EVERSOURCE
Project Authorization Form

Operations Project Authorization Form

Approved at May 03, 2019 EPAC
Link to Meeting Minutes

Date Prepared: 04/10/2019	**Project Title:** [redacted]
Company/ies: Eversource CT	**Project ID Number: CS00128**
Organization: Asset Management	**Class(es) of Plant: Distribution** [redacted]
Project Initiator: [redacted]	**Project Category:** [redacted]
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose:** [redacted]
Estimated in service date: 12/31/19	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Y	**Capital Investment Part of Original Operating Plan? Y**
Authorization Type: Full Funding	**O&M Expenses Part of the Original Operating Plan? N**
Total Request: $1,860,000	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding of $1,860,000 for [redacted]

There is a previously approved Technical Authorization Form (TAF), dated 10/18/2016, for $62,000 that was used for preliminary engineering. The TAF was approved in PowerPlan on 10/24/2016. As of April 12, 2019, approximately $268,000 has been spent to date.

This project is in progress and will be coordinated with project [redacted] Oil Circuit Breaker (OCB) replacements to maximize resources and outage coordination.

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	Prior Spend to Date (through 4/12/19)	2019	Totals
Capital Additions - Direct	$33	$157	$841	$998
Less Customer Contribution	$0	$0	$0	$0
Removals net of Salvage ____%	$2	$0	$67	$67
Total - Direct Spending	$35	$157	$908	$1,065
Capital Additions - Indirect	$26	$100	$635	$735
Subtotal Request	$61	$257	$1,543	$1,800
AFUDC	$1	$11	$49	$60
Total Capital Request	$62	$268	$1,592	$1,860
O&M	$0	$0	$0	$0
Total Request	$62	$268	$1,592	$1,860

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	Prior Spend to Date (through 4/12/19)	2019	Totals
Straight Time Labor	$41	$41	$82
Overtime Labor	$7	$0	$7
Outside Services	$1	$764	$765
Materials	$105	$103	$208
Other, including contingency amounts (describe)	$3	$0	$3
Total	$157	$908	$1,065

Indirect Capital Costs	Prior Spend to Date (through 4/12/19)	2019	Totals
Indirects/Overheads (including benefits)	$100	$635	$735
Capitalized interest or AFUDC, if any	$11	$49	$60
Total	$111	$684	$795
Total Capital Costs	$268	$1,592	$1,860
Less Total Customer Contribution	$0	$0	$0
Total Capital Project Costs	$268	$1,592	$1,860

Total O&M Project Costs	$0	$0	$0

Note: Explain unique payment provisions, if applicable

Other charges consist of miscellaneous employee expenses. All prior costs are included in the above cost estimate.

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): There are no ARO's associated with this project.

Is there an ARO associated with this project? No AROs 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]

[redacted]. An oil circuit breaker replacement project ([redacted]) is scheduled to run in parallel with this project to maximize resources and outage coordination.

Project Objectives

[redacted]

Project Scope

[redacted]

Equip Position	Manufacturer	Model	Equip No
[redacted]			

Equip Position	Manufacturer	Model	Equip No
[redacted]			

- [redacted]

[redacted]

[redacted]

- [redacted]
- [redacted]

All replacement equipment is Eversource standards approved and stock coded.

All equipment shall be operated and tested according to Eversource testing practices prior to accepting.

Background / Justification

[redacted] Refer to Figure 1 for the attached nomenclature diagram for device counts and locations.

[redacted] Photographs of the equipment are attached.

[redacted]

A [redacted] was completed (03/28/2016) that [redacted]

Business Process and / or Technical Improvements:

The equipment improvements to this [redacted]

Alternatives Considered with Cost Estimates

Do Nothing: This is the only alternative to the identified project scope. [redacted] This is not a suitable

solution due to [redacted] A do nothing approach does not address the [redacted]. At that point, [redacted]

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Engineering Drawings Issued	March 2018
Procurement	April 2018
Construction	February 2019
ISD	December 2019

Regulatory Approvals

N/A

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
[redacted]	2019	Medium	[redacted]
Actual cost higher than estimated due to scope changes.	2019	Low	The scope will be held to the project description. Upon start of the OCB project, [redacted]
Delays due to inclement weather are always a risk	2019	Low - Medium	[redacted] This project will be constructed by outside contractors.

[redacted]

[redacted]

References

TPS-10-005-CT, Rev1 ([redacted]

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

Figure 1 - Nomenclature diagram showing location of devices being replaced

Photographs

[redacted]

Photograph 1- [redacted] **-** [redacted]



Photograph 2 - [redacted]



Photograph 3- [redacted]



Photograph 4 - [redacted]



Photograph 5 - [redacted]



Photograph 6 - [redacted]



Photograph 7 - [redacted]



Photograph 8 - [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]		**PAF No: CS00128**
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?	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?	Yes	
Are there any changes to the baseline audible noise?	No	
Is there an impact to the existing ground grid?	No	
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] - [redacted]	**PAF No: CS00128**
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?	Engineering
Was the estimate reviewed by Eversource Estimating?	No

Cost Estimate Backup Details

The construction phase of the project will be performed with the Oil Circuit Breaker (OCB) replacement program [redacted]. [redacted] See the attached cost estimate backup detail document.

Project Title: [redacted]	Prior Yrs	2019	N/A	2020	1	2021	2	2022	3	2023	4	TOTAL	N/A		Escalation
TAF / Project #: TBD	$	Mdays	$	MDays	$	MDays	$	MDays	$	MDays	$	MDays	$	%	3.0%
ENRXX-TG ENG / DESIGN															[redacted]
Project Services & Drafting	$0	60	$22,200	0	$0	0	$0	0	$0	0	$0	60	$22,200		
Trans Eng & Design	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Civil Engineering	$0	10	$3,700	0	$0	0	$0	0	$0	0	$0	10	$3,700		
Civil Design	$0	5	$1,850	0	$0	0	$0	0	$0	0	$0	5	$1,850		
Elect Eng & Design	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Dist. SS Eng & Design	$0	25	$9,250	0	$0	0	$0	0	$0	0	$0	25	$9,250		
Protection & Control	$0	10	$3,700	0	$0	0	$0	0	$0	0	$0	10	$3,700		
Surveying	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Permitting	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Telecom	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
SS Technical Engineer	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Apparatus Speciallist	$0	5	$1,850	0	$0	0	$0	0	$0	0	$0	5	$1,850		
Escalation					$0		$0		$0		$0		$0		
LT Subtotal	$0	115	$42,550	0	$0	0	$0	0	$0	0	$0	115	$42,550	$42,550	=If Crossfoot Verification
Distribution Contractor Engineering	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		370
Eng Contractor = W19 x Material & Construction Cost	$0		$92,094		$0		$0		$0		$0		$92,094	10.0%	
Contingency			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$0		$0		$0		$0		$0		
ENRXX TOTAL	$0		$134,644		$0		$0		$0		$0		$134,644	$134,644	=If Crossfoot Verification
PSMXX-PROJECT MGR & SUPPORT															
Project Planning	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Project Management/Engineer	$0	25	$9,250	0	$0	0	$0	0	$0	0	$0	25	$9,250		
Legal	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Escalation					$0		$0		$0		$0		$0		
LT Subtotal	$0	25	9,250	0	$0	0	$0	0	$0	0	$0	25	$9,250	$9,250	=If Crossfoot Verification
Employee Expenses	$0		$93		$0		$0		$0		$0		$93	1%	
Contractors - Includes Sales Tax & Esc.	$0		$0		$0		$0		$0		$0		$0		
Environmental (Identifiable Tax Credit)	$0		$0		$0		$0		$0		$0		$0		
Legal - Contractors - Includes Sales Tax	$0		$0		$0		$0		$0		$0		$0		
Property Tax (Large Projects & Town Expectations)	$0		$0		$0		$0		$0		$0		$0		
Fees & Payments	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$0		$0		$0		$0		$0		
PSMXX-PROJECT MGR & SUPPORT TOTAL	$0		$9,343		$0		$0		$0		$0		$9,343	$9,343	=If Crossfoot Verification
CSTXX-CONSTRUCTION - Additions %														100.0%	In House MDay Rate
Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		[redacted]
Electrical	$0	3	$1,422	0	$0	0	$0	0	$0	0	$0	3	$1,422		
Test	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Other - Switch / Tag Support	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Construct. Reps	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Escalation					$0		$0		$0		$0		$0		
LT Subtotal	$0	3	$1,422	0	$0	0	$0	0	$0	0	$0	3	$1,422	$1,422	=If Crossfoot Verification
Employee Expenses	$0		$14		$0		$0		$0		$0		$14	1%	Contractor MDay Rate
Contractor Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	3.9%	[redacted]
Contractor Electrical	$0	343	$384,160	0	$0	0	$0	0	$0	0	$0	343	$384,160	3.9%	
Contractor Test	$0	30	$36,000	0	$0	0	$0	0	$0	0	$0	30	$36,000	3.9%	
Contractor Other - Switch / Tag Support	$0	125	$140,000	0	$0	0	$0	0	$0	0	$0	125	$140,000	3.9%	
Contractor Equipment = % of Total Construction Labor	$0		$84,316		$0		$0		$0		$0	0	$84,316	20.0%	
Additional Test & Commissioning Labor Inc sales tax	$0		$0		$0		$0		$0		$0		$0		
Fees & Payments	$0		$0		$0		$0		$0		$0		$0		
Rents & Leases	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$0		$0		$0		$0		$0		
CSTXX TOTAL	$0		$645,912		$0		$0		$0		$0		$645,912	$645,912	=If Crossfoot Verification
REMXX-TG REMOVAL - %														10.0%	In House MDay Rate
Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		[redacted]
Electrical	$0	60	$28,440	0	$0	0	$0	0	$0	0	$0	60	$28,440		
Escalation					$0		$0		$0		$0		$0		
LT Subtotal	$0	60	$28,440	0	$0	0	$0	0	$0	0	$0	60	$28,440	$28,440	=If Crossfoot Verification
Employee Expenses	$0		$284		$0		$0		$0		$0		$284	1%	Contractor MDay Rate
Contractor Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	3.9%	
Contractor Electrical	$0	34	$38,416	0	$0	0	$0	0	$0	0	$0	34	$38,416	3.9%	[redacted]
Contractors - Include Sales Tax	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$0		$0		$0		$0		$0		
REMXX TOTAL	$0		$67,140		$0		$0		$0		$0		$67,140	$67,140	=If Crossfoot Verification
MATXX-TG MATERIAL (Includes Tax)															
Misc Purchases (Credit Card Etc.)	$0		$6,459		$0		$0		$0		$0		$6,459	1%	1% Constuction Labor
Stock	$0		$103,499		$0		$0	$0	$0		$0		$103,499		
Direct	$0		$97,932		$0		$0		$0		$0		$97,932		
Contingency Excluding Big Ticket Items			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$0		$0		$0		$0		$0		
MATXX TOTAL	$0		$207,890		$0		$0		$0		$0		$207,890	$207,890	=If Crossfoot Verification
Contingency Excludes Large Items	$0		$0		$0		$0		$0		$0		$0		Note Only - Large Items
LNDXX-TG LAND															ENG Blended Rate
Real Estate	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		[redacted]
Escalation					$0		$0		$0		$0		$0		
LT Subtotal	$0		$0		$0		$0		$0		$0		$0		=If Crossfoot Verification
Purchase Land	$0		$0		$0		$0		$0		$0		$0		
Fees & Payments	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0	1.0%	
Escalation					$0		$0		$0		$0		$0		
LNDXX TOTAL	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	$0	=If Crossfoot Verification
DIRECT COST TOTAL	$0		$1,064,929		$0		$0		$0		$0		$1,064,929		
INDIRECTS															
Non-Productive Allocation (ZB-TM1-ZNP)	$0		$10,208		$0		$0		$0		$0		$10,208	12.5%	
Payroll Benefits Allocation (ZE-TM1-Z93)	$0		$37,060		$0		$0		$0		$0		$37,060	40.3%	
Material Stores Allocation (Stock) <25k (ZC-TM1-Z91)	$0		$72,762		$0		$0		$0		$0		$72,762	35.0%	Excludes Big Ticket Tabs
Gen Service Co. OH Allocation (ZF-TM1-Z94)	$0		$0		$0		$0		$0		$0		$0	0.0%	
E&S Allocation (25%<20M<3%) - (ZI-TM1-Z96)	$0		$542,350		$0		$0		$0		$0		$542,350	60.0%	
Misc. Dist. Exp. Cap. Allocation (ZH-TM1-Z92)	$0		$45,196		$0		$0		$0		$0		$45,196	5.0%	
AS&E Allocations (ZJ-TM1-Z90)	$0		$5,925		$0		$0		$0		$0		$5,925	0.5%	
Vehicle Allocations (ZV-TM1-Z98)	$0		$21,420		$0		$0		$0		$0		$21,420	26.2%	
INDIRECT Subtotal	$0		$734,921		$0		$0		$0		$0		$734,921	$734,921	=If Crossfoot Verification
AFUDC (ZK - TM1-Z95)	$0		$60,385		$0		$0		$0		$0		$60,385	6.71000%	[redacted]
PROJECT COST TOTAL	$0		$1,860,235		$0		$0		$0		$0		$1,860,235		=If Crossfoot Verification
															$1,860,235

Calc OH's	Prior Years	2019	Subtotal	2020	Subtotal	2021	Subtotal	2022	Subtotal	2023	Subtotal	TOTAL	Subtotal	
Filter Label to Create Formulas - Should = Total	Costs	M-Days	Costs	M-Days	Costs	M-Days	Costs	M-Days	Costs	M-Days	Costs	M-Days	Costs	
Engineering	$0	115	$42,550	0	$0	0	$0	0	$0	0	$0	115	$42,550	
Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	
Electrical	$0	63	$29,862	0	$0	0	$0	0	$0	0	$0	63	$29,862	
Test	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	
Other Support/Switc/Constr Rep/RE	$0	25	$9,250	0	$0	0	$0	0	$0	0	$0	25	$9,250	
LT Sub - Total	$0	203	81,662	0	0	0	0	0	0	0	0	203	$81,662	$81,662
Employee Expenses	$0		$391		$0		$0		$0		$0		$391	
Materials	$0		$207,890		$0		$0		$0		$0		$207,890	
Contractors	$0		$774,986		$0		$0		$0		$0		$774,986	
Envirionmental	$0		$0		$0		$0		$0		$0		$0	
Fees & Payments	$0		$0		$0		$0		$0		$0		$0	
Rents & Leases	$0		$0		$0		$0		$0		$0		$0	
Contingency	$0		$0		$0		$0		$0		$0		$0	
Escalation	$0		$0		$0		$0		$0		$0		$0	
Contingency & Escalation Subtotal	$0		$0		$0		$0		$0		$0		$0	
DIRECT TOTAL	$0		$1,064,929		$0		$0		$0		$0		$1,064,929	
Overhead Subtotal	$0		$795,306		$0		$0		$0		$0		$795,306	
PROJECT COST TOTAL	$0		$1,860,235		$0		$0		$0		$0		$1,860,235	$1,860,235

Summary by Activity														
Material	$0		$207,890		$0		$0		$0		$0		$207,890	
Labor & Equipment (Const,RMV,Test)	$0		$713,052		$0		$0		$0		$0		$713,052	
Engineering/Permitting/PM/Land/Ind	$0		$878,908		$0		$0		$0		$0		$878,908	
Escalation	$0		$0		$0		$0		$0		$0		$0	
AFUDC	$0		$60,385		$0		$0		$0		$0		$60,385	
Contingency	$0		$0		$0		$0		$0		$0		$0	
PROJECT COST TOTAL	$0		$1,860,235		$0		$0		$0		$0		$1,860,235	$1,860,235

Technical Authorization Form

Date Prepared: 10/18/2016	Project Title: [redacted]
Company/ies: Eversource CT	Project ID Number: CS00128
Organization: Strategy & Performance	Class(es) of Plant: Distribution
Project Initiator: [redacted]	Project Category: [redacted]
Project Owner/Manager: [redacted]	Project Type: *Specific*
Project Sponsor: [redacted]	Project Purpose: [redacted]
Estimated in service date: 12/31/18	If Transmission Project: *NA*
Authorization Type: Engineering	Authorization Amount: $62,000

Project Need Statement

[redacted]

Project Objectives

[redacted]

Project Scope

The scope of this project is to replace the following bus attached devices;

Equip_Position	Manufacturer	Model	Equip_No
[redacted]			

[redacted]

- [redacted]
- [redacted]

Background / Justification

There will be an oil circuit breaker replacement project scheduled to run in parallel with this project. [redacted]

.

Business Process and / or Technical Improvements:

The [redacted]

Cost Estimate and Assumptions

The construction phase of the project will be performed with the Oil Circuit Breaker (OCB) replacement program. This will take advantage of [redacted] for both projects.

Project Costs;

Internal support $618k

External Contractor $882k

Alternatives Considered with Cost Estimates

The only alternative to the identified project scope is to do nothing. [redacted]

$0

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Engineering	2017
Construction	2018
ISD	12/31/2018

Regulatory Approvals

N/A

Risks and Risk Mitigation Plans

[redacted]

References

One-Line Diagrams, Attachments, and Images

[redacted]

Hollow core insulator replacements



[redacted]

[redacted]

General Switch replacement

[redacted]

[redacted]



