Operations Project Authorization Form

Approved at September 12, 2018 EPAC

Link to Meeting Minutes

Date Prepared: 08/22/2018	**Project Title: [redacted] OCB replacement**
Company/ies: Eversource CT	**Project ID Number: CS00253**
Organization: Asset Management	**Class(es) of Plant: Distribution Substation**
Project Initiator: [redacted]	**Project Category: Reliability**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Replace aging oil circuit breakers**
Estimated in service date: 12/2019	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Yes	**Capital Investment Part of Original Operating Plan? Yes**
Authorization Type: Full Funding	**O&M Expenses Part of the Original Operating Plan? No**
Total Request: $1,365,000	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding of $1,365,000 to [redacted] Eversource CT has an initiative (under PURA Docket No. 14-05-06) that began in 2006 to replace all OCB's in distribution substations to minimize environmental impacts from leaking and failed equipment. The initiative started by targeting OCB's with PCB bushings, then in 2012, the initiative increased in scope to include all distribution substation OCB's. There have been no previous expenditures on this project. The previous authorized amount of $88,000 was approved on August 10, 2017 for preliminary engineering

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2019	2020	2021	Totals
Capital Additions - Direct	$68	$731	-	-	$731
Less Customer Contribution	$0	$ -	-	-	$ -
Removals net of Salvage 7.5%	$4	$ -	-	-	$ -
Total - Direct Spending	$72	$731	-	-	$731
Capital Additions - Indirect	$16	$633	-	-	$633
Subtotal Request	$88	$1,364	-	-	$1,364
AFUDC	$0	$2	-	-	$2
Total Capital Request	$88	$1,366	-	-	$1,366
O&M	$0	$ -	-	-	$ -
Total Request	$88	$1,366	-	-	$1,366

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2019	2020	2021	Total
Straight Time Labor	$26	-	-	$26
Overtime Labor	$ -	-	-	$ -
Outside Services	$578	-	-	$578
Materials	$125	-	-	$125
Other, including contingency amounts (describe)	$2	-	-	$2
Total	$731	-	-	$731

Indirect Capital Costs	2019	2020	2021	Total
Indirects/Overheads (including benefits)	$634	-	-	$634
Capitalized interest or AFUDC, if any	$2	-	-	$2
Total	$636	-	-	$636

Total Capital Costs	$1,366		-	$1,366
Less Total Customer Contribution	$0	-	-	$0
Total Capital Project Costs	$1,366		-	$1,366
Total O&M Project Costs	$0	-	-	$0

Future Financial Impacts:

Provide below the estimated future costs that will result from the project:
Note: Dollar values are in thousands:

Future Costs	Year 20__	Year 20__	Year20__	Year 20__	Total Future Project Costs
Capital	$ -	$ -	$ -	$ -	$ -
O&M	-	-	-	-	-
Other	-	-	-	-	-
TOTAL	$ -	$ -	$ -	$ -	$ -

Describe the estimated future Capital, O&M and/or Other costs noted above: N/A

What functional area(s) will these future costs be funded in? There are no additional future costs associated with this project. [redacted]

If this is other than a Reliability Project, please complete the section below;

Provide below the estimated financial benefits that will result from the project:
Note: Dollar values are in thousands:

Future Benefits	Year 20__	Year 20__	Year 20__	Year 20__	Total Future Project Benefits
Capital	$ -	$ -	$ -	$ -	$ -
O&M	-	-	-	-	-
Other	-	-	-	-	-
TOTAL	$ -	$ -	$ -	$ -	$ -

Describe the estimated future Capital, O&M and/or Other benefits noted above: N/A

What functional area(s) will these benefits be reflected in? Substation Operations

Asset Retirement Obligation (ARO) and/ or Environmental Cleanup Costs (Environmental Liabilities):

Is there an ARO associated with this project? If yes, please provide details: No

Are there other environmental cleanup costs associated with this project? Each site was inspected for any additional scope that would be a factor associated with the OCB replacements. PM confirmed that no additional environmental cost will be associated with this project.

Technical Justification:

Project Need Statement

[redacted] As part of an environmental effort (under PURA Docket No. 14-05-06) that began in 2006, the [redacted] The need is driven by obsolescence and environmental concerns.

Project Objectives

The main objectives of this project are to:

- [redacted]
- Increase employee and customer safety
- Increase system reliability
- Reduce costs by increasing maintenance intervals

Project Scope

[redacted]

Nom	Age	Tank style	Mfg	Model	Load Rating	V class	Interrupt kA
[redacted]							

[redacted]

[redacted]

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

Background / Justification

The overall capital initiative to eliminate oil filled circuit breakers from the system was presented to PURA within Docket No. 14-05-06. It started off with replacing (OCB's) with PCB bushings and later expanded to all oil filled circuit breakers. The initiative justification was due to the amount of environmental damage and the associated cost the company would be exposed to by a PCB bushing/breaker failing catastrophically. The complete docket can be found as an attachment under References.

[redacted].

Business Process and / or Technical Improvements:

The benefit to customers will be improved reliability and less environmental risk in the future by replacing aging oil filled equipment that is both a safety and environmental concern. Reduced maintenance intervals due to the vacuum bottle interrupters. [redacted]

Alternatives Considered with Cost Estimates

A do-nothing approach is not recommended as an alternative because it does not address the environmental concerns the regulatory bodies were told would be addressed.

[redacted] is roughly $4M to $5M to install.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Engineering	Sept 2018
Procurement	Oct 2018
Construction start	Feb 2019
Construction finish	Dec 2019

Regulatory Approvals

N/A

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Internal construction resources not available to perform the work.	2019	Low	[redacted] will be performed by an outside contractor.
Internal engineering resources not available to perform the work.	2018	Low	This project will be engineering by outside services. Limited support from internal engineering. Breakers will be purchased by engineering
Materials Shortage or long lead times	2019	Medium	[redacted] Lead times may delay construction schedules.
System abnormal configuration	2019	High	[redacted]

References

CL&P Operating Initiatives 2014 to 2019, Docket# 14-05-06

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

Nomenclature Diagram showing breaker locations (attached)



Fig. 1 [redacted]



Fig. 2 [redacted]

Project Checklist – Transmission and Substation

Checklist for Studies and Processes of a Transmission & Substation Capital Project				
Project Name: [redacted] - OCB Replacement				**PAF No: CS00253**
Facility Type: ☐ BPS ☐ BES ☐ PTF ☒ non-PTF ☐ CIP ☒ Distribution				
PLANNING				
Is a NX-9 required?				No
Is an ISO-NE PAC presentation required?				No
Is a PPA required?				No
Is a TCA Application Required?				No
PLANNING/PROTECTION & CONTROLS				
Are RAS/SPS/UVLs affected?				No
OPERATIONS				
Outage Required?	☒ Primary Equipment (Power Transfer)	☒ Secondary Equipment (P&C only)	☐ Outage Not Required	
Do SCLL Conditions Exist?				No
Has an outage schedule been approved?				No
Are Operations & Maintenance procedures/training required?				No
STANDARDS				
Does the project include standard equipment and designs?				Yes
SUBSTATION ENGINEERING				
Does this impact Revenue Metering				No
Is preliminary short circuit/ breaker duty analysis required?				No
Are there any changes to the baseline audible noise?				No
Is there an impact to the existing ground grid?				Yes
Is a Transient Over Voltage (TOV) analysis required?				No
P&C ENGINEERING				
OP-22 - Are PMUs and DDR required?				No
If BPS, is an NPCC Directory #4 presentation required?				No

Checklist for Studies and Processes of a Transmission & Substation Capital Project	
Project Name: [redacted] - OCB Replacement	**PAF No: CS00253**
TRANSMISSION LINE ENGINEERING	
Are there any changes that affect the baseline EMF?	No
Are there any changes that affect the baseline EMI?	No
SITING	
Is a Siting filing required?	No
PERMITTING	
Is there any permitting required?	No
SITING & CONSTRUCTION SERVICES (OUTREACH)	
What is the level of outreach expected?	Low
INITIATOR	
Has a field constructability review been completed?	Yes
INVESTMENT RECOVERY	
Does the project require development of an Investment Recovery plan?	No
COST ESTIMATING	
How was the cost estimate prepared?	Estimate was prepared by an external firm
Who prepared the estimate?	[redacted]
Was the estimate reviewed by Eversource Estimating?	No

Cost Estimate Backup Details

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr/Lead: [redacted]
Project Number: CS00253
Est. Revision # 00

Estimate By: ABC
Date of Estimate: 09/18/2018
ISD: 12/31/19
Estimate 09/18/2018

ESTIMATE SUMMARY

Estimate Type: Construction

	TOTAL	% of Total	Prior	2018	2019	2020	2021	2022	2023
CONSTRUCTION	$181,208	13.3%			$181,208				
ENGINEERING/DESIGN	$186,985	13.7%			$186,985				
LAND									
MATERIAL	$121,200	8.9%			$121,200				
PROJECT MGR & SUPPORT									
REMOVAL									
TEST	$220,000	16.1%			$220,000				
CONTINGENCY									
ESCALATION	$21,282	1.6%			$21,282				
INDIRECTS	$633,526	46.4%			$633,526				
AFUDC	$1,572	0.1%			$1,572				
Total Cost	**$1,365,773**	100.0%			**$1,365,773**				

Estimate Range	-10%	-	10%
	$1,229,196	-	**$1,502,351**

COMMENTS:

Project Scope:

[redacted]

Assumptions/Clarifications;
Indirect rates based on; 11 - CT , Station work
Estimate based on previous work.

[redacted]