Provider (TSP) responsible for the transmission project.

ERCOT is prepared to provide the Commission with any additional information it may request regarding these matters.

Dated: September 3, 2024

Respectfully Submitted,

/s/ Katherine Gross

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July 29, 2024

Mr. Eithar Nashawati
Senior Director, Asset Planning
Oncor Electric Delivery
2233-B Mountain Creek PKWY
Dallas, TX 75211-6716

Mr. Sandeep Borkar
Director, Transmission Planning
LCRA TSC
3505 Montopolis Drive
Austin, TX 78744

RE: Oncor Salado Switch to Hutto Switch 138-kV Line Project

Dear Mr. Nashawati and Mr. Borkar:

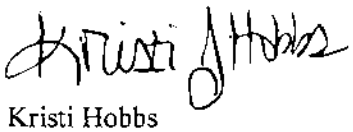
The Electric Reliability Council of Texas (ERCOT) Regional Planning Group (RPG) has reviewed and accepted the following Tier 3 transmission project in accordance with ERCOT Protocol Section 3.11.4:

Salado Switch to Hutto Switch 138-kV Line Project:

- Upgrade the exiting north circuit of the Hutto Switch – Round Rock Switch 138-kV Double-Circuit Line to increase the maximum operating temperature of the existing 1590 kcmil ACSR conductor from 90°C to 150°C rated at 2064 A (493 MVA), approximately 8.9-mile. The existing Hutto Switch and the existing Round Rock Switch are currently owned by Oncor;
- Expand the existing Salado Switch to include the new Salado 138-kV Switch directly south of the existing Salado 345-kV Switch using a 6-breaker, 138-kV breaker-and-a-half arrangement. The existing Salado Switch is currently owned by Oncor;
- Rebuild the existing Round Rock Westinghouse Tap – Gabriel Substation – Salado Switch 138-kV Line Section with double-circuit capable structures and double-circuit conductor rated at 2569 A (614 MVA) or greater, to establish the Salado Switch – Round Rock Switch 138-kV Line, approximately 36.4-mile. The existing Round Rock Westinghouse Tap is currently owned by Oncor. The existing Gabriel Substation is currently owned by LCRA TSC;
- Loop the existing Bell County Switch – Gabriel Substation 138-kV Line into the Salado 138-kV Switch. The existing Bell County Switch is currently owned by BEPC. The existing Gabriel Substation is currently owned by LCRA TSC; and
- Move Midnight transformer #1 and Salado South transformer #1 to the Round Rock Switch – Salado Switch 138-kV Line. The existing Midnight and the Salado South substations are currently owned by Oncor.

Should you have any questions please contact me at any time.

Sincerely,



Kristi Hobbs
Vice President, System Planning and Weatherization
Electric Reliability Council of Texas

cc:

Pablo Vegas, ERCOT
Woody Rickerson, ERCOT
Prabhu Gnanam, ERCOT
Robert Golen, ERCOT
Brandon Gleason, ERCOT

SALADO SWITCH – HUTTO SWITCH 138 KV LINE PROJECT

ERCOT RPG Submittal
June 13, 2024

Business and Operations Services
Assets Planning

ONCOR

Table of Contents

Executive Summary

Oncor and LCRA Transmission Services Corporation (LCRA TSC) propose a Tier 3 project that will:

- Upgrade the 8.9-mile north circuit of the Hutto Switch – Round Rock Switch 138 kV Double-Circuit Line to increase the maximum operating temperature of the existing 1590 kcmil ACSR conductor from 90°C to 150°C rated at 2064 A (493 MVA);
- Expand the existing Salado Switch to include the new Salado 138 kV Switch directly south of the existing Salado 345 kV Switch using a 6-breaker, 138 kV breaker-and-a-half arrangement;
- Rebuild the existing 36.4-mile Round Rock Westinghouse Tap – Gabriel Substation (LCRA TSC) – Salado 138 kV Line Section with double-circuit capable structures and double-circuit conductor rated at 2569 A (614 MVA) or greater to establish the Salado Switch – Round Rock Switch 138 kV Line;
- Loop the existing Bell County Switch (BEPC) – Gabriel Substation (LCRA TSC) 138 kV Line into the Salado 138 kV Switch; and
- Move Midnight transformer #1 and Salado South transformer #1 to the Round Rock Switch – Salado Switch 138 kV Line.

Steady-state assessments performed in Bell and Williamson Counties indicate thermal violations on the Hutto Switch – Gabriel Substation (LCRA TSC) 138 kV Line under contingency conditions. These violations were also identified in the 2023 ERCOT Regional Transmission Plan (RTP). The RTP identified reliability project 2023-SC17 to resolve the thermal violations. The Round Rock Westinghouse Tap – Salado 138 kV Line Section was built in the 1970s with wood H-frame structures and is nearing the end of its design life. The Proposed RPG Project will resolve identified thermal violations, replace the aged infrastructure with new components to meet the current Oncor standards, and provide greater thermal capacity for future load growth.

As part of the scope described above, LCRA TSC will upgrade its existing 1.2-mile 138-kV double-circuit transmission line section from Gabriel Substation to Structure 25/8 – where the north and south circuit are connected to Salado and Round Rock Westinghouse Tap, respectively – using bundled 959 ACSS Suwannee conductor (conductor rating of 942 MVA). LCRA TSC will also upgrade terminal facilities at Gabriel, Georgetown East, and Georgetown South substations to accommodate the new conductor.

This Tier 3 project in Bell and Williamson Counties is recommended for construction to meet a May 2027 in-service date. The Proposed RPG Project will cost an estimated $87.6 million. The Oncor portion will cost an estimated $80.8 million and the LCRA TSC portion will cost an estimated $6.8 million. This Proposed RPG Project is not expected to require a Certificate of Convenience and Necessity (CCN) filing with the Public Utility Commission of Texas. The completion dates may change depending on material acquisition, outage coordination, construction, or other project related requirements.

Oncor will work with ERCOT as necessary to develop and implement Constraint Management Plans based on summer operational conditions in 2025 through 2027.If needed, Oncor will utilize line sectionalizing switches as our primary method to mitigate overload risks under contingency conditions. As a last resort measure, Oncor may utilize load shed to further mitigate the risk of overloads.

Introduction

This submittal describes the need to upgrade the 8.9-mile mile north circuit of the Hutto Switch – Round Rock Switch 138 kV Double-Circuit Line, rebuild and install a second circuit on the existing 36.4-mile Round Rock Westinghouse Tap – Salado 138 kV Line Section, and establish the Salado 138 kV Switch. The Proposed RPG Project will mitigate reliability violations and allow for future load growth in the area. Figures 1 and 2 below display an area map and current configuration of the transmission system surrounding the Proposed RPG Project.

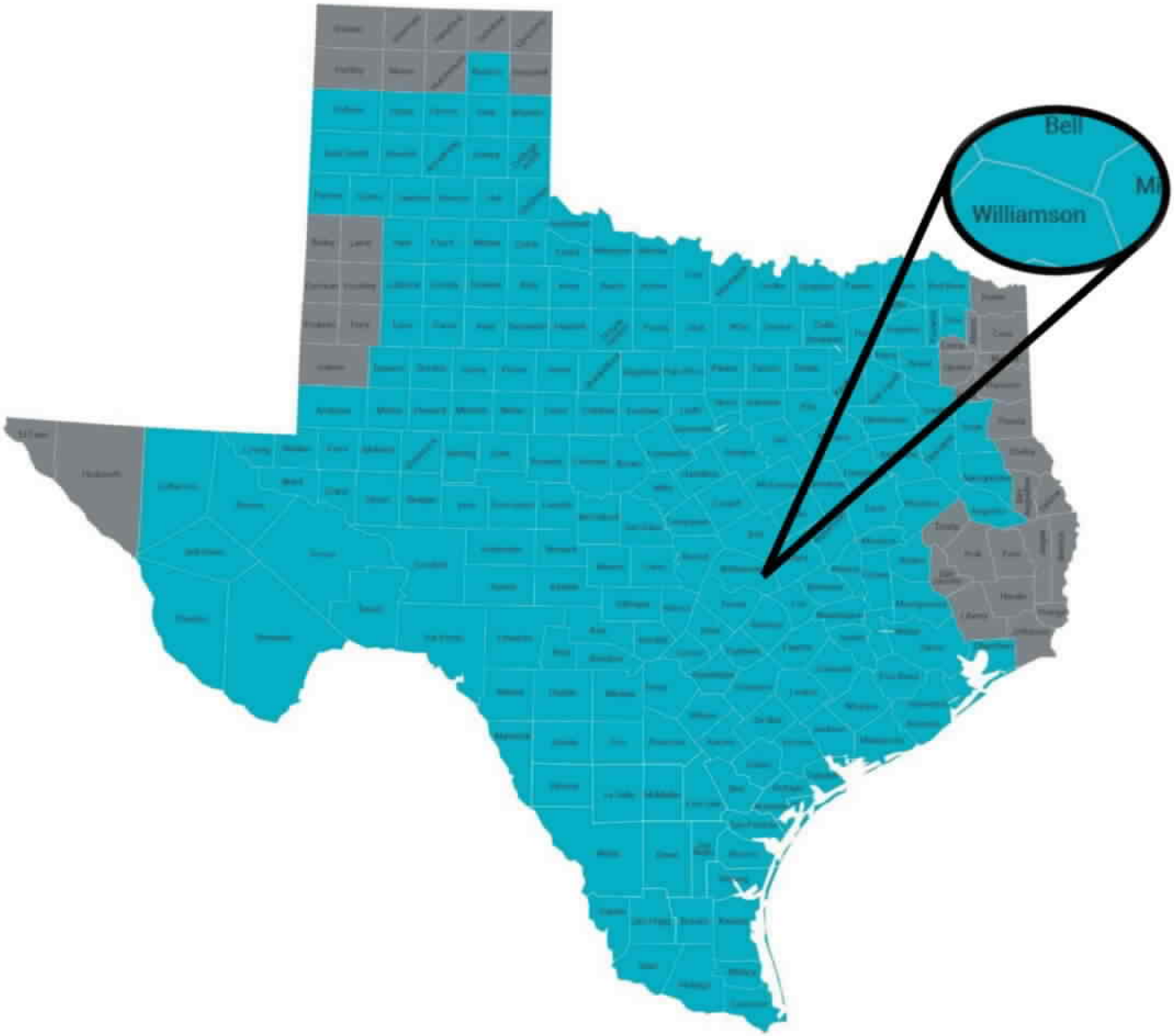


Figure 1: Texas Counties Map and Propose RPG Project Location

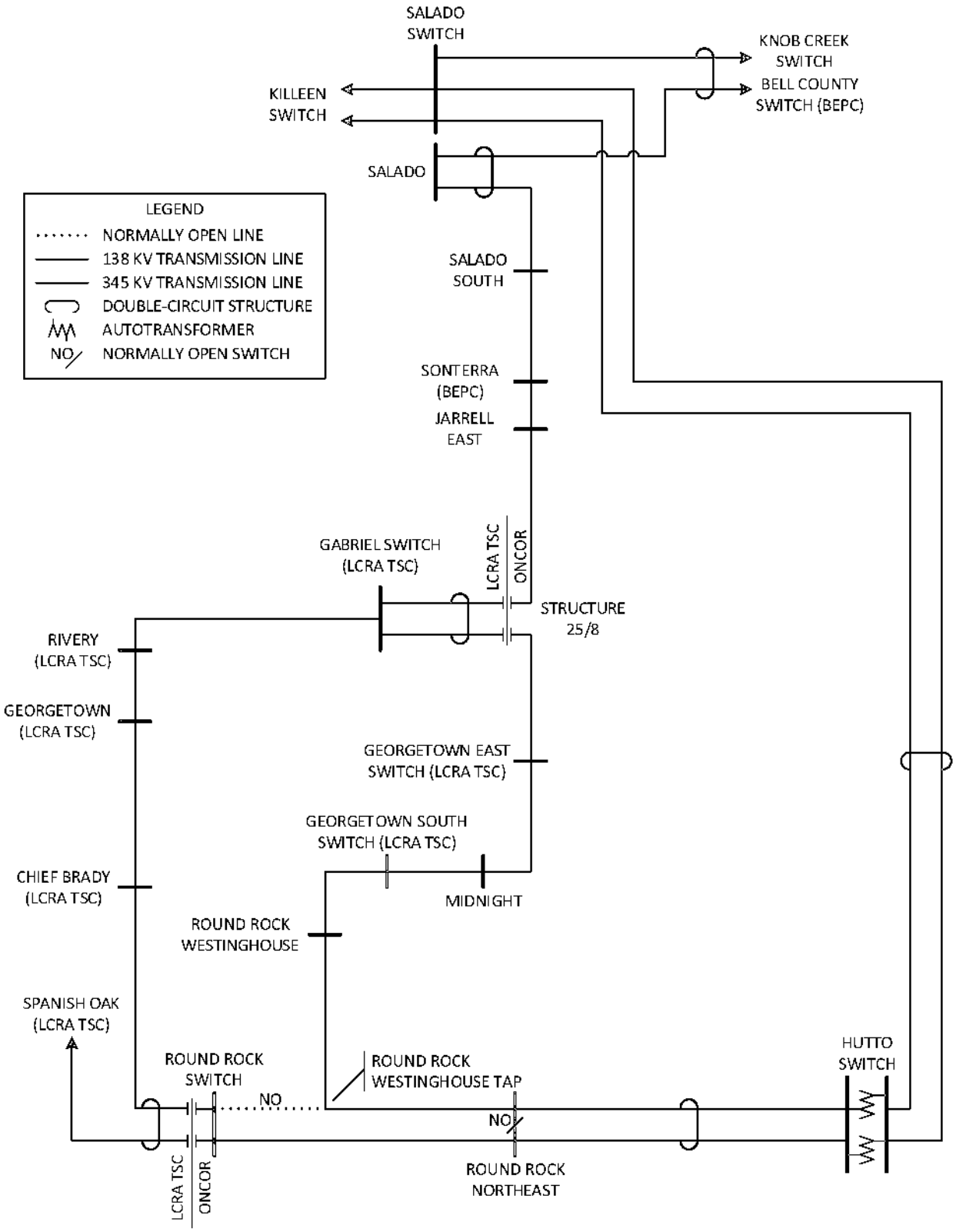


Figure 2 – Existing Salado Area One-line Diagram

Study Assumptions and Methodology

The steady state analysis utilized the ERCOT Steady State Working Group (SSWG) cases published on October 9, 2023 (23SSWG_2025_SUM1_U1_Final_10092023.sav, 23SSWG_2026_SUM1_U1_Final_10092023.sav, 23SSWG_2027_SUM1_U1_Final_10092023.sav). Additional topology changes were made to the cases to incorporate the Oncor Temple Area Project which was submitted to RPG on January 2, 2024.

The cases used for the dynamic studies were the Dynamic Working Group (DWG) 2024 Summer Peak Case (2024_SP_Final_NonCnv35.sav) and 2025 High Wind Low Load Case (2025_HWLL_Final_NonCnv35.sav) published in May 2022. System topology and load updates necessary to implement the Proposed RPG Project were used in the study case.

The short circuit analysis was performed using the System Protection Working Group (SPWG) case "23_SPWG_2025_FY_06302023_FINAL". The SPWG case was modified to include changes associated with the Proposed RPG Project, as well as other Oncor system changes that occurred since the development of the SPWG case.

Study Results and Project Need

Steady State Analysis

Oncor steady-state assessments for the 2025, 2026, and 2027 summer peak cases revealed thermal violations on the Hutto Switch – Gabriel Substation (LCRA TSC) 138 kV Line under post-contingency conditions. The post-contingency conditions that result in thermal violations include multiple contingency scenarios per NERC Standard TPL-001-5.1 and ERCOT Planning Guide Reliability Performance Criteria 4.1.1.2 1(d). The results justifying the need for the Proposed RPG Project and subsequent results after the Proposed RPG Project is completed are summarized in Table 1.

Dynamic Analysis

Oncor performed dynamic analysis to evaluate the impact of the addition of the Proposed RPG Project on the transmission system in the Salado Area. The analysis focused on studying the impacts of contingency events in the project area before and after implementation of the Proposed RPG Project. The results of the stability assessment, with the addition of the Proposed RPG Project, demonstrate that there is no adverse effect on the transmission system.

Short-Circuit Analysis

Oncor performed short-circuit analysis to evaluate the impact of the addition of the Proposed RPG Project on the transmission system in the Temple Area. Oncor did not identify any overdutied breakers resulting from the Proposed RPG Project.

Thermal Loading	Overloaded Element		Hutto Switch - Round Rock Westinghouse Tap 138 kV Line Section	Georgetown South (LCRA TSC) - Round Rock Westinghouse Tap 138 kV Line Section	Gabriel (LCRA TSC) - Midnight 138 kV Line
	Contingency Elements		Round Rock Switch - Chief Brady (LCRA TSC) and Spanish Oak (LCRA TSC) 138 kV Double-Circuit Line	Round Rock Switch - Chief Brady (LCRA TSC) and Spanish Oak (LCRA TSC) 138 kV Double-Circuit Line	Hutto Switch - Round Rock Northeast 138 kV Line Section
	NERC Category		P7	P7	P2.1
	Rating Without / With Project		326 / 478 MVA	214 / 614 MVA	214 / 614 MVA
	2025 SUM	Without Project	131.1%	135.2%	171.4%
		With Projects	84.0%	51.9%	51.7%
	2026 SUM	Without Projects	134.8%	134.0%	188.8%
		With Projects	86.6%	53.2%	56.6%
	2027 SUM	Without Projects	123.3%	115.1%	192.2%
		With Projects	81.9%	49.90%	53.2%

Table 1: Post-Contingency Thermal Loading Before and After the Proposed RPG Project

Aging Infrastructure Analysis

The Round Rock Westinghouse Tap – Salado Substation 138 kV Line Section was originally constructed in the 1970s. This transmission line was built using wood poles, porcelain insulators, and 795 ACSR "Drake" conductor with a rating of 214 MVA. The Round Rock Westinghouse Tap – Salado Substation 138 kV Line Section consists of 595 directly embedded wood poles, the majority of which exceed 45 years of service. The majority of structures include wooden crossarms, which also exceed 45 years of service. The poles and structural components are near the end of their design life, with a majority of these components having not been replaced after their original installation. Recent ground line inspection and aerial patrol reports indicate there are in excess of 210 poles with ground line decay or shell rot. The age and condition of the wood poles with ground line decay make them more vulnerable to storm or wind damage, which could impact reliability and continuity of service. Rebuilding this line will improve the line's overall performance, reduce future extensive maintenance requirements, and promote the reliable operation of the transmission grid.

Subsynchronous Resonance (SSR) Screening

The proposed upgrade takes place on the 138 kV transmission system, which does not require an SSR screening, per ERCOT Protocol 3.22.1.3, and therefore Oncor did not perform an in-depth SSR analysis.

Project Description

In order to address reliability and aging infrastructure concerns, Oncor recommends the following:

- Upgrade the 8.9-mile north circuit of the Hutto Switch – Round Rock Switch 138 kV Double-Circuit Line to increase the maximum operating temperature of the existing 1590 kcmil ACSR conductor from 90°C to 150°C rated at 2064 A (493 MVA);
- Expand the existing Salado Switch to include the new Salado 138 kV Switch directly south of the existing Salado 345 kV Switch using a 6-breaker, 138 kV breaker-and-a-half arrangement;
- Rebuild the existing 36.4-mile Round Rock Westinghouse Tap – Gabriel Substation (LCRA TSC) – Salado 138 kV Line Section with double-circuit capable structures and double-circuit conductor rated at 2569 A (614 MVA) or greater to establish the Salado Switch – Round Rock Switch 138 kV Line;
- Loop the existing Bell County Switch (BEPC) – Gabriel Substation (LCRA TSC) 138 kV Line into the Salado 138 kV Switch; and
- Move Midnight transformer #1 and Salado South transformer #1 to the Round Rock Switch – Salado Switch 138 kV Line.

The Hutto Switch – Round Rock Northeast – Round Rock Westinghouse Line Section of the Hutto Switch – Georgetown South Switch (LCRA TSC) 138 kV Line will be rated at 478 MVA limited by the terminal equipment at Round Rock Northeast. The Jarrell East – Sonterra (BEPC) - Salado South Line Section of the Gabriel Substation (LCRA TSC) – Salado Switch 138 kV Line will be rated 478 MVA limited by terminal equipment at Sonterra (BEPC).

The estimated cost for this project is $87.6 million. The Oncor portion will cost approximately $80.8 million and the LCRA TSC portion will cost approximately $6.8 million.

One-Line Diagram

Figure 3 below shows a one-line diagram depicting the Proposed RPG Project.

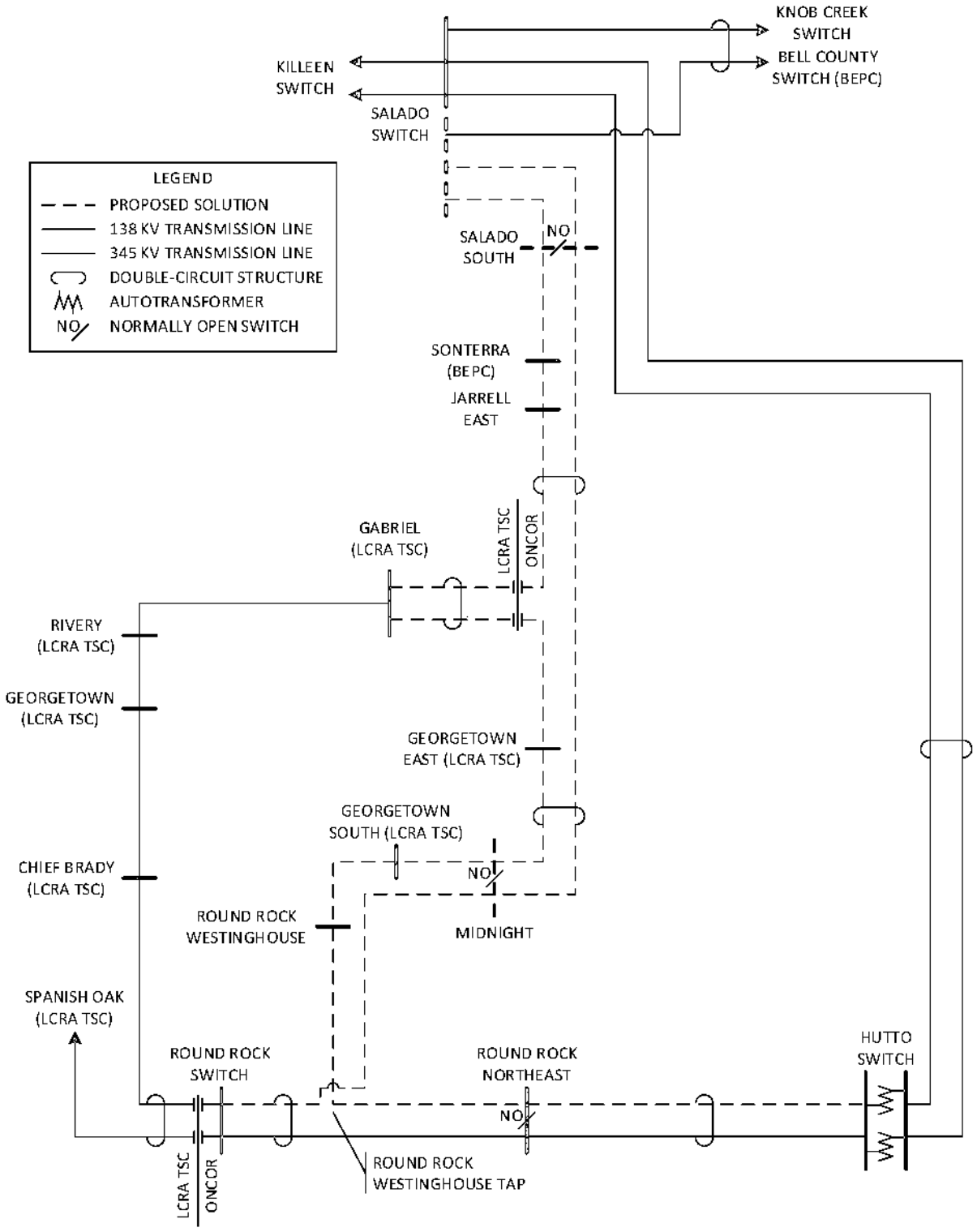


Figure 3 – Proposed RPG Project One-Line

Alternative Solutions

Oncor considered constructing a new 138 kV circuit between Hutto Switch and Gabriel Substation (LCRA TSC). This alternative would require a CCN filing with the PUC, and does not address the aging infrastructure concerns on the existing Round Rock Westinghouse Tap – Salado 138 kV Line Section. Therefore, this alternative would result in significantly higher project cost and delayed in-service date. Additionally, the Proposed RPG Project will allow the existing, normally open Round Rock Switch – Round Rock Westinghouse Tap 138 kV Line Section to be placed in service, and provides improved system reliability in an area experiencing high load growth.

Recommendation

In order to address the reliability and aging infrastructure concerns, Oncor recommends the following:

- Upgrade the 8.9-mile north circuit of the Hutto Switch – Round Rock Switch 138 kV Double-Circuit Line to increase the maximum operating temperature of the existing 1590 kcmil ACSR conductor from 90°C to 150°C rated at 2064 A (493 MVA);
- Expand the existing Salado Switch to include the new Salado 138 kV Switch directly south of the existing Salado 345 kV Switch using a 6-breaker, 138 kV breaker-and-a-half arrangement;
- Rebuild the existing 36.4-mile Round Rock Westinghouse Tap – Gabriel Substation (LCRA TSC) – Salado 138 kV Line Section with double-circuit capable structures and double-circuit conductor rated at 2569 A (614 MVA) or greater to establish the Salado Switch – Round Rock Switch 138 kV Line;
- Loop the existing Bell County Switch (BEPC) – Gabriel Substation (LCRA TSC) 138 kV Line into the Salado 138 kV Switch; and
- Move Midnight transformer #1 and Salado South transformer #1 to the Round Rock Switch – Salado Switch 138 kV Line.

This Proposed RPG Project is recommended to mitigate post-contingency thermal violations, address future load growth, and enhance system reliability in Bell and Williamson Counties.

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August 16, 2024

Kenneth Bowen
Manager, Transmission Planning & Operations Engineering
CPS Energy
500 McCullough Avenue
San Antonio, Texas 78215

RE: CPS Energy Eastside 345/138-kV Switching Station Project

Dear Mr. Bowen:

On July 26, 2024, The Electric Reliability Council of Texas (ERCOT) has reviewed, reclassified and accepted the following Tier 1 project to a Tier 3 transmission project in accordance with ERCOT Protocol Section 3.11.4. Cost estimates and CCN requirement for the installation of the new Eastside 345/138-kV switching station was not included as part this project approval because that was already included in the San Antonio South Reliability II Project (23RPG032) endorsed by ERCOT in April 2024:

CPS Energy Eastside 345/138-kV Switching Station Project:

- Rebuild the Spruce to new Eastside switching station 345-kV transmission lines circuit 1 and circuit 2 in existing easement with a normal and emergency rating of 2,347 MVA or greater, approximately 9.8-mile, per circuit.

Should you have any questions please contact me at any time.

Sincerely,

Kristi Hobbs
Vice President, System Planning and Weatherization
Electric Reliability Council of Texas

cc:

Pablo Vegas, ERCOT
Woody Rickerson, ERCOT
Prabhu Gnanam, ERCOT
Robert Golen, ERCOT
Brandon Gleason, ERCOT

ERCOT Independent Review of the CPS Eastside 345/138-kV Switching Station Project

Document Revisions

Date	Version	Description	Author(s)
7/26/2024	1.0	Final Draft	Abishek Penti
		Reviewed by	Robert Golen, Prabhu Gnanam

Executive Summary

CPS Energy (CPS) submitted the Eastside 345/138-kV Switching Station Project to the Regional Planning Group (RPG) in February 2024. CPS proposed this project to address thermal overloads and voltage violations under various contingency conditions in the South and South-Central (SSC) Weather Zones in the San Antonio area, located in Bexar County.

The CPS proposed project was estimated to cost approximately $158.0 million and was classified as a Tier 1 project per ERCOT Protocol Section 3.11.4.3 and the proposed project would require a Certificate of Convenience and Necessity (CCN) application for the installation of new Eastside switching station.

ERCOT performed an Independent Review, identified thermal overloads and voltage violations in the San Antonio Area, and evaluated four different transmission project options.

Among the four different transmission project options evaluated in the Independent Review, ERCOT recommends Option 1A to address the reliability violations based on the study results described in Sections 5 and 6 of this report. Option 1A consists of the following:

- Rebuild the Spruce to new Eastside switching station 345-kV transmission lines circuit 1 and circuit 2 in existing easement with a normal and emergency rating of 2,347 MVA or greater, approximately 9.8-mile, per circuit.

The cost estimate for this project is approximately $47.0 million. This project will not require a CCN and the expected In-Service Date (ISD) of this project is June 2028. Based on ERCOT independent review, ERCOT will reclassify this RPG project to a Tier 3 project according to the ERCOT Protocol 3.11.4.3(1)(c). Cost estimates and CCN requirement for the installation of the new Eastside 345/138-kV switching station was not included in this project because they are captured in the San Antonio South Reliability II Project (23RPG032) and endorsed by ERCOT in April 2024.

CPS will work with ERCOT as early as practical to develop outage plans needed for construction and implement Constraint Management Plans (CMP) based on expected operational conditions for the time period when construction outages are planned.

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1 Introduction

In February 2024, CPS Energy (CPS) submitted the Eastside 345/138-kV Switching Station Project to the Regional Planning Group (RPG) to address NERC TPL-001-5.1 and ERCOT Planning Guide criteria thermal overloads in the area. This project is in the South Central (SC) Weather Zone in Bexar County.

This CPS-proposed project was classified as a Tier 1 project pursuant to ERCOT Protocol Section 3.11.4.3, with an estimated cost of approximately $158.0 million. One or more Certificate of Convenience and Necessity (CCN) applications will be required for the construction of the new Eastside 345/138-kV switching station. The expected In-Service Date (ISD) of the project is June 2028.

ERCOT conducted an Independent Review for this RPG project to identify any reliability needs in the area, including thermal overloads and voltage violations, and evaluated various transmission upgrade options. This report describes the study assumptions, methodology, and the results of ERCOT Independent Review (EIR) of the project.

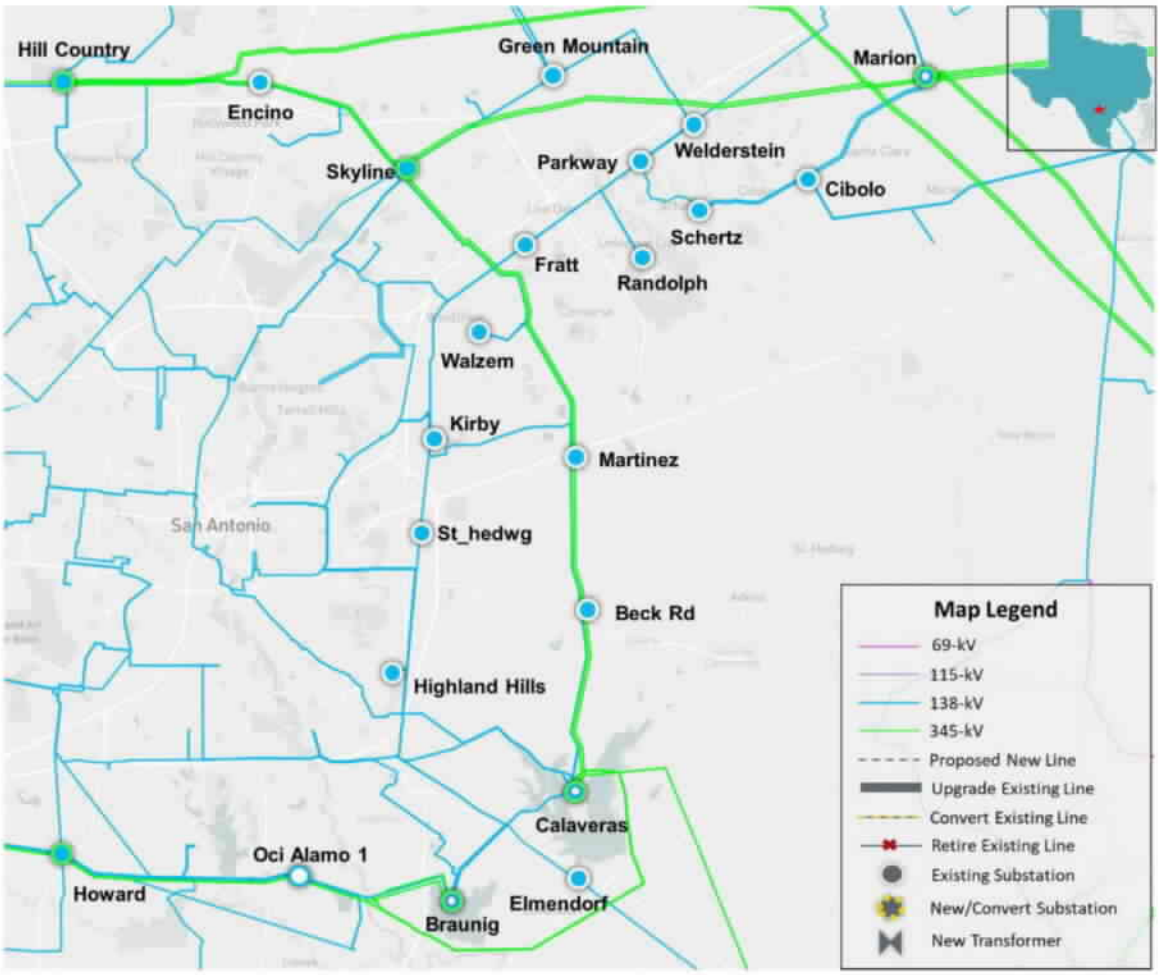

Figure 1.1: Map of Transmission System in the Study Area

2 Study Assumptions and Methodology

ERCOT performed studies under various system conditions to identify any reliability issues and to determine transmission upgrades to support the proposed Eastside 345/138-kV Switching Station Project if an upgrade is deemed necessary. This section describes the study assumptions and criteria used to conduct the independent study.

2.1 Study Assumptions for Reliability Analysis

Although this project, proposed by the TSP, is in the South Central Weather Zone in Bexar County, the study also included Wilson, Atascosa, Medina, Guadalupe, Comal, Bandera, and Kendall Counties because of their electrical proximity to the area of concern, which extends into the South Weather Zone.

2.1.1 Steady-State Study Base Case

The Final 2023 Regional Transmission Plan (RTP) cases, published on the Market Information System (MIS) on December 22, 2023, were used as reference cases in this study. The Year 2029 Summer peak load case was selected for the long-term outlook. The steady-state study base case was constructed by updating transmission, generation, and loads of the following 2029 Summer peak load case for the South and South Central (SSC) Weather Zones.

- 2023RTP_2029_SUM_SSC_12222023[1]

2.1.2 Transmission Topology

Transmission projects within the study area with ISDs by June 2028 were added to the study base case. The ERCOT Transmission Project Information and Tracking (TPIT)[2] report posted in February 2024 was used as reference. The added TPIT projects are listed in Table 2.1. These are classified as Tier 2, Tier 3, and Tier 4 projects.

Table 2.1: List of Transmission Projects Added to the Study Base Case

TPIT No	Project Name	Tier	Project ISD	County
23RPG028	Rio Medina Project	Tier 2	1/1/2027	Medina
22RPG026	Wimberley Loop project	Tier 2	5/1/2027	Blanco, Hays
23RPG003	Eagle Ford Large Load Interconnection Project	Tier 3	12/4/2025	DeWitt
23RPG004	Lockhart to Luling 69-kV Transmission Line Overhaul Project	Tier 4	6/30/2025	Caldwell
23RPG015	Cuero Substation Upgrade Project	Tier 4	5/15/2024	DeWitt
72500	Rio Lago -New 138kV Substation	Tier 4	11/30/2024	Bandera
72268	CPSE_New Ingram Rd Substation	Tier 4	5/1/2025	Bexar
71873	CPSE_Hill Country Auto# 2 Impedance Upgrade	Tier 3	6/1/2025	Bexar

[1] 2023 Regional Transmission Plan Postings: https://mis.ercot.com/secure/data-products/grid/regional-planning
[2] TPIT Report: https://www.ercot.com/gridinfo/planning

TPIT No	Project Name	Tier	Project ISD	County
73063	Big Foot to Lytle: Convert to 138 kV	Tier 4	9/20/2025	Medina, Frio
76242	Lytle: Build new 138kV terminal	Tier 4	9/20/2025	Medina
76768	Upgrade Pearson -Pearsall	Tier 4	12/1/2025	Frio, Medina
67992D	CPSE_345KV_Howard_Switching_Station,CPSE_Hamilton_to_MedCtr_Upgrade,CPSE_Medina_to_36th_Street_Upgrade	Tier 3	1/31/2026	Bexar
76790	Upgrade Pearsall Auto	Tier 4	5/1/2027	Frio
73417	LCRATSC_Schumansville_SheriffsPosse_StormHardening	Tier 4	5/15/2025	Guadalupe, Comal
73793	LCRATSC_McCartyLaneEast_Zorn_TL_Storm_Hardening	Tier 4	5/15/2025	Hays, Guadalupe

Transmission projects listed in Table 2.2, identified in the 2023 RTP as placeholders within the study area and are not approved by RPG were removed from the study base case.

Table 2.2: List of Transmission Projects Removed from the Study Base Case

RTP Project ID	Project Name	County
2023-SC5	Beck Road 345/138-kV Substation Expansion	Bexar
2023-SC19	South to Central Texas 345-kV Double-Circuit Line Additions	San Patricio, Bee, Karnes, Wilson, Guadalupe, Comal, Hays, Travis, Williamson
2023-SC10	Wiseman 138-kV Substation Addition and CPS Multiple Cap Bank Additions	Bexar, Comal
2023-SC16	Hondo to Hondo Creek Switching Station 138-kV Line Upgrade	Medina
2023-SC20	Pearson -Natalia -Devine -Moore -Pearsall 69-kV Line Rebuild	Frio, Medina
2022-S3	Pearsall 138/69-kV Transformer Upgrade	Frio
2023-S3	Oaks Sub 138/69-kV Transformer Upgrade	Atascosa
2023-S4	Poteet Sub to Oaks Sub 69-kV Line Upgrade	Atascosa
2023-S5	Poteet Sub to Pearsall Switching Station 69-kV Line Upgrade	Atascosa, Frio
2023-S6	Rossville Substation Cap Bank Addition	Atascosa

2.1.3 Generation

Based on the January 2024 Generator Interconnection Status (GIS)[3] report posted on the ERCOT website on February 1, 2024, generators in the SC Weather Zone that met ERCOT Planning Guide Section 6.9(1) conditions with Commercial Operations Date (COD) prior to June 2028 were added to

[3] GIS Report: https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER

the study base case. These generation additions are listed in Table 2.3. All new generation dispatches were consistent with the 2024 RTP methodology.

Table 2.3: List of Generation Added to the Study Base Case Based on the January 2024 GIS Report

GINR	Project Name	Fuel	Project COD	Capacity (~MW)	County
22INR0366	Libra BESS	OTH	03/30/2024	206.2	Guadalupe
22INR0422	Ferdinand Grid BESS	OTH	05/31/2026	202.7	Bexar
23INR0154	Ebony Energy Storage	OTH	04/30/2024	203.5	Comal
23INR0381	Soportar ESS	OTH	03/15/2025	102.1	Bexar
23INR0483	Rio Nogales CT1 Rotor Replacement	GAS	6/8/2023	3.1	Guadalupe
24INR0427	CPS AvR CT1 Rotor Replacement	GAS	02/15/2024	11.3	Bexar

The status of each unit that was projected to be either indefinitely mothballed or retired at the time of the study were reviewed. The units listed in Table 2.4 were opened (turned off) in the study base case to reflect their mothballed/retired status.

Table 2.4: List of Generation Opened to Reflect Mothballed/Retired Status

Bus No	Unit Name	Max Capacity (~MW)	Weather Zone
110941	SL_SL_G1	65.0	Coast
110942	SL_SL_G2	65.0	Coast
110943	SL_SL_G3	30.0	Coast
110944	SL_SL_G4	30.0	Coast
140042	WFCOGE_UNIT2	17.0	North
130121	SGM_SIGNALMT2	6.6	Far West
132931	TOSBATT_U1	2.0	Far West

Generation listed in Table 2.5 were closed (turned on) in the study base case to reflect the change in their Generation Resource as these recourses are returning to year-round service.

Table 2.5: List of Generation Closed to Reflect Returning to Service Status

Bus No	Unit Name	Max Capacity (~MW)	Weather Zone
110020	WAP_GT2	71.0	Coast
150023	MCSES_UNIT8	568.0	North-Central
110261	TGF_TGFGT_1	78.0	Coast

2.1.4 Loads

Loads in the SC Weather Zone were updated based on the new confirmed loads in the study area. Minimum reserve requirements were maintained consistent with the 2023 RTP.

2.1.5 Maintenance Outage Scenario

ERCOT developed an off-peak maintenance season scenario to further evaluate the study options.

The load level in the SC Weather Zone was reduced to 83.6% of its summer peak load level in the study base case. This scaling is meant to reflect assumed off-peak season loads based on ERCOT load forecast for future years as well as historical load in the SC Weather Zone.

2.2 Study Assumptions for Congestion Analysis

Congestion analysis was conducted to identify any new congestion in the study area with the addition of the preferred transmission upgrade option.

The 2023 RTP 2028 economic case was updated based on the April 2024 GIS[4] report for generation updates and the February 2024 TPIT[5] reports for transmission updates to conduct congestion analysis. The 2028 study year was selected based on the proposed ISD of the project.

New generation additions listed in Table A.1 in Appendix A were added to the economic base case. Transmission projects listed in Table A.2 in Appendix A were also added to the economic base case. All generation listed in Table 2.4 were opened in the study base case to reflect their mothballed/retired status.

2.3 Methodology

This section lists the contingencies and criteria used for project review along with tool used to perform the various analyses.

2.3.1 Contingencies and Criteria

The reliability assessments were performed based on NERC Reliability Standard TPL-001-5.1, ERCOT Protocols, and Planning Criteria.[6]

Contingencies[7] were updated based on the changes made to the topology as described in Section 2.1 of this document. The following steady state contingencies were simulated for the study region:

- P0 (System Intact);
- P1, P2-1, P7 (N-1 conditions);
- P2-2, P2-3, P4, and P5 (Extra High Voltage (EHV) only);
- P3: G-1 + N-1 (G-1: generation outages) {Guadalupe Gen CC Train 1, San Miguel Unit 1, and J K Spruce Unit 2}; and
- P6-2: X-1 + N-1 (X-1: 345/138-kV transformers only) {Hill Country, Skyline, and Marion}.

All 69-kV and above buses, transmission lines, and transformers in the study region were monitored (excluding generator step-up transformers) and the following thermal and voltage limits were enforced:

- Thermal
  - Rate A (normal rating) for pre-contingency conditions;
  - Rate B (emergency rating) for post-contingency conditions;

[4] GIS Report: https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER
[5] TPIT Report: https://www.ercot.com/gridinfo/planning
[6] ERCOT Planning Criteria: http://www.ercot.com/mktrules/guides/planning/current
[7] Details of each event and contingency category is defined in the NERC reliability standard TPL-001-5.1

- Voltages
  - Voltages exceeding pre-contingency and post-contingency limits; and
  - Voltage deviations exceeding 8% on non-radial load buses.

2.3.2 Study Tool

ERCOT utilized the following software tools to perform this independent study:

- PowerWorld Simulator version 23 for Security Constrained Optimal Power Flow (SCOPF) and steady-state contingency analysis; and
- UPLAN version 12.3.0.29978 to perform congestion analysis.

3 Project Need

Steady-state reliability analysis was performed in accordance with NERC TPL-001-5.1 and ERCOT Planning Criteria described in Section 2.3.1 of this document. This analysis indicated thermal overload and voltage violation issues under N-1, G-1 + N-1 and X-1 + N-1 contingency conditions in the study area prior to the addition of San Antonio South Reliability II project (23RPG032) endorsed by ERCOT in April 2024. These issues are summarized in Table 3.1 and visually illustrated in Figure 3.1.

Table 3.1: Violations Observed on Base Case Under NERC TPL-001-5.1 and in the Study Area

NERC Contingency Category	Voltage Violations	Thermal Overloads	Unsolved Power Flow
P0: N-0	None	None	None
P1, P2-1, P7: N-1	211	3	1
P3: G-1+N-1	208	6	1
P6-2: X-1+N-1	210	6	1

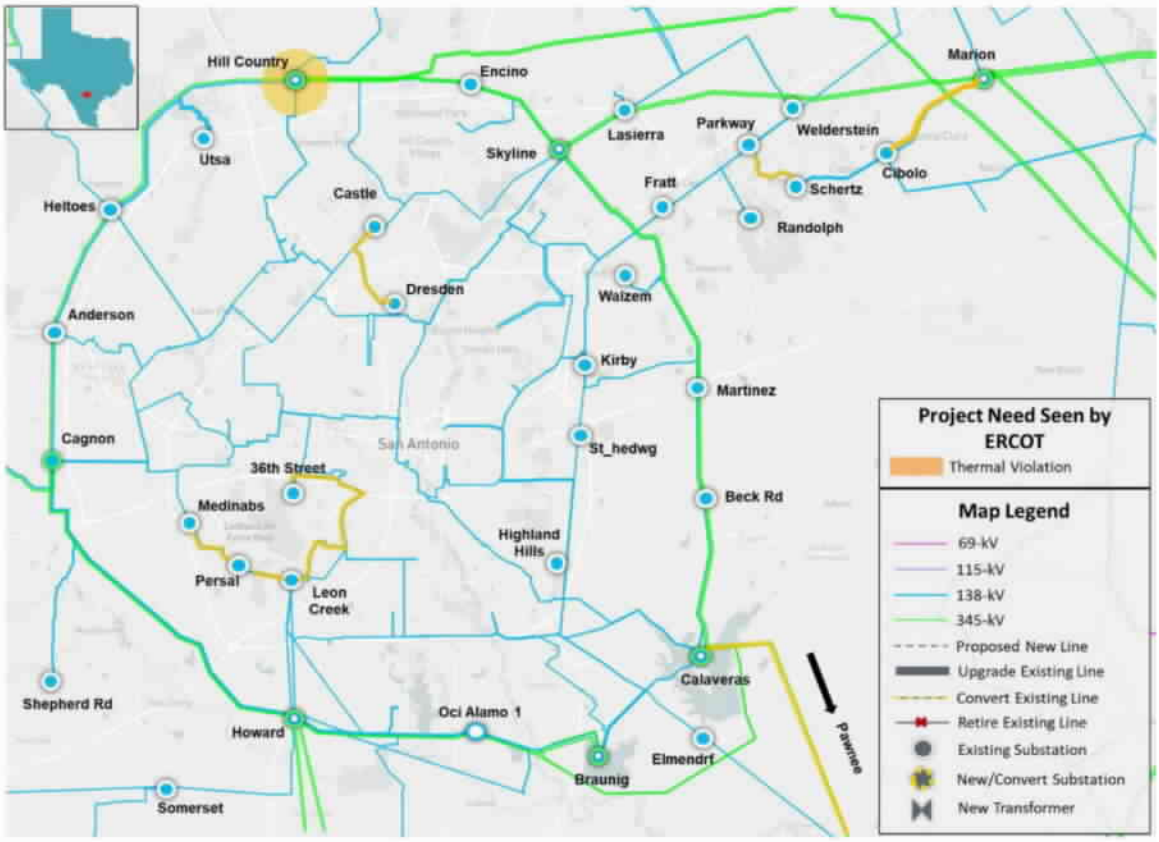

Figure 3.1: Study Area Map Showing the Thermal Violations as Seen by ERCOT

Inclusion of the San Antonio South Reliability II Project relieves the majority of the thermal overloads in the study region. The addition of thirteen (13) capacitor banks identified in the CPS Omicron Reliability project (24RPG004) relieves the voltage violations in the study area. The outstanding thermal and voltage violations are summarized in Table 3.2 and visually illustrated in Figure 3.2.

Table 3.2: Violations Observed on Base case plus San Antonio South Reliability II project and the addition of 13 Capacitor Banks under NERC TPL-001-5.1 and ERCOT Planning Criteria in the Study Area

NERC Contingency Category	Voltage Violations	Thermal Overloads	Unsolved Power Flow
P0: N-0	None	None	None
P1, P2-1, P7: N-1	None	2	None
P3: G-1+N-1	None	2	None
P6-2: X-1+N-1	None	2	None

Two 345-kV transmission lines overloads were observed under various contingency conditions. These issues are summarized in Table 3.3 and visually illustrated in Figure 3.2.

Table 3.3: Thermal Overloads Observed in the Study Area

NERC Contingency Category	Overloaded Element	Voltage Level (kV)	Length (~miles)	Max Loading (%)
P3: G-1+N-1	Spruce – Martinez 345-kV Line Ckt 1	345	9.8	105.5
P3: G-1+N-1	Spruce – Martinez 345-kV Line Ckt 2	345	9.8	105.5

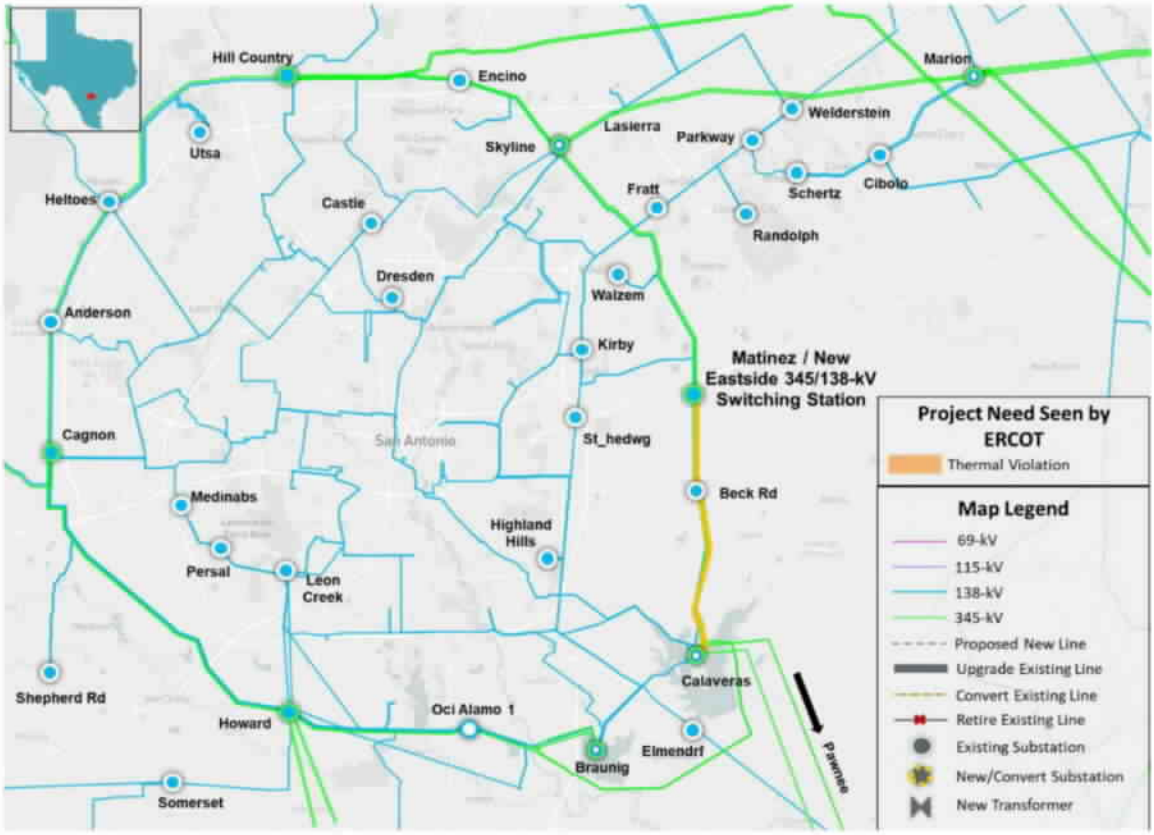

Figure 3.2: Study Area Map Showing Project Needs Seen by ERCOT

4 Description of Project Options

ERCOT initially evaluated four system improvement options to address the thermal overloads that were observed in the study base case in the San Antonio Area.

Option 1 (CPS Proposed Solution) consists of the following:

- Construct a new Eastside 345/138-kV switching station North of Beck Road substation;
- Install two 345/138-kV autotransformers with nameplate rating of 600 MVA at the new Eastside 345/138-kV switching station;
- Loop Spruce to Skyline 345-kV Circuit 1 and Circuit 2 into the new Eastside 345-kV station;
- Loop Deely to Martinez, Deely to Walzem, Beck to Kirby and Sommers to Kirby 138-kV transmission lines into the new Eastside 138-kV station; and

- Rebuild the Spruce to new Eastside switching station 345-kV transmission line circuit 1 and circuit 2 in existing easement with a normal and emergency rating of 2347 MVA or greater, approximately 9.8-mile, per circuit.

Figure 4.1: Map of Option 1

Option 1A consists of the following:

- Rebuild the Spruce to new Eastside switching station 345-kV transmission line circuit 1 and circuit 2 in existing easement with a normal and emergency rating of 2347 MVA or greater, approximately 9.8-mile, per circuit.

Figure 4.2: Map of Option 1A

Option 2 consists of the following:

- Install two 345/138-kV autotransformers with nameplate rating of 600 MVA at the Spruce 345-kV substation to Deely 138-kV substation.

Figure 4.2: Map of Option 2

Option 3 consists of the following:

- Install two 345/138-kV autotransformers with nameplate rating of 600 MVA at the Van Rose 345-kV substation to Braunig West 138-kV substation.

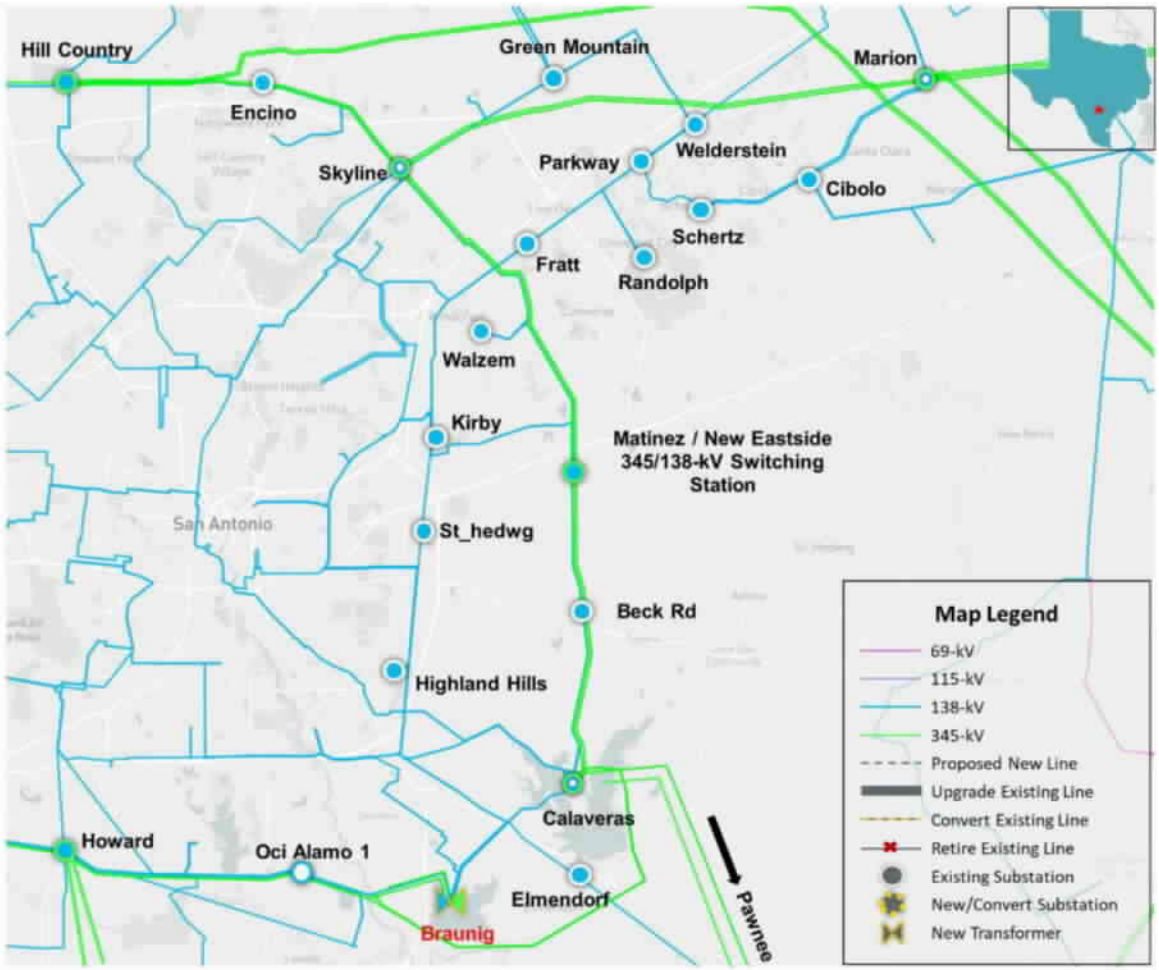

Figure 4.3: Map of Option 3

5 Option Evaluations

ERCOT performed reliability analysis and planned maintenance outage evaluation on all four options to identify any reliability impact of the options in the study area. This section details these studies and their results and compares the options.

5.1 Results of Reliability Analysis

All initial four options were evaluated based on the contingencies described in the methodology section of the report, and no reliability criteria violation were identified for all four options as shown in Table 5.1.

Table 5.1: Results of Initial Reliability Assessment of All Four Options

Option	Voltage Violations	Thermal Overloads	Unsolved Power Flow
1	None	None	None
1A	None	None	None
2	None	None	None
3	None	None	None

5.2 Planned Maintenance Outage Evaluation

Using the P1, P2.1, and P7 contingencies based on the review of the system topology of the area, ERCOT conducted an N-2 contingency analysis for each of the study options to represent system element outages under planned maintenance condition (N-1-1) in the area. Then, each N-2 violation was run as an N-1-1 contingency scenario, with system adjustments between the contingencies. The transmission elements in the study area were monitored in the maintenance outage evaluation.

As shown in Table 5.2, the results of this maintenance assessment indicates that all four options performed similarly and did not result in any reliability violations.

Table 5.2: Results of Planned Maintenance Outage Evaluation for the Four Options

Option	Voltage Violations	Thermal Overloads	Unsolved Power Flow
1	None	None	None
1A	None	None	None
2	None	None	None
3	None	None	None

5.3 Cost Estimate and Feasibility Assessment

CPS performed feasibility assessments and provided cost estimates for the four options. Table 5.3 summarizes the cost estimate, CCN required and option feasibility for the four options.

Table 5.3: Cost Estimates and Feasibility for the Four Options

Option	Cost Estimates (~$M)	CCN Required	Feasible
1	160.0[8]	Yes	Feasible
1A	47.0	No	Feasible
2	N/A[9]	N/A[9]	Not Feasible
3	N/A[9]	N/A[9]	Not Feasible

Based on the input from CPS, Option 2 and 3 were deemed infeasible due to physical space limitation. Based on the results shown in table 5.3 Option 1 and Option 1A were selected as short-listed options for further evaluations.

[8] Cost Estimate includes the addition of the Eastside Switching Station, which was captured in the San Antonio South Reliability II Project (23RPG032) endorsed by ERCOT in April 2024.
[9] The estimated cost was not provided because the Options were deemed infeasible by CPS due to space constraint.

6 Comparison of Short-listed Options

Based on the results from Option Evaluations in Section 5, all the short-listed Options 1 and 1A are summarized in Table 6.1.

Table 6.1: Comparison of the Short-Listed Options

	Option 1	Option 1A
Met ERCOT and NERC Reliability Criteria	Yes	Yes
Improved Operational Flexibility (Planned Maintenance Outages)	Yes	Yes
CCN Needed	Yes	No
Feasibility	Yes	Yes
Capital Cost Estimates[10] (~$M)	$160.0[11]	$47.0

ERCOT recommends Option 1A as the preferred option to address the reliability need in the study area based on the following considerations:

- Option 1A resolves all the reliability needs;
- Option 1A is the least cost solution;
- Option 1A is a feasible option; and
- Option 1A would not require a CCN.

7 Additional Analysis and Assessment

The preferred option (Option 1A, approximately $47.0 million and does not require a CCN) is categorized as a Tier 3 project, pursuant to ERCOT Protocol 3.11.4.3(1)(c). ERCOT performed generation and load sensitivity studies to identify the preferred option performance. Additionally, a Sub-synchronous Resonance (SSR) Assessment was performed.

7.1 Generation Addition Sensitivity Analysis

ERCOT performed a generation addition sensitivity analysis. Based on a review of the May 2024 GIS[12] reports, 3 units were found within the SC Weather Zone that could have an impact on the identified reliability issues. These units, listed in the Table 7.1, were added to the preferred option following the 2024 RTP Methodology. ERCOT determined addition of these generators do not impact the preferred option.

[10] The cost estimates were provided by the Transmission Service Provider (TSP).
[11] Cost Estimate includes the addition of the Eastside Switching Station, which was captured in the San Antonio South Reliability II Project (23RPG032) endorsed by ERCOT in April 2024.
[12] GIS Report: https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER.

Table 7.1: List of Units that Could have an Impact on the Identified Reliability Issues

GINR	Unit Name	Fuel Type	Capacity (~MW)	County
21INR0391	Grandslam Solar	Solar	121.9	Atascosa
22INR0388	Cachi BESS	Battery	205.5	Guadalupe
23INR0207	El Patrimonio Solar	Solar	152.3	Bexar

7.2 Load Scaling Sensitivity Analysis

ERCOT performed Load Scaling Sensitivity Analysis to evaluate the potential impact of load scaling on the criteria violations seen in this ERCOT independent review. As stated in Section 2.1, ERCOT used the 2029 SSC summer peak case from the 2023 RTP and adjusted the load to create the 2029 SSC summer peak case to study the area in SC Weather Zone. This study base case, which was created in accordance with the 2023 RTP Study Scope and Process document and Section 2.1 of this document, included load scaled down from the respective non-coincident peaks in the North, North Central, South, South Central, East, and Coast Weather Zones.

The Outage Transfer Distribution Factors (OTDFs) of overloaded elements with respect to the load transfer for each Weather Zone (excluding SSC Weather Zones) were calculated using PowerWorld Simulator. The OTDFs were less than 1% for each of the overloaded elements, *i.e.*, they were not significant enough to have an impact on the overloaded elements. ERCOT concluded that the load scaling used to develop the base case in this study did not have a material impact on the project need, which was primarily driven by thermal overloads and voltage violations under maintenance outage condition in the study area.

7.3 Sub-synchronous Resonance (SSR) Assessment

ERCOT conducted a sub-synchronous-resonance (SSR) screening for the preferred option (Option 1A) and found no adverse SSR impacts to the existing and planned generation resources in the study area.

8 Congestion Analysis

ERCOT conducted a congestion analysis to identify any potential impact on system congestion related to the addition of the recommend project, Option 1A, using the 2023 RTP 2028 final economic case.

The results of congestion analysis indicated no significant congestion in the area due to the addition of the recommended transmission upgrades of Option 1A.

9 Conclusion

ERCOT evaluated the four transmission upgrade options to resolve the thermal overloads and voltage violations in the Bexar County. Based on the results of the independent review, ERCOT recommends

Option 1A as the preferred solution because it solves the reliability needs in the study area, is the least cost solution, is a feasible solution, and does not require a CCN.

Option 1A consists of the following upgrades and is estimated to cost $47.0 million:

- Rebuild the Spruce to new Eastside switching station 345-kV transmission line circuit 1 and circuit 2 in existing easement with a normal and emergency rating of 2,347 MVA or greater, approximately 9.8-mile, per circuit.

Figure 9.1: Map of Option 1A

This project does not require a CCN and the expected ISD of this project is June 2028. Based on ERCOT independent review, ERCOT will reclassify this RPG project to a Tier 3 project according to the ERCOT Protocol 3.11.4.3(1)(c). Cost estimates and CCN requirement for the installation of the new Eastside 345/138-kV switching station are captured in the San Antonio South Reliability II Project (23RPG032) and endorsed by ERCOT in April 2024.

Appendix A

Table A.1: List of Generation Added to the Economic Base Case Based on April 2024 GIS Report

GINR	Project Name	Fuel	Project COD	Capacity (~MW)	County
14INR0033	Goodnight Wind	WIN	2/14/2024	258.1	Armstrong
19INR0054	Monte Cristo 1 Wind	WIN	9/30/2025	236.9	Hidalgo
19INR0134	Cottonwood Bayou Solar	SOL	8/13/2024	351.4	Brazoria
19INR0203	Angelo Solar	SOL	8/12/2024	195.4	Tom Green
20INR0040	Montgomery Ranch Wind	WIN	9/1/2024	200.2	Foard
20INR0208	Signal Solar	SOL	3/15/2025	51.8	Hunt
20INR0210	Hopkins Solar	SOL	12/30/2023	253.1	Hopkins
20INR0248	Second Division Solar	SOL	9/17/2024	100.3	Brazoria
21INR0302	Aureola Solar	SOL	6/28/2024	203.0	Milam
21INR0303	Mandorla Solar	SOL	11/29/2024	254.0	Milam
21INR0304	Halo Solar	SOL	6/20/2024	254.0	Bell
21INR0325	Sheep Creek Wind	WIN	1/31/2024	153.0	Callahan
21INR0368	Eliza Solar	SOL	11/1/2024	151.6	Kaufman
21INR0389	Hollywood Solar	SOL	6/30/2024	353.4	Wharton
21INR0424	Tierra Bonita Solar	SOL	10/29/2024	306.9	Pecos
21INR0450	Danish Fields Storage	OTH	3/6/2024	152.4	Wharton
21INR0505	Ramsey Storage	OTH	12/31/2025	510.4	Wharton
21INR0511	Wolf Ridge Repower	WIN	4/2/2024	9.0	Cooke
21INR0515	Roadrunner Crossing Wind II SLF	WIN	1/20/2025	126.7	Eastland
22INR0251	Shaula I Solar	SOL	10/30/2025	205.2	DeWitt
22INR0260	Eliza Storage	OTH	11/1/2024	100.2	Kaufman
22INR0261	Dorado Solar	SOL	12/31/2025	406.3	Callahan
22INR0267	Shaula II Solar	SOL	5/30/2026	205.2	DeWitt
22INR0353	BRP Carina BESS	OTH	12/31/2024	151.9	Nueces
22INR0354	XE MURAT Solar	SOL	5/13/2024	60.4	Harris
22INR0366	LIBRA BESS	OTH	1/26/2024	206.2	Guadalupe
22INR0422	Ferdinand Grid BESS	OTH	5/31/2026	202.7	Bexar
22INR0502	Shamrock	WIN	4/19/2024	223.9	Crockett
22INR0555	Guevara Storage	OTH	7/15/2025	125.4	Rockwall
23INR0026	Baker Branch Solar	SOL	8/1/2024	469.4	Lamar
23INR0054	Tanglewood Solar	SOL	1/16/2025	257.0	Brazoria
23INR0062	Noria Storage	OTH	9/1/2025	75.0	Nueces
23INR0091	Cascade Solar	SOL	12/31/2024	254.2	Brazoria
23INR0114	True North Solar	SOL	6/30/2024	238.3	Falls
23INR0154	Ebony Energy Storage	OTH	5/6/2024	203.5	Comal
23INR0159	Five Wells Storage	OTH	12/30/2023	220.8	Bell
23INR0219	Dogfish BESS	OTH	12/31/2024	75.0	Pecos
23INR0239	Giga Texas Energy Storage	OTH	1/31/2024	131.1	Travis

GINR	Project Name	Fuel	Project COD	Capacity (~MW)	County
23INR0296	Trojan Solar	SOL	2/28/2026	151.3	Cooke
23INR0331	Talitha BESS	OTH	6/30/2024	61.4	Jim Wells
23INR0349	Tokio Solar	SOL	8/25/2025	177.6	McLennan
23INR0367	Fewell Solar	SOL	9/9/2025	203.5	Limestone
23INR0381	Soportar ESS	OTH	3/15/2025	102.1	Bexar
23INR0387	Pioneer DJ Wind	WIN	5/3/2024	140.3	Midland
23INR0408	TECO GTG2	GAS	1/30/2024	50.0	Harris
23INR0418	Angelo Storage	OTH	5/3/2024	103.0	Tom Green
23INR0460	GULF STAR STORAGE	OTH	6/25/2024	301.0	Wharton
23INR0470	BoCo BESS	OTH	6/22/2024	155.5	Borden
23INR0525	Pyron Wind Repower	WIN	2/1/2024	19.9	Nolan
23INR0637	Goodnight Wind II	WIN	12/30/2024	258.3	Armstrong
24INR0010	Pinnington Solar	SOL	10/15/2025	666.1	Jack
24INR0015	Five Wells Solar	SOL	12/29/2023	322.8	Bell
24INR0038	SP Jaguar Solar	SOL	6/30/2025	300.0	McLennan
24INR0039	SP Jaguar BESS	OTH	6/30/2025	300.0	McLennan
24INR0070	Sypert Branch Solar Project	SOL	6/1/2025	261.8	Milam
24INR0100	Sheep Creek Storage	OTH	7/1/2024	142.1	Callahan
24INR0109	Oriana BESS	OTH	7/2/2025	60.3	Victoria
24INR0138	Midpoint Storage	OTH	8/30/2025	52.2	Hill
24INR0139	Midpoint Solar	SOL	8/30/2025	103.8	Hill
24INR0140	Gaia Storage	OTH	7/31/2025	76.8	Navarro
24INR0141	Gaia Solar	SOL	7/31/2025	152.7	Navarro
24INR0265	Ironman BESS	OTH	11/1/2024	304.2	Brazoria
24INR0273	Al Pastor BESS	OTH	8/16/2024	103.1	Dawson
24INR0281	Red Egret BESS	OTH	6/1/2025	310.6	Galveston
24INR0295	Lucky Bluff BESS	OTH	5/31/2025	100.8	Erath
24INR0312	Wigeon Whistle BESS	OTH	9/1/2024	122.9	Collin
24INR0337	Eldora Solar	SOL	6/30/2026	200.9	Matagorda
24INR0338	Eldora BESS	OTH	6/30/2026	201.3	Matagorda
24INR0436	Carambola BESS	OTH	5/31/2026	97.4	Hidalgo
25INR0105	Diver Solar	SOL	6/30/2026	228.2	Limestone
25INR0162	SOHO II BESS	OTH	1/1/2025	206.3	Brazoria
25INR0223	Uhland Maxwell	GAS	4/15/2025	188.4	Caldwell
25INR0232	Isaac Solar	SOL	3/31/2026	51.6	Matagorda
25INR0328	Longbow BESS	OTH	11/13/2024	180.8	Brazoria
23INR0403	Connolly Storage	BAT	8/18/2023	125.4	Wise
24INR0147	Holy ESS	BAT	1/19/2023	209.3	Harris
24INR0397	Destiny Storage	BAT	9/21/2023	201.1	Harris
20INR0217	CAROL wind	WND	1/31/2024	165.4	Potter
21INR0240	La Casa Wind	WND	1/4/2024	148.4	Stephens
21INR0379	Ash Creek Solar	SOL	1/17/2024	417.7	Hill

GINR	Project Name	Fuel	Project COD	Capacity (~MW)	County
23INR0030	Langer Solar	SOL	1/5/2024	249.8	Bosque
23INR0070	Chillingham Solar	SOL	1/30/2024	352.4	Bell
23INR0336	Bypass Battery Storage	BAT	1/9/2024	206.9	Fort Bend
24INR0632	Cedro Hill Wind Repower	WND	1/30/2024	9.9	Webb
26INR0042	Valhalla Solar	SOL	1/5/2024	306.8	Brazoria
23INR0044	Parliament Solar U1	SOL	12/31/2024	250.4	Waller
23INR0044	Parliament Solar U2	SOL	12/31/2024	234.2	Waller
24INR0023	Compadre Solar U1	SOL	12/25/2024	194.7	Hill
24INR0023	Compadre Solar U2	SOL	12/25/2024	211.5	Hill
24INR0208	Eastbell Milam Solar II	SOL	12/20/2024	151.0	Milam
24INR0329	XE Murat Storage	BAT	12/14/2024	60.1	Harris
24INR0605	TEXAS GULF SULPHUR REPOWER	NG	6/25/2024	94.0	Wharton
16INR0049	Nazareth Solar	SOL	3/24/2025	204	Castro
21INR0428	Nabatoto Solar North U1	SOL	2/1/2026	224.8	Leon
21INR0428	Nabatoto Solar North U2	SOL	2/1/2026	140.9	Leon
24INR0395	Berkman Storage	BAT	4/30/2026	150.9	Galveston
25INR0531	CPS Energy AvR1CT2 Rotor Replacement	GAS	4/1/2024	11.3	Bexar

Table A.2: List of Transmission Projects Added to Economic Base Case Based on February 2024 TPIT Report

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

Table A.3: Project Related Document

No	Document Name	Attachment
1	Eastside Switching Station Project	Eastside Switching Station Report.pdf