Filing Receipt

Filing Date - 2024-02-27 11:58:35 AM

Control Number - 55999

Item Number - 16

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 A TIER 3 TRANSMISSION PROJECT

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 a Tier 3 transmission project submitted by Oncor Electric Delivery Company LLC (Oncor), as reflected in Attachments A-B. Oncor 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 this matter.

Dated: February 27, 2024

Respectfully Submitted,

/s/ Katherine Gross

Chad V. Seely
Senior Vice President and General Counsel
Texas Bar No. 24037466
(512) 225-7035 (Phone)
chad.seely@ercot.com

Brandon Gleason
Deputy General Counsel
Texas Bar No. 24038679
(512) 275-7442 (Phone)
brandon.gleason@ercot.com

Katherine Gross
Senior Corporate Counsel
Texas Bar No. 24065610
(512) 225-7184 (Phone)
(512) 225-7079 (Fax)
Katherine.Gross@ercot.com

ERCOT
8000 Metropolis Drive, Bldg. E, Suite 100
Austin, Texas 78744
(512) 225-7079 (Fax)

ATTORNEYS FOR ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.

ercot
Your Power. Our Promise.

Taylor
2705 West Lake Drive
Taylor, TX 76574
T 512.248.3000
F 512.225.7079

Austin
8000 Metropolis Drive (Building E), Suite 100
Austin, TX 78744
T 512.225.7000
F 512.225.7079

ercot.com

February 26, 2024

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

RE: Rockhound 345/138-kV Switch and Grey Well Draw – Buffalo 2nd 138-kV Circuit Project

Dear Mr. Nashawati:

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:

Rockhound 345/138-kV Switch and Grey Well Draw – Buffalo 2nd 138-kV Circuit Project:

- Install a new 26.2-mile Grey Well Draw – Buffalo 138-kV second circuit, on the vacant side of the existing structures, using a conductor rated 2569 Amps or greater (normal and emergency rating of 614 MVA);
- Reconfigure the existing Germania 138-kV Point of Delivery (POD), Roughneck Tap POD and Triangle 138 kV station for each to connect to the new Grey Well Draw – Buffalo 138-kV second circuit;
- Establish the new Rockhound 345/138-kV Switch, including two 600 MVA autotransformers, approximately 10.7 miles east of the existing Midland East 345/138-kV Switch. The Rockhound 345/138 kV Switch will initially be installed with an 8-breaker, 345-kV breaker-and-a-half bus arrangement, and a 10-breaker, 138-kV breaker-and-a-half bus arrangement. All terminal and associated equipment will meet or exceed 5000 Amps for 345-kV and 3200 Amps for 138-kV;
- Construct an approximately 0.1-mile loop of the existing Midland East – Falcon Seaboard 345-kV Line (normal and emergency rating of 956 MVA) into the new Rockhound 345-kV Switch; and
- Construct an approximately 0.1-mile loop of the existing Blue Acres – Buffalo 138-kV Line (normal and emergency rating of 614 MVA) and the new Grey Well Draw – Buffalo 138-kV Line (normal and emergency rating of 614 MVA) into the new Rockhound 138-kV Switch.

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

ROCKHOUND 345/138 KV SWITCH AND GREY WELL DRAW – BUFFALO 2ND 138 kV CIRCUIT

ERCOT RPG Submittal
January 11, 2024

Business and Operations Services
Assets Planning

ONCOR

Table of Contents

Executive Summary

Oncor Electric Delivery Company LLC (Oncor) proposes a Tier 3 project (Proposed RPG Project) that will:

- Install a new 26.2-mile Grey Well Draw – Buffalo 138 kV second circuit, on the vacant side of the existing structures, using a conductor rated 2569 A or greater (normal and emergency rating of 614 MVA);
- Reconfigure the existing Germania 138 kV Point of Delivery (POD), Roughneck Tap POD and Triangle 138 kV station for each to connect to the new Grey Well Draw – Buffalo 138 kV second circuit;
- Establish the new Rockhound 345/138 kV Switch, including two 600 MVA autotransformers, approximately 10.7 miles east of the existing Midland East 345/138 kV Switch. The Rockhound 345/138 kV Switch will initially be installed with an 8-breaker, 345 kV, breaker-and-a-half bus arrangement, and a 10-breaker, 138 kV, breaker-and-a-half bus arrangement. All terminal and associated equipment will meet or exceed 5000 A for 345 kV and 3200 A for 138 kV;
- Construct an approximately 0.1-mile loop of the existing Midland East – Falcon Seaboard 345 kV Line (normal and emergency rating of 956 MVA) into the new Rockhound 345 kV Switch; and
- Construct an approximately 0.1-mile loop of the existing Blue Acres – Buffalo 138 kV Line (normal and emergency rating of 614 MVA) and the new Grey Well Draw – Buffalo 138 kV Line (normal and emergency rating of 614 MVA) into the new Rockhound 138 kV Switch.

Steady-state assessment of Oncor's existing transmission facilities in this area of far west Texas has identified low voltages outside acceptable limits at 17 138 kV load-serving substations by the summer of 2024. These low voltages exceed the North American Electric Reliability Corporation (NERC), ERCOT and Oncor reliability criteria. This area of the system has been experiencing significant load growth primarily in the oil and gas industry, leading to the addition of several new points of delivery (PODs). The Proposed RPG Project will eliminate all identified voltage exceedances, improve system operational flexibility, reduce customer exposure, and increase system capacity in the area.

This $97.0 million Tier 3 project in Martin and Midland counties is recommended for construction to meet a December 2024 in-service date. No portion of this Proposed RPG Project will require a CCN. The projected in-service date may change based on requirements for environmental assessment, licensing requests and construction progress. The cost estimate accounts for the expectation that some construction activities will occur in an energized transmission line corridor. If necessary, Oncor will work with ERCOT to develop and implement Constraint Management Plans (CMPs) such as line sectionalizing or mobile equipment/capacitor installation based on summer 2024 operational conditions.

Introduction

This submittal describes the need to establish the new Rockhound 345/138 kV Switch and Grey Well Draw – Buffalo 138 kV 2nd Circuit (Proposed RPG Project) in Martin and Midland counties. Oncor continues to see load growth in this area of west Texas due to the high level of activities in the oil and gas industry. The strong need in this area is mainly driven by new loads and electrification activities, including conversion of gas-powered equipment to electrical operation and moving load from on-site generation to the grid to improve reliability. The addition of new industrial loads in the area have resulted in low voltages at 17 load-serving substations in the area. Figures 1 and 2 below show an area map and current configuration of the area around the Proposed RPG Project.

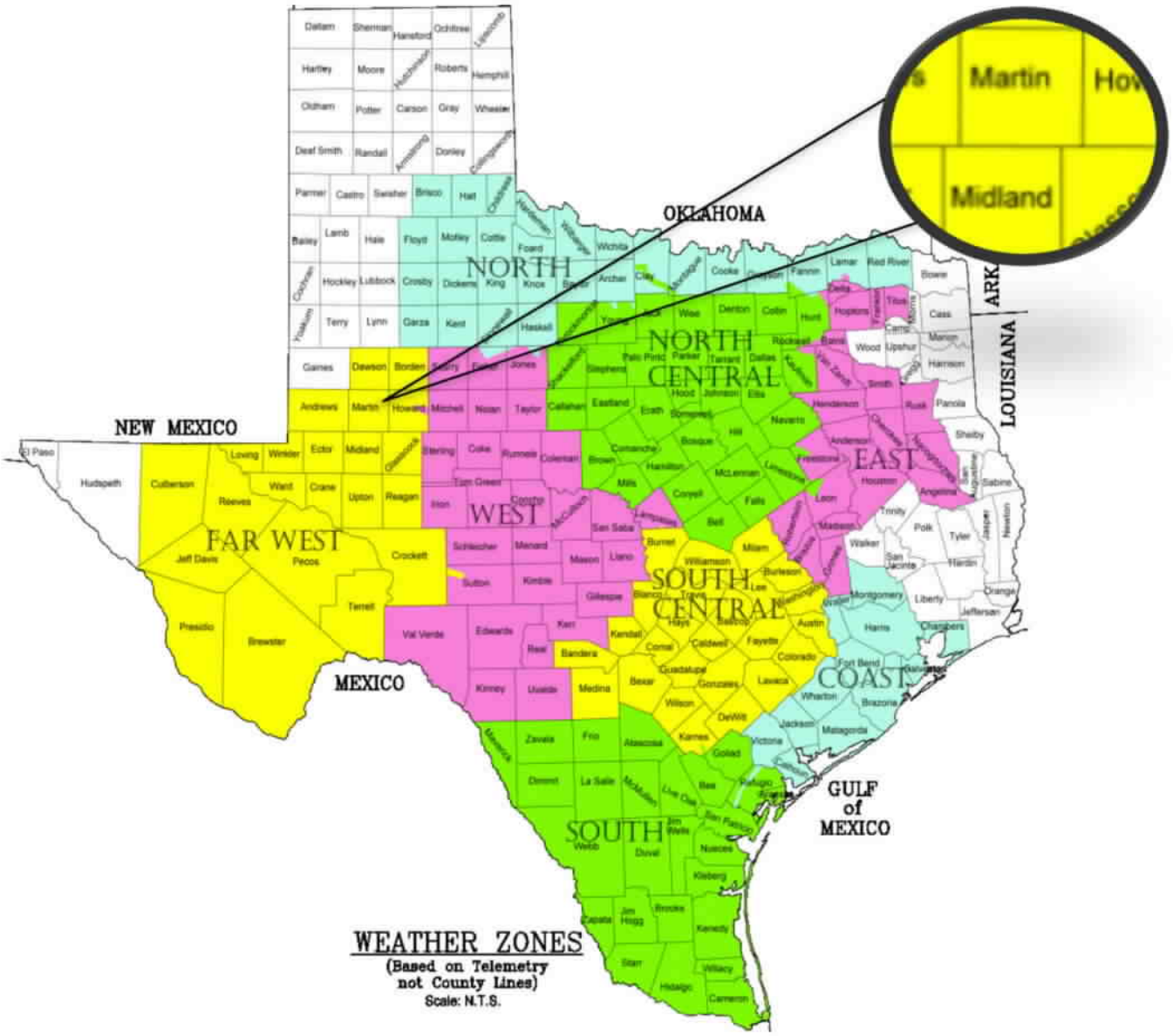

Figure 1. Proposed RPG Project Approximate Location

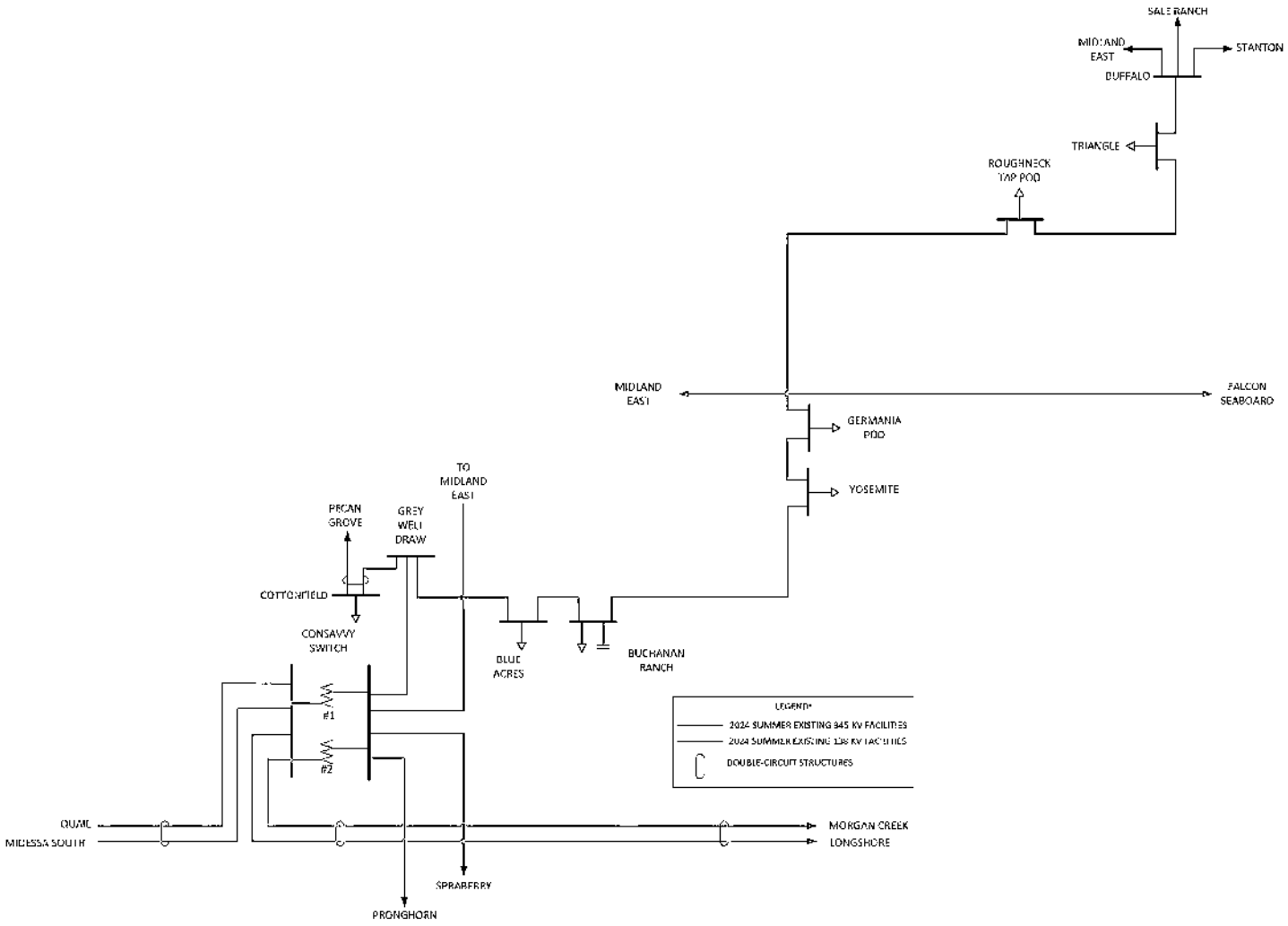

Figure 2. Existing Study Area Slider

Purpose and Necessity

Steady-State Analysis

Oncor steady-state assessments for the 2024, 2025, and 2029 summer peak cases revealed voltage exceedances at 17 load-serving substations in the area of the Proposed RPG Project under post-contingency conditions. The cases used for this study were the ERCOT Steady State Working Group (SSWG) cases published on October 2022, (22SSWG_2024_SUM1_U1_FINAL_10102022.sav, 22SSWG_2025_SUM1_U1_FINAL_10102022.sav, and 22SSWG_2029_SUM1_U1_FINAL_10102022.sav). The following projects were assumed to be in-service in the analysis:

- Consavyy 345/138 kV Switch Project (accepted by RPG 4/4/2022);
- Expanse/Volta 345/138 kV Switch Project (accepted by RPG 4/4/2022);
- Peck – Driver 138 kV Project (endorsed by ERCOT 5/12/2023).
- Big Spring West – Stanton East 138 kV Line Rebuild (accepted by ERCOT 5/30/2023)
- Azalea substation and newly signed load (The connection of this new substation will not require a CCN.)

The post-contingency conditions that result in voltage exceedances include multiple contingency scenarios per NERC Standard TPL-001-5 and ERCOT Planning Guide Reliability Performance Criteria 4.1.1.2 1(d). The results justifying the need for the proposed projects and subsequent results after the proposed projects are completed are summarized in Table 1 below.

Area Voltages											
NERC Category	Contingency		Monitored Bus Number	Monitored Bus Name	Voltage (p.u.)					
	PSSE Bus Numbers	Elements			2024 Summer		2025 Summer		2029 Summer	
					Pre-Project	Post-Project	Pre-Project	Post-Project	Pre-Project	Post-Project
P1	11387 - 11396	Consavvy – Grey Well Draw 138 kV Line	11396	Grey Well Draw	0.9101	0.9813	0.9199	0.9836	0.8957	0.9682
			23857	Blue Acres	0.909	0.9879	0.9195	0.9900	0.8941	0.9737
			11335	Buchanan Ranch	0.9091	0.9881	0.9196	0.9903	0.8941	0.9739
			23858	Yosemite	0.9036	0.9825	0.9146	0.9846	0.8905	0.9692
			11390	Germania POD	0.9028	0.9764	0.9140	0.9786	0.8903	0.964
			23843	Roughneck Tap POD	0.9068	0.9796	0.9184	0.9822	0.8962	0.9681
			23839	Triangle	0.9141	0.9754	0.9263	0.9799	0.9063	0.9665
			23837	Buffalo	0.9232	0.9753	0.9358	0.9811	0.9179	0.9686
			18662	Brazos Midstream Midland POD	0.9228	0.9707	0.9332	0.9818	0.9154	0.9648
			23841	Sale Ranch	0.9241	0.9694	0.9333	0.9735	0.9155	0.9633
			11371	Red Sand POD	0.9232	0.9703	0.9316	0.9737	0.9119	0.9615
			11229	Stanton	0.9245	0.9729	0.9420	0.9828	0.9258	0.9742
			1133	Cottonfield	0.9103	0.9812	0.9200	0.9832	0.8961	0.9692
			23860	South Midland	0.9112	0.9812	0.9208	0.9833	0.8973	0.9696
			23861	Pecan Grove	0.914	0.9756	0.9226	0.9782	0.9010	0.9651
			23840	Glass Ranch	0.9236	0.9712	0.9317	0.9744	0.9113	0.9615
			23836	Natural Dam	0.9235	0.9653	0.9424	0.9784	0.9243	0.9691

Table 1. Worst Area Voltage Exceedances

Area Voltages											
NERC Category	Contingency		Monitored Bus Number	Monitored Bus Name	Voltage (p.u.)					
	PSSE Bus Numbers	Elements			2024 Summer		2025 Summer		2029 Summer	
					Pre-Project	Post-Project	Pre-Project	Post-Project	Pre-Project	Post-Project
P2	11396 – 23857	Grey Well Draw – Blue Acres 138 kV Line Section	23857	Blue Acres	0.8772	1.0124	0.8933	1.0151	0.8423	0.9958
			11335	Buchanan Ranch	0.8773	1.0125	0.8934	1.0152	0.8425	0.9959
			23858	Yosemite	0.8758	0.9976	0.8913	1.005	0.8452	0.9835
			11390	Germania POD	0.8764	0.9859	0.8918	0.9895	0.8473	0.9744
			23843	Roughneck Tap POD	0.8851	0.9878	0.9001	0.9913	0.8603	0.9765
			23839	Triangle	0.9005	0.9823	0.9148	0.9875	0.8823	0.9737
			23837	Buffalo	0.9162	0.9814	0.9302	0.9878	0.9036	0.9749
			18662	Brazos Midstream Midland POD	0.9230	0.9765	0.9343	0.9818	0.9102	0.971
			23841	Sale Ranch	0.9282	0.975	0.9381	0.9798	0.9154	0.9694
			11371	Red Sand POD	0.9361	0.9766	0.9450	0.9811	0.9222	0.9687
			11229	Stanton	0.9198	0.9782	0.9384	0.9885	0.9148	0.9797
			11373	Rocklake POD	0.9260	0.9729	0.9376	0.9794	0.9147	0.9691
			11331	Bealscreek	0.9287	0.9662	0.9492	0.9852	0.9248	0.9753
			1325	Airpark	0.9441	0.9742	0.9512	0.9834	0.9280	0.9745
			23840	Glass Ranch	0.9395	0.9777	0.9480	0.9821	0.9251	0.969
			23836	Natural Dam	0.9225	0.9697	0.9416	0.9834	0.9180	0.974
			1326	Stanton East	0.9241	0.9786	0.9451	0.9911	0.9236	0.9840

Table 1. Worst Area Voltage Exceedances (continued)

Area Voltages											
NERC Category	Contingency		Monitored Bus Number	Monitored Bus Name	Voltage (p.u.)					
					2024 Summer		2025 Summer		2029 Summer	
	PSSE Bus Numbers	Elements			Pre-Project	Post-Project	Pre-Project	Post-Project	Pre-Project	Post-Project
P6	23857 - 11396	First Contingency: Blue Acres – Grey Well Draw 138 kV Line	23857	Blue Acres	0.7287	0.9459	0.7453	0.9482	0.6713	0.9292
			11335	Buchanan Ranch	0.7288	0.946	0.7454	0.9488	0.6714	0.9293
			23858	Yosemite	0.7569	0.9601	0.7733	0.9632	0.7054	0.9455
			11390	Germania POD	0.7655	0.9695	0.7817	0.9735	0.7161	0.9575
			23843	Roughneck Tap POD	0.7950	0.9708	0.8109	0.9746	0.7523	0.9589
			23839	Triangle	08379	0.9682	0.8532	0.9739	0.8060	0.959
			23837	Buffalo	0.8726	0.9693	0.8875	0.9762	0.8495	0.9622
	11335	Second Contingency: Buchanan Ranch 110.4 MVAR Capacitor Bank	18662	Brazos Midstream Midland POD	0.8886	0.9666	0.9006	0.9723	0.8667	0.9603
			23841	Sale Ranch	0.8988	0.9662	0.9092	0.9715	0.8776	0.9598
			11371	Red Sand POD	0.9104	0.9683	0.9198	0.9731	0.8888	0.9595
			11229	Stanton	0.883	0.9679	0.9029	0.9790	0.8689	0.9687
			11373	Rocklake POD	0.8967	0.9643	0.9089	0.9712	0.8769	0.9596
			11331	Bealscreek	0.9066	0.9597	0.9263	0.9793	0.8934	0.9675
			1325	Airpark	0.9245	0.9684	0.9315	0.9785	0.9003	0.9675
			23840	Glass Ranch	0.9151	0.9696	0.9241	0.9744	0.8934	0.9601
			23836	Natural Dam	0.8941	0.9615	0.9136	0.9759	0.8807	0.9647
			1326	Stanton East	0.8910	0.9692	0.9135	0.9826	0.8820	0.9739

Table 1. Worst Area Voltage Exceedances (continued)

Dynamic Analysis

This assessment focused on quantifying the dynamic stability impacts of the most critical contingencies identified in the steady-state analysis, as well as the effectiveness of the Proposed RPG Project in mitigating those issues. The dynamic analysis was conducted using the Dynamic Working Group (DWG) 2025 Summer Peak case published in February 2022 (2025_SP_Final_NonCnv33.sav). The full Stanton Loop topology and load was updated to mirror the case used in the steady state assessment. The load on the southern portion of the Stanton Loop was adjusted to match the steady-state case and included updated load contracts through June 2023. The results of the stability assessment, with the addition of the Proposed RPG Project, demonstrate that post-contingency voltage exceedances were eliminated through 2029 with the Proposed RPG Project in-service and that there was no adverse effect on the transmission system. Oncor's most recent annual assessment indicates there are no known dynamic stability issues in this area. Therefore, Oncor did not perform additional dynamic analysis for the Proposed RPG Project through 2029. Oncor will continue to perform annual dynamic analysis for this area.

Short-Circuit Study

Oncor has evaluated the short-circuit impacts of the Proposed RPG Project using the System Protection Working Group (SPWG) case "23_SPWG_2028_FY_07222023_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. Oncor did not identify any overdutied breakers resulting from the Proposed RPG Project.

Subsynchronous Resonance (SSR) Screening

Oncor performed an SSR screening assessment with all series capacitors and generator units in service to identify new potential SSR vulnerabilities within the ERCOT system as a result of the proposed projects. The study was performed with and without the Proposed RPG Project and confirmed the Proposed RPG Project did not create any new or shorter paths leading to generation sources becoming radial with series capacitors in the event of fewer than 14 concurrent outages. No further SSR analysis is required for the Proposed RPG Project.

Project Description

In order to address the identified reliability concerns, Oncor recommends the following:

- Install a new 26.2-mile Grey Well Draw – Buffalo 138 kV second circuit, on the vacant side of the existing structures, using a conductor rated 2569 A or greater (normal and emergency rating of 614 MVA);
- Reconfigure the existing Germania 138 kV Point of Delivery (POD), Roughneck Tap POD and Triangle 138 kV station for each to connect to the new Grey Well Draw – Buffalo 138 kV second circuit;
- Establish the new Rockhound 345/138 kV Switch, including two 600 MVA autotransformers, approximately 10.7 miles east of the existing Midland East 345/138 kV Switch. The Rockhound 345/138 kV Switch will initially be installed with an 8-breaker, 345 kV, breaker-and-a-half bus arrangement, and a 10-breaker, 138 kV, breaker-and-a-half bus arrangement. All terminal and associated equipment will meet or exceed 5000 A for 345 kV and 3200 A for 138 kV;
- Construct an approximately 0.1-mile loop of the existing Midland East – Falcon Seaboard 345 kV Line (normal and emergency rating of 956 MVA) into the new Rockhound 345 kV Switch; and
- Construct an approximately 0.1-mile loop of the existing Blue Acres – Buffalo 138 kV Line (normal and emergency rating of 614 MVA) and the new Grey Well Draw – Buffalo 138 kV Line (normal and emergency rating of 614 MVA) into the new Rockhound 138 kV Switch.

One-Line Diagram

Figure 3 shows a one-line diagram with dashed elements depicting the proposed projects.

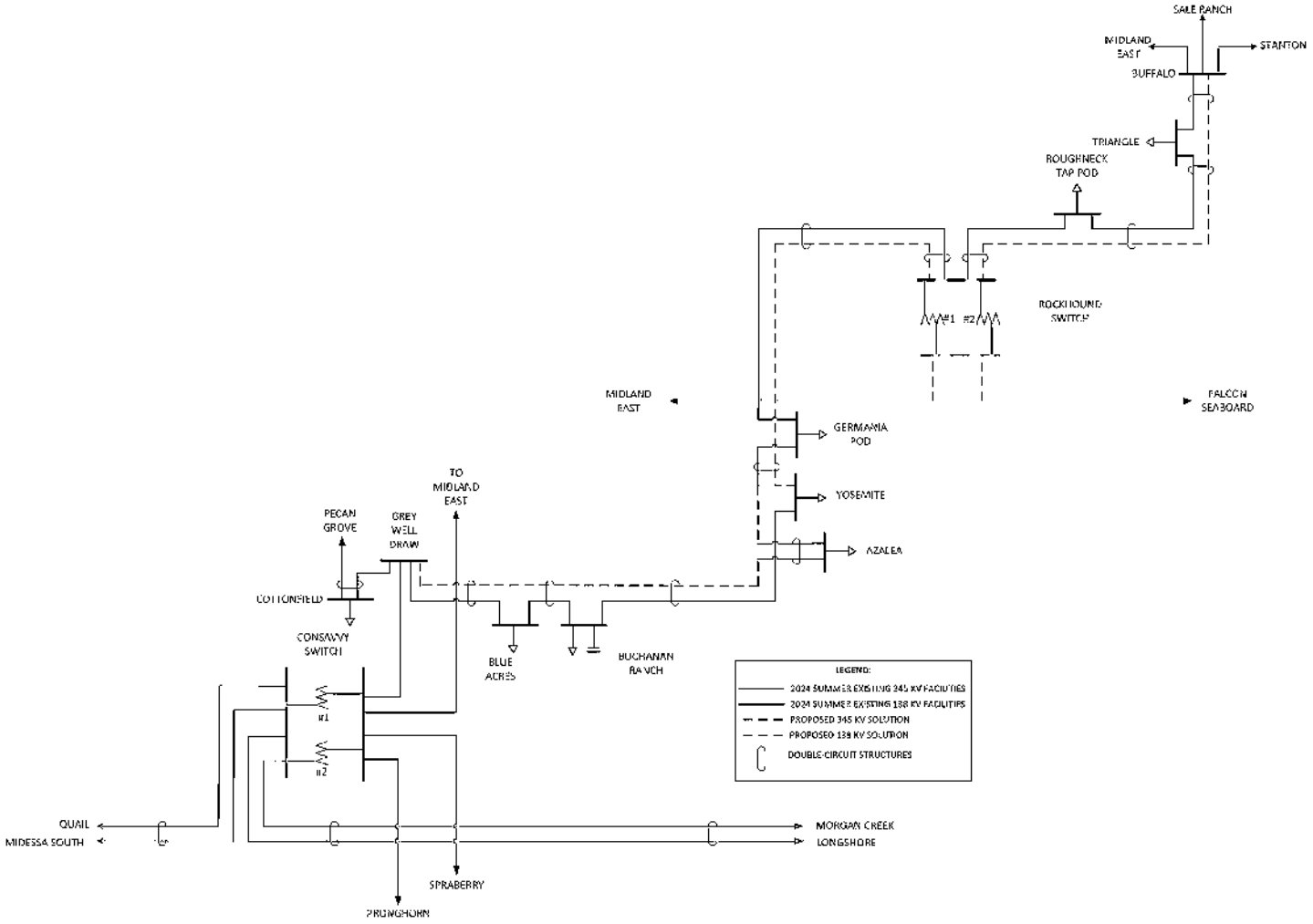

Figure 3. Proposed RPG Project Slider Diagram

Alternative Solutions

As an alternative to constructing the Proposed RPG Project, Oncor considered adding shunt reactive support at the Buffalo station. While this alternative provides voltage support and may be considered in future projects, this alternative does not address all of the voltage exceedances on the aforementioned stations. Additionally, this alternative solution will not improve overall system strength due to the lack of a 345/138 kV injection in the area, unlike the Proposed RPG Project. Oncor does not recommend this alternative solution because, unlike the Proposed RPG Project, post contingency exceedances remain, overall system strength will not improve, and import capabilities are not increased.

Another alternative considered was constructing a new 5.2-mile, 138 kV line from Consavvy to Blue Acres. Given the lack of existing rights-of-way (ROW) available to expand networking in the study area, the new line would need to undergo a

Certificate of Convenience and Necessity (CCN) review and land acquisition process, which would add considerable complexity and time requirements this alternative's completion. Oncor does not recommend this alternative solution because it would require more time to construct and import capabilities are not improved.

Recommendation

Oncor recommends the following project as the best solution to resolve the post-contingency thermal and voltage issues identified in the analysis of the study area.

- Install a new 26.2-mile Grey Well Draw – Buffalo 138 kV second circuit, on the vacant side of the existing structures, using a conductor rated 2569 A or greater (normal and emergency rating of 614 MVA);
- Reconfigure the existing Germania 138 kV Point of Delivery (POD), Roughneck Tap POD and Triangle 138 kV station for each to connect to the new Grey Well Draw – Buffalo 138 kV second circuit;
- Establish the new Rockhound 345/138 kV Switch, including two 600 MVA autotransformers, approximately 10.7 miles east of the existing Midland East 345/138 kV Switch. The Rockhound 345/138 kV Switch will initially be installed with an 8-breaker, 345 kV, breaker-and-a-half bus arrangement, and a 10-breaker, 138 kV, breaker-and-a-half bus arrangement. All terminal and associated equipment will meet or exceed 5000 A for 345 kV and 3200 A for 138 kV;
- Construct an approximately 0.1-mile loop of the existing Midland East – Falcon Seaboard 345 kV Line (normal and emergency rating of 956 MVA) into the new Rockhound 345 kV Switch; and
- Construct an approximately 0.1-mile loop of the existing Blue Acres – Buffalo 138 kV Line (normal and emergency rating of 614 MVA) and the new Grey Well Draw – Buffalo 138 kV Line (normal and emergency rating of 614 MVA) into the new Rockhound 138 kV Switch.

This Proposed RPG Project resolves all identified area post-contingency voltage concerns. Oncor will work with ERCOT to develop and implement CMPs based on summer 2024 operational conditions. Oncor will utilize line sectionalizing or mobile equipment/capacitor installation CMPs as necessary to mitigate system low/high voltages under contingency. Completing the Proposed RPG Project will meet reliability requirements, maintain acceptable system voltages, add a new 345 kV injection point, improve overall system strength and import capability, and provide adequate transmission capacity for the system under pre- and post-contingency conditions. The estimated cost for this Tier 3 Proposed RPG project is $97.0 million, based on the expectation that some elements of this project will be constructed using energized (hot) work processes.