EVERSOURCE
Project Authorization Form

# Operations Project Authorization Form

## Approved at April 17, 2019 EPAC
## Link to Meeting Minutes

| | |
|---|---|
| **Date Prepared: 03/24/2019** | **Project Title: [redacted] OCB Replacement** |
| **Company/ies: Eversource CT** | **Project ID Number: CS00099** |
| **Organization: Asset Management** | **Class(es) of Plant: Distribution Substation** |
| **Project Initiator: [redacted]** | **Project Category: Stations - Breakers** |
| **Project Manager: [redacted]** | **Project Type: Specific** |
| **Project Sponsor: [redacted]** | **Project Purpose: Replace Aging Oil Circuit Breaker** |
| **Estimated in service date: 12/18** | **If Transmission Project: PTF? N/A** |
| **Eng. /Constr. Resources Budgeted? Yes** | **Capital Investment Part of Original Operating Plan? Y** |
| **Authorization Type: Full Funding** | **O&M Expenses Part of the Original Operating Plan? N** |
| **Total Request: $677,000** | |

## Financial Requirements:

### Project Authorization

ERM: _____

FP&A: _____

### Executive Summary

This project is seeking full funding of $677,000 to replace [redacted] Eversource has an initiative that began in 2006 to replace all OCBs in distribution substations to minimize environmental and safety impacts from leaking and failed equipment. The initiative started by targeting OCBs with PCB bushings. In 2012, the initiative increased in scope to include all [redacted] OCBs. [redacted] The previous authorized amount of $30,000 was approved in PowerPlan on October 24, 2016 for preliminary engineering. $677,446 has been spent to date and the project was in service December 2018.

**Project Costs Summary**
*Note: Dollar values are in thousands*

| | Prior Authorized | Prior Years Spend | 2018 | 2019 | Totals |
|---|---|---|---|---|---|
| Capital Additions - Direct | $14 | $5 | $265 | ($2) | $268 |
| Less Customer Contribution | $0 | $0 | $0 | $0 | $0 |
| Removals net of Salvage ____% | $0 | $0 | $0 | $10 | $10 |
| Total - Direct Spending | $14 | $5 | $265 | $9 | $278 |
| Capital Additions - Indirect | $15 | $7 | $374 | $9 | $390 |
| Subtotal Request | $29 | $12 | $639 | $18 | $668 |
| AFUDC | $1 | $0 | $9 | $0 | $9 |
| Total Capital Request | $30 | $12 | $648 | $18 | $677 |
| O&M | $0 | $0 | $0 | $0 | $0 |
| Total Request | $30 | $12 | $648 | $18 | $677 |

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

| Direct Capital Costs | Prior Years | 2018 | 2019 | Total |
|---|---|---|---|---|
| Straight Time Labor | $5 | $141 | $4 | $149 |
| Overtime Labor | $0 | $39 | $0 | $39 |
| Outside Services | $0 | $0 | $5 | $5 |
| Materials | $0 | $70 | ($2) | $68 |
| Other, including contingency amounts (describe) | $0 | $15 | $2 | $17 |
| **Total Direct Costs** | $5 | $265 | $9 | $278 |

| Indirect Capital Costs | Prior Years | 2018 | 2019 | Total |
|---|---|---|---|---|
| Indirects/Overheads (including benefits) | $7 | $374 | $9 | $390 |
| Capitalized interest or AFUDC, if any | $0 | $9 | $0 | $9 |
| **Total Indirect Costs** | $7 | $381 | $9 | $399 |

| | | | | |
|---|---|---|---|---|
| **Total Capital Costs** | $12 | $646 | $18 | $677 |
| Less Total Customer Contribution | $0 | $0 | $0 | $0 |
| **Total Capital Project Costs** | **$12** | **$646** | **$18** | **$677** |
| Total O&M Project Costs | $0 | $0 | $0 | $0 |

*Note: Explain unique payment provisions, if applicable*

The other line item of $17K is for expenses, including mileage.

**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? N/A
A representative from the respective functional area is required to be included as a project approver.

**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__ | Year20__ | 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? N/A
A representative from the respective functional area is required to be included as a project approver.

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

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

Are there other environmental cleanup costs associated with this project? No
If yes, please provide details:

## Technical Justification:

### Project Need Statement

[redacted] As part of an environmental initiative (under PURA Docket No. 14-05-06) that began in 2006, the OCB was replaced [redacted] The need was driven by customer and employee safety, obsolescence and environmental concerns.

### Project Objectives

The main objectives of this project are to:

- Increase employee and customer safety
- Removal of oil filled devices from the [redacted] /environment.
- Increase system reliability

### Project Scope

Replaced [redacted] The following OCB was identified for replacement:

| Nom | Age | Tank Style | Mfg. | Model | Load Rating | V class | Interrupt kA |
|---|---|---|---|---|---|---|---|
| [redacted] | | | | | | | |

[redacted]

[redacted]

[redacted]

Included in the project scope was the replacement of the [redacted]

**Background / Justification**

As mentioned above under the project need statement, this project is part of an overall oil circuit breaker removal initiative that began in 2006. The initiative was created to decrease Eversource's environmental exposure to oil spills and leaks, as well as replacing a vital component of aging substation infrastructure. The overall capital initiative to eliminate oil filled circuit breakers from the system was presented to PURA within docket number 14-05-06. It started off with replacing OCBs with PCB bushings and has now expanded to all oil filled circuit breakers. The initiative justification was due to the amount of environmental damage and the associated dollars the company was exposed to with a PCB bushing/breaker catastrophically failing.

[redacted]

[redacted]. Refer to Figure 2 for equipment visuals.

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

The benefit to customers and Eversource is improved reliability and less environmental risk in the future by replacing aging equipment that is both a safety and environmental concern.

**Alternatives Considered with Cost Estimates**

A do-nothing approach was not recommended as an alternative due to not addressing the environmental concerns of the regulatory agencies.

[redacted]

**Project Schedule**

| Milestone/Phase Name | Estimated Completion Date |
|---|---|
| Engineering | December 2017 |
| Construction start | September 2018 |
| Construction finish | December 2018 |

**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. | 2018 | Low | OCB removals and [redacted] to be performed by an outside contractor. |
| Internal engineering resources not available to perform the work. | 2018 | Low | This project was engineered by internal engineering. |
| [redacted] | 2018 | Low | [redacted] |
| [redacted] | 2018 | Low | [redacted] Man-hours were included in the estimate for this. |

**References**

CL&P 2014-2019 Capital Operating Initiatives

PURA Docket No. 14-05-06

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

[redacted]

Figure 1- Nomenclature diagram [redacted]





Figure 3 - Detail map showing [redacted]

**Project Checklist – Transmission and Substation**

**INSTRUCTIONS:**
It is the responsibility of the initiator to contact the area disciplines to determine if the project considerations contained in this list are applicable to their project. They should fill out the checklist and determine a transition plan for the purpose of project execution.

| **Checklist for Studies and Processes of a Transmission & Substation Capital Project** | | |
|---|---|---|
| **Project Name:** [redacted] | **OCB Replacement** | **PAF No: CS00099** |
| **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? | [redacted] | ☐ Outage Not Required |
| Do SCLL Conditions Exist? | Yes | |
| Has an outage schedule been approved? | Yes | |
| 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: CS00099** |
| **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? | Other (specify below) |
| Who prepared the estimate? | Actuals from Power Plan |
| Was the estimate reviewed by Eversource Estimating? | No |

**Cost Estimate Backup Details**

See attached detailed cost backup

**Cost Breakdown for FP# CS00099**

04/03/2019

| | | | | FERC Account # | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Cost_Type | Year | CE_Type | DESCRIPTION | 106010 | 107010 | 108030 | 45701X | 92000X | 93020X | Total |
| Direct | 2017 | Labor | Labor Straight Time Exempt | | 3,038.77 | | | | | 3,038.77 |
| Direct | 2017 | Labor | Labor Straight Time Non-Exempt | | 1,831.45 | | | | | 1,831.45 |
| | | **Labor Total** | | - | 4,870.22 | - | - | - | - | 4,870.22 |
| | **2017 Total** | | | - | 4,870.22 | - | - | - | - | 4,870.22 |
| Direct | 2018 | Contractors | Environmental Outside Services | | 150.50 | | | | | 150.50 |
| Direct | 2018 | Contractors | Other Outside Services- Other | | 255.00 | | | | | 255.00 |
| | | **Contractors Total** | | - | 405.50 | - | - | - | - | 405.50 |
| Direct | 2018 | Labor | Labor Overtime Non-Exempt | | 35,953.87 | | | | | 35,953.87 |
| Direct | 2018 | Labor | Labor Premium and Special Non-Exempt | | 2,893.94 | | | | | 2,893.94 |
| Direct | 2018 | Labor | Labor Straight Time Exempt | | 19,314.53 | | | | | 19,314.53 |
| Direct | 2018 | Labor | Labor Straight Time Non-Exempt | | 121,444.99 | | | | | 121,444.99 |
| | | **Labor Total** | | - | 179,607.33 | - | - | - | - | 179,607.33 |
| Direct | 2018 | Materials | Materials- Purchased | | 5,899.56 | | | | | 5,899.56 |
| Direct | 2018 | Materials | Materials- Stores | | 11,574.69 | | | | | 11,574.69 |
| Direct | 2018 | Materials | Stores over 25K | | 52,169.13 | | | | | 52,169.13 |
| | | **Materials Total** | | - | 69,643.38 | - | - | - | - | 69,643.38 |
| Direct | 2018 | Misc Other | Meals | | 980.00 | | | | | 980.00 |
| Direct | 2018 | Misc Other | Mileage | | 11,754.62 | | | | | 11,754.62 |
| Direct | 2018 | Misc Other | Miscellaneous Accounting Adjustments | 659,472.34 | (659,472.34) | | | | | - |
| Direct | 2018 | Misc Other | Rent Expense-External | | 2,577.55 | | | | | 2,577.55 |
| | | **Misc Other Total** | | 659,472.34 | (644,160.17) | - | - | - | - | 15,312.17 |
| | **2018 Total** | | | 659,472.34 | (394,503.96) | - | - | - | - | 264,968.38 |
| Direct | 2019 | Contractors | Environmental Outside Services | | (10.83) | 7.82 | | | | (3.01) |
| Direct | 2019 | Contractors | Other Outside Services- Other | | 5,484.14 | | | | | 5,484.14 |
| | | **Contractors Total** | | - | 5,473.31 | 7.82 | - | - | - | 5,481.13 |
| Direct | 2019 | Labor | Labor Overtime Non-Exempt | | (1,878.32) | 1,908.23 | | | | 29.91 |
| Direct | 2019 | Labor | Labor Premium and Special Non-Exempt | | (153.47) | 153.47 | | | | - |
| Direct | 2019 | Labor | Labor Straight Time Exempt | | 305.93 | 1,268.91 | | | | 1,574.84 |
| Direct | 2019 | Labor | Labor Straight Time Non-Exempt | | (4,453.38) | 6,654.10 | | | | 2,200.72 |
| | | **Labor Total** | | - | (6,179.24) | 9,984.71 | - | - | - | 3,805.47 |
| Direct | 2019 | Materials | Materials- Stores | | (1,529.88) | | | | | (1,529.88) |
| | | **Materials Total** | | - | (1,529.88) | - | - | - | - | (1,529.88) |
| Direct | 2019 | Misc Other | Meals | | (51.97) | 51.97 | | | | - |
| Direct | 2019 | Misc Other | Mileage | | (405.97) | 635.53 | | | | 229.56 |
| Direct | 2019 | Misc Other | Miscellaneous Accounting Adjustments | (13,096.73) | 13,096.73 | | | | | - |
| Direct | 2019 | Misc Other | Rent Expense-External | | 1,042.62 | | | | | 1,042.62 |
| | | **Misc Other Total** | | (13,096.73) | 13,681.41 | 687.50 | - | - | - | 1,272.18 |
| | **2019 Total** | | | (13,096.73) | 11,445.60 | 10,680.03 | - | - | - | 9,028.90 |
| **Direct Total** | | | | 646,375.61 | (378,188.14) | 10,680.03 | - | - | - | 278,867.50 |
| Indirect | 2017 | Indirect | Admin and Eng OH- Acct Use Only | | 81.13 | | | | | 81.13 |
| Indirect | 2017 | Indirect | Engin and Super OH- Acct Use Only | | 1,818.91 | | | | | 1,818.91 |
| Indirect | 2017 | Indirect | Gen Ser Co Benefit Loader- Acct Use Only | | 3,779.25 | | | | | 3,779.25 |
| Indirect | 2017 | Indirect | Misc Dist Exp Capitalized OH-Acct Use Only | | 344.51 | | | | | 344.51 |
| Indirect | 2017 | Indirect | Non Productive Time Loader- Acct Use Only | | 806.05 | | | | | 806.05 |
| Indirect | 2017 | Indirect | Vehicle Costs Clearing- Acct Use Only | | 33.62 | | | | | 33.62 |
| | | **Indirect Total** | | - | 6,863.47 | - | - | - | - | 6,863.47 |
| Indirect | 2017 | Misc Other | AFUDC Debt | | 41.25 | | | | | 41.25 |
| Indirect | 2017 | Misc Other | AFUDC Equity | | 88.57 | | | | | 88.57 |
| | | **Misc Other Total** | | - | 129.82 | - | - | - | - | 129.82 |
| | **2017 Total** | | | - | 6,993.29 | - | - | - | - | 6,993.29 |
| Indirect | 2018 | Indirect | Admin and Eng OH- Acct Use Only | | 3,036.83 | | | | | 3,036.83 |
| Indirect | 2018 | Indirect | Alloc- E+S OH Subst- Acct Use Only | | 175,244.74 | | | | | 175,244.74 |
| Indirect | 2018 | Indirect | Engin and Super OH- Acct Use Only | | 36,678.63 | | | | | 36,678.63 |
| Indirect | 2018 | Indirect | Gen Ser Co Benefit Loader- Acct Use Only | | 12,717.00 | | | | | 12,717.00 |
| Indirect | 2018 | Indirect | Misc Dist Exp Capitalized OH-Acct Use Only | | 14,525.48 | | | | | 14,525.48 |
| Indirect | 2018 | Indirect | Non Productive Time Loader- Acct Use Only | | 23,613.89 | | | | | 23,613.89 |
| Indirect | 2018 | Indirect | Payroll Benefit Loader- Acct Use Only | | 74,420.82 | | | | | 74,420.82 |
| Indirect | 2018 | Indirect | Stores Loader- Acct Use Only | | 5,246.10 | | | | | 5,246.10 |
| Indirect | 2018 | Indirect | Vehicle Costs Clearing- Acct Use Only | | 28,442.81 | | | | | 28,442.81 |
| | | **Indirect Total** | | - | 373,926.30 | - | - | - | - | 373,926.30 |
| Indirect | 2018 | Misc Other | AFUDC Debt | | 2,768.89 | | | | | 2,768.89 |
| Indirect | 2018 | Misc Other | AFUDC Equity | | 5,945.26 | | | | | 5,945.26 |
| | | **Misc Other Total** | | - | 8,714.15 | - | - | - | - | 8,714.15 |
| | **2018 Total** | | | - | 382,640.45 | - | - | - | - | 382,640.45 |
| Indirect | 2019 | Indirect | Admin and Eng OH- Acct Use Only | | (84.29) | 170.05 | | | | 85.76 |
| Indirect | 2019 | Indirect | Alloc- E+S OH Subst- Acct Use Only | | (4,804.61) | 9,544.64 | | | | 4,740.03 |
| Indirect | 2019 | Indirect | Engin and Super OH- Acct Use Only | | (2,041.54) | 2,041.54 | | | | - |
| Indirect | 2019 | Indirect | Gen Ser Co Benefit Loader- Acct Use Only | | (681.01) | 885.65 | | | | 204.64 |
| Indirect | 2019 | Indirect | Misc Dist Exp Capitalized OH-Acct Use Only | | (227.47) | 819.98 | | | | 592.51 |
| Indirect | 2019 | Indirect | Non Productive Time Loader- Acct Use Only | | (789.97) | 1,323.28 | | | | 533.31 |
| Indirect | 2019 | Indirect | Payroll Benefit Loader- Acct Use Only | | (2,217.87) | 4,043.37 | | | | 1,825.50 |
| Indirect | 2019 | Indirect | Service Company Allocations- Acct Use Only | | | | (486.26) | 234.54 | 251.72 | - |
| Indirect | 2019 | Indirect | Stores Loader- Acct Use Only | | 243.44 | | | | | 243.44 |
| Indirect | 2019 | Indirect | Vehicle Costs Clearing- Acct Use Only | | (828.32) | 1,548.30 | | | | 719.98 |
| | | **Indirect Total** | | - | (11,431.64) | 20,376.81 | (486.26) | 234.54 | 251.72 | 8,945.17 |
| | **2019 Total** | | | - | (11,431.64) | 20,376.81 | (486.26) | 234.54 | 251.72 | 8,945.17 |
| **Indirect Total** | | | | - | 378,202.10 | 20,376.81 | (486.26) | 234.54 | 251.72 | 398,578.91 |
| **Grand Total** | | | | 646,375.61 | 13.96 | 31,056.84 | (486.26) | 234.54 | 251.72 | 677,446.41 |