EVERSOURCE

# Supplement Authorization Form

| | |
|---|---|
| **Project Title:** [redacted] PILC Replacement | **Project Number:** CD01194 |
| **Date Prepared:** 04/24/2026 | **Company:** Eversource CT |
| **Organization:** Distribution Engineering | **Project Category:** UG CABLE & EQUIPMNT REPLACEMNT |
| **Initiating Organization:** Distribution | **Project Type:** Specific |
| **Project DDE:** [redacted] | **Capital Investment part of 5-year 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) |
| **Current Authorized Amount: $2,416.1K** | **Approved In-Service Date:** 12/31/2019 |
| **Supplement Request: $292.5K** | **Estimated In-Service Date:** 12/31/2020 |
| **Total Capital Request: $2,709.3K** | **Authorization Type:** Supplement Request |
| | **Reason:** Cost Overage |

## 1. Project Background

This project is part of an overall strategy to address poor performing PILC cable in our underground distribution system. [redacted]. These feeders have been identified as having the highest percentage of PILC cable remaining with over 60% on each feeder with the majority between the [redacted]. With the completion of this cable replacement, and the 2012 project that reconductored the old spacer cable on the [redacted] with aerial cable, we should have 2 very reliable sources from [redacted].

[redacted]

## 2. Supplement Justification Overview

Supplemental funding of $292.5K was requested to complete the project due mainly to added outside labor and material costs. The $292.5K is an additional 12% of the previously approved $2,416.1K making the total project cost $2,709.3K.

## 3. Supplement Justification Detail

The direct costs increased due to the increase in outside services, material costs and removals.

## 4. Supplement Cost Summary (Project Total)

| Capital Costs | To Date Spend | Prior Authorized | Supplemental Request | Total Request |
|---|---|---|---|---|
| Internal Labor and Construction Equipment | 91.9 | 337.1 | -251.6 | 85.4 |
| Outside Services | 922.3 | 486.3 | 370.7 | 857.0 |
| Materials | 900.5 | 581.1 | 255.6 | 836.7 |
| Removals | 0.0 | 0.0 | 135.8 | 135.8 |
| Risk and Contingency | 53.1 | 0.0 | 53.1 | 53.1 |
| Other | 1.8 | 20.1 | -18.4 | 1.7 |
| **Subtotal** | **1,969.7** | **1,424.6** | **545.1** | **1,969.7** |

| Indirect Capital Costs | To Date Spend | Prior Authorized | Supplemental Request | Total Request |
|---|---|---|---|---|
| Indirects/Overheads (including benefits) | 656.7 | 971.6 | -314.8 | 656.7 |
| Capitalized interest or AFUDC, if any | 82.9 | 19.9 | 63.0 | 82.9 |
| **Subtotal** | **739.6** | **991.5** | **-251.9** | **739.6** |
| | | | | |
| **Total Capital Costs (Gross)** | **2,709.3** | **2,416.1** | **293.2** | **2,709.3** |
| | | | | |
| Less Total Customer Contribution | **0.0** | **0.0** | **0.0** | **0.0** |
| | | | | |
| **Project Costs (Net of Reimbursement)** | **2,709.3** | **2,416.1** | **293.2** | **2,709.3** |

# New Total Request by Year (if applicable)

| Capital Costs | 2018 | 2019 | 2020 | TOTAL |
|---|---|---|---|---|
| Internal Labor & Equipment | 0.3 | 61.7 | 23.5 | 85.4 |
| Outside Services | 2.6 | 618.8 | 235.6 | 857.0 |
| Materials | 2.5 | 604.2 | 230.0 | 836.7 |
| Removals | 0.4 | 95.2 | 40.2 | 135.8 |
| Risk and Contingency | 0.0 | 0.0 | 53.1 | 53.1 |
| Other | 0.0 | 1.2 | 0.5 | 1.7 |
| **SUBTOTAL Direct Cost** | **5.8** | **1,381.1** | **582.8** | **1,969.7** |
| Indirects / Overheads | 10.0 | 409.0 | 237.7 | 656.7 |
| AFUDC | 0.1 | 37.4 | 45.4 | 82.9 |
| **SUBTOTAL Indirect Cost** | **10.1** | **446.3** | **283.1** | **739.6** |
| **TOTAL Capital Request** | **15.9** | **1,827.4** | **865.9** | **2,709.3** |
| Less Total Customer Contribution | 0.0 | 0.0 | 0.0 | **0.0** |
| **TOTAL Project Cost** | **15.9** | **1,827.4** | **865.9** | **2,709.3** |

## 5. Lessons Learned

Greater contingencies should be utilized in the future to account for underground work.

## 6. Full Funding PAF

**Operations Project Authorization Form**

| | |
|---|---|
| **Date Prepared: 09/24/2018** | **Project Title: [redacted] PILC Cable Replacement** |
| **Company/ies: CT** | **Project ID Number: CD01194** |
| **Organization: Electric** | **Class(es) of Plant: Distribution (Underground)** |

| | |
|---|---|
| **Project Initiator:** [redacted] | **Project Category: UG Cable & equipment Replacement** |
| **Project Manager:** [redacted] | **Project Type: Specific** |
| **Project Sponsor:** [redacted] | **Project Purpose: PILC Cable Replacement** |
| **Estimated in service date: December 31, 2019** | **If Transmission Project: PTF? N/A** |
| **Eng. /Constr. Resources Budgeted? No** | **Capital Investment Part of Original Operating Plan? No** |
| **Authorization Type: Initial Funding** | **O&M Expenses Part of the Original Operating Plan? No** |
| **Total ENG Request: $2,461,757** | **Total Project Cost: $2,461,757** |

**Executive Summary**

This project is part of an overall strategy to address poor performing PILC cable in our underground distribution system. The [redacted]. These feeders have been identified as having the highest percentage of PILC cable remaining with over 60% on each feeder with the majority between the [redacted]. This project replaces all remaining PILC cable with EPR on both the [redacted]. With the completion of this cable replacement, and the 2012 project that reconductored the old spacer cable on the [redacted] with aerial cable, we should have 2 very reliable sources [redacted]

This project is being created due to the event on 9/4/2018 when the [redacted] had a failure on PILC cable at the same time as a failure on the [redacted]

Below is a summary of the remaining PILC cable and costs for each feeder:

| Segment | Total Cable (ft) | PILC (ft) | % PILC | Cost | Priority |
|---|---|---|---|---|---|
| [redacted] | 2491 | 1017 | 40.80% | $171,704 | 3 |
| | **9732** | **6939** | **71.30%** | **$1,040,686** | **2** |
| | 3431 | 798 | 23.30% | $126,493 | 4 |
| | **9732** | **7186** | **73.80%** | **$1,068,873** | **1** |
| | 3241 | 0 | 0% | $ - | |
| | 170 | 170 | 100% | $27,917 | 6 |
| | 4013 | 0 | 0% | $ - | |
| | 4544 | 1140 | 25.10% | $187,210 | 5 |

*The above distances were determined using the best available data based on a review of existing underground maps, actual amount of cable will be determined as part of the detail design engineering process.*

**It is recommended to prioritize the [redacted] because it has the most PILC cable remaining, 5 faults in the last 10 years, the most recent fault was on the [redacted] carries more normal load than the [redacted]**

**Project Costs Summary**

| Direct Capital Costs | Year 1 | Year 2 | Year 3+ | Total |
|---|---|---|---|---|
| Straight Time Labor | $4,799 | $106,230 | $107,743 | $218,772 |
| Overtime Labor | $2,595 | $57,447 | $58,266 | $118,308 |
| Outside Services | $10,667 | $236,129 | $239,492 | $486,288 |
| Materials | $12,748 | $282,191 | $286,210 | $581,149 |
| Other, including contingency amounts (describe) | $440 | $9,743 | $9,882 | $20,065 |
| **Total Direct Costs** | **$31,249** | **$691,741** | **$701,593** | **$1,424,583** |

| Indirect Capital Costs | Year 1 | Year 2 | Year 3+ | Total |
|---|---|---|---|---|
| Indirects/Overheads (including benefits) | $21,312 | $471,776 | $478,495 | $971,583 |
| Capitalized interest or AFUDC, if any | $437 | $9,670 | $9,808 | $19,915 |
| **Total Indirect Costs** | **$21,749** | **$481,446** | **$488,303** | **$991,498** |
| | | | | |
| **Total Capital Costs** | **$52,998** | **$1,173,187** | **$1,189,896** | **$2,416,080** |
| | | | | |
| Less Total Customer Contribution | **$0** | **$0** | **$0** | **$0** |
| | | | | |
| **Total Capital Project Costs** | **$52,998** | **$1,173,187** | **$1,189,896** | **$2,416,080** |
| | | | | |
| **Total O&M Project Costs** | **$1,002** | **$22,179** | **$22,495** | **$45,677** |

| | | | | |
|---|---|---|---|---|
| **Total Project Cost** | **$ 54,000** | **$1,195,366** | **$1,212,391** | **$2,461,757** |

**Financial Evaluation**

| | Prior Authorized | 2018 | 2019 | 2020 | Totals |
|---|---|---|---|---|---|
| Capital Additions - Direct | $0 | $28,084 | $621,668 | $630,522 | $1,280,274 |
| Less Customer Contribution | $0 | $0 | $0 | $0 | $0 |
| Removals net of Salvage ____% | $0 | $3,165 | $70,073 | $71,071 | $144,309 |
| Total - Direct Spending | $0 | $31,249 | $691,741 | $701,593 | $1,424,583 |
| Capital Additions - Indirect | $0 | $21,312 | $471,776 | $478,495 | $971,583 |
| Subtotal Request | $0 | $52,561 | $1,163,517 | $1,180,088 | $2,396,166 |
| AFUDC | $0 | $445 | $9,853 | $9,993 | $20,291 |
| Total Capital Request | $0 | $53,006 | $1,173,369 | $1,190,081 | $2,416,457 |
| O&M | $0 | $994 | $21,997 | $22,310 | $45,300 |
| Total Request | $0 | $54,000 | $1,195,366 | $1,212,391 | $2,461,757 |

***Note: Dollar values are in thousands***

**Technical Justification:**

**Project Need Statement**

This project has been established to replace the remaining paper insulated lead covered (PILC) underground primary cable on the [redacted] circuits from [redacted] with ethylene propylene rubber (EPR) insulated cable.

**Project Objectives**

This project is part of the initiative to eliminate PILC underground cable due to demonstrated poor performance of this type of cable on our 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 / reliability.

**Project Scope**

**We can prebuild 52% of the cable replacement** [redacted]

[redacted]

**Background / Justification**

[redacted]

**10 Year PILC Failure History**

| Feeder | Location | Failure Date | WR |
|---|---|---|---|
| [redacted] | | | |

The total emergent cost to replace PILC with EPR based on past replacements in Greenwich is about $200/ft this is over 20% higher than to replace under planned project.

**Business Process and / or Technical Improvements**:

Replacement of the PILC cable eliminates the exposure to failure of the PILC cable. These failures create the risk of overloading the remaining feeders if there is the loss of a second feeder to Prospect.

**Alternatives Considered with Cost Estimates**

| Segment | Total Cable (ft) | PILC (ft) | % PILC | Cost |
|---|---|---|---|---|
| [redacted] | 3241 | 0 | 0% | $ - |
| | 170 | 170 | 100% | $ 27,917.40 |
| | 4013 | 0 | 0% | $ - |
| | 4544 | 1140 | 25.1% | $ 187,210.80 |

**Project Schedule**

| Milestone/Phase Name | Estimated Completion Date |
|---|---|
| 15 MH Inspections Completed | 12/31/2018 |
| Start Replacement [redacted] | 01/01/2019 |
| Complete Replacement [redacted] | 06/01/2019 |
| Start Replacement [redacted] | 06/01/2019 |
| Complete Replacement [redacted] | 12/31/2019 |

| Milestone/Phase Name | Estimated Completion Date |
|---|---|
| Start Replacement [redacted] | 01/01/2020 |
| Complete Replacement [redacted] | 06/01/2020 |
| Start Replacement [redacted] | 06/01/2020 |
| Complete Replacement [redacted] | 12/31/2020 |

**Regulatory Approvals**

None

**Risks and Risk Mitigation Plans**

| Risk Event | Risk Horizon | Likelihood of Occurrence | Risk Mitigation |
|---|---|---|---|
| Actual cost higher than estimated due to scope changes. | 2019 | 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. | 2019 | Low | Plan internal resources to perform the work. |
| Internal engineering resources not available to perform the work. | 2018 | Medium | Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost. |
| Materials Shortage or long lead times | 2019 | Low | Pre-order long lead time material; minimize the use of non-standard and non-stocked material. |
| Storms delays | 2019 | Low | If storm activity delays work, we may be forced to use external resources. |

| | | | |
|---|---|---|---|
| System abnormal configuration | 2019 | Low | Impact to system configuration during construction when loop schemes are taken out of service. If event occurs while clearance is in place to perform work, more customers will be impacted to an outage. |

**References**

None

**Attachments (One-Line Diagrams, Images, etc.)**


[redacted] PILC Locations.pdf


CD01194_project_needs_statement.pdf

