Overview of Skyview 345/138 kV Switch

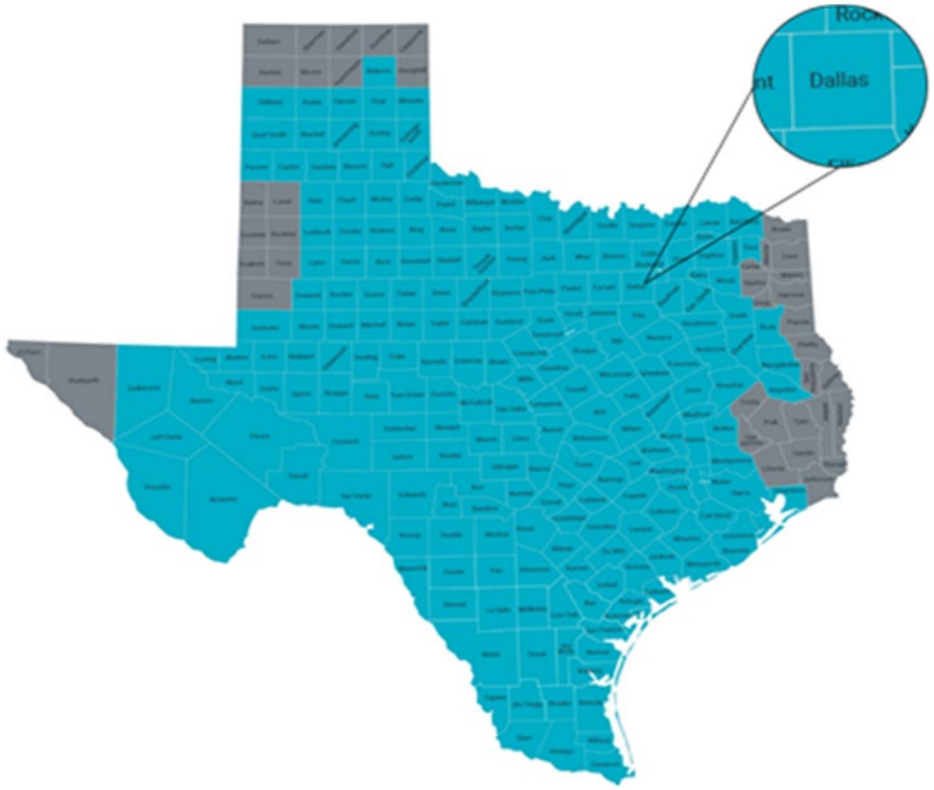
ERCOT RPG Meeting

10/28/2025

Thomas Nguyen

Project Overview

- Tier-2 Project in the Dallas County
- CCN Required
- Resolves identified thermal violations, provide additional 345 kV sources for the area, further network the area's transmission facilities, and enhance system reliability
- New 345/138 kV Switch
  - 345 kV Switch: One breaker
  - 138 kV Switch: Ring bus
  - One new 345/138 kV Autotransformer rated at 700 MVA
- Two 2.6 miles of 138 kV transmission line upgrades on new triple circuit structures
- One 2.6 miles of new 345 kV transmission line on the rebuilt triple circuit structures
- Cost Estimate: $56.82M

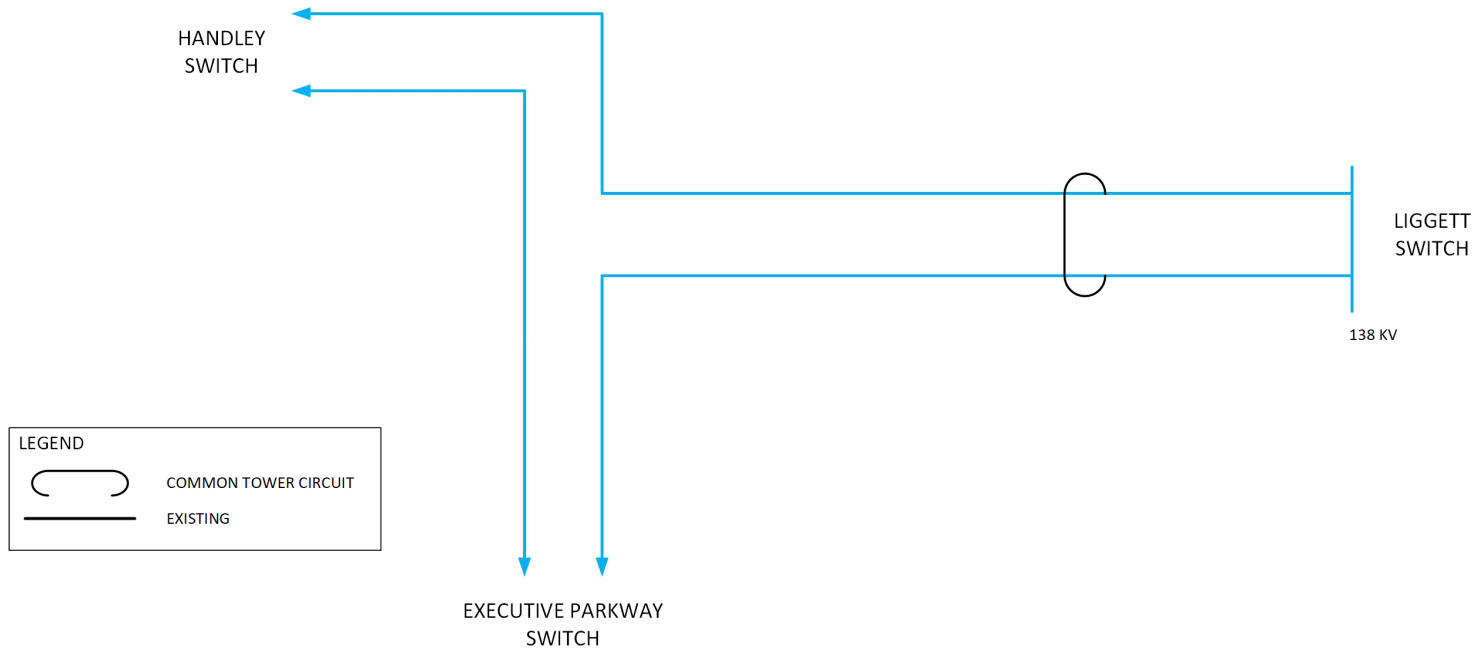


Pre-Project Thermal Violations

Multiple contingencies of concern

- X-1 + N-1

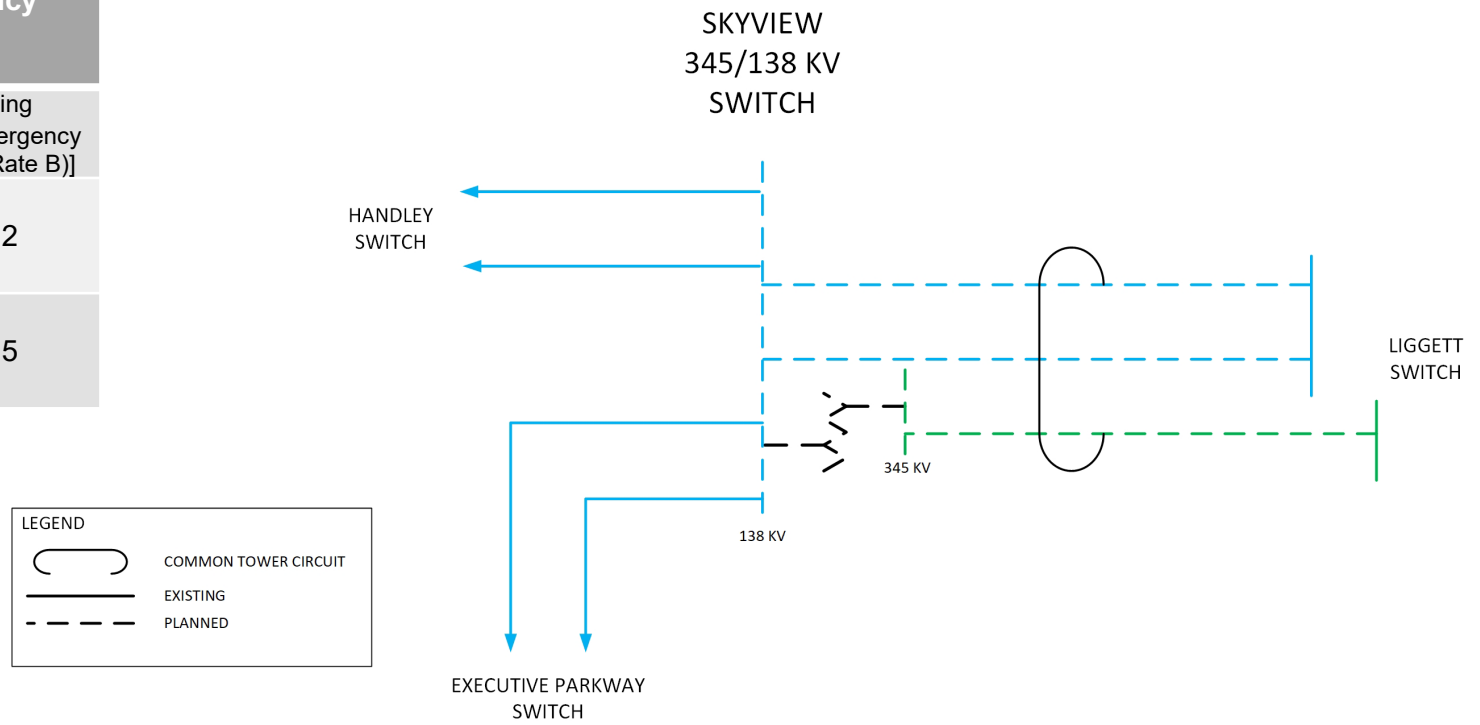
	Pre-project Worst Post-Contingency Loading	
Element	Contingency	Loading [% of Emergency Rating (Rate B)]
Liggett 345/138 kV Autotransformer #1	Liggett 345/138 kV Autotransformer #2 + Norwood Switch – Liggett Switch/Cedar Hill Switch 345 kV Double-Circuit Line	119.6
Liggett 345/138 kV Autotransformer #2	Liggett 345/138 kV Autotransformer #1 + Norwood Switch – Liggett Switch/Cedar Hill Switch 345 kV Double-Circuit Line	109.5



Liggett 345/138 kV Autotransformers thermal overload was also identified in the 2024 ERCOT Regional Transmission Plan (RTP) project 2024-NC77

Post-Project Thermal Loading

	Post-project Worst Post-Contingency Loading	
Element	Contingency	Loading [% of Emergency Rating (Rate B)]
Liggett 345/138 kV Autotransformer #1	Skyview 345/138 kV Autotransformer #1 + Norwood Switch – Liggett Switch/Cedar Hill Switch 345 kV Double-Circuit Line	88.2
Liggett 345/138 kV Autotransformer #2	Liggett 345/138 kV Autotransformer #1 + Norwood Switch – Liggett Switch/Cedar Hill Switch 345 kV Double-Circuit Line	80.5



Oncor Recommendation

- Establish Skyview 345 kV Switch with one 345 kV, 3200 A circuit breaker and Skyview 138 kV Switch with seven 138 kV, 3200 A breakers in a ring bus arrangement;
- Install one 600 MVA (nameplate) 345/138 kV Autotransformer at Skyview Switch (normal rating of 700 MVA and emergency rating of 750 MVA);
- Rebuild the 2.6-mile portion of the existing Liggett Switch - Handley Switch/Executive Parkway 138 kV double-circuit line using triple-circuit capable structures. For both 138 kV circuits, use a conductor rated at 2569 A (normal and emergency rating of 614 MVA) or greater;
- Install one 2.6-mile 345 kV transmission circuit between Liggett Switch and Skyview 345 kV Switch using the rebuilt triple-circuit capable structures of the upgraded 2.6-mile portion of Liggett Switch – Handley Switch/Executive Parkway Switch 138 kV Double-Circuit Line. Use a conductor rated at 3200 A (normal and emergency rating of 1912 MVA) or greater;
- Install one 345 kV, 3200 A circuit breaker at Liggett Switch 345 kV;
- Ensure all existing terminal and associated 138 kV equipment are rated at 3000 A (717 MVA) or greater. New equipment will be rated at 3200 A (764 MVA) or greater; and
- Ensure all the new and existing terminals and associated 345 kV equipment meet or exceed 3200 A (1912 MVA).

Questions?