

**MINUTES OF THE
PLANNING ADVISORY COMMITTEE (PAC)
MEETING HELD ON JANUARY 19, 2023
VIA WEBEX & TELECONFERENCE**

Attendee	Organization
J. Truswell – Chair	ISO New England
J. Macura – Secretary	ISO New England
R. Albrecht	Raymond J Albrecht PE
S. Allen	Eversource Energy
B. Andrew	Eversource Energy
P. Asarese	ISO New England
P. Bernard	ISO New England
M. Berninger	ConEdison Transmission
P. Boughan	ISO New England
J. Breard	ISO New England
J. Burlew	ISO New England
D. Burnham	Eversource Energy
D. Cavanaugh	Energy New England
J. Cebrik	Avangrid
R. Collins	ISO New England
J. Dannels	Shell
H. Dinesh	ISO New England
M. Drzewianowski	ISO New England
L. Durkin	ISO New England
F. Etti	VELCO
J. Fenn	Versant Power
B. Forshaw	Energy Market Advisors, LLC
B. Fowler	Wheelabrator North Andover Inc.; Exelon Generating Company LLC; Nautilus Power; Dynegy Power Marketing, LLC; Entergy Nuclear Power Marketing LLC; Great River Hydro, LLC
R. Gibbons	Avangrid
R. Guay	Maine PUC
J. Halpin	Eversource Energy
A. Hanenkratt	National Grid
P. Holloway	MA DOER
H. Hunt	NESCOE
J. Iafrati	Customized Energy Solutions
M. Ide	Massachusetts Municipal Wholesale Electric Company

S. Keane	NESCOE
N. Krakoff	Conservation Law Foundation
F. Kugell	Central Maine Power Company
R. Lafayette	Eversource Energy
A. Lawton	Synapse Energy
P. Lopes	MA DOER
J. Lucas	Eversource Energy
T. Lundin	LS Power
B. Marszalkowski	ISO New England
T. Martin	National Grid
B. McKinnon	Norwood Municipal Light Department
A. Newcomb	Daymark Energy Advisors
S. Nikolov	ISO New England
B. Oberlin	ISO New England
H. Pathan	Eversource Energy
D. Patnaude	Eversource Energy
H. Presume	VELCO
J. Rotger	Customized Energy Solutions
E. Runge	Day Pitney
D. Schwarting	ISO New England
M. Scott	National Grid
C. Sedlacek	Eversource Energy
J. Slocum	Massachusetts Public Utilities Commission
E. Snyder	Eversource Energy
C. Soderman	Eversource Energy
P. Sousa	Marble River
M. Valencia Perez	ISO New England
K. Wei	Nextera Energy
S. Welch	Doral Renewables LLC
J. Zhang	ISO New England

Item 1.0 – Chairs Remarks

Ms. Jody Truswell welcomed the committee and reviewed the days’ agenda.

Item 2.0 – Maplewood #16 – Substation Asset Replacements (CEII)

Mr. Anil Adhikari (National Grid) presented an asset replacement overview and proposed solutions for Maplewood #16 substation.

The 115 kV Gas Circuit Breaker #158 (PTF) was manufactured in 1996 and suffers sulfur hexafluoride (SF6) gas leaks, pneumatic system failures, and trouble reports indicate moisture in the air valves. These leaks and system failures have led to slow tripping times outside of the manufacturer specifications and causes undue stress on the compressors. As a result, low-pressure conditions can cause the breaker to trip. In addition, the breaker has not operated

properly under fault conditions. The 115 kV Transformer #4 (non-PTF) is over 30 years old and trouble reports indicate 30+ nitrogen and oil leaks. While National Grid has made intermediate repairs, these solutions have proven temporary.

National Grid proposed specific solutions for Maplewood #16 substation. First, construct a new control house with modern protection and control systems (including the new IEC61850 communication standard (50% non-PTF)). Second, replace Gas Circuit Breaker #158 and Transformer #4 (non-PTF). Third, install 115 kV CCVT with CCVT/Wave Trap combination on the F 158N line, condition monitoring for transmission assets (Transformers No. 3 & No. 4 (non PTF), new circuit breaker, battery banks (50% non PTF), and standby generator (50% non PTF)). Last, incorporate online monitoring for a 115 kV breaker, 115 kV transformer #3 & #4, and substation batteries. The project costs \$15.30M (+50/ 25%), broken down into \$6.17M PTF and \$9.13M non-PTF.

Stakeholders had no questions on this presentation.

Item 3.0 – Connecticut 115 kV Copper Conductor and Shield Wire Replacement Projects –Update

Mr. Chris Soderman (Eversource Energy) presented an update on Connecticut 115 kV copper conductor and shield wire replacement projects. The last PAC update was part of larger portfolio of copper conductor and shield wire replacement projects in January 2021. The depreciating strength in obsolete copper conductor and shield wire drives the need for these replacements

Estimated project costs increased due to pandemic-driven supply chain issues and unprecedented inflation of material and labor costs. Refined analysis and design identified efficiencies to perform a broader scope of work that would otherwise require additional efforts in the future. Additional conductor and shield wire replacements create efficiency and avoid separate future replacement projects. Structure replacements offer siting and permitting efficiencies in affected rights-of-way and avoid stress-related blowout issues.

Lines 1163/1550

- Reconductor 7.04 miles (3.52 per line) of 795 ACSR with 1272 ACSS between Frost Bridge and Noera Junction.
- Replace 7.04 miles (3.52 per line) of copperweld shield wire with OPGW between Frost Bridge and Noera Junction.
- Replace 27 structures (26 existing lattice towers and 1 wood structure) with 11 double circuit and 33 engineered single circuit steel structures.
- Install ADSS and conduits to communication cabinets in Frost Bridge.
- 2022 estimated total PTF cost: \$34.5 million
- Revised in service date is Q3 2024

Lines 1268/1485/1622/1887

- Replacement of 49 existing lattice towers, and steel and wood pole structures with 63 new structures in the section from Brookfield Junction-Stony Hill-Shepaug-Bates Rock.
- 2022 estimated total PTF costs: \$47.2 million
- Estimated in service date Q2 2024

Between Stony Hill and Shepaug

- Reconductor 6.5 miles of 4/0 copper conductor with 1272 kcmil ACSS on Lines 1887 and 1485.
- Replacement of 6.5 miles of copperweld shield wire with OPGW on Lines 1887 and 1485.

Between Brookfield Junction and Stony Hill

- Reconductor 1.0 mile of 4/0 copper conductor with 1272 kcmil ACSS on Lines 1887 and 1268.
- Replacement of 1.0 mile of copperweld shield wire with OPGW on Lines 1887 and 1268.

Stakeholders had no questions on this presentation.

Item 4.0 – Asset Condition Wood Structure Replacements

Mr. Chris Soderman (Eversource Energy) presented an overview on asset condition wood structure replacements. Structures targeted for replacement as part of this project are wood and supporting structures for lines within project scope are a combination of wood and steel. The lines in this project scope are in Connecticut (Lines 1208 & 1280), Eastern Massachusetts (Line 389), and New Hampshire (Line C196).

In accordance with Electric Power Research Institute (EPRI) guidelines, inspections indicated significant wood degradation along identified lines. Grade C/D (moderate to severe defect) wood structures showed woodpecker damage, top rot, cracking and splitting, and damaged insulators and deteriorated steel hardware. Light duty weathering steel structures are set to replace existing structures and provide a greater life expectancy and storm resiliency than wood. These replacements support the long-term integrity and reliability of the Eversource transmission system and meet current design criteria. The project stretches 49.94 miles, replaces 88 structures, and costs \$38.407 million.

Stakeholder had no questions on this presentation.

Item 5.0 – Line 381/379 Optical Ground Wire Upgrade

Mr. Chris Soderman (Eversource Energy) presented an update on lines 381/378 (345 kV) optical ground wire upgrade. There are multiple project drivers. First, OPGW installation expands a private Eversource OPGW and Synchronous Optical Networking (SONET) loop. Second, the project creates a new fiber route between Eversource and VELCO. Third, the projects provide critical infrastructure protection. The fiber provides the necessary bandwidth for physical security monitoring and triaging of alarms for BES Cyber Systems at medium and low impact substations. Fourth, the DOE and EPRI recommend fiber as a means to strengthen the security and resilience of critical communication infrastructure to protect against the consequences of electromagnetic pulse attacks. Last, fiber optic cable is a non-propagating media for electric and magnetic fields, and therefore considered generally immune to the effects of geomagnetic disturbances.

Line 381 project replaces 20.01 miles of existing shield wire with 20.01 miles of OPGW between Northfield Mountain Substation and Tower 1 in Hinsdale, NH and installs ADSS and supporting terminal work to tie into Northfield Mountain and Chestnut Hill Substations. Line 379 project replaces 1.1 miles of existing shield wire with 1.1 miles of OPGW between Tower

592 and Tower 594 outside of Vernon, VT. This includes the Connecticut River Crossing and VELCO is set to install ADSS from Tower 594 into Vernon Substation. The total estimated cost (-25 / +50%) is \$8.24 million and the project in-service date is Q3, 2023.

In response to stakeholder questions, Mr. Soderman provided the following:

- The project is part of the shared communications network.

Item 6.0 – 2023 Public Policy Transmission Upgrade Process

Mr. Brent Oberlin (ISO New England) presented the 2023 Public Policy Transmission Upgrade (PPTU) process. Section 4A of Attachment K to the Open Access Transmission Tariff (OATT) describes this process.

On January 13, 2023, ISO New England initiated the PPTU process with a Public Notice requesting input on state, federal, and local Public Policy Requirements (PPR) driving transmission needs. Stakeholders can provide their input to ISO at PublicPolicy@iso-ne.com until February 27, 2023 (45 days public notice) through the template located on [ISO's website](#). Stakeholders will have the opportunity to give input at PAC's February 15 meeting.

NESCOE's PPR communication to ISO is due May 1. Stakeholder's reconsideration requests on NESCOE's federal PPR are required no later than 15 days after ISO posts NESCOE's communication (approximately May 15). If required, ISO provides a draft scope for the Public Policy Transmission Study by September 1.

In response to Stakeholder questions, ISO New England responded with the following:

- This process is open to any entity or PAC member—one just needs to point to a codified law or mandate.
- Any entity can provide input on the federal, state, or local government PPRs.
- ISO reviews at local PPRs.
- With the 15-day window, individuals can comment on NESCOE's thoughts.
- Cost allocation is already part of the general process.
- All comments submitted and the NESCOE communication will be posted. A PAC presentation will be given after the commenting period is over.
- In the event that a state PPR drives the construction of transmission, the region pays 70% of the cost and 30% is paid by the state whose PPR drove the upgrade. The ISO would need to circle back for local costs.
- There has not been a public policy transmission built based off the PPTU process.
- Cost allocation is already defined (schedule 12 of the Tariff), so there is not an opt out option, however exceptions can exist.
- The ISO determines whether there is a public policy need on the federal and local PPRs. NESCOE may provide input regarding the state and federal (NESCOE input on state is determinative).
- Cost allocation has nothing to do with the proceeding onto a study phase of this process because the Tariff stipulates what the states would pay. There is no opt out option for states to say they do not want to pay.
- ISO would need to circle back as to whether federal funding through the IRA would play a role in cost allocation. It is possible it is mentioned somewhere in the Tariff's language.

Comments:

- There was a general concern regarding cost allocation.
- Ultimately, states are not moving forward in this process because they do not want to pay for the policies of other states.

Item 7.0 – Closing Remarks/Adjourn for the Day

Ms. Truswell welcomed Jill Macura as PAC Secretary. She announced the next Planning Advisory Committee meeting will be held on February 15, 2023.

The meeting adjourned at 10:05 A.M.

Respectfully submitted,

_____/s/_____

Jillian Macura

Secretary, Planning Advisory Committee