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Operations Project Authorization Form

Approved on May 11, 2023 EPAC

Link to Meeting Minutes

Project Title: [redacted] Xfrmr Replacements	**Project Number: CS00383**
Date Prepared: 05/01/2023	**Company: Eversource CT**
Organization: System Planning	**Class(es) of Plant: D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformer**
Managing Organization: Transmission / Major Projects	**Schedule ID#: CS003831**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: May 2025	**Emergency Related Request? No**
Eng./Constr. Resources Budgeted? Yes	**Facility Type (check all that apply):** ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Total Capital Request: $17.518M	**Authorization Type: Full Funding**

[1] Executive Summary

[redacted]

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[2] Project Costs Summary

Line item Category	Prior Authorized	Actuals to Date	2023 to Go	2024	2025	2026	2027	2028	Total Request
1. ROW / Easements / Land Acquisition	$								
2. Environmental Approvals / Permits	$								
3. Outreach	$1	$0	$10	$5	$2				$18
4. Siting Approvals / Permits	$25	$1	$52	$29	$12				$95
5. Engineering / Design	$532.4	$122	$567	$20	$21				$730
6. Materials (Eversource purchased)	$		$3,911	$1,016	$8				$4,935
7. Construction (incl materials by contractors)	$	$10	$336	$1,101	$882				$2,329
8. Testing / Commissioning	$		$151	$474	$229				$853
9. Project Mgmt. Team	$132	$61	$52	$101	$105				$319
10. Removals	$		$14	$86	$45				$145
11. Other	$								
12. Risks	$125		$165	$485	$350				$1,000
SUBTOTAL DIRECTS W/ RISKS	$815.4	$194	$5,259	$3,318	$1,653				$10,424
13. Indirects/Overhead	$123.9	$148	$1,049	$1,642	$1,217				$4,056
14. AFUDC	$2.3	$12	$152	$614	$319				$1,096
PROJECT TOTAL – BASELINE BUDGET	$941.6	$354	$6,459	$5,575	$3,189				$15,577
15. Contingency	$		$250	$933	$758				$1,941
TOTAL CAPITAL REQUEST	$941.6	$354	$6,710	$6,508	$3,947				$17,518
16. Reimbursables/Customer Contribution	$								
PROJECT TOTAL (LESS REIMBURSABLES)	$941.6	$354	$6,710	$6,508	$3,947				$17,518
O&M	$								
TOTAL REQUEST	$941.6	$354	$6,710	$6,508	$3,947				$17,518

Note: Dollar values are in thousands

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Detail other costs, project risk items and their allocations:

Risk	Allocation
1. Potential UG Obstructions	$ 160,000
2. Severe Weather, Delays, OT	$375,000
3. Design development	$115,000
4. Material Procurement Long Lead Time Items	$200,000
5. Over Time due to Project Acceleration	$150,000
Total	$1,000,000

Explain unique payment provisions, if applicable:

[redacted]

Equipment Summary:

Material Details [redacted] **– Approved 12/02/2022**					
Qty	Equipment Type	Description	Lead Time	Unit Cost	Total Cost
[redacted]					
Total				**$106,000**	**$106,000**

Identify and detail any unique O&M impacts resulting from this project:

N/A

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[3] Technical Justification

Project Need, Objective and Justification

[redacted]

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[redacted]

Project Scope

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Substation Equipment

Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*
[redacted]			

Relay Table

Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*
[redacted]			

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[redacted]

Background

[redacted]

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[4] Alternatives Considered

[redacted]

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[redacted]

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[5] Project Schedule

Milestone	Scheduled Completion Date
IFR Approval	April 2020
SDC Approval (for applicable projects)	May 2022
Conversion of Tx development costs, 183 to 107 (applicable to projects that require SSF approval and/or ISO preferred alternative selection)	N/A
EPAC Partial Funding Approval (for applicable projects)	May 2022
Preliminary Design Completion (or latest pre-full funding design phase)	March 2023
EPAC Full Funding Approval	May 2023
Siting Approval (for applicable projects)	May 2023
Start of Construction	October 2024
Project In-Service Date (ISD)	May 2025
Project Need Date (for applicable projects)	June 2024
ISO Related Milestones: (for applicable projects)	
• ISO Preferred Alternative Selected	N/A
• PAC Presentation	N/A
• TCA Submittal	N/A

See Attachment B for the P6 Schedule.

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[6] Regulatory Approvals

An Exempt Modification is required to be submitted to the Connecticut Siting council. It is expected to be filed in May 2023.

[7] Risk and Risk Mitigation Plans

Contingency:

The project cost estimate allocates $1,941K of contingency for any risks that are not yet known and do not yet have mitigation plans. $1,500K of the total contingency amount has been included for risks associated with [redacted]

Risk Mitigation:
A mobile transformer will be on-site and installed during the construction period. The mobile transformer is required for transformer replacements in the event of a transformer trip while the other is being replaced.

Risk	Mitigation
1. Potential UG Obstructions	Complete potholing after 70% engineering is completed to identify obstructions and incorporate into design prior to IFC. Cross check original substation prints. Risk allocation is also included.
2. Severe Weather, Delays, OT	Define construction critical paths, identify float, and ensure that on-time resolutions are developed for projects to avoid delays. Risk allocation is also included.
3. Design development	Clearly define scope – review engineering firms design on schedule – perform constructability review prior to start of construction. Risk allocation is also included.
4. Material Procurement Long Lead Time Items	Material order authorization form used to order all longer lead materials 12/02/2022.
5. Over Time due to Project Acceleration	If schedule cannot be maintained due to material delays, the transformer outage will need to take place in the following off season (October) timeframe.

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[8] References

References
1. Distribution System Planning Guide
2. CS00383 – [redacted] Xfrm Replacement – Partial Funding PAF – dated 05/02/2022
3. CS00383_[redacted] BESS Initial Funding – PAF R1 – dated 07/10/2020
4. CS00383 - [redacted] Xfrm Replacement – SSF – dated 05/02/2022
5. Eversource SUB 014
6. Eversource SUB 38
7. Geotechnical Report
8. Eversource SUB 013

[9] Attachments (One-Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. CS00383 C-23-159 Transformer Replacements – [redacted] EST rev#02 EXT	*YES*
B. [redacted] P6 Schedule – (CS003831) – 2023_04_12	*YES*
C. [redacted] Constructability Review 11.29.2022 Rev 0	*YES*
D. 15405-91001.pdf-NOMEN-ADDITIONS-Marks-HH	*YES*
E. 15405-91001.pdf-NOMEN-REMOVALS-Marks-2 HH	YES

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INSTRUCTIONS:
It is the responsibility of the initiator to contact the subject matter experts in the listed 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. See the PAF Guide for additional instruction.

Project Checklist – Transmission & Substation Capital Project			
Project Name: [redacted] **Xfrmr Replacements**		**Project Number: CS00383**	
Facility Type: ☐BPS ☒BES ☐PTF ☐PTF non-regional ☐non-PTF ☐CIP ☒Distribution ☐General Plant			
PLANNING			
Is a NX-9 required?		Yes	
Is an ISO-NE PAC presentation required?		No	
ISO-NE Presentation Date (if completed):		Enter Date	
Cost in ISO-NE Presentation ($M) (if completed):		Enter Cost ($M)	
Is a PPA required?		Yes	
ISO-NE Approval Date (if completed):		07/20/2022	
Is a TCA Application Required?		No	
TCA Submittal Date (if submitted):		Enter Date	
Cost in TCA Submittal ($M) (if submitted):		Enter Cost ($M)	
Enter ISO-NE RSP / Asset Condition ID, if assigned:		Enter ISO-NE ID	
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?		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?		Yes	
Is there an impact to the existing ground grid?		Yes	
Is a Transient Over Voltage (TOV) analysis required?		NR	

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Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] Xfrmr Replacements	**Project Number: CS00383**
P&C ENGINEERING	
OP-22 - Are PMUs and DDR required?	No
If BPS, is an NPCC Directory #4 presentation required?	No
Are ISO-NE OP-24 Appendix B updates necessary?	No
TRANSMISSION LINE ENGINEERING	
Are there any changes that affect the baseline EMF?	No
Are there any changes that affect the baseline EMI?	No
SITING	
Has Siting reviewed this project?	Yes
Name of Siting contact:	[redacted]
Is a Siting filing required? *(If yes, list in regulatory approvals section)*	Yes
PERMITTING	
Is there any permitting required? *(If yes, list in regulatory approvals section)*	No
PROJECT SERVICES (OUTREACH) and ROW WORK COORDINATION	
Has Project Services reviewed this project?	Yes
Name of Project Services contact:	[redacted]
What is the level of outreach expected?	Low
Is any part of this project in an Environmental Justice Community?	No
Has ROW Coordination reviewed this project?	No
Is this project coordinating with other existing scheduled work?	No
INITIATOR	
Has a field constructability review been completed?	Yes
INVESTMENT RECOVERY	
Does the project require development of an Investment Recovery plan?	Yes
COST ESTIMATING	
What team/firm prepared the cost estimate?	Estimate was prepared by the Eversource Estimating Team
Name of the person who prepared the estimate:	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes - Full Review

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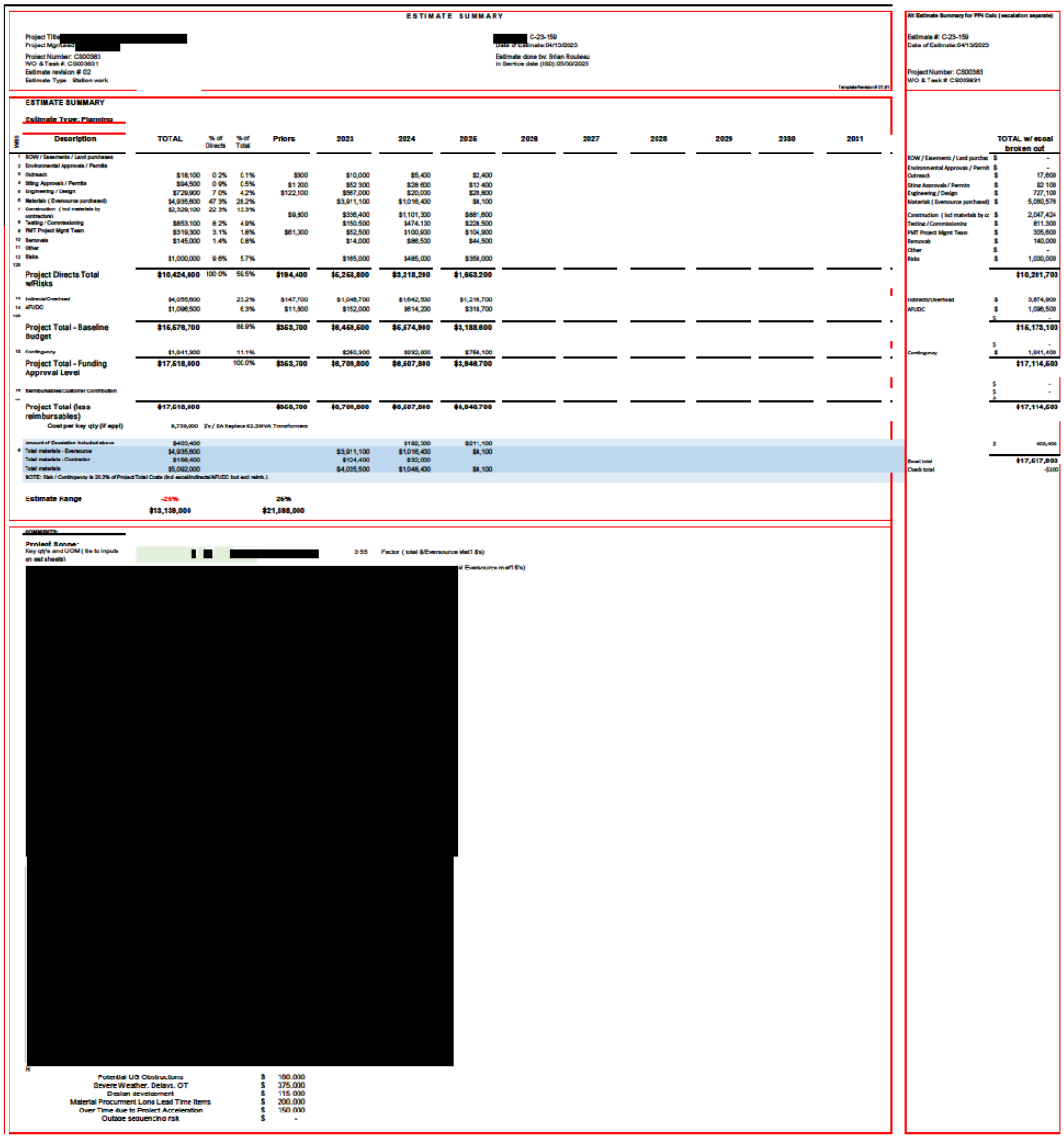

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr: [redacted]

Project Number: CS00383
WO & Task #: CS003831
Estimate revision #: 02
Estimate Type - Station work

[redacted] C-23-159
Date of Estimate:04/13/2023
Estimate done by: Brian Rouleau
In Service date (ISD):05/30/2025

ESTIMATE SUMMARY

Estimate Type: Planning

Description	TOTAL	% of Directs	% of Total	Priors	2023	2024	2025	2026	2027	2028	2029	2030	2031
ROW / Easements / Land purchases													
Environmental Approvals / Permits													
Outreach	$18,100	0.2%	0.1%	$300	$10,000	$5,400	$2,400						
Siting Approvals / Permits	$94,500	0.9%	0.5%	$1,200	$52,300	$28,600	$12,400						
Engineering / Design	$729,900	7.0%	4.2%	$122,100	$567,000	$20,000	$20,800						
Materials (Eversource purchased)	$4,935,800	47.3%	28.2%		$3,911,100	$1,016,400	$8,100						
Construction (Incl materials by contractors)	$2,329,100	22.3%	13.3%	$9,800	$336,400	$1,101,300	$881,600						
Testing / Commissioning	$953,100	9.2%	4.9%		$150,500	$474,100	$328,500						
PMT Project Mgmt Team	$319,300	3.1%	1.8%	$61,000	$52,500	$100,900	$104,900						
Removals	$145,000	1.4%	0.8%		$14,000	$86,500	$44,500						
Other													
Risks	$1,000,000	9.6%	5.7%		$185,000	$485,000	$350,000						
Project Directs Total w/Risks	**$10,424,800**	**100.0%**	**59.5%**	**$194,400**	**$6,268,800**	**$3,318,200**	**$1,863,200**						
Indirects/Overhead	$4,055,800		23.2%	$147,700	$1,048,700	$1,642,500	$1,216,700						
AFUDC	$1,096,500		6.3%	$11,600	$152,000	$814,200	$318,700						
Project Total - Baseline Budget	**$16,576,700**		**88.9%**	**$353,700**	**$8,469,500**	**$5,674,900**	**$3,188,800**						
Contingency	$1,941,300		11.1%		$250,300	$932,900	$758,100						
Project Total - Funding Approval Level	**$17,518,000**		100.0%	**$353,700**	**$8,709,800**	**$6,607,800**	**$3,946,700**						
Reimbursable/Customer Contribution													
Project Total (less reimbursables)	**$17,518,000**			**$353,700**	**$8,709,800**	**$6,607,800**	**$3,946,700**						
Cost per key qty (if appl)	8,759,000	$'s / EA Replace 62.5MVA Transformers											
Amount of Escalation included above	$405,400					$192,300	$211,100						
Total materials - Eversource	$4,935,800				$3,911,100	$1,016,400	$8,100						
Total materials - Contractor	$156,400				$124,400	$32,000							
Total materials	$5,092,000				$4,035,500	$1,048,400	$8,100						

NOTE: Risk / Contingency is 20.2% of Project Total Costs (Incl escal/Indirects/AFUDC but excl reimb.)

Estimate Range	-25%	25%
	$13,139,000	$21,898,000

COMMENTS:

Project Scope:
Key qty's and UOM (tie to inputs on est sheets)

[redacted] 3.55 Factor (total $/Eversource Mat'l $'s)

[redacted] Eversource mat'l $'s)

[redacted]

Potential UG Obstructions	$ 160,000
Severe Weather, Delays, OT	$ 375,000
Design development	$ 115,000
Material Procurment Long Lead Time Items	$ 200,000
Over Time due to Project Acceleration	$ 150,000
Outage sequencing risk	$ -

Alt Estimate Summary for PPH Calc (escalation separate)

Estimate #: C-23-159
Date of Estimate:04/13/2023

Project Number: CS00383
WO & Task #: CS003831

	TOTAL w/ escal broken out
ROW / Easements / Land purchas	$ -
Environmental Approvals / Permit	$ -
Outreach	$ 17,600
Siting Approvals / Permits	$ 92,100
Engineering / Design	$ 727,100
Materials (Eversource purchased)	$ 5,060,578
Construction (Incl materials by c	$ 2,047,424
Testing / Commissioning	$ 811,300
PMT Project Mgmt Team	$ 305,800
Removals	$ 140,000
Other	$ -
Risks	$ 1,000,000
	$10,201,700
Indirects/Overhead	$ 3,874,900
AFUDC	$ 1,096,500
	$ -
	$15,173,100
Contingency	$ 1,941,400
	$17,114,500
	$ -
	$ -
	$17,114,500
	$ 403,400
Excel total	**$17,517,900**
Check total	-$100

[redacted]

6/13/2023

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UNESCALATED LINE ITEM DOLLARS

Project Number CS00383
Date of Estimate 04/13/2023
Estimate revision # 02

