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Operations Project Authorization Form

Approved on November 7, 2024 EPAC

Link to Meeting Minutes

Project Title: [redacted] **Switchgear Replacement**	**Project Number: CS00491**
Date Prepared: 10/21/2024	**Company: Eversource CT**
Organization: Asset Management	**Class(es) of Plant: D SS**
Project Initiator: [redacted]	**Project Category: Stations - Circuit Breakers**
Managing Organization: Project Mgt and Construction	**Schedule ID: 80117272**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: February 2027	**Emergency Related Request? No**
Eng./Constr. Resources Budgeted? Yes	**Facility Type (check all that apply):** ☐ PTF ☐ non-PTF ☐ local PTF ☒ Distribution ☐ N/A (General Plant)
EJ Community: No	**Authorization Type: Full Funding**
Total Capital Request: $24.192M	

[1] Executive Summary

[redacted]

[redacted]

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[2] Project Costs Summary

Note: Dollar values are in thousands and rounded to nearest thousand

Line-item Category	Prior Authorized	Actuals to Date	2024	2025	2026	2027	2028	Total Request
1. ROW / Easements / Land Acquisition	$	$	$	$	$	$	$	$
2. Environmental Approvals / Permits	$	$1	$	$	$	$	$	$1
3. Outreach	$	$0	$34	$19	$	$	$	$53
4. Siting Approvals / Permits	$	$2		$	$	$	$	$2
5. Engineering / Design	$	$1,134	$369	$379	$74	$	$	$1,956
6. Materials (Eversource purchased)	$	$	$2,003	$2,057	$534	$	$	$4,594
7. Construction (incl materials by contractors)	$0	$39	$	$	$3,412	$576	$	$4,026
8. Testing / Commissioning	$0	$	$	$	$1,078	$182	$	$1,260
9. Project Mgmt. Team		$94	$258	$284	$256	$66	$	$957
10. Removals	$0		$	$	$241	$41	$	$282
11. Other	$0	$3	$624	$641	$302	$23	$	$1,594
12. Risks	$0	$	$459	$458	$1,207	$180	$	$2,305
SUBTOTAL DIRECTS W/ RISKS	**$**	**$1,273**	**$3,748**	**$3,838**	**$7,103**	**$1,067**	**$**	**$17,029**
13. Indirect/Overhead	$	$589	$1,056	$1,080	$1,014	$150	$	$3,889
14. AFUDC	$	$58	$211	$661	$1,224	$270	$	$2,424
PROJECT TOTAL – BASELINE BUDGET	**$**	**$1,920**	**$5,015**	**$5,580**	**$9,341**	**$1,487**	**$**	**$23,343**
15. Contingency		$	$272	$271	$271	$37	$	$850
TOTAL CAPITAL REQUEST	**$243**	**$1,920**	**$5,286**	**$5,851**	**$9,612**	**$1,524**	**$**	**$24,192**
16. Reimbursables/Customer Contribution		$	$	$	$	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	$243	**$1,920**	**$5,286**	**$5,851**	**$9,612**	**$1,524**	**$**	**$24,192**
O&M		$	$	$	$	$	$	$
TOTAL REQUEST	**$243**	**$1,920**	**$5,286**	**$5,851**	**$9,612**	**$1,524**	**$**	**$24,192**

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Detail other costs, project risk items and their allocations:
Other ($320K): Taxes

Risk	Allocation
1. Environmental	$111,000
2. Engineering	$200,700
3. Materials Delay	$164,000
4.Material /Vendor Cost	$168,000
5.Construction Delay	$197,500
6. Outage Impact	$203,000
7.Material Costs Impact	$199,000
8.Weather Delays Impact	$200,000
9. Rock Excavation Impact	$201,000
Total	$1,644,200

Explain unique payment provisions, if applicable:

[redacted]

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

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[3] Technical Justification

[redacted]

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Project Scope

[redacted]

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Substation Equipment

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

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Background

[redacted]

[4] Alternatives Considered

[redacted]

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[5] Project Schedule

Milestone	Scheduled Completion Date
IFR Approval	August 2021
SDC Approval (for applicable projects)	October 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)	November 2022
Preliminary Design Completion (Or latest pre-full funding design phase)	May 2024
EPAC Full Funding Approval	October 2024
Siting Approval (For applicable projects)	July 2025
Start of Construction	March 2026
Project In-Service Date (ISD)	February 2027
Project Need Date (For applicable projects)	N/A
ISO Related Milestones: (For applicable projects)	TBD
• ISO Preferred Alternative Selected	N/A
• PAC Presentation	N/A
• TCA Submittal	N/A

The P6 schedule is provided as Attachment B.

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[6] Regulatory Approvals

CT Siting Council Exempt Modification is required.

EJ Community Considerations:

The project is not located in an Environmental Justice (EJ) Community.

[7] Risk and Risk Mitigation Plans

Contingency:

The project cost estimate allocates $746K of continency for project unknowns.

Risk Mitigation:

Risk	Mitigation
1. Environmental	Provide disposal service as required. May require removal of topsoil and provide new soil replacement. There is potential yard flooding. Risk allocation has been included in the budget.
2.. Engineering	Review the Preliminary Engineering design with the external Vendor and continue communication with external vendor through design finalization. Risk allocation has been included in the budget.
3.Material /Vendor Cost	Keep major equipment delivery on time. Risk allocation has been included in the budget.
4.Construction Delay	Risk allocation has been included for construction delay. This will be mitigated by continued monthly coordination meetings with construction crews and external construction vendor.
5. Material Costs Impacts	Pre-planned and schedule delivery of switchgear to coincide with full funding approval. Risk allocation has been included in the budget.
6.Weather Delays Impact	Review scheduling and forecasts; may require extended labor overtime. Risk allocation has been included in the budget.
7. Rock Excavation Impact	Risk allocation has been included in the estimate. This will be mitigated by considering all requirements for removal of rocks.
8.Single Contingency Load Loss (SCLL)	Outage sequencing being done in such a way that SCLL condition are minimal. A mobile will be used during construction to mitigate SCLL risk.

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[8] References

References
1.CS00491 - [redacted] Replacement – IFR, approved 7/27/202
2. CS00491 - [redacted] Replacement – SSF, dated 10/7/2022
3. CS00491 - [redacted] Replacement – Partial PAF, approved 10/27/2022
4. CD02098 – [redacted] Replacement – PAF, dated 12/8/2022
5. CS00407 - DSCADA LTC Upgrade program (CS00407), approved 3/17/2021.
6. Eversource Standards – SUB148.8
7. DSEM 05.184 0 Distribution System Fault Current Control
8. Material Order Authorization - Exception form, dated 10/12/2023

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

Attachment	Included in Submittal?
Figures 1 – 6	*YES*
A. Full Funding Cost Estimate	*YES*
B. P6 Schedule	*YES*
C. Constructability Review	*YES*

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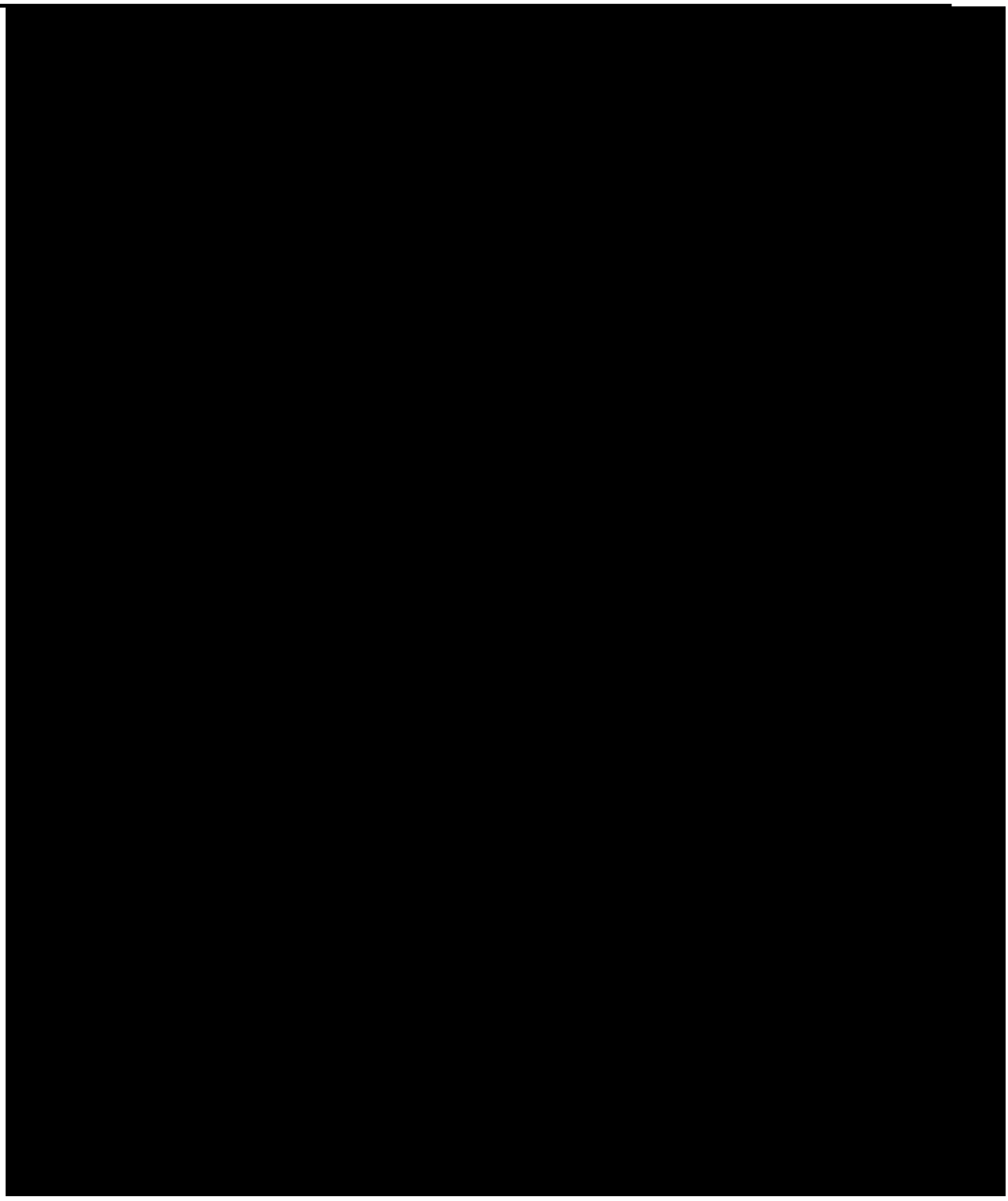

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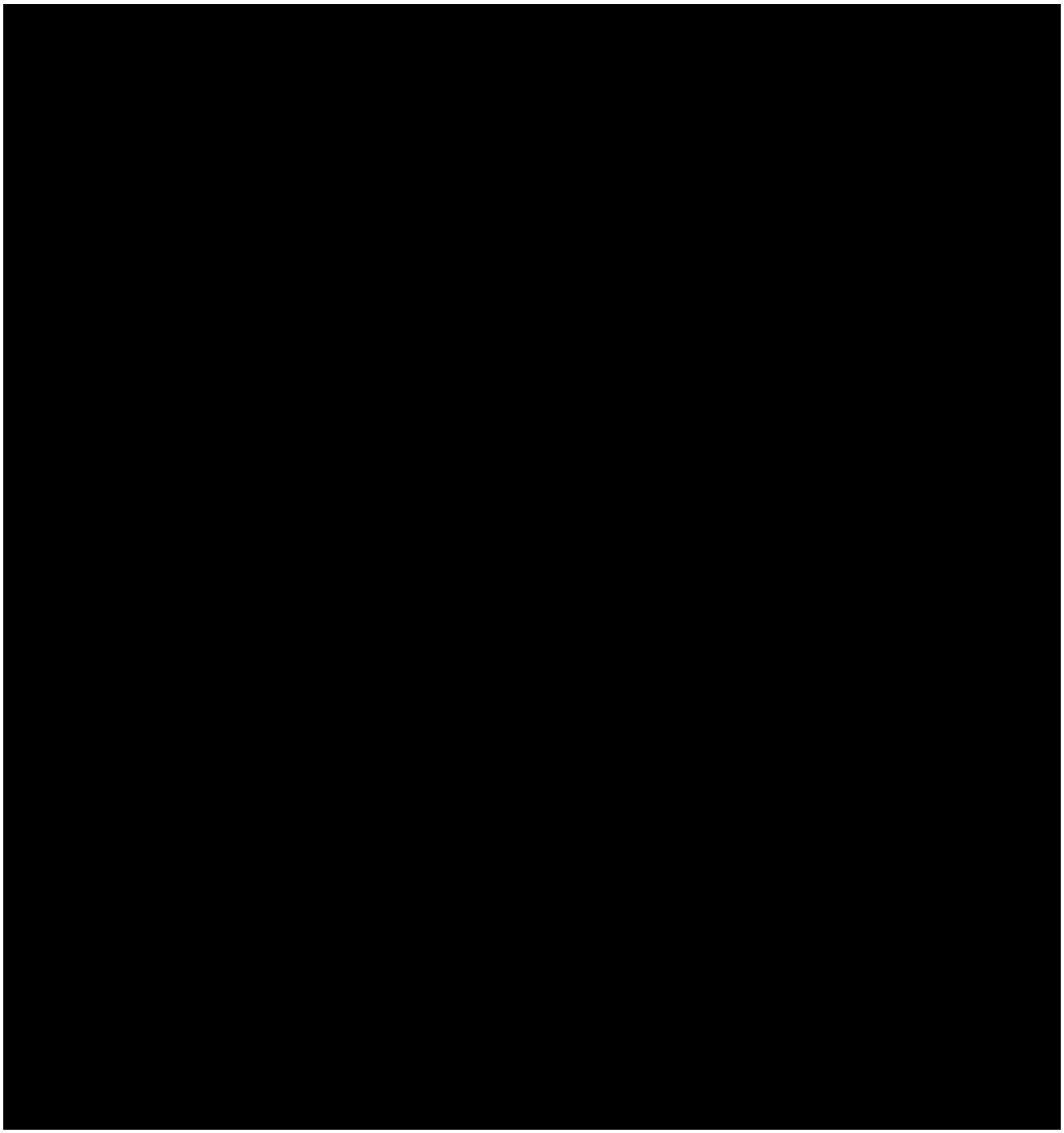

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INSTRUCTIONS:
It is the responsibility of the initiator to contact the subject matter experts in the listed area disciplines to determine if the project considerations contained in this list are applicable to their project. They should fill out the 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] **Switchgear Replacement**		**Project Number: CS00491**	
Facility Type: ☐BPS ☐BES ☐PTF ☐local PTF ☐non-PTF ☐CIP ☒Distribution ☐General Plant ☐CONVEX ☐SCADA			
PLANNING			
Is a NX-9 required?		Yes	
Is an ISO-NE PAC presentation required?		No	
ISO-NE Presentation Date (if completed):		N/A	
Cost in ISO-NE Presentation ($M) (if completed):		N/A	
Is a PPA required?		Yes	
ISO-NE Approval Date (if completed):		TBD	
Is a TCA Application Required?		No	
TCA Submittal Date (if submitted):		N/A	
Cost in TCA Submittal ($M) (if submitted):		N/A	
Enter ISO-NE RSP / Asset Condition ID, if assigned:		N/A	
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?		No	
Is there an impact to the existing ground grid?		Yes	
Is a Transient Over Voltage (TOV) analysis required?		No	

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Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] Switchgear Replacement	**Project Number: CS00491**
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?	No Choose an item
Name of Project Services contact:	N/A
What is the level of outreach expected?	Low
Has ROW Coordination reviewed this project?	No
Is this project coordinating with other existing scheduled work?	Yes
ENVIRONMENTAL JUSTICE COMMUNITIES	
Has the Equity and Environmental Justice team reviewed this project?	No
Name of Equity and Environmental Justice contact:	N/A
Is any part of this project in an Environmental Justice Community?	No
Was the Equity Framework Checklist completed?	No
Has enhanced outreach required per State Regulatory requirements been completed?	No
INITIATOR	
Has a field constructability review been completed?	Yes

Project Checklist - Transmission & Substation Capital Project

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Project Name: [redacted] Switchgear Replacement	Project Number: CS00491
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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Project name [redacted] **Switchgear**
Project no **CS00491**
Project manager **TBD**
Project estimator [redacted]

Est accuracy **Conceptual (-25% to +50%)**
Ext accuracy
State **CT**
Business unit **Transmission**

Description	% Directs	% Total	[redacted] Switchgear Replacement - CT_Standard1 - Option 2
ROW / Easements / Land purchases	0.0%	0.0%	-
Environmental Approvals / Permits	0.0%	0.0%	900
Project Services	0.3%	0.2%	53,300
Siting Approvals / Permits	0.0%	0.0%	1,900
Engineering / Design	11.5%	8.1%	1,956,100
Materials (Eversource purchased)	27.0%	19.0%	4,593,600
Construction (inc contractor sourced material)	23.6%	16.6%	4,026,100
Testing / Commissioning	7.4%	5.2%	1,260,200
PMT Project Mgmt Team	5.6%	4.0%	957,500
Removals	1.7%	1.2%	281,400
Other (including CWIP & Taxes)	9.4%	6.6%	1,593,600
Risks	13.5%	9.5%	2,304,800
Project Directs (including risks)	**100.0%**	**70.4%**	**17,029,400**
Indirects/Overhead		16.1%	3,889,000
AFUDC		10.0%	2,424,500
Project Total - Baseline Budget		**96.5%**	**23,342,900**
Contingency		3.5%	850,000
Project Total - Approval Level		**100.0%**	**24,192,900**
Reimbursables/Customer Contribution		0.0%	-
Project Total (less reimbursables)			**24,192,900**

Metrics	
	1.00 EA
	24,192,900 $/EA
Escalation (included above)	917,900
Miscellaneous	
Risks & Contingency / Project Total - Approval level (less Risks & Contingency)	15.00%
	Conceptual (-25% to +50%)
Estimate Range	
Low	18,144,700
Expected	24,192,900
High	36,289,400

Return to TOC

CBS1 > 2 > 3 > 4	Description	Total Amount	Actual Amount	Labor Hours	Labor Amount	Material Amount	Subcontract Amount	Equipment Amount	Other Amount
		24,192,981	1,919,451	36,609	5,559,326	5,097,498	-	224,901	11,391,806
[redacted]	Switchgear Replacement - CT_Standard1 - Option 2	24,192,981	1,919,451	36,609	5,559,326	5,097,498	-	224,901	11,391,806
02	Environmental Approvals / Permits	896	896	-	-	-	-	-	-
03	SCS Outreach	53,310	259	-	53,051	-	-	-	-
04	Siting Approvals / Permits	1,910	1,910	-	-	-	-	-	-
05	Engineering / Design	1,956,114	1,134,001	7,302	822,113	-	-	-	-
06	Equipment /Materials (Eversource purchased)	4,593,648	-	-	-	4,590,370	-	-	3,278
07	Construction (incl matl's by contractors)	4,026,149	38,468	14,242	2,279,165	507,128	-	224,901	976,486
08	Testing / Commissioning	1,260,186	-	5,800	1,260,186	-	-	-	-
09	PMT Project Mgmt Team	957,470	94,043	7,578	863,427	-	-	-	-
10	Removals	281,384	-	1,687	281,384	-	-	-	-
11	Other	1,593,635	3,216	-	-	-	-	-	1,590,419
12	Risks	2,304,800	-	-	-	-	-	-	2,304,800
13	Indirects/Overhead	3,889,017	588,787	-	-	-	-	-	3,300,230
14	AFUDC	2,424,463	57,871	-	-	-	-	-	2,366,592
15	Contingency	850,000	-	-	-	-	-	-	850,000
Grand Total		24,192,981	1,919,451	36,609	5,559,326	5,097,498	-	224,901	11,391,806