Operations Project Authorization Form

Date Prepared: May 21, 2021	**Project Title: [redacted] Replace [redacted] Cable**
Company/ies: Eversource CT	**Project ID Number: CD01702**
Organization: Distribution Electric	**Class(es) of Plant: Distribution**
Project Initiator: [redacted]	**Project Category: Line**
Project Manager: [redacted]	**Project Type: Reliability Improvement Specific Project**
Project Sponsor: [redacted]	**Project Purpose: Replace Defective Conductor**
Estimated in service date: 12/31/2022	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Yes	**Capital Investment Part of Original Operating Plan? Yes**
Authorization Type: Preliminary Funding	**O&M Expenses Part of the Original Operating Plan? Yes**
Total Request: $657,613	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is being established to cover the costs associated with replacement of defective spacer cable on [redacted], Naugatuck. [redacted] This project is part of an overall program to address [redacted], as explained below.

[redacted].

Project CD01702 proposes to replace 470' of 1/0 AL spacer cable with 556 AAC spacer cable and 2,160' of 336 AAC spacer cable with 556 AAC spacer cable.

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2021	2022	2023+	Totals
Capital Additions - Direct	$0	$0	$375	$0	$375
Less Customer Contribution	$0	$0	$0	$0	$0
Removals net of Salvage ____%	$0	$0	$35	$0	$35
Total - Direct Spending	$0	$0	$410	$0	$410
Capital Additions - Indirect	$0	$0	$223	$0	$223
Subtotal Request	$0	$0	$633	$0	$633
AFUDC	$0	$0	$5	$0	$5
Total Capital Request	$0	$0	$638	$0	$638
O&M	$0	$0	$20	$0	$20
Total Request	**$0**	**$0**	**$658**	**$0**	**$658**

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2021	2022	2023+	Total
Straight Time Labor	$0	$28	$0	$28
Overtime Labor	$0	$5	$0	$5
Outside Services	$0	$280	$0	$280
Materials	$0	$96	$0	$96
Other, including contingency amounts (describe)	$0	$1	$0	$1
Total Direct Costs	**$0**	**$410**	**$0**	**$410**

Indirect Capital Costs	2021	2022	2023+	Total
Indirects/Overheads (including benefits)	$0	$223	$0	$223
Capitalized interest or AFUDC, if any	$0	$5	$0	$5
Total Indirect Costs	**$0**	**$228**	**$0**	**$228**
Total Capital Costs	**$0**	**$637**	**$0**	**$637**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$0**	**$637**	**$0**	**$637**
Total O&M Project Costs	**$0**	**$20**	**$0**	**$20**
Total Project Cost	**$0**	**$658**	**$0**	**$658**

Technical Justification:

Project Need Statement

This project proposes [redacted] AAC spacer cable on [redacted] ., [redacted]

New spacer cable was chosen to replace the existing 1/0 spacer cable on [redacted] not only for its enhanced reliability performance, but also due to the road conditions, which would make installation of open wire construction difficult due to the tight clearances between the structures and the road. Below is an image showing the reduced clearances on [redacted]



Project Objectives

Reduce exposure to outages related to conductor damage as a result of spacer cable ringing.

Project Scope

The scope of this project is as follows:

[redacted]

Major Material:

2,630’ of 3 phase 556 AAC Spacer Cable

Background / Justification

[redacted]

[redacted]

[redacted]

Within these zones there exists a total of 2,630' of spacer cable that show signs of conductor ringing, as a result of a manufacture defect which subjects the conductor to ultra-violet degradation causing the conductor to form rings in the covering. These rings expose the conductor to possible phase-to ground fault current exposure due to the close conductor spacing of spacer cable construction. This slowly degrades the conductor itself, subjecting it to eventual conductor breakage and resulting downed conductor & power outage.

Note: a separate project has been established which includes as part of its scope the installation of a new device to break up the [redacted] large customer zone into two zones each having less than 500 customers each.

Business Process and / or Technical Improvements:

- Eliminate exposure to wire down events due to damaged conductors.

Alternatives Considered with Cost Estimates

Option 1 – [redacted]. The cost of this alternative is $658k and is the preferred option.

Option 2 – [redacted]
The cost of this option is estimated to be $547k. This option was not chosen since spacer cable provides for greater reliability performance against lightning and tree related outages as compared to open wire covered conductor (AKA Tree Wire).

Project Option Comparison

Design Criteria [redacted]		
Cost	$657K	$547K
Cost / CM Saved	N/A	N/A
Cost / CI Saved	N/A	N/A
Preferred option	X	

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Preliminary Approval	May 2021
Detailed Design	September 2021
Construction Start Date	January 2022
Construction End Date	December 2022

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.	2022	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Customer Permission / Siting Council / Municipal approvals	2021	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach
Internal construction resources not available to perform the work.	2022	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2021	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2022	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2022	Low	Schedule work to minimize system abnormal time. Most of this work will require system to be abnormal for any extended period of time.

References

072012 NU Report Ringed Cable.docx

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

CD01702 Project Map Rev 3 05-21-202

CD01702 One-Lines.pdf

CD01702 Project Load Summary Rev3 (

CD01702_project_needs_statement_ENG_05