56 Prospect Street
Hartford, CT 06103

Steven J. Allen
Eversource, ISO-NE Coordination
phone: 860-728-4536
email: steven.allen@eversource.com

January 9, 2023

Ms. Emily Laine
Chair, NEPOOL Reliability Committee
ISO New England, Inc.
One Sullivan Road
Holyoke, MA 01040-2841

Dear Ms. Laine,

In accordance with Schedule 12C of the ISO New England ("ISO-NE") Transmission, Markets & Services Tariff ("ISO-NE Tariff"), Eversource Energy Service Company ("Eversource") hereby submits the attached Transmission Cost Allocation ("TCA") application(s) reporting cost support information associated with the construction, retirement, or modification to facilities rated 69 kV and above that qualify as regional Pool Transmission Facilities ("PTF") for the following Eversource project:

ES-23-TCA-01 Z180 115-kV Line Asset Condition and OPGW Project (Beebe River substation – Huckins Hill substation)

Eversource is requesting that ISO-NE submit this TCA to the NEPOOL Reliability Committee for review, in accordance with ISO-NE Planning Procedure No. 4 ("PP-4").

If you have any questions, I can be reached via the information listed above.

Sincerely,

Steven J. Allen

Steven J. Allen

cc: M. Drzewianowski

Attachment B
TCA Application Form

1. Applicant:

Contact Name:	Steven J. Allen
Company Name:	Eversource Energy Service Company
Address 1:	56 Prospect Street
Address 2:	
City, State, Zip	Hartford, CT 06103
Contact Phone #	860-728-4536
Email Address	steven.allen@eversource.com

Application #: ES-23-TCA-01

Date: Jan-23

RSP Project ID # or Asset Condition ID #: 281

Is Project related to CIP-14: Yes [ ] No [X]

2. Project Description:

In Service Date: Jun-24

a. **High Level Project Details:**

Project Name (If no formal name, then Substation Upgrade, Line Upgrade, etc. are acceptable): **Z180 115-kV Asset Condition and OPGW Project (Beebe River substation - Huckins Hill substation)**

Project Location (State only): **State:** **NH** **County:** **Grafton**

b. Summary of PTF-related work for Project:

This project will replace 28 wood structures with steel structures due to deficiencies such as woodpecker damage, rot, cracks, and deteriorated steel mechanical connections; remove one wood structure; replace one existing steel structure and install a new steel structure in a new location due to wire clearance concerns; replace 3.4 circuit miles of existing 336.4 ACSR 26/7 conductor with 1272 ACSS 54/19 conductor and replace 3.4 miles of existing 3#6 copperweld and 24 Fiber Optical Ground Wire (OPGW) with two (2) new 48 fiber 0.646 OPGW on the Z180 115-kV Line (Beebe River substation - Huckins Hill substation).

Final project cost details will be known following closeout of all project work orders.

c. Summary of Non-PTF-related work for Project:

3. Was a transmission Proposed Plan Application required for this work? Yes [X] No [ ] PPA Number: ES-21-T43

4. Has a transmission Proposed Plan Application been approved? Yes [X] No [ ] N/A [ ] Approval Date: July 15, 2021
If yes, attach a copy and reference Proposed Plan Application # and approval date. (Please check only one)

Need For Project:

5. Need Based On (Check all Categories that apply):

a. Reliability [X]
b. Economic [ ]
c. Service to new load [ ]
d. New generator interconnection [ ]

Generator Proposed Plan Application Number
Generator Proposed Plan Application Date

(Attach copy of cover letter & Generator Proposed Plan Application)

e.	Public Policy Transmission Upgrade (PPTU)	☐
f.	Market Efficiency Transmission Upgrade (METU)	☐
g.	Asset Condition	☒
h.	Other (specify in line 6)	☐

6. Provide a narrative description of the need for this Project.
(Include available documentation relative to the need for this Project.)

A rebuild of the Z180 115-kV Line is necessary due to asset condition and engineering analysis concerns with many structures on the line driven by many factors.

- The existing 3.4 miles of 3#6 copperweld shield wire is obsolete and susceptible to failure due to thermal rating degradation of the conductor as well as degradation due to environmental factors such as wind, ice and ambient temperature.
- The 3.4 circuit miles of existing obsolete 336.4 ACSR copper conductor will be replaced with 1272 ACSS 54/19 conductor
- The replacement of 29 wood/steel structures with steel structures is necessary as the result of foot and aerial patrols noting deficiencies such as: woodpecker damage, rot, cracks, splits and decay and clearance concerns.

Cost of Project:

7. Total Project Cost ($M) **equals PTF + Non-PTF + all other Project Costs**:	**$14.529**
8. Total Proposed PTF Costs	
a. Total Proposed PTF Cost of this Project ($M):	$14.529
b. Requested Pool-Supported PTF Costs associated with this Project ($M):	**$14.529**
c. Breakdown of Requested Pool-Supported PTF Cost associated with this Project ($M): (Consistent with Table 1 and Appendix D of this Procedure)	
Material	$2.777
Labor	$7.759
ROW	$0.000
Engineering/Permitting/Indirects	$2.385
Escalation	$0.000
AFUDC (or equivalent)	$0.553
Contingency	$1.055
d. Generator Supported PTF Costs* ($M):	$0.000
If the costs in 8.b. plus 8.d. do not equal the total proposed PTF cost (8.a) explain and indicate who is responsible for the remaining costs.	
9. Total Proposed Non-PTF Cost of this Project ($M):	$0.000
10. Proposed PTF Costs ($M) introduced as a result of local, state or other regulatory/legislative requirements, including costs identified pursuant to Section 1.6.3 of this PP-4.	$0.000
a. Description of Proposed PTF Cost introduced as a result of local, state or other regulatory/legislative requirements as defined in question 8 above.	
11. All other Project Costs not captured in PTF Costs (8) or Non-PTF Costs (9) ($M) associated with this Project:	$0.000

12. Total PTF Cost based on: (check one)
Actual Costs [ ]
OR
Estimated Costs* [X]

13. Valuation Year(s) of dollar amounts submitted above: 2023

14. If applicable, explain how the cost of common facilities were allocated between PTF and Non-PTF.

15. Does this Project result in a change of existing Non-PTF facilities to PTF? Yes [ ] No [X]

16. Describe the major transmission alternatives, and their costs consistent with the breakdown provided in item 7 of this Application, that were considered. Provided an explanation why the preferred alternative was selected.
(Include available documentation relative to the major transmission alternatives analysis and selection.)

Alternative:

1. Do nothing but for the reasons stated in 6 above is not acceptable.
2. Replace only high priority structures and copperweld shield wire - all structures on the line would need to be replaced to support the increased loading of the shield wire.
3. Construct a new line in parallel with existing line - this is not a preferred solution due to costs, extensive vegetation clearing work and the impact to abutting property owners, municipalities and other sensitive stakeholders along this right-of-way

Preferred: Rebuild the Z180 Line is the preferred solution by replacing 28 wooden structures with self-weathering steel structures and removal of one wood structure, replace one existing and install one new steel structure; replace 3.4 circuit miles of 336 ACSR conductor with 1272 ACSS conductor and replace 3.4 miles of two 3#6 copperweld static wires with two 48F 0.646 Optical Ground Wire (OPGW). A full rebuild allows replacement of aging conductor and shield wire and is more efficient and cost effective.

17. Has state and local siting been completed? If yes, explain the siting process and any provisions that were made during siting, provide docket or siting reference numbers.
If no, then explain when siting is expected to be completed and any provisions that have been agreed to.

No unusual siting or permitting was required for this project.

* Pool-Supported PTF costs were determined pursuant to Schedule 11 of Section II of the Tariff.

PROJECT COST ESTIMATE & SCHEDULE SHEET

Transmission Owner: Public Service Company of New Hampshire **RSP Project #:** 281

Project Name: Z180 115-kV Asset Condition and OPGW Project (Beebe River substation - Huckins Hill substation) **Date:** Jan-23

1. Project Scope Summary

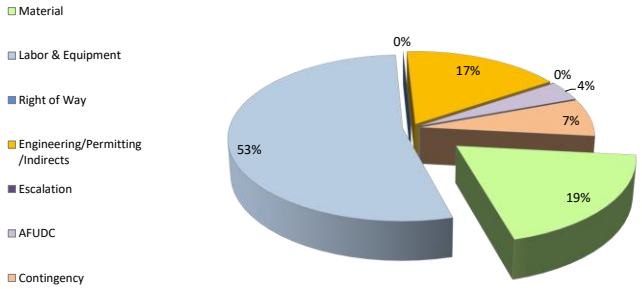
This project will replace 28 wood structures with steel structures due to deficiencies such as woodpecker damage, rot, cracks, and deteriorated steel mechanical connections; remove one wood structure; replace one existing steel structure and install a new steel structure in a new location due to wire clearance concerns; replace 3.4 circuit miles of existing 336.4 ACSR 26/7 conductor with 1272 ACSS 54/19 conductor and replace 3.4 miles of existing 3#6 copperweld and 24 Fiber Optical Ground Wire (OPGW) with two (2) new 48 fiber 0.646 OPGW on the Z180 115-kV Line (Beebe River substation - Huckins Hill substation).

2. Project Cost Summary

($M)

2.1. Project Cost Summary

Cost Category	PTF	Non-PTF	Total
Material	$ 2.777	$ -	$ 2.777
Labor & Equipment	$ 7.759	$ -	$ 7.759
Right of Way	$ -	$ -	$ -
Engineering/Permitting /Indirects	$ 2.385	$ -	$ 2.385
Escalation	$ -	$ -	$ -
AFUDC	$ 0.553	$ -	$ 0.553
Contingency	$ 1.055	$ -	$ 1.055
Total Project Cost	**$ 14.529**	**$ -**	**$ 14.529**



2.2 Detailed Cost Summary By Project Element

	Material	Labor & Equipment	Right of Way	Engineering/ Permitting/ Indirects	Escalation	AFUDC	Contingency	Total	PTF Amount
Z180 115-kV Asset Condition and OPGW Project (Beebe River substation - Huckins Hill substation)	$ 2.777	$ 7.759	$ -	$ 2.385	$ -	$ 0.553	$ 1.055	**$ 14.529**	**$ 14.529**
Total	**$ 2.777**	**$ 7.759**	**$ -**	**$ 2.385**	**$ -**	**$ 0.553**	**$ 1.055**	**$ 14.529**	**$ 14.529**

3. Project Milestone Schedule

Description			2021 Qtr1	Qtr2	Qtr3	Qtr4	2022 Qtr1	Qtr2	Qtr3	Qtr4	2023 Qtr1	Qtr2	Qtr3	Qtr4	2024 Qtr1	Qtr2	Qtr3	Qtr4	2025 Qtr1	Qtr2	Qtr3	Qtr4
Siting & Permitting																						
Approval and Permits	8/1/2022	1/16/2023							→													
Engineering																						
Engineering and Design	1/31/2022	12/23/2022					→															
Material																						
Material	5/6/2022	5/31/2023					→				→											
Construction																						
Construction	2/1/2023	6/30/2024									→				→							
			Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4
			2021				2022				2023				2024				2025			

Z180 115-kV Asset Condition and OPGW Project Correlation Table
(Beebe River substation - Huckins Hill substation)

TCA Item	RSP: Project ID #	Study: Reliability Issues Requiring Action	PPA Application: PPA No.	PPA Application: Preferred Solution Description	PAC/RC Meeting: Presentation Reference	TCA Application ($1,000s): PTF Estimate	TCA Application ($1,000s): Non-PTF Estimate
ES-23-TCA-01	**281**	n/a	ES-21-T43	Replace 28 wood 115-kV structures with steel structures and one remoal, replace one and install one new steel structure; replace copperweld shield wire with Optical Ground Wire (OPGW) and replace 3.4 circuit miles of copper conductor with 1272 ACSS.	Per PAC Presentation 12/16/2020	$ 14.529	
				SUBTOTAL		$ 14.529	$ -