EVERSOURCE

Project Approval Form

Project Title: 4.8KV Grounding Annual	**Project Number: CD48KVAN24**
Date Prepared: 08/14/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** 4.8KV GROUNDING
Project Initiator: [redacted]	**Project Type:** Annual
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** No
Project Sponsor: [redacted]	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Required in service date: 12/31/2024	
Total Capital Request: $1,000K	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is being requested for this project at a cost of $1,000K. This project pertains to high volume work orders not to exceed $500K per work order and covers the entire state of CT. Capital work orders initiated against this annual project must include total costs less than or equal to $500K. Any work order exceeding $500K will require a separate Project Authorization Form (PAF).

This is being created to capture the cost necessary to remediate 4.8 kV ungrounded delta system to comply with PURA regulatory requirements under Docket No. 96-05-05, National Electric Safety Code (NESC) 2017 Section 9 “Grounding Methods for Electrical Supply and Communication Facilities” and Eversource Standards DTR 16.411, DTR 16-704. The proper grounding of electrical circuits and equipment is intended to prevent damage to equipment, to safeguard property against fire, and to reduce the hazard of electrical shock. This project is consistent with the requirements of the Docket, NESC and Eversource Standards.

2. Project Cost Summary

Capital Costs	2024	Total
Internal Labor and Construction Equipment	0.1	0.1
Outside Services	560.1	560.1
Materials	1.6	1.6
Removals	0.0	0.0
Other	0.0	0.0
Risk and Contingency	0.0	0.0
Subtotal	**561.8**	**561.8**

Indirect Capital Costs	2024	Total
Indirects/Overheads (including benefits)	438.2	438.2
Capitalized interest or AFUDC, if any	0.0	0.0
Subtotal	**438.2**	**438.2**
Total Capital Costs (Gross)	**1,000.0**	**1,000.0**
Less Total Customer Contribution	**0.0**	**0.0**
Project Costs (Net)	**1,000.0**	**1,000.0**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

In order to comply with NESC grounding requirement the Company will install grounding electrodes to its 4.8 kV Delta System in accordance to standards DTR 16.411, DTR 16-704.These project is driven by regulatory requirements under Docket 96-05-05 to upgrade its system in accordance to NESC requirement for “Grounding Methods for Electrical Supply and Communication Facilities”

b. Project Need

Electric circuits are grounded when intentionally or accidentally connected to earth. Grounding prevents the occurrence of dangerous differences in potential between circuits, equipment, or conductor enclosures and the earth or objects in contact with the earth. For 4.8 kV grounding to be effective, the path to ground from circuits and equipment should be permanent and continuous and should have impedance sufficiently low to limit its potential above ground and to facilitate the operation of over-current devices in the circuit. The effectiveness of an intentional ground, such as a driven ground rod, can be nullified by high resistance to ground or loose or broken ground connections, which hamper or prevent the dissipation of fault currents and may contribute to the non-operation of overcurrent protective devices. This project covers grounding 4.8kV circuits in Connecticut in YEAR.

c. Project Scope

For year X the Company will install grounds and remediate 4.8kv locations that currently do not abide by PURA’s regulatory requirements, the NESC and Eversource’s standards.

4. Alternatives Considered

The alternative is to not install grounds. Not installing grounds would result in these locations to not be up to standard.

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Construction Start	01/01/2024
In Service Date	12/31/2024

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

For 4.8 kV grounding to be effective, the path to ground from circuits and equipment should be permanent and continuous and should have impedance sufficiently low to limit its potential above ground and to facilitate the operation of over-current devices in the circuit. The effectiveness of an intentional ground, such as a driven ground rod, can be nullified by high resistance to ground or loose or broken ground connections, which hamper or prevent the dissipation of fault currents and may contribute to the non-operation of overcurrent protective devices.

9.

References
1. N/A

10. Attachments (One Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. Cost Estimate	*NO*

B. Partial PAF	*NO*