P145 Line Rebuild – Asset Condition and OPGW Project

TCA Submittal Presentation
ES-22-TCA-18
ISO-NE ACL #324

NEPOOL Reliability Committee Meeting

May 16th, 2023

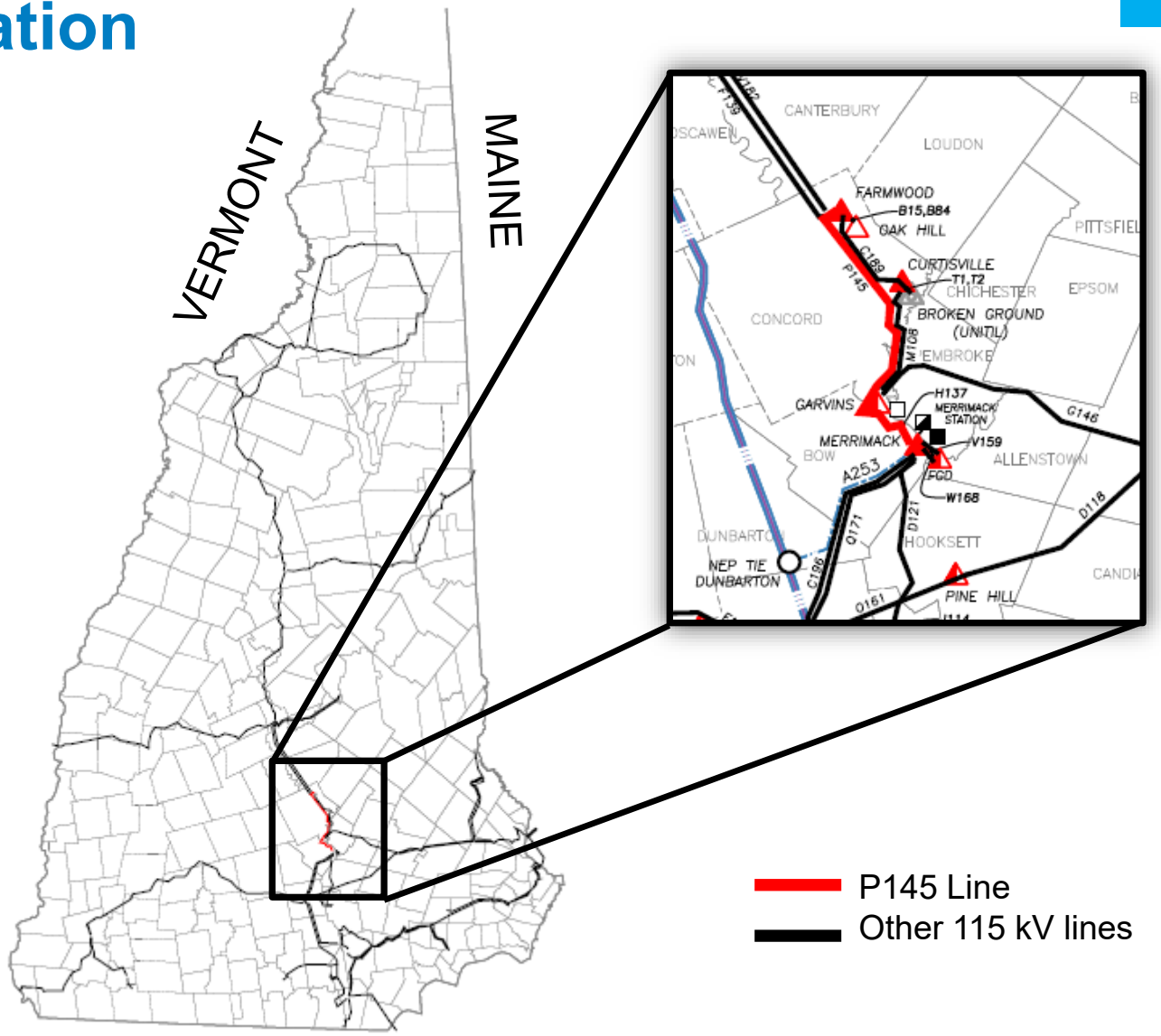
Agenda

- Project Background
- Project Location
- Project Drivers
- Project Summary of Work

Project Background

- This presentation covers an asset condition project on the 115 kV P145 in New Hampshire
  - Presented at the January 20th, 2022 PAC meeting
- Line P145 is a 12.5-mile-long 115 kV line spanning between Merrimack Substation and Farmwood Substation in New Hampshire
- Originally constructed in 1966
- Existing conductor is 795 36/1 ACSR
- Existing static wires are two 3#6 Copperweld shield wires
- 165 structures, primarily single circuit wooden H-Frame structures

New Hampshire 115-kV Geographic Location

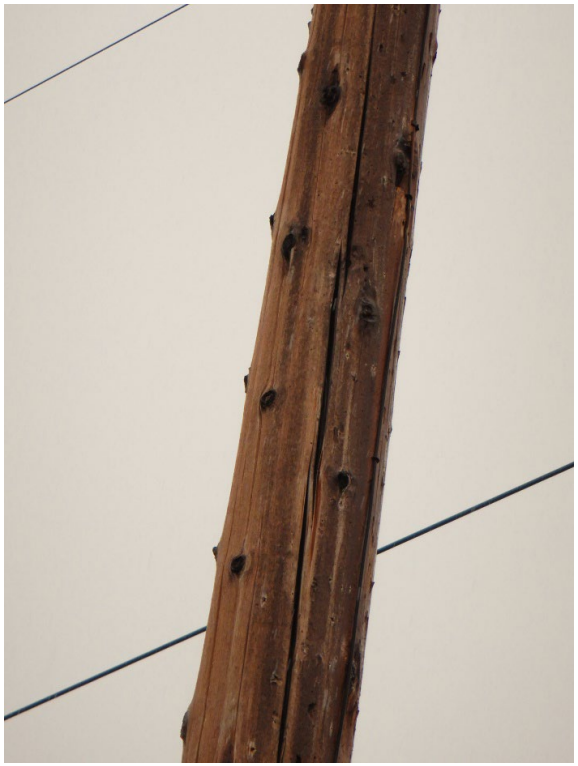


Project Drivers – Asset Condition

- Conductor
  - Conductor is 56 years old and near its end of life
  - This original conductor, 795 ACSR 36/1, is being replaced with Eversource standard 1272 ACSS 54/19 conductor
- Structure Replacement
  - Completed inspections and graded condition of all structures in accordance with Electric Power Research Institute (EPRI) guidelines
  - Asset condition concerns identified via inspections. If not addressed, the identified concerns jeopardize the long-term integrity of the transmission system and its continued reliability
- Shield Wire/OPGW
  - Asset condition concerns identified with existing copperweld shield wire
  - These materials are prone to failures due to aging and are no longer industry-standard, making replacement hardware is difficult to find
  - OPGW is readily available material and is a comparable cost to a like-for-like shield wire replacement

Project Drivers

P145 - Structure 104
Example of existing
H-frame structures



P145 - Structure 73
Cracked Pole

Project Summary

- Rebuild the P145 line with 154 new weathering steel structures, reusing 6 existing steel structures and permanently removing 5 structures
- Replace existing 795 ACSR 36/1 with 1272 ACSS 54/19 conductor
- Replace two existing 3#6 Copperweld shield wire with two runs of 48 fiber OPGW
- All replacements and upgrades are replacing obsolete components and will meet current design criteria
- **Total Estimated PTF Cost: $52.142M**
- **In-service Date: March 2024**

Questions