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Operations Project Authorization Form

Project Title: [redacted] PILC Cable Replacement	**Project Number:** CD01783
Date Prepared: 04/26/2023	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** UG CABLE & EQUIPMNT REPLACEMNT
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** Yes
Estimated in service date: 12/31/2023	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $2,297K	**Authorization Type:** Full Funding

Executive Summary

This project is being presented to secure full funding authorization at a cost of $2,297K. This full funding estimate is 89% of the initial funding of $2,596K. There is no scope change in the job. Careful analysis of the preliminary estimate and the final estimate shows that material cost and outside services were estimated higher than they turned out to be.

The project was originally presented as follows:

Project CD01783 has been established to replace the Paper Insulated Lead Covered (PILC) cable on the [redacted] circuit. The circuit had 3 PILC cable outages since 2007, with the most recent outage occurring on 7/13/2020. [redacted] This project is part of an overall strategy to address the poor performance of PILC cables in the underground distribution system.

The [redacted]

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Project Costs Summary

Note: Dollar values are in thousands

Capital Costs	2023	2024	2025+	Total
Internal Labor and Construction Equipment	181.8	0.0	0.0	181.8
Outside Services	239.2	0.0	0.0	239.2
Materials	629.9	0.0	0.0	629.9
Removals	269.5	0.0	0.0	269.5
Risk and Contingency	160.3	0.0	0.0	160.3
Other	0.0	0.0	0.0	0.0
Subtotal	**1,480.6**	**0.0**	**0.0**	**1,480.6**

Indirect Capital Costs	2023	2024	2025+	Total
Indirects/Overheads (including benefits)	816.7	0.0	0.0	816.7
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal	**816.7**	**0.0**	**0.0**	**816.7**
Total Capital Costs (Gross)	**2,297.3**	**0.0**	**0.0**	**2,297.3**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**2,297.3**	**0.0**	**0.0**	**2,297.3**

Technical Justification:

Project Need, Objective and Justification:

Project CD01783 [redacted] This makes it beneficial to have a reliable underground cable to prevent future faults. Refer to the outage data below:

[redacted] UG Cable Outage Data.xlsx

[redacted]

Project Scope:

[redacted]

Major Material:

- 14,000' 750 Cu EPR

Background:
Project CD01783 is part of an initiative to eliminate PILC cables due to their demonstrated poor performance on Eversource's distribution system.

PILC copper cable was used extensively in the urban underground electrical systems that were built in the early/mid 1900s. This cable is now reaching the end of its useful life, and cable failures cause feeder lock-outs which can impact customer reliability and satisfaction.

Beginning in 2018, Eversource - CT has established a program to proactively replace PILC cable. Targeted cable replacement is prioritized based on outage history, loading and customer exposure.

[redacted]

[redacted]

The following is a list of known dates where there were cable faults on the [redacted] circuit from 1/1/2007 to present:

- 8/2/2007
- 6/15/2011
- 7/13/2020

Alternatives Considered:

Were alternative solutions considered/applicable? Include any cost/benefit analysis.

Alternatives were considered (please describe below)

Consideration was given to remove the cable from the conduit system and run overhead as aerial cable. This was not chosen as it would have resulted in two circuits on the same pole line backing each other up, which is against Eversource's circuit design criteria.

Regulatory Approvals:

Are Regulatory body approvals needed for the project?
No

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Project Schedule

Milestone/Phase Name	Estimated Date
100% Engineering Completion	December 2022
Construction Start	March 2023
Testing/Commissioning	September 2023
In Service Date	December 2023

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2023	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2023	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods

References

Limiting Sheet.xlsx

[redacted] MH524 E WALL.xlsx

[redacted] UG Cable Outage Data.xlsx

CD01783_project_needs_statement.pdf

Appendices (One-Line Diagrams, Images, etc.)

[redacted]

[redacted]_oneline.pdf