Operations Project Authorization Form

Date Prepared: 10/13/2023	**Project Title: Direct Buried Cable Replacement**
Company/ies: Eversource CT	**Project ID Number: 10139521**
Organization: Distribution Electric	**Class(es) of Plant: Distribution**
Project Initiator: [redacted]	**Project Category: DB Cable Replacement**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Reliability**
Estimated in service date: 12/31/2021	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Y	**Capital Investment Part of Original Operating Plan?**
Authorization Type: Final Funding	**O&M Expenses Part of the Original Operating Plan?**
Total Request: $6,470K	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This program funds the rejuvenation or replacement of direct buried (DB) distribution cables in underground residential (URD) and commercial developments that are reaching the end of their useful lives. It has been determined on an industry-wide basis that much of the original XLP and HMP-insulated primary cable installed in the DB system has not achieved its engineered life expectancy. Premature cable failures have degraded the reliability for the Eversource customers served by these cables.

This project was to capture and document the charges to address emergent failures of the direct buried/underground (DB/UG) system. The aim was to replace DB/UG cable that had experienced faults and was deemed unreliable for the year 2021. Workorders were created for each of the locations to capture labor and material for the replacement of the cable.

Capital Costs	Year 1	Year 2	Year 3+	Total
Internal Labor and Construction Equipment	2,282.1	0.0	0.0	2,282.1
Outside Services	228.2	0.0	0.0	228.2
Materials	554.2	0.0	0.0	554.2
Removals	384.4	0.0	0.0	384.4
Risk and Contingency	195.6	0.0	0.0	195.6
Other	0.0	0.0	0.0	0.0
Subtotal	**3,644.6**	**0.0**	**0.0**	**3,644.6**

Indirect Capital Costs	Year 1	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	2,768.9	0.0	0.0	2,768.9
Capitalized interest or AFUDC, if any	56.5	0.0	0.0	56.5
Subtotal	**2,825.4**	**0.0**	**0.0**	**2,825.4**
Total Capital Costs (Gross)	**6,470.0**	**0.0**	**0.0**	**6,470.0**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net)	**6,470.0**	**0.0**	**0.0**	**6,470.0**

Project Costs Summary / Financial Evaluation

WO NUMBER	WO DESCRIPTION	PROJECT DEPT CODE	PROJEC	PROJECT DESCRIPTION	WO IN SRV DATE	WO INIT DATE	Total Amount (K)
80033882	[redacted]	15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	12/29/2021	2/1/2021	$275
80036101		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	3/8/2021	2/1/2021	$448
80054941		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	12/23/2021	3/23/2021	$382
80068261		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	10/20/2022	4/27/2021	$616
80075432		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	12/23/2021	5/17/2021	$193
80115294		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	10/12/2021	9/7/2021	$323
80116216		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	5/17/2022	9/8/2021	$295
80118334		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	11/16/2021	9/14/2021	$348
80137704		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	11/30/2021	11/16/2021	$339
80138207		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	1/11/2022	10/26/2021	$283
80066568		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	11/28/2021	4/22/2021	$208
80111998		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	2/28/2022	8/25/2021	$282
80112355		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	11/22/2021	8/26/2021	$608
80123256		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	10/20/2022	9/29/2021	$427
80128587		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	7/12/2022	10/16/2021	$170
80139201		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	2/28/2022	11/18/2021	$191
80139830		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	10/11/2022	11/22/2021	$281
80147670		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	1/17/2022	12/16/2021	$220
80101926		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	8/15/2023	7/28/2021	$107
80128813		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	8/28/2023	10/18/2021	$118
80103498		15D	101395	DIRECT BURIED CABLE REPLACEMENT PRO	1/4/2024	8/2/2021	$111
Total							$6,225

Please note, the previous submission of this PAF inadvertently included WO 80140261 which was previously approved on specific project 80140261P, therefore it was removed from the above table. The previous submission's table also included WO 80138207 twice, therefore it was also removed from the table. The table above now reflects the addition of WOs 80101926, 80103498 and 80128813. The removal of the 2 aforementioned projects leaves a gap of $245K between the project authorized amount and the amount charged to date, which allows room for additional compliance WOs to be transferred to this project if needed.

Technical Justification:

Project Need Statement

Emergent failures in direct buried cable developments required cable replacement to address the reliability issues. The cable was replaced with new cable in conduit to mitigate the outages.

Project Objectives
To replace DB cable that is has a history of failure to improve reliability and customer experience.

Project Scope
Cable replacement includes failed single phase and three phase cable, replacing elbows, installing or replacing lightning arresters, and possibly a transformer, riser, or switch-vault and all other associated equipment/material.

Major Material
#1 Aluminum
4/0 Aluminum
Elbows
Arrestors
Terminators
Transformer
Switch-vault

Background / Justification
DB cables are selected for replacement based on their historical performance. Replacing the cable and placing the new cable in conduit addresses eliminates the failing cable and protects the new cable for greater reliability.

Business Process and / or Technical Improvements
Eliminate unreliable XLP/HMP DB cable and replace it with EPR in conduit.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Project Initiation	01/01/2021
Project In-Service Date	12/31/2021

Regulatory Approvals
None needed

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Internal engineering resources not available to perform the work.	2021	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.

Storm delays	2021	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2021	Low	Schedule work to minimize system abnormal time. Most of this work will require system to be abnormal for any extended period of time.

Attachments