TNMP Galveston System Transmission Upgrades

02/24/2025

Project Summary

Preferred Option: 345kV source into Seminole station and 138kV re-builds

- Tap CNP's 345kV PH Robinson – Meadow line ~ 12.49 miles from PH Robinson to create a new CenterPoint 345kV switching station (Six (6) 345kV breakers in a breaker and a half scheme)
- Build a new 345/138kV TNMP Nighthawk station and two (2) 0.12 mile 345kV tie-lines utilizing 1926 ACSS conductor on separate structures (Normal/Emergency ratings: 2,987 MVA/2,987 MVA) from the CNP 345kV switching station to TNMP 345kV Nighthawk station (Four (4) 345kV breakers and Ten (10) 138kV breakers in a breaker and a half scheme)Install two (2) 345/138kV transformers at 345/138kV Nighthawk station.
- Install two (2) 345/138kV transformers at 345/138kV Nighthawk station, each with 800 MVA/1067 MVA (Normal/Emergency ratings
- Re-configure the 138kV Seminole – Friendswood and Seminole – Magnolia lines to be routed through 138kV Nighthawk (1600 Amp, Normal/Emergency ratings: 383/383 MVA) and build a 1.69 miles double circuit jumper (Normal/Emergency ratings: 717 MVA/717 MVA) from 138kV Nighthawk to existing Seminole station
- Re-conductor the 138kV Butler Road – Magnolia – Seminole (Nighthawk) – Friendswood – Hastings – North Alvin lines for 3000 Ampere (717 MVA)

Project Overview

Preferred Option: 345kV source into Seminole station and 138kV re-builds

- Reliability driven Tier-1 Project
- Cost estimate: $133.73 million
- Estimated in-service: June 2028
- The voltage security of the region will be addressed and the long-term load serving capability will be improved to meet the increased energy demand forecasted in the region

Background

- TNMP is anticipating a significant amount of load growth on its Galveston region transmission system
  - Based on a combination of large spot load interconnection requests and the growing residential/commercial trends in the region
- Additionally, there have been a significant amount of BESS projects that have met Section 6.9 requirements of the EPG in TNMP's Galveston region transmission system
- TNMP's annual transmission planning studies have also indicated a vulnerability to N-1-1 (P6) events in terms of steady state voltage security of their Galveston system 138kV loop
- The location of this transmission system is such that there are very limited options to get additional transmission enhancement to this region given that the east side of the system is pretty much along the Gulf Coast.
- In light of all the above factors, TNMP initiated a study to assess the most cost-effective transmission upgrade solution to reliably address the issues identified above

Key Study Conclusions

- The study results indicate the preferred option provides a better performance in terms of the long-term load serving capability and especially in terms of the voltage security of the region. The voltage security issue of the region is expected to be exacerbated with numerous additional large spot load requests that TNMP has received in the region. The presence of the 345kV source into Seminole (via Nighthawk) provides a more robust voltage performance for the transmission system in the region.
- From long term load serving capability point of view, the preferred option also provides TNMP with more flexibility in terms of accommodating some of the large load requests anticipated on their system before running into planning criteria violations under N-1 events.

Questions!