

Line N133 Structure Replacement Project

Planning Advisory Committee Meeting June 20, 2024

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Agenda

- Purpose
- Project Background
- Project Location
- Project Drivers
- Project Scope
- Project Summary
- Feedback & Next Steps

Purpose

- Advise ISO-NE and the PAC of asset condition and reliability needs driving the proposed structure replacement project on the N133 115 kV line in Maine
- Eversource takes a proactive approach to maintain long-term structural integrity and continued reliability of its transmission infrastructure through inspection-based asset management and holistic evaluation of present and future needs, as well as community and environmental impacts



Str 57 - Depot Rd - Eliot, ME

Project Background

- Eversource manages ~4,400 circuit miles of transmission lines and ~58,000 miles of distribution lines primarily in Connecticut, Massachusetts, and New Hampshire
- Eversource takes a proactive approach to maintain long-term structural integrity and continued reliability of its transmission infrastructure through regular inspections (walkdown ground inspections, structure ground line, flyovers, etc.)
- The N133 115 kV Line runs 6.37 miles from Schiller substation in Portsmouth, NH to Three Rivers substation in Eliot, ME
 - Originally constructed in 1967 (57 years old)
 - Total structures: 73
 - Combination of wood, steel H-frame, and steel lattice tower
 - Conductor: 795 ACSR
 - Shield wire: Mix of 3#6 Copper, and 7#5, 7#8, and 19#7 Alumoweld
 - Shield wire length: 12.0 miles



Project Location



Project Drivers

 Recently completed inspections of these lines graded condition of all structures in accordance with Electric Power Research Institute (EPRI) guidelines:

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- A: Nominal Defect No action required
- B: Minimal Defect Monitor degradation
- C: Moderate Defect Rehabilitation recommended as scheduled maintenance
- D: Severe Defect Repair, reinforce, or replace as soon as possible
- Grade C round wood structures showed one or more of the following age-related degradations, leading to decreased load carrying capability
 - Cracking, splitting
 - Weathered pole tops, rust on hardware and insulators
- Additional B grade structures were identified and prioritized for replacement based on Engineering requirements to meet current uplift standards as well as efficiencies in required permitting approvals for replacing Grade C structures, and minimizing environmental impacts
 - If not addressed, these issues jeopardize the long-term integrity of the transmission system and its continued reliability

Line	Location	Total Structures in Segment	Structures Targeting Replacement			Replacement Need		
			Total	Priority C	Priority B	ACR	Uplift	Proximity
N133	Schiller substation (NH) to Three Rivers substation (ME)	73	19	6	13	6	2	11







Structure 32 – Weathered top, splits, rust on hardware

Structure 47 – Pole splits



Alternatives Analysis

- Alternative 1: Replace only priority C structures
 - This option does not address structures that show signs of degradation and are within the work area for this project
 - If such structures are not replaced within the work area, it will require repeated revisits to the N133 line, resulting in environmental impacts to the wetland areas located within the Right-of-Way
- Alternative 2 (Preferred): Replace priority C rated structures, uplift and nearby priority B rated structures
 - Addresses the long-term integrity and the continued reliability of the N133 line
 - Minimizes repeated future disturbances to wetlands located within the Right-of-Way (ROW)
 - This approach maximizes cost efficiencies of engineering, permitting, access, mobilization, and demobilization to address the present and future asset condition needs
- Alternative 3: Full rebuild
 - This option addresses all current and future asset condition concerns related to the line, including the 20 remaining wood structures. However, a full rebuild is unnecessary at this time. The majority of structures on the N133 line do not require replacement and are located outside of the planned work areas
 - In addition, there are no presently identified asset condition concerns with the 795 ACSR conductor and Alumoweld shield wires on the line

Summary

- Inspections have indicated degradation of several wood structures along the N133 115 kV line
- Deteriorating wood structures will be replaced, 19 in total, with new weathering steel structures that will provide a greater life expectancy and a higher storm resiliency
- Total estimated PTF cost: \$5.503M (-25/ +50%)
- In-service date: Q4 2024

Feedback and Next Steps



- Please submit any written comments on these projects to:
 - pac.responses@eversource.com
 - pacmatters@iso-ne.com

Presentation	Date	Description
Initial Presentation	June 20, 2024	Presentation on replacement of degrading structures on Line N133
Questions/Feedback	July 5, 2024	Comment deadline

Questions



