EVERSOURCE
Project Authorization Form

Operations Project Authorization Form

Approved at August 1, 2018 EPAC

Link to Meeting Minutes

Date Prepared: 7/17/18	**Project Title:** [redacted] Installation
Company/ies: Eversource CT	**Project ID Number:** CS00325
Organization: System Planning	**Class(es) of Plant:** Distribution Substation
Project Initiator: [redacted]	**Project Category:** Reliability
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Project Purpose:** Increase the operation/maintenance flexibility
Estimated in service date: 12/2019	**If Transmission Project: PTF?** No
Eng. /Constr. Resources Budgeted? Yes	**Capital Investment Part of Original Operating Plan?** No
Authorization Type: Full Funding	**O&M Expenses Part of the Original Operating Plan?** N/A
Total Request: $2.242M	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This Project is requesting full funding for the installation of a [redacted]

Without the proposed [redacted]

This circuit breaker would increase operation flexibility/simplicity which will result in improved System reliability. The total project request is for $2.242M.

Project Costs Summary

Note: Dollar values are in thousands

PAF (dollars in thousands)

	Prior Authorized	2017	2018	2019+	Totals
Capital Additions - Direct	$250	$182	$805	$-	$1,237
Less Customer Contribution	$-	$-	$-	$-	$-
Removals net of Salvage ____%	$-	$-	$-	$-	$-
Total - Direct Spending	$250	$182	$805	$-	$1,237
Capital Additions - Indirect	$-	$209	$792	$-	$1,001
Subtotal Request	$250	$391	$1,597	$-	$2,238
AFUDC	$-	$0	$3	$-	$4
Total Capital Request	$250	$392	$1,600	$-	$2,242
O&M	$-	$-	$-	$-	$-
Total Request	$250	$392	$1,600	$-	$2,242

	Prior	2017	2018	2019+	
Direct Capital Costs	Actuals	**Year 1**	**Year 2**	**Year 3+**	**Total**
Straight Time Labor	$-	$39	$33	$-	$72
Overtime Labor	$-	$-	$-	$-	$-
Outside Services	$-	$140	$727	$-	$867
Materials	$-	$-	$229	$-	$229
Other – Vehicles, expenses, Contingency	$-	$3	$66	$-	$70
Total	$-	$182	$1,055	$-	$1,237

Indirect Capital Costs		**Year 1**	**Year 2**	**Year 3+**	**Total**
Indirects/Overheads (including benefits)	$-	$209	$792	$-	$1,001
Capitalized interest or AFUDC, if any	$-	$0	$3	$-	$4
Total	$-	$210	$795	$-	$1,005

Total Capital Costs	$-	$392	$1,850	$-	$2,242
Less Total Customer Contribution	$-	$-	$-	$-	$-
Total Capital Project Costs	**$-**	**$392**	**$1,850**	**$-**	**$2,242**
Total O&M Project Costs	$-	$-	$-	$-	$-

Note: Explain unique payment provisions, if applicable

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:

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:

What functional area(s) will these benefits be reflected in?_____
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? If yes, please provide details:
No

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

Technical Justification:

Project Need Statement

[redacted]

Project Objectives

[redacted]

Project Scope

[redacted]

Background / Justification

Presently, [redacted]

Business Process and / or Technical Improvements:

Improvements due to this project include: Operation flexibility/simplicity resulted in System reliability.

Alternatives Considered with Cost Estimates

[redacted]

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Engineering	9/2018
Siting	12/2018
Material receipt	12/2018
Construction	6/2019
ISD	12/2019

Regulatory Approvals

Siting:
Connecticut Siting Council Notice of Exemption

Risks and Risk Mitigation Plans

[redacted]

References

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



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] 115-kV Breaker Installation						**PAF No:CS00325**
Facility Type: ☒ BPS	☒ BES	☐ PTF	☒ non-PTF	☒ CIP	☒ Distribution	
PLANNING						
Is a NX-9 required?						Yes
Is an ISO-NE PAC presentation required?						No
Is a PPA required?						Yes
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?						Yes
Has an outage schedule been approved?						No
Are Operations & Maintenance procedures/training required?						Yes
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?						Yes

Checklist for Studies and Processes of a Transmission & Substation Capital Project

Project Name : [redacted] 115-kV Breaker Installation	**PAF No:** CS00325

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?	Yes
PERMITTING	
Is there any permitting required?	Yes
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 the Eversource Estimating Team
Who prepared the estimate?	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes

ESTIMATE SUMMARY
CL&P

Project Title: [redacted] 6X Series Breaker
Project Mgr/Lead: [redacted]
Project Number: CS00325

Estimate By: CSS
Date of Estimate: 06-20-18
ISD: 06/30/19
Estimate C-18-009

ESTIMATE SUMMARY

ESTIMATE TYPE: Planning

	TOTAL	Prior	2018	2019	2020	2021	2022 and FUTURE
CONSTRUCTION	$348,633	$0	$0	$348,633	$0	$0	$0
ENGINEERING/DESIGN	$216,917	$0	$161,985	$54,932	$0	$0	$0
LAND	$0	$0	$0	$0	$0	$0	$0
MATERIAL	$239,331	$0	$0	$239,331	$0	$0	$0
PROJECT MGR & SUPPORT	$46,641	$0	$20,292	$26,349	$0	$0	$0
REMOVAL	$0	$0	$0	$0	$0	$0	$0
TEST	$366,576	$0	$0	$366,576	$0	$0	$0
CONTINGENCY	$0	$0	$0	$0	$0	$0	$0
ESCALATION	$30,578	$0	$0	$30,578	$0	$0	$0
INDIRECTS	$989,535	$0	$209,204	$780,331	$0	$0	$0
AFUDC	$3,789	$0	$484	$3,305	$0	$0	$0
Total Cost	**$2,242,000**	**$0**	**$391,965**	**$1,850,035**	**$0**	**$0**	**$0**

	-25%	-	25%
Planning Range	**$1,681,500**	-	**$2,802,500**

COMMENTS:

Project Scope:

"Eversource System Planning determined that an additional 115-kV circuit breaker on the high side of the 6X transformer in the Southington Substation is required. Per the direction of Eversource Engineering, Commonwealth Associates, Inc. (CAI) will provide engineering services to scope this additional breaker in relation to the new 115-kV Bus Tie Reactor project." TRC to provide engineering services for the associated protection and Controls.

Substation scope as follows:

[redacted]

P&C scope as follows:

[redacted]

Assumptions:
Engineering to be outsourced with in-house review, construction and test to be outsourced.
This estimate is based on TRC, Common Wealth Associate's and PAF description only, actual quantities may vary during detailed engineering.
Material estimates based on previous work, vendor quotes, and/or RS Means.
Labor estimates based on construction vendor budget quotes or previous work.
All new equipment will be installed within the confines of the existing fenced yard.
No breaker disconnects required.
There is an existing trenching system from control house to substation yard equipment.
Breaker foundation and conduits from breaker to trench already installed under GHCC.

Project Number: CS00325

Project Title: [redacted] 6X Series Breaker

Escalated Line Item Dollars

Escalation Rate 3%			Rate $ 416	0	1	2	3	4	
			Prior	2018	2019	2020	2021	2022 and FUTURE	TOTAL
			MDYS DOLLARS	MDYS DOLLARS	MDYS DOLLARS	MDYS DOLLARS	MDYS DOLLARS	MDYS DOLLARS	MDYS DOLLARS
CSTXX-CONSTRUCTION	R								
Electrical Construction	LT		$0	$0	$0	$0	$0	$0	0 $0
General Construction	LT		$0	$0	$0	$0	$0	$0	0 $0
Transmission Automation	LT		$0	$0	$0	$0	$0	$0	0 $0
Construction Reps	LT		$0	$0	$0	$0	$0	$0	0 $0
Support Switch/Tag	LT		$0	$0	10 $4,289	$0	$0	$0	10 $4,289
LT Total			0 $0	0 $0	10 $4,289	0 $0	0 $0	0 $0	10 $4,289
Employee Expenses	AE	5%	$0	$0	$214	$0	$0	$0	$214
Construction Purchased Material	AM	1%	$0	$0	$3,082	$0	$0	$0	$3,082
Construction Vendor inc sales tax @	AQ	3.9%	$0	$0	$296,648	$0	$0	$0	$296,648
Vehicles	AV	20%	$0	$0	$858	$0	$0	$0	$858
BHI Construction Rep	AQ		$0	$0	36 $54,000	$0	$0	$0	$54,000
Rents and Leases	BR		$0	$0	$0	$0	$0	$0	$0
CSTXX Subtotal			$0	$0	$359,091	$0	$0	$0	$359,091
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
CSTXX Total			0 $0	0 $0	46 $359,091	0 $0	0 $0	0 $0	10 $359,091
ENRXX-TG ENGINEERING/DESIGN									
Project Services/Drafting	LT		$0	5 $2,082	5 $2,145	$0	$0	$0	10 $4,227
Transmission Engineering/Design	LT		$0	$0	$0	$0	$0	$0	0 $0
Civil Engineering/Design	LT		$0	$0	$0	$0	$0	$0	0 $0
Substation Engineering/Design	LT		$0	20 $8,329	10 $4,289	$0	$0	$0	30 $12,618
Distribution SS Engineering/Design	LT		$0	$0	$0	$0	$0	$0	0 $0
Protection & Controls Engineering	LT		$0	30 $12,493	10 $4,289	$0	$0	$0	40 $16,782
Survey Engineering	LT		$0	$0	$0	$0	$0	$0	0 $0
Telecom Engineering	LT		$0	5 $2,082	$0	$0	$0	$0	5 $2,082
LT Total			0 $0	60 $24,986	25 $10,723	0 $0	0 $0	0 $0	85 $35,709
Employee Expenses	AE	5%	$0	$1,249	$536	$0	$0	$0	$1,785
Contractor Engineering inc sales tax	AQ	3.9%	$0	$135,000	$45,000	$0	$0	$0	$180,000
Vehicles	AV	3%	$0	$750	$322	$0	$0	$0	$1,072
ENRXX Subtotal			$0	$161,985	$56,581	$0	$0	$0	$218,566
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
ENRXX Total			0 $0	60 $161,985	25 $56,581	0 $0	0 $0	0 $0	85 $218,566
LNDXX-TG LAND									
Real Estate	LT		$0	$0	$0	$0	$0	$0	0 $0
Employee Expenses	AE	5%	$0	$0	$0	$0	$0	$0	$0
Purchase Land	AM		$0	$0	$0	$0	$0	$0	$0
Vehicles	AV	3%	$0	$0	$0	$0	$0	$0	$0
Fees and Payments	BF		$0	$0	$0	$0	$0	$0	$0
LNDXX Subtotal			$0	$0	$0	$0	$0	$0	$0
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
LNDXX Total			0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0
MATXX-TG MATERIAL									
See attached	AM		$0	$0	$225,911	$0	$0	$0	$225,911
	AM		$0	$0	$0	$0	$0	$0	$0
	AM		$0	$0	$0	$0	$0	$0	$0
Freight		0%	$0	$0	$0	$0	$0	$0	$0
Sales Tax		3.9%	$0	$0	$8,800	$0	$0	$0	$8,800
Stores Expense Allocation (ZC)		5%	$0	$0	$11,300	$0	$0	$0	$11,300
MATXX Subtotal			$0	$0	$246,011	$0	$0	$0	$246,011
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
MATXX Total			$0	$0	$246,011	$0	$0	$0	$246,011
PSMXX-PROJECT MANAGER & SUPPORT									
Project Planning	LT		$0	12 $4,997	12 $5,147	0 $0	$0	$0	24 $10,144
Project Management	LT		$0	20 $8,329	20 $8,579	$0	$0	$0	40 $16,908
Contracts/Purchasing	LT		$0	2 $833	$0	$0	$0	$0	2 $833
Legal	LT		$0	$0	$0	$0	$0	$0	0 $0
Transmission Planning	LT		$0	$0	$0	$0	$0	$0	0 $0
Environmental	LT		$0	$0	5 $2,145	$0	$0	$0	5 $2,145
LT Total			$0	34 $14,159	37 $15,871	0 $0	0 $0	0 $0	71 $30,030
Employee Expenses	AE	5%	$0	$708	$794	$0	$0	$0	$1,502
Legal Vendor	AQ		$0	$0	$0	$0	$0	$0	$0
Project Support Vendor Inc Sales Tax	AQ	3.9%	$0	$5,000	$10,000	$0	$0	$0	$15,000
Vehicles	AV	3%	$0	$425	$476	$0	$0	$0	$901
Include allowance for Property tax large proj.	BR		$0	$0	$0	$0	$0	$0	$0
Fees and Payments	BF		$0	$0	$0	$0	$0	$0	$0
PSMXX Subtotal			$0	$20,292	$27,141	$0	$0	$0	$47,433
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
PSMXX Total			$0	34 $20,292	37 $27,141	0 $0	0 $0	0 $0	71 $47,433
REMXX-TG REMOVAL									
Engineering/Design	LT		$0	0 $0	0 $0	0 $0	$0	$0	0 $0
General Construction	LT		$0	$0	$0	$0	$0	$0	0 $0
LT Total			0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0
Employee Expenses	AE	15%	$0	$0	$0	$0	$0	$0	$0
Outside Services Inc Sales Tax	AO	3.9%	$0	$0	$0	$0	$0	$0	$0
Contractor Labor Inc sales Tax	AQ	3.9%	$0	$0	$0	$0	$0	$0	$0
Vehicles	AV	20%	$0	$0	$0	$0	$0	$0	$0
Rents and Leases	BR		$0	$0	$0	$0	$0	$0	$0
REMXX Subtotal			$0	$0	$0	$0	$0	$0	$0
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
REMXX Total			$0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0
TSTXX-TG TEST									
Test Labor-In House	LT		$0	$0	5 $2,145	$0	$0	$0	5 $2,145
Employee Expense	AE	10%	$0	$0	$215	$0	$0	$0	$215
Contractor Test & Commissioning Labor	AQ	3.9%	$0	$0	$375,000	$0	$0	$0	$375,000
Vehicles	AV	10%	$0	$0	$215	$0	$0	$0	$215
TSTXX Subtotal			$0	$0	$377,575	$0	$0	$0	$377,575
Contingency	P1	0%		$0	$0	$0	$0	$0	$0
TSTXX Total			$0	0 $0	5 $377,575	0 $0	0 $0	0 $0	5 $377,575
TOTAL PROJECT DIRECT COST			**$0**	**$182,277**	**$1,066,399**	**$0**	**$0**	**$0**	**$1,248,676**
INDIRECTS									
Non-Productive Time Allocation (ZB)	58	15.4%	$0	$6,009	$5,070	$0	$0	$0	$11,079
Payroll Benefits Allocation (ZE)	59	40.3%	$0	$18,215	$15,369	$0	$0	$0	$33,584
Gen SVC CO OVRHD ALLOC (ZF)	60	0.0%	$0	$0	$0	$0	$0	$0	$0
E&S Allocations (ZI) (25%<20M<3%)	61	90.0%	$0	$183,032	$750,704	$0	$0	$0	$933,736
AS&E Allocations (ZJ)	62	0.5%	$0	$1,948	$9,188	$0	$0	$0	$11,136
AFUDC (ZK)	63	0.2%	$0	$484	$3,305	$0	$0	$0	$3,789
Indirects Subtotal			$0	$209,688	$783,636	$0	$0	$0	$993,324
TOTAL PROJECT COST			**$0**	**$391,965**	**$1,850,035**	**$0**	**$0**	**$0**	**$2,242,000**