TNMP Ward and Winkler County Transmission Improvement Project – ERCOT Independent Review Scope

Regional Planning Group

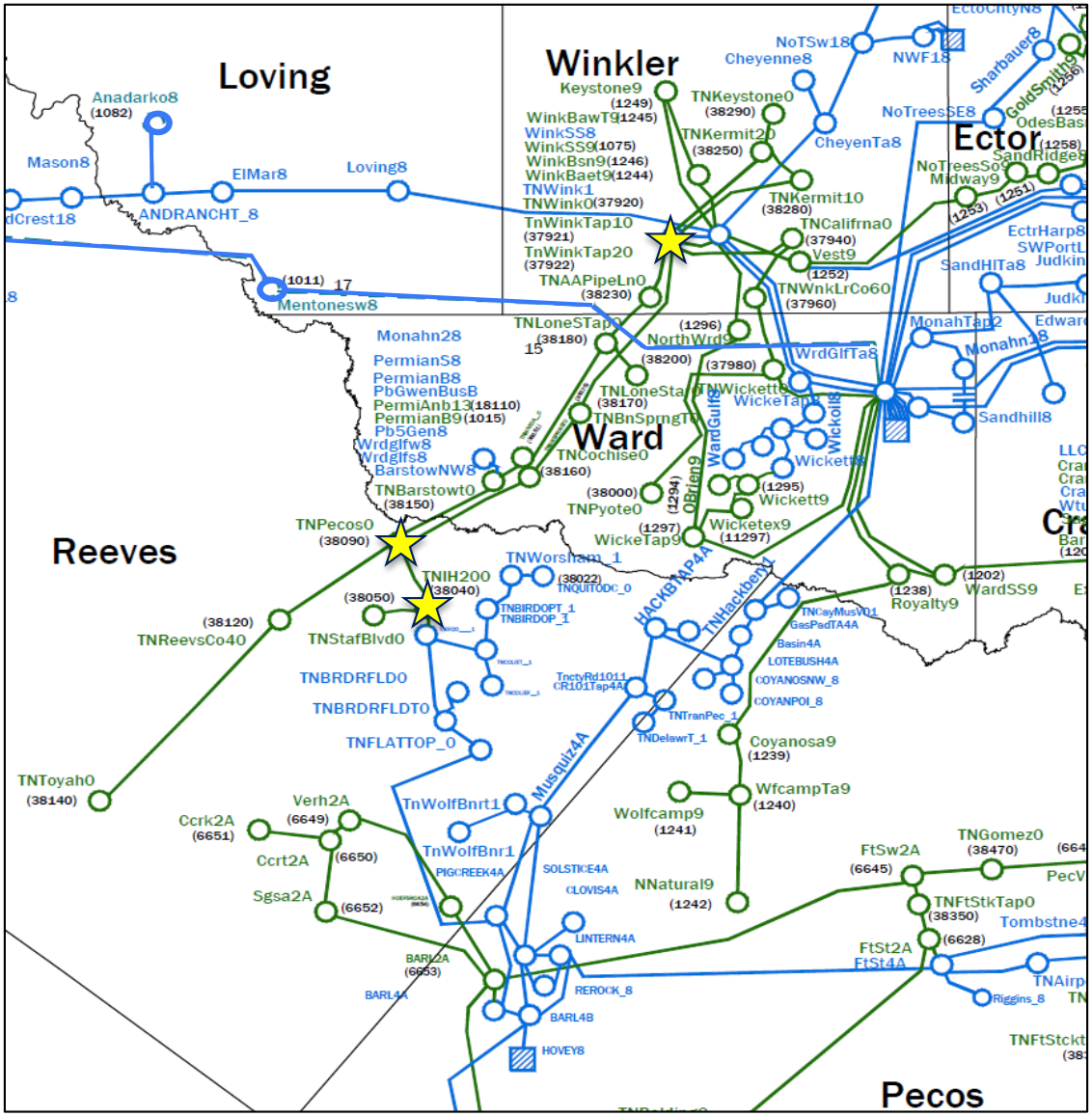
May 14, 2019

Introduction

Texas New Mexico Power (TNMP) submitted Ward and Winkler County Transmission Improvement Project for Regional Planning Group review in March 2019. This is a Tier 2 project that is estimated to cost $60 million.

- Expected in-service date is December 2020
- Address ongoing load increases in TNMP's West Texas North region
- Reliability Issues
  - Thermal overloads on TNMP's 69-kV system between Wink, Wickett, and Pecos stations for 138-kV contingencies
  - Oncor's Wink 138/69-kV auto overload
- Provide thermal capacity and improved voltage support by
  - Converting most of TNMP's 69-kV system in the area to 138-kV
  - Establishing new 138-kV points of interconnection with Oncor's system
- This project is currently under ERCOT independent review

Study Area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Study Assumptions

- **Study Base Cases**
  - Steady-state cases will be constructed from the following final 2018 Regional Transmission Plan cases posted on the MIS on Dec 20, 2018:
    - Case: 2018RTP_2021_SUM_WFW_12202018
    - Case: 2018RTP_2024_SUM_WFW_12202018
  - Study Area: ERCOT Far West Weather Zone

Study Assumptions

- **Transmission Updates**
  - Transmission Projects expected to be in-service within the study area by 2021 and 2024, respectively, at the time of the study will be added to the base cases
  - The following Tier 4 projects identified in the 2018 RTP were included in the base cases
    - Second 345/138 kV transformer at Moss Switching Station (2018-FW1, MOD: 7092)
    - Yucca - Moss 138 kV Series Reactor (2018-FW1, MOD: 7099)
    - Wolf - General Tire 138 kV Series Reactor (2018-FW1, MOD: 7100)
    - Wink - Yukon 138 kV Second Circuit (2018-FW1, MOD: 7102)
    - Saragosa to Solstice: Rebuild 138 kV line (2018-FW3, MOD: 6851)

Study Assumptions

- **Load Updates**
  - The Far West (FW) weather zone load in the 2018 RTP base cases will be adjusted based on the load confirmed by TNMP.

Year	FW Load Confirmed by TNMP for the ERCOT Independent Review (MW)
2021	562
2024	640

Study Assumptions

- **Generation Updates**
  - **New Generation Addition**
    - Generator additions that meet Planning Guide Section 6.9 requirements for the respective study years in Far West weather zone at the time of study (April 2019 GIS report posted on May 2) will be added to the base cases

INR	Project Name	Capacity (MW)	Projected COD
17INR0070	Desert Sky repower	7.2	03/01/2019
18INR0038	Barrow Ranch	160	12/01/2019
18INR0055	Long Draw Solar	225	06/30/2020
18INR0067	Gopher Creek Wind	158	07/31/2019
18INR0069	Indian Mesa repower	0	01/01/2019
19INR0029	Phoebe Solar	250	09/01/2019
19INR0038	High Lonesome W	449.5	11/30/2019
19INR0083	Oberon Solar	180	12/15/2019
19INR0099a	Kontiki 1 Wind (ERIK)	255.3	06/30/2020
19INR0099b	Kontiki 2 Wind (ERNEST)	255.3	06/30/2021
19INR0102	Queen Solar	400	12/31/2019
19INR0163	Sage Draw Wind	338	03/31/2020
19INR0174	Elbow Creek repower	0	09/16/2019
19INR0184	Oxy Solar	16.2	07/15/2019
19INR0185	Lapetus Solar 2	100	12/31/2019
20INR0011	Ranchero Wind	300	09/30/2019
20INR0054	Taygete Solar	254.24	12/01/2020

  - **Generation Retirement**
    - All recently retired/mothballed coal and natural gas units that were not reflected in the 2018 RTP cases will be removed from the base cases

Study Assumptions – Miscellaneous

- **Wind Generation Dispatch**
  - Far West weather zone wind will be dispatched consistent with 2019 RTP
  - The wind dispatch level in other weather zones will remain the same as the 2019 RTP assumptions

- **Solar Generation Dispatch**
  - Solar generation in the study area will be turned off to represent a stressed system condition as the load in the study area is mainly associated with oil and natural gas loads that are expected to operate as a constant load, 24x7

- **Reserves**
  - Load outside of West and Far West weather zones will be adjusted to make up for the 2800 MW reserve

Contingencies and Criteria

- **Contingencies for Study Region**
  - NERC TPL-001-4 and ERCOT Planning Criteria (http://www.ercot.com/content/wcm/current_guides/53526/04_050115.doc):
    - Normal system condition (P0)
    - N-1 conditions (P1, P2-1, P7)
    - P2, P4, and P5 (EHV only)
    - X-1 + N-1 (X-1 represents 345/138 kV transformer outage)
    - G-1 + N-1 (G-1 represents generator outage)
- **Criteria**
  - Thermal
    - Monitor all transmission lines and transformers in study region
    - Use Rate A for pre-contingency conditions
    - Use Rate B for post-contingency conditions
  - Voltages
    - Monitor all busses 60 kV and above in the study region
    - Voltages exceeding their pre-contingency and post-contingency limits
    - Voltage deviations exceeding 8% on non-radial load busses

Study Procedure

- **Need Analysis**
  - The reliability analysis will be performed to identify the need to serve the projected TNMP load using the study base case

- **Project Evaluation**
  - Project alternatives will be tested to satisfy the NERC and ERCOT reliability requirements
  - ERCOT will also consider construction and maintenance outages

- **Economic Analysis**
  - Economic analysis will be performed to ensure that the identified transmission upgrades do not result in new congestion within the study area

Deliverables

- **Tentative Timeline**
  - Status updates – June 2019
  - Final recommendation – August 2019

Stakeholder Comments Also Welcomed to Sun Wook Kang:
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