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Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CS00061

[redacted]

Work Classification

Category: [redacted]
Type: BLG5
Type Desc: [redacted]
Work Type: [redacted]

Ownership / Management

AWC: Tolland
Statewide: No
Owner: [redacted]
Manager [redacted]

Project Information

Status: Prelim Design Approved
Associated Projects: CD00262
SPS #:
Assignment ID:
AIS Score:
Patrol Find ID:

Budget Summary - Preferred Option

[redacted]

2019

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	[redacted]	Prelim	0	0 %	$8,417,000	$8,417,000
				2019 Total:	**$8,417,000**	**$8,417,000**
				Total Project:	**$8,417,000**	**$8,417,000**

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Specific Project Proposal - Project #: CS00061

[redacted]

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted]	[redacted]	$9,030,000	$0	100 %	$0.00	$0.00	☐
O2	[redacted]	[redacted]	$8,417,000	$0	100 %	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	[redacted]	$9,030,000			$0.00	$0.00
2	[redacted]	$8,417,000			$0.00	$0.00

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Specific Project Proposal - Project #: CS00061

[redacted]

Background / Scope

Issue:

[redacted]

Project Description:

12/11/14 - This is being presented for ENG approval.

[redacted]

[redacted]

The total estimated cost is $8.42M and the proposed ISD is 5/31/19.

[redacted] however, the additional cost is an estimated $613k, raising the total cost to $9.03M, [redacted]

The cost of the Transmission portion of the project, to [redacted] is not included in the above costs. There are two Transmission alternatives: 1. [redacted]. The best option has not been determined yet. There is a relatively small difference in cost to Distribution for either option. The main difference is the [redacted] is chosen, which adds approximately $300k compared to the [redacted].

Major Materials:

[redacted]

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Specific Project Proposal - Project #: CS00061

[redacted]

[redacted]

Other Considerations:

Revision / ACT Comments:

If we don't do this project, what will happen?

[redacted]

Environmental

Water Pollution: No Change Soil Contamination: No Change Natural Habitats: No Change

Alternatives considered based on Environmental Impact or Description of Aspects Oil Spill Risks Considered? ☑

[redacted]

Safety Concerns With This Project? ☐

Explain:

External Stakeholders

Customer Impact / Involvement

Cust. Impacted:
Crit. Cust. Impacted:
Adjoining Property Owner Consent Required: ☐
Other Utility Pole Custodian Area: ☐
State Highway Permit Required: ☐

Approx. Pole Count (NU):
Approx. Pole Count (Other):
Town Hearing Required: ☐
Easement Required: ☐

Relocation / New Service

New Srvc. Contact:
Customer Type:
Request Number:

Requestor Type:
State Highway Project #:
Route #:

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Specific Project Proposal - Project #: CS00061

[redacted]

Capacity Planning Checklist

General Information

[redacted]

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Specific Project Proposal - Project #: CS00061

[redacted] Conservation and Load Management C&LM programs implemented in accordance with TD 190 - Targeted Application of C&LM Measures to Peak Load Planning Needs.

a. C&LM programs - Estimated load saved (provided by C&LM):

b. Estimated savings needs to be reflected in the load. Does the estimated savings defer the year of need? ☐

If yes, what is the new projected year of need?

Additional Justification / Comments:

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Specific Project Proposal - Project #: CS00061

[redacted]

Design Alternative CS00061-01

General Information

Segment: [redacted] Status: Prelim Design Submitted

Segment Type: [redacted] Town: [redacted] Budget Year: 2019

Work Type: Other Trimming Required: ☐ In Service Date: 05/31/2019

Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	[redacted]	[redacted]	[redacted]

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Specific Project Proposal - Project #: CS00061

[redacted] - [redacted]

Design Alternative CS00061-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	0.00 %
SubTotal:	$9,030,000
Contingency Amount:	$0
Estimate:	$9,030,000
Reimbursement:	$0
Net Amount:	**$9,030,000**
Description:	[redacted]

Item Description	CU	$ / Per	Qty	Amount
OTHER	14-ALL14	[redacted]		$9,030,000.00
OTHER				

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Install	[redacted]	[redacted]	[redacted]	[redacted]			[redacted]

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Specific Project Proposal - Project #: CS00061

[redacted] - [redacted]

Segment CS00061-02

General Information

Segment: [redacted]
Status: Prelim Design Approved
Segment Type: [redacted]
Town: [redacted]
Budget Year: 2019
Work Type: Other
Trimming Required: ☐
In Service Date: 05/31/2019
Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	[redacted]	[redacted]	[redacted]

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CS00061 [redacted]

Segment CS00061-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	0.00 %
SubTotal:	$8,417,000
Contingency Amount:	$0
Estimate:	$8,417,000
Reimbursement:	$0
Net Amount:	**$8,417,000**
Description:	[redacted]

Item Description	CU	$ / Per	Qty	Amount
OTHER	14-ALL14	[redacted]		$8,417,000.00
OTHER				

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Install	[redacted]	[redacted]	[redacted]	[redacted]			[redacted]

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Operations Project Authorization Form

Approved at May 26, 2021 EPAC

Link to Meeting Minutes

Date Prepared: 05/14/2021	**Project Title:** [redacted]
Company: Eversource CT	**Project Number: T SS: 404932, D SS: CS00166**
Organization: System Planning	**Class(es) of Plant: T SS and D SS**
Project Initiator: [redacted]	**Project Category:** [redacted] **- Other**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Reliability**
Estimated in service date: December 2023	**Capital Investment part of original Oper. Plan: Yes**
Eng./Constr. Resources Budgeted? Yes	**O&M Expenses part of original Oper. Plan: No**
Authorization Type: Full Funding	**Facility Type (check all that apply):** ☐ **PTF** ☒ **non-PTF** ☒ **Distribution**
Total Request: $39,885K (T: $14,609, D1: $17,841K, D2: $7,435K)	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking Full Funding of $39,885K ($14,609K – Transmission (40493201), $17,841K – Distribution Phase 1 (CS001661), $7,435K – Distribution Phase 2 (CS001662)) to support material procurement, construction, and test services for transmission and distribution

[redacted]

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[redacted]

This project is being proposed to address reliability, aging infrastructure, power quality, voltage, and distribution load serving issues documented in an area study performed by Distribution Engineering in 2015 (Refer to Attachment B [redacted] This project was reviewed and approved by the Solution Design Committee on November 13, 2019.

Partial Funding Authorization:

Distribution (CS00166): The partial funding request of $2,630K was approved in PowerPlan on March 5, 2020. The project has incurred $441K to date on completion of the following activities:

- 100% IFC Drawings
  - [redacted]
- Major Materials procurement (drawings only: [redacted]
- Coordination with Distribution OH Team for [redacted]
- [redacted]
- Environmental Permit Determinations and appropriate document development (Natural Diversity Data Base (NDDB) and Stormwater Pollution Control Plan (SWPCP))
- Siting & Permitting Determinations and appropriate document development (Petition)
- Electrical/Civil and Testing Support RFPs

Transmission (404932): Partial funding of $1,256K was approved in in PowerPlan on February 27, 2020. The project has incurred $1,196K to date on completion of the following activities:

- 100% IFC Drawings
  - [redacted]
- Drawings of Major Materials [redacted]
- Electrical/Civil and Testing Support RFPs
- Environmental Permit Determinations and appropriate document development (NDDB and SWPCP)
- Siting & Permitting Determinations and appropriate document development (Petition)

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Full Funding Authorization:

The Full Funding estimates were created based on completion of following items:

- Major contracts (Electrical/Civil construction and Testing Support) pricing based on 100% IFC drawings
- Major material quotes and detailed BOMs
- Detailed constructability review walkdowns (Attachment C)
- Coordination with other stakeholders (Distribution OH Project Team)
- [redacted] (Attachment D)
- Coordination with UCONN on additional laydown area requirement (Attachment E)

A summary of the project cost breakdown is as follows:

Work Order	Estimate Value
40493201	$14,609K
CS001661 (Phase 1)	$17,841K
CS001662 (Phase 2)	$7,435K
Total	**$39,885K**

- 40493201 (Phase 1 Construction): [redacted]
- CS001661 (Phase 1 Construction): [redacted]
- Refer to "Project Scope" section of this document for additional detail.

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Project Costs Summary: Transmission (40493201)

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
1. ROW / Easements / Land Acquisition									
2. Environmental Approvals / Permits		$23	$12	$58					$93
3. Outreach		$4	$7	$23					$34
4. Siting Approvals / Permits		$3	$138	$471					$611
5. Engineering / Design	$652	$615	$196	$178					$989
6. Materials (Eversource purchased)	$135	$61	$659	$1,024					$1,744
7. Construction (incl matl's by contractors)		$56	$573	$2,960					$3,589
8. Testing / Commissioning		$1	$200	$1,487					$1,688
9. Project Mgmt Team	$175	$126	$150	$273					$549
10. Removals			$41	$42					$83
11. Other									
12. Risks			$140	$360					$500
SUBTOTAL DIRECTS W/ RISKS	$962	$890	$2,116	$6,874					$9,880
13. Indirects/Overhead	$255	$296	$752	$2,654					$3,702
14. AFUDC	$40	$9	$118	$440					$567
PROJECT TOTAL – BASELINE BUDGET		$1,195	$2,986	$9,968					$14,149
15. Contingency			$111	$349					$460
TOTAL CAPITAL REQUEST		$1,195	$3,097	$10,316					$14,609
16. Reimbursables/Customer Contribution									
PROJECT TOTAL (LESS REIMBURSABLES)		$1,195	$3,097	$10,316					$14,609
O&M									
TOTAL REQUEST	$1,256	$1,195	$3,097	$10,316					$14,609

Note: Explain unique payment provisions, if applicable: *Provide a detailed breakdown of Other costs here. Risk allocation of $500K is for the following:*

Potential UG Obstructions is in allowances to construction vendor	$ 50,000
Severe Weather, Delays, OT	$ 350,000
Design development	$ 100,000

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Breakout Costs: Transmission (40493201)

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
ST Labor		$168	$120	$123					$412
OT Labor									
Outside Services Labor	$826	$661	$1,060	$5,181					$6,902
Materials*	$135	$61	$750	$1,161					$1,971
Removals			$41	$42					$83
Other			$257	$715					$972
Indirects	$255	$296	$752	$2,654					$3,702
AFUDC	$40	$9	$118	$440					$567
TOTAL CAPITAL REQUEST - W/O REIMBURSABLES	$1,256	$1,195	$3,097	$10,316					$14,609

*All materials including Eversource purchased and outside service purchased. Note that outside service purchased material included in construction in project cost summary above.

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Project Costs Summary: Distribution Phase 1 (CS001661)

Note: Dollar values are in thousands

Line item Category	Prior Authorized*	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
1. ROW / Easements / Land Acquisition									
2. Environmental Approvals / Permits		$2	$5						$6
3. Outreach			$8	$14					$22
4. Siting Approvals / Permits		$5	$22	$38					$65
5. Engineering / Design	$1,450	$54	$189	$197					$439
6. Materials (Eversource purchased)	$475	$238	$1,732	$2,638					$4,608
7. Construction (incl matl's by contractors)			$1,778	$2,745					$4,524
8. Testing / Commissioning			$258	$1,311					$1,569
9. Project Mgmt Team		$5	$88	$138					$230
10. Removals			$27	$42					$68
11. Other									
12. Risks			$222	$475					$697
SUBTOTAL DIRECTS W/ RISKS	$1925	$303	$4,328	$7,598					$12,228
13. Indirects/Overhead	$629	$113	$1,874	$3,230					$5,217
14. AFUDC	$76	$1							$1
PROJECT TOTAL – BASELINE BUDGET	$2,630	$417	$6,201	$10,828					$17,446
15. Contingency			$158	$236					$394
TOTAL CAPITAL REQUEST	$2,630	$417	$6,360	$11,064					$17,841
16. Reimbursables/Customer Contribution									
PROJECT TOTAL (LESS REIMBURSABLES)	$2,630	$417	$6,360	$11,064					$17,841
O&M									
TOTAL REQUEST	$2,630	$417	$6,360	$11,064					$17,841

*Prior Authorized was for CS00166 Distribution Project Phase 1 (CS001661) and Phase 2 (CS001662) combined; therefore, no separate cost breakdown is available for these two work orders. All CS00166 costs are shown in Distribution Phase 1 (CS001661) cost tables.

Note: Explain unique payment provisions, if applicable: *Provide a detailed breakdown of Other costs here. Risk allocation of $697K is for the following:*

Potential UG Obstructions is in allowances to construction vendor	$ 50,000
Severe Weather, Delays, OT	$ 400,000
Design development	$ 75,000

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Additional removal costs	$ 100,000
Unforeseen environmental disposal	$ 72,000

Breakout Costs: Distribution Phase 1 (CS001661)

Note: Dollar values are in thousands

Line item Category	Prior Authorized**	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
ST Labor		$65	$104	$70					$239
OT Labor									
Outside Services Labor	$1,450		$2,197	$4,309					$6,506
Materials*	$475	$238	$1,772	$2,699					$4,710
Removals			$27	$42					$68
Other			$385	$715					$1,100
Indirects	$629	$113	$1,874	$3,230					$5,217
AFUDC	$76	$1							$1
TOTAL CAPITAL REQUEST - W/O REIMBURSABLES	$2,630	$417	$6,360	$11,064					$17,841

*All materials including Eversource purchased and outside service purchased. Note that outside service purchased material included in construction in project cost summary above.

**Prior Authorized was for CS00166 Distribution Project Phase 1 (CS001661) and Phase 2 (CS001662) combined; therefore, no separate cost breakdown is available for these two work orders. All CS00166 costs are shown in Distribution Phase 1 (CS001661) cost tables.

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Project Costs Summary: Distribution Phase 2 (CS001662)

Note: Dollar values are in thousands

Line item Category	Prior Authorized*	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
1. ROW / Easements / Land Acquisition									
2. Environmental Approvals / Permits				$12	$24				$36
3. Outreach				$0	$9				$9
4. Siting Approvals / Permits				$1	$24				$25
5. Engineering / Design		$7		$102	$65				$174
6. Materials (Eversource purchased)					$1,841				$1,841
7. Construction (incl matl's by contractors)					$1,483				$1,483
8. Testing / Commissioning				$39	$835				$874
9. Project Mgmt Team		$2	$3	$17	$90				$111
10. Removals				$24	$100				$125
11. Other									
12. Risks			$10	$410					$420
SUBTOTAL DIRECTS W/ RISKS		$9	$13	$605	$4,471				$5,097
13. Indirects/Overhead		$15	$6	$193	$1,922				$2,137
14. AFUDC		$0							$0
PROJECT TOTAL – BASELINE BUDGET		$24	$19	$798	$6,393				$7,234
15. Contingency				$3	$197				$201
TOTAL CAPITAL REQUEST		$24	$19	$801	$6,591				$7,435
16. Reimbursables/Customer Contribution									
PROJECT TOTAL (LESS REIMBURSABLES)		$24	$19	$801	$6,591				$7,435
O&M									
TOTAL REQUEST		$24	$19	$801	$6,591				$7,435

*Prior Authorized was for CS00166 Distribution Project Phase 1 (CS001661) and Phase 2 (CS001662) combined; therefore, no separate cost breakdown is available for these two work orders. All CS00166 costs are shown in Distribution Phase 1 (CS001661) cost tables.

Note: Explain unique payment provisions, if applicable: *Provide a detailed breakdown of Other costs here. Risk allocation of $420K is for the following:*

Potential UG Obstructions	$ 50,000
Severe Weather, Delays, OT	$ 200,000

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Design development	$ 55,000
Additional removal costs	$ 40,000
Additional bus, supports, and pathways	$ 50,000
Unforeseen environmental disposal	$ 25,000

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Breakout Costs: Distribution Phase 2 (CS001662)

Note: Dollar values are in thousands

Line item Category	Prior Authorized**	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
ST Labor		$9	$3	$38	$51				$101
OT Labor									
Outside Services Labor				$130	$2,383				$2,513
Materials*					$1,935				$1,935
Removals				$24	$100				$125
Other			$10	$415	$200				$625
Indirects		$15	$6	$193	$1,922				$2,137
AFUDC		$0							$0
TOTAL CAPITAL REQUEST - W/O REIMBURSABLES		$24	$19	$801	$6,591				$7,435

*All materials including Eversource purchased and outside service purchased. Note that outside service purchased material included in construction in project cost summary above.

**Prior Authorized was for CS00166 Distribution Project Phase 1 (CS001661) and Phase 2 (CS001662) combined; therefore, no separate cost breakdown is available for these two work orders. All CS00166 costs are shown in Distribution Phase 1 (CS001661) cost tables.

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Project Costs Summary: Transmission and Distribution Combined

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
1. ROW / Easements / Land Acquisition									
2. Environmental Approvals / Permits		$24	$17	$70	$24				$135
3. Outreach		$4	$15	$37	$9				$65
4. Siting Approvals / Permits		$8	$160	$510	$24				$701
5. Engineering / Design	$2,102	$675	$384	$476	$65				$1,602
6. Materials (Eversource purchased)	$610	$299	$2,392	$3,661	$1,841				$8,192
7. Construction (incl matl's by contractors)		$56	$2,351	$5,705	$1,483				$9,596
8. Testing / Commissioning		$1	$457	$2,837	$835				$4,131
9. Project Mgmt Team	$175	$133	$241	$427	$90				$891
10. Removals			$68	$108	$100				$276
11. Other									
12. Risks			$372	$1,245					$1,617
SUBTOTAL DIRECTS W/ RISKS	$,2887	$1,201	$6,456	$15,077	$4,471				$27,206
13. Indirects/Overhead	$884	$425	$2,632	$6,077	$1,922				$11,055
14. AFUDC	$115	$11	$118	$440					$568
PROJECT TOTAL – BASELINE BUDGET	$3,886	$1,637	$9,206	$21,593	$6,393				$38,829
15. Contingency			$269	$588	$197				$1,055
TOTAL CAPITAL REQUEST	$3,886	$1,637	$9,475	$22,182	$6,591				$39,884
16. Reimbursables/Customer Contribution									
PROJECT TOTAL (LESS REIMBURSABLES)	$3,886	$1,637	$9,475	$22,182	$6,591				$39,884
O&M									
TOTAL REQUEST	$3,886	$1,637	$9,475	$22,182	$6,591				$39,884

Note: Explain unique payment provisions, if applicable: *Provide a detailed breakdown of Other costs here.*

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Breakout Costs: Transmission and Distribution Combined

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2021 to Go	2022	2023	2024	2025	2026	Total
ST Labor		$242	$226	$232	$51				$751
OT Labor									
Outside Services Labor	$2,277	$661	$3,257	$9,620	$2,383				$15,921
Materials*	$610	$299	$2,522	$3,860	$1,935				$8,615
Removals			$68	$108	$100				$276
Other			$653	$1,845	$200				$2,697
Indirects	$884	$425	$2,632	$6,077	$1,922				$11,055
AFUDC	$115	$11	$118	$440					$568
TOTAL CAPITAL REQUEST - W/O REIMBURSABLES	$3,886	$1,637	$9,475	$22,182	$6,591				$39,884

*All materials including Eversource purchased and outside service purchased. Note that outside service purchased material included in construction in project cost summary above.

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Future Financial Impacts:

Provide below the estimated future costs that will result from the project: N/A
Note: Dollar values are in thousands

Future Costs	Year 20__	Year 20__	Year 20__	Year 20__+	Total Future Project Costs
Capital	$ -	$ -	$ -	$ -	$ -
O&M	-	-	-	-	-
Other	-	-	-	-	-
TOTAL	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Describe the estimated future Capital, O&M, and/or Other costs noted above: Not Applicable

What functional area(s) will these future costs be funded in? Not Applicable
A representative from the respective functional area is required to be included as a project approver.

Provide below the estimated future financial benefits that will result from the project:
Note: Dollar values are in thousands

Future Benefits	Year 20__	Year 20__	Year 20__	Year 20__+	Total Future Project Benefits
Capital	$ -	$ -	$ -	$ -	$ -
O&M	-	-	-	-	-
Other	-	-	-	-	-
TOTAL	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Describe the estimated future Capital, O&M, and/or Other benefits noted above: Not Applicable

What functional area(s) will these benefits be reflected in? Not Applicable
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: Not Applicable

Are there other environmental cleanup costs associated with this project? If yes, please provide details: Soil samples have been completed and no evidence of contamination was identified. There is a potential for asbestos-containing materials and equipment containing polychlorinated biphenyls that will need proper removal and disposal.

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Technical Justification:

Project Need Statement

Distribution Needs:

This project is being proposed to address reliability, aging infrastructure, power quality, voltage, and distribution load serving issues documented in an area study performed by Distribution Engineering in 2015 (Refer to Attachment B [redacted]

[redacted]

[redacted]

[redacted]

This project will [redacted]

Transmission Needs:

[redacted]

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Project Objectives

Distribution Objectives:

The main objectives of this project are to [redacted]

[redacted]

Transmission Objectives:

The main objective of this project is to address the [redacted]:

- [redacted]
- [redacted]

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Project Scope

[redacted]

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[redacted]

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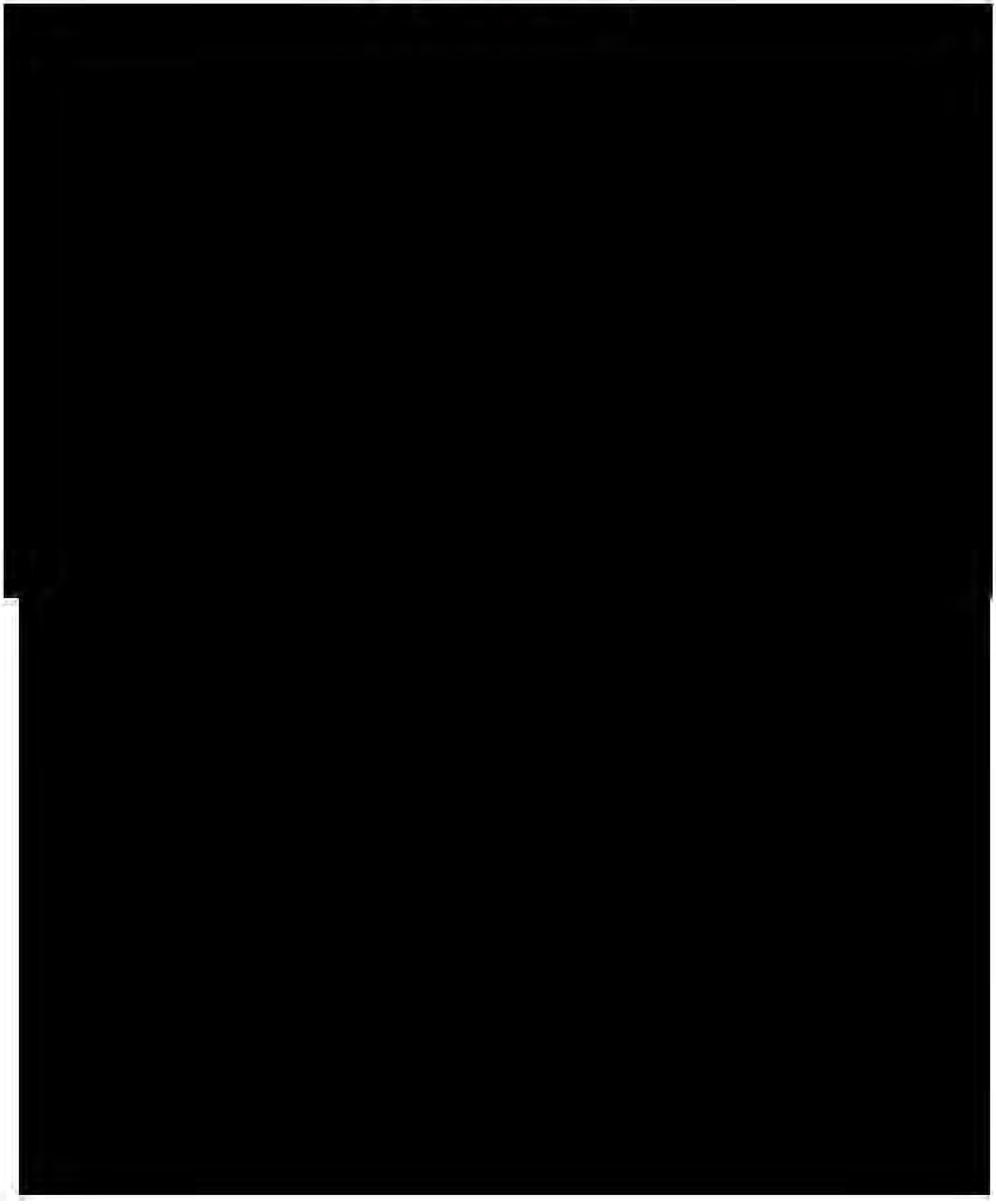

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[redacted]

REDACTED

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[redacted]

V. **Other Site Considerations**

A. Real Estate/Siting & Permitting Considerations (i.e. acquisitions, offset encroachment, ROW impacts):

[redacted] ill take place on Eversource property.

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B. Environmental
   a. Soil Contamination: Soil samples have been completed. No evidence of contamination was found.
   b. Wetlands impact: The planned area of expansion is outside of the designated wetland area. The small portion of the wetland will be utilized for the laydown area which will be matted in accordance with Best Management Practice (BMP) requirements.

C. Audible Noise Level Changes/Considerations:
   a. A sound study was completed to determine sound levels based on proposed configuration and equipment. The study showed to meet applicable local standards at the property line.

D. T-Line Considerations:
   a. The [redacted]

V. Protection & Controls Scope of Work

A. Transmission Description of Work: 40493201

Protection & Control Transmission Scope consists of the following:

a. [redacted]

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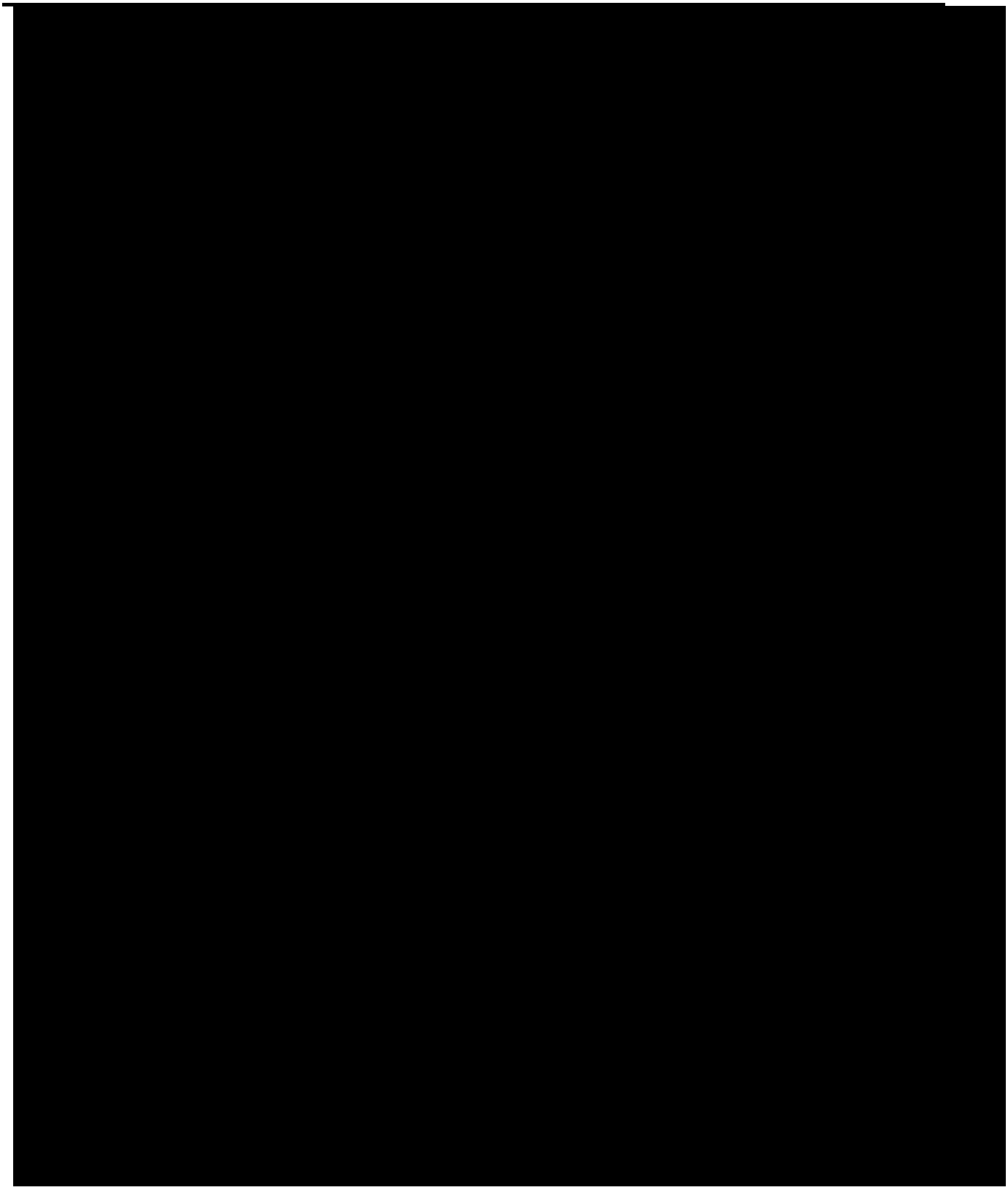
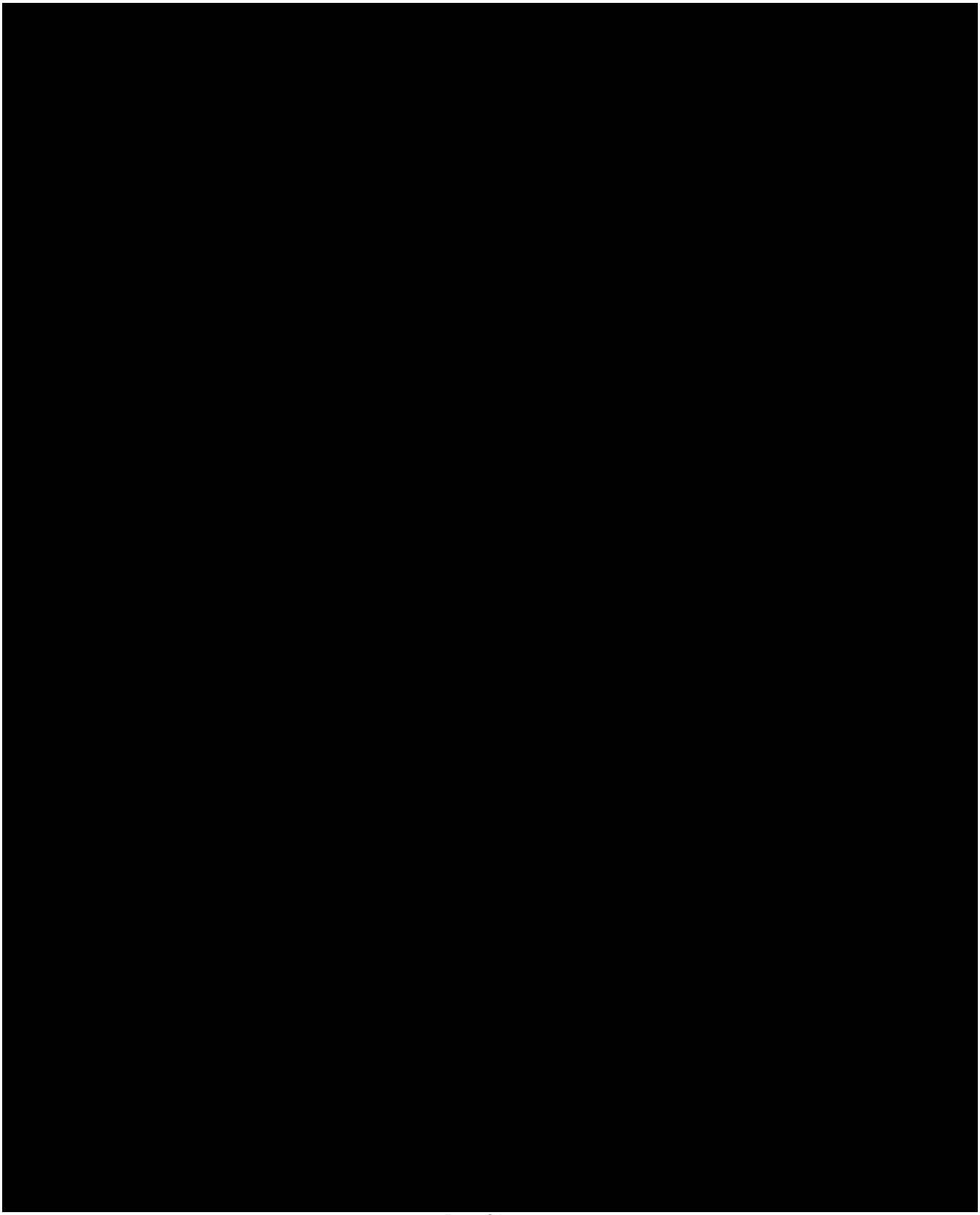


REDACTED

EVERSOURCE



REDACTED

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[redacted]

VII. Work Performed by Others

a. Programming and configuration of Bitronics meters and SEL meters.
b. Site survey, environmental survey, soil contamination testing, and geotechnical testing were completed by combination of Eversource and Eversource approved contractors.

REDACTED

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Business Process and / or Technical Improvements

This project will [redacted]

Alternatives Considered with Cost Estimates

This project was presented to the Solution Design Committee on November 13, 2019 and the chosen Transmission and Distribution alternatives were approved.

Distribution Alternatives:

- [redacted]
- [redacted]

  Planning grade cost estimate for this alternative is $25.3M

Conceptual grade cost estimate for this alternative is $26.1M with Transmission Alternative 2.

- [redacted]

Transmission Alternatives:

- [redacted]

REDACTED

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[redacted]

Planning grade cost estimate for this alternative is $14.6M.

- [redacted]

Conceptual grade cost estimate for [redacted] is $7.7M.

REDACTED

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- [redacted]

Conceptual grade cost estimate for this alternative is $4.0M.

The table below show each distribution and transmission alternative described above along with their associated costs.

REDACTED

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Alternative Solution Summary Table

Key factors	[redacted]
Description Summary	
Constructability Requirement	
Permitting Requirement	
System Performance	
Future Expansion	
Estimated Cost reported in $M at -25/+50 %	
Preferred solution (Yes/No)	

REDACTED

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Key factors	[redacted]		
Description Summary			
Constructability Requirement			
Permitting Requirement			
System Performance			
Future Expansion			
Estimated Cost reported in $M at -25/+50 %	$27.2 (Conceptual) ($22.1 Distribution and $5.1 Transmission)	$33.3 ($25.6 Distribution and $7.7 Transmission)	$26.1 ($22.1 Distribution and $4.0 Transmission)
Preferred solution (Yes/No)	[redacted]		

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Project Schedule

Milestone/Phase Name	Estimated Completion Date
Partial Funding Presentation to EPAC and Approval - Completed	February 2020
Partial Funding Approved in PowerPlan - Completed	March 2020
Initiate work orders - Completed	March 2020
Issue PO for Equipment drawings (Transformers, Switchgear, etc.) - Completed	March 2020
Receive equipment approval drawings from Manufacturers - Completed	August 2020
Resolve comments on approval drawings and receive updated schematics from Manufacturer - Completed	November 2020
Preliminary Engineering (Civil design and Preliminary Elec. Design Phase 1 and Phase 2) - Completed	January 2021
Constructability review, site walkdown - Completed	March 2021
Update PAF and estimate for full funding presentation to EPAC - Completed	May 2021
Detailed Engineering (IFC Design Phase 1 and Phase 2) - Completed	April 2021
EPAC presentation for full funding	May 2021
Resolve EPAC comments and start PowerPlan approval routing	May 2021
Risk Workshop with Enterprise Risk Management	June 2021
Subsidiary Board Presentation and Approval	July 2021
PowerPlan authorization complete	July 2021
Siting Approval	September 2021
Environmental Permit Approval	July 2021
Order materials and issue major equipment POs for release to Manufacturer (transformers, switchgear, breakers, circuit switchers, control house, relay panels, 115kV cable, etc.)	August 2021
Civil Construction Start (Phase 1: [redacted]	October 2021
Delivery of Relay & Control Enclosure & panels (~5 months after release to Manufacturer)	February 2022
Delivery of [redacted] (~8 months after release to Manufacturer)	April 2022
Phase 1 outages commence	September 2022
In-service (Phase 1) [redacted]	December 2022
[redacted]	December 2022
[redacted]	May 2023
[redacted]	June 2023
[redacted]	August 2023
[redacted]	August 2023
[redacted]	December 2023

See Attachment H for the P6 Schedule.

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Regulatory Approvals

[redacted]

[redacted]

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See Attachment K for an aerial view of the [redacted]

Risks and Risk Mitigation Plans

The project has identified the following list of Risks and associated mitigation plans. The project will be required to conduct a Risk Assessment workshop with Enterprise Risk Management (ERM); this is scheduled to be completed on June 9, 2021. The results of the workshop will be documented in the Subsidiary Board Presentation.

The risks identified in the table below are specific risks that the project may realize during the execution of the project; however, the risk amounts are included as part of the general risk categories outlined in the cost summary section. The below list of specific risks will be used in the ERM workshop ahead of Subsidiary Board Presentation.

Risk Description	Risk Horizon	Risk Mitigation
Encounter unexpected obstructions (rock/ledge/duct banks/conduit) during underground construction causing increased construction costs	2021 - 2023	Structure the Electrical/Civil contract to incorporate allowances for unexpected obstructions using unit pricing from bid (Rock Removal - CY; Duct bank removal - LF

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Risk Description	Risk Horizon	Risk Mitigation
Given the location, dewatering onsite may be required due to unforeseen environmental conditions that prove more costly than forecasted.	August 2021 - June 2022; Jan 2023 - June 2023	Obtain monthly rental cost from electrical-civil contractor during RFP process.
[redacted]	2021 - 2022	[redacted]
[redacted]	2022 - 2023	[redacted]
[redacted]	2021-2022	[redacted]
Construction is susceptible to weather delays, causing scheduling delays that may impact ISO-NE/SOC approved equipment outage dates. This may also lead to additional costs for overtime and due to severe weather delays.	2021 - 2023	Develop a construction schedule recovery plan based on contractor's unit costs to support the outage schedule.
Delay in major material deliveries (switchgear, transformers, R&CE, relay and control panels) impacting target scope of work planned in service date	2022-2023	Maintain continuous communication with major material suppliers and negotiate pricing for anticipated schedule delays with construction/testing contractors, and develop schedule recovery plan to maintain planned ISD
Removal and off-site disposal of contaminated soil and asbestos/PCB containing materials exceeds anticipated cost due to unforeseen environmental issues	2021-2023	Incorporate allowances for off-site disposal of contaminated soil and asbestos based on pre-characterization data from accessible locations
Additional on-site construction and commissioning management and monitoring due to complex cut-overs	2022-2023	Evaluate the need for additional resources after development of commissioning plans
Deviations to the original plan/schedule resulting in requiring additional coordination with the local entities (Uconn, Town of Mansfield) for major materials deliveries and the duration of construction phase.	2022-2023	Develop a strategy in coordination with the local entities while maintaining continuous communication.

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Risk Description	Risk Horizon	Risk Mitigation
Continuous/additional restoration of project access paths and laydown areas during construction due to external elements (weather)	2021 - 2023	Construction contractor would provide additional restoration beyond contracted amount to maintain a safe and constructable work environment
[redacted]	2022-2023	[redacted]
Delayed construction start resulting in increased construction/testing costs to meet Phase 1 target in-service date	2021-2022	Develop a schedule recovery plan in coordination with the contractors to stay on course with the target in-service date

References

- ES SUB 013
- ES SUB 014
- ES SUB 015
- ES SYSPLAN 010

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



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Figure 1: [redacted]

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Figure 2:



Figure 3:

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Project Authorization Form

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]	**Project Number: T: 404932, D:CS00166**	
Facility Type: ☐ BPS ☒ BES ☐ PTF ☒ non-PTF ☐ CIP ☒ Distribution		
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	
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?	[redacted]	☐ 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?	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	

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Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted]	**Project Number: T: 404932, D: CS00166**
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	
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)*	Yes
SITING & CONSTRUCTION SERVICES (OUTREACH)	
What is the level of outreach expected?	High
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

Cost Estimate Backup Details

Please see Attachment A for the detailed cost estimate backup files.

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr/Lead: [redacted]
Project Number:404932/CS00166
WO & Task #:40493201
Est. Revision # 00
Estimate Type - [redacted]

Estimate By: [redacted]
Date of Estimate: 4/30/2020
ISD:12/31/2022
Estimate # C-21-270A

Template Revision # 01.61

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2021	2022	2023	2024	2025	2026
1	ROW / Easements / Land purchases										
2	Environmental Approvals / Permits	$92,700	0.9%	0.6%	$22,900	$12,000	$57,800				
3	Outreach	$33,900	0.3%	0.2%	$4,400	$6,700	$22,800				
4	Siting Approvals / Permits	$611,400	6.2%	4.2%	$2,800	$137,700	$470,900				
5	Engineering / Design	$988,500	10.0%	6.8%	$615,100	$195,800	$177,600				
6	Materials (Eversource purchased)	$1,743,700	17.6%	11.9%	$60,800	$659,400	$1,023,500				
7	Construction (incl matl's by contractors)	$3,589,300	36.3%	24.6%	$56,200	$573,200	$2,959,900				
8	Testing / Commissioning	$1,688,000	17.1%	11.6%	$1,500	$199,700	$1,486,800				
9	PMT Project Mgmt Team	$549,300	5.6%	3.8%	$126,400	$150,400	$272,500				
10	Removals	$83,400	0.8%	0.6%		$41,100	$42,300				
11	Other										
12	Risks	$500,000	5.1%	3.4%		$140,000	$360,000				
	Project Directs Total w/Risks	**$9,880,200**	100.0%	67.6%	**$890,100**	**$2,116,000**	**$6,874,100**				
13	Indirects/Overhead	$3,701,700		25.3%	$296,200	$751,800	$2,653,700				
14	AFUDC	$566,600		3.9%	$9,300	$117,700	$439,600				
	Project Total - Baseline Budget	**$14,148,500**		96.9%	**$1,195,600**	**$2,985,500**	**$9,967,400**				
15	Contingency	$460,000		3.1%		$111,200	$348,800				
	Project Total - Funding Approval Level	**$14,608,500**		100.0%	**$1,195,600**	**$3,096,700**	**$10,316,200**				
16	Reimbursables/Customer Contribution										
	Project Total (less reimbursables)	**$14,608,500**			**$1,195,600**	**$3,096,700**	**$10,316,200**				
		-									
	Amount of Escalation included above	$250,800					$250,800				
6	Total materials - Eversource	$1,743,700			$60,800	$659,400	$1,023,500				
	Total materials - Contractor	$227,473			-$27	$90,200	$137,300				
	Total materials	$1,971,173			$60,773	$749,600	$1,160,800				
	NOTE: Risk / Contingency is 7% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)										
	Estimate Range	**-25%**	-		**25%**						
		$10,956,000	-		**$18,261,000**						

COMMENTS:

Project Scope:

[redacted]

Assumptions/Clarifications;
Indirect rates based on; 1T - CT , [redacted]

[redacted]
Underground obstructions are anticipated.
Soil contamination is to be handled by others.
No rental required for laydown area
Enginering internal construction external. Susbstation expansion PMT is split between (3) workorders.
[redacted] is based on layout drawing 17801-33008 Rev AR dated 3/2021.
No remote input-output (RIO) equipment is required per project team.
No digital fault recorder or cabinet as per project team
Soil Disposal - Contaminated (20%), Non-contaminated 80%)
Additional Hand Digging Labor (50%)
Encounter rock or foundations in trench (15%)

RISKS

Potential UG Obstructions is in allowances to construction vendor	$	50,000
Severe Weather, Delays, OT	$	350,000
Design development	$	100,000

Project Number:404932/CS00166
Date of Estimate: 4/30/2020
Est. Revision # 00
Template Revision # 01.61

CSTXX-CONSTRUCTION	R		Prior actuals to date Mhrs	Prior actuals to date DOLLARS	2021 Mhrs	2021 DOLLARS	2022 Mhrs	2022 DOLLARS	1 2023 Mhrs	1 2023 DOLLARS	2 2024 Mhrs	2 2024 DOLLARS	3 2025 Mhrs	3 2025 DOLLARS	4 2026 Mhrs	4 2026 DOLLARS	5 TOTAL Mhrs	5 TOTAL DOLLARS
Electrical Construction	LT																	
General Construction	LT			$15,451														$15,451
SCADA / Automation	LT						120	$6,551									120	$6,551
Telecom - Field	LT						80	$4,367									80	$4,367
Construction Reps (internal)	LT																	
Support Switch/Tag	LT				32	$1,696	48	$2,620									80	$4,316
Other (specify)	LT																	
Other (specify)	LT																	
Other (specify)	LT																	
LT Total				$15,451	32	$1,696	248	$13,538									280	$30,685
Employee Expenses	AE	5%				$85		$677										$762
Construction Purchased Material	AM	1%				$4,527		$26,423										$30,950
Outside Construction Vendor	AQ			$33,538	1,975	$452,704	11,191	$2,642,281									13,166	$3,128,523
Sales tax on Constr. Vendor																		
Vehicles (now in indirects section)	AV																	
Inspection services (Outside Vendor)	AQ																	
Construction Rep (Outside vendor)	AQ			$7,221	198	$28,512	1,120	$166,118									1,318	$201,851
Rents and Leases	BR																	
CSTXX Subtotal				$56,210		$487,524		$2,849,037										$3,392,771
Escalation						$ -		$ -		$ -		$ -		$ -		$ -		$ -
	P1																	
CSTXX Total				$56,210	2,205	$487,524	12,559	$2,849,037									14,764	$3,392,771
ENRXX-TG ENGINEERING/DESIGN																		
Project Services/Drafting	LT				80	$4,240	120	$6,551									200	$10,791
T- Line Engineering/Design	LT																	
D- Street Engineering/Design	LT																	
Civil Engineering/Design	LT				480	$25,440	240	$13,102									720	$38,542
Substation (T) Engineering/Design	LT			$99,605	400	$21,200	400	$21,836									800	$142,641
Substation (D) Engineering/Design	LT																	
Protection & Controls Engineering	LT				480	$25,440	120	$6,551									600	$31,991
Survey Engineering	LT																	
SCADA / Automation Engineering	LT				120	$6,360											120	$6,360
Telecom Engineering	LT				120	$6,360											120	$6,360
Other - specify	LT																	
Other - specify	LT																	
LT Total				$99,605	1,680	$89,040	880	$48,040									2,560	$236,685
Employee Expenses	AE	5%				$4,452		$2,402										$6,854
Contractor Engineering - T-Lines	AQ																	
Contractor Engineering - D-Street	AQ																	
Contractor Engineering - T -Station	AQ			$515,509	400	$60,800	800	$125,248									1,200	$701,557
Contractor Engineering - D-Station	AQ																	
Contractor Engineering - P&C	AQ																	
Contractor Engineering - Survey	AQ				45	$5,535	15	$1,900									60	$7,435
Contractor Engineering - SCADA / Automatic	AQ				240	$36,000											240	$36,000
Contractor Engineering - Telecom	AQ																	
Contractor Engineering - Specify	AQ																	
Contractor Engineering - Specify	AQ																	
Contractor Engineering - Specify	AQ																	
Vehicles (now in indirects section)	AV																	
ENRXX Subtotal			-	$615,114	2,365	$195,827	1,695	$177,590	-		-		-		-		4,060	$988,531
Escalation																		
	P1																	
ENRXX Total			-	$615,114	2,365	$195,827	1,695	$177,590	-		-		-		-		4,060	$988,531
LNDXX-TG LAND																		
Real Estate	LT																	
Employee Expenses	AE	5%																
Purchase Land	AM																	
Vehicles (now in indirects section)	AV																	
Fees and Payments	BF																	
LNDXX Subtotal			-		-		-		-		-		-		-		-	
Escalation																		
	P1																	
LNDXX Total			-		-		-		-		-		-		-		-	
MATXX-TG MATERIAL																		
Eversource	AM			$60,773		$626,905		$954,463										$1,642,140
Outside Services	AM					$90,197		$137,325										$227,521
	AM																	
Freight																		
Sales Tax Eversouce/outside services		4%				$28,000		$42,630										$70,630
Other																		
MATXX Subtotal				$60,773		$745,102		$1,134,417										$1,940,292
Escalation																		
	P1																	
MATXX Total				$60,773		$745,102		$1,134,417										$1,940,292
PSMXX-PROJECT MANAGER & SUPPORT																		
Project Management (PM)	LT			$41,510	160	$8,480	520	$28,387									680	$78,377
Project Planning/Cost (IP)	LT																	
Contracts/Purchasing (C/P)	LT				40	$2,120											40	$2,120
System Planning	LT																	
Environmental	LT			$4,317	36	$2,283	12	$784									48	$7,384
SCS - Traditional	LT			$3,369		$2,671		$9,131										$15,171
Legal	LT																	
Estimating	LT				60	$3,180											60	$3,180
Siting - Certificate of Site & Faciltiy	LT			$2,755		$6,900		$23,587										$33,242
Asset Management	LT				60	$3,180											60	$3,180
Other -	LT																	
Other -	LT																	
Other -	LT																	
Other -	LT																	
LT Total				$51,951	356	$28,814	532	$61,889									888	$142,654
Employee Expenses	AE	5%				$1,441		$3,094										$4,535
Project Support Vendor - PM	AQ			$84,867	880	$132,000	1,560	$241,020	-	-	-	-					2,440	$457,887
Project Support Vendor - IP	AQ				-		-		-	-	-	-					-	
Project Support Vendor - C/P	AQ				-		-		-	-	-	-					-	
Project Support Vendor - System Planning	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Enviromental	AQ			$18,560	72	$9,763	408	$56,985	-	-	-	-					480	$85,308
Project Support Vendor - SCS - Traditional	AQ			$1,042	-	$4,010	-	$13,699	-	-	-	-					-	$18,751
Project Support Vendor - Legal	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Estimating	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Siting - Certificate o	AQ				-	$130,800	-	$447,329	-	-	-	-					-	$578,129
Project Support Vendor - Asset Management	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Vehicles (now in indirects section)	AV																	
Property or CWIP tax large proj. allowance	BR																	
	BR																	
Fees and Payments - Enviromental	BF																	
Fees and Payments - Siting	BF																	
Fees and Payments - Other	BF																	
PSMXX Subtotal			-	$156,420	1,308	$306,828	2,500	$824,016	-		-		-		-		3,808	$1,287,264
Escalation																		
	P1																	
PSMXX Total			-	$156,420	1,308	$306,828	2,500	$824,016	-		-		-		-		3,808	$1,287,264
REMXX-TG REMOVAL																		
Engineering/Design	LT																	
Internal Construction	LT																	
LT Total																		
Employee Expenses	AE	15%																
Outside Services	AO																	
Contractor Labor	AQ					$41,078	247	$42,310									247	$83,387
Vehicles (now in indirects section)	AV																	
Rents and Leases	BR																	
REMXX Subtotal			-		-	$41,078	247	$42,310	-		-		-		-		247	$83,387
Escalation																		
	P1																	
REMXX Total			-		-	$41,078	247	$42,310	-		-		-		-		247	$83,387
TSTXX-TG TEST																		
Test / Field Engr. Labor (In House)	LT			$1,484														$1,484
Lead Commissioning Engr. (LCE) (internal)	AQ																	
Employee Expense	AE	10%																
Test / Field Engr. Labor (contractor)	AQ				640	$133,120	4,627	$991,288									5,267	$1,124,408
Lead Commissioning Engr. (LCE) (contactor)	AQ				320	$66,560	2,313	$495,537									2,633	$562,097
Vehicles (now in indirects section)	AV																	
TSTXX Subtotal				$1,484		$199,680		$1,486,825										$1,687,989
Escalation																		
	P1																	
TSTXX Total				$1,484	960	$199,680	6,940	$1,486,825									7,900	$1,687,989
SUBTOTAL PROJECT DIRECT COST			**-**	**$890,001**	**6,838**	**$1,976,038**	**23,941**	**$6,514,195**	**-**		**-**		**-**		**-**		**30,779**	**$9,380,234**
Risk																		
Risk						$140,000		$360,000										$500,000
Risk Total						$140,000		$360,000										$500,000
TOTAL PROJECT DIRECT COST			**-**	**$890,001**	**6,838**	**$2,116,038**	**23,941**	**$6,874,195**	**-**		**-**		**-**		**-**		**30,779**	**$9,880,234**
INDIRECTS																		
Non-Productive Time Allocation (ZB)	58	15.1%		$28,240		$17,992		$18,581										$64,813
Payroll Benefits Allocation (ZE) incl NPT	59	44.0%		$707		$859		$6,854										$8,420
Gen SVC CO Overhead (ZF) incl NPT	60	75.0%		$140,932		$101,693		$94,854										$337,479
E&S Allocations (ZI)	61	45.0%		$120,296		$603,439		$2,460,362										$3,184,097
AS&E Allocations (ZJ)	62	0.7%		$3,945		$18,900		$63,782										$86,627
Stores Expense Allocation (ZC)	62																	
Lobby Stock																		
MDEC																		
Vehicles		7.5%		$2,067		$8,966		$9,260										$20,293
	63																	
Indirects Subtotal				$296,187		$751,849		$2,653,693										$3,701,729
TOTAL PROJECT COST - Direct & Indirect (excl AFUDC)				**$1,186,188**		**$2,867,887**		**$9,527,888**										**$13,581,963**
AFUDC																		
AFUDC (ZK)				$9,278		$117,666	0	$439,616	0		0		0		0		0	$566,560
In Service Dollars																		
Cumulative IS$																		
AFUDC Subtotal				$9,278		$117,666		$439,616										$566,560
TOTAL PROJECT COST - Baseline Budget				**$1,195,466**		**$2,985,553**		**$9,967,504**										**$14,148,523**
Contingecy																		
Contingency						$111,161		$348,839										$460,000
Other																		
Contingency SubTotal						**$111,161**		**$348,839**										**$460,000**
TOTAL PROJECT COST - Approved Funding				$1,195,466		**$3,096,714**		**$10,316,343**										**$14,608,523**
Reimbursables / Customer Contribution																		
Reimbursables / Customer Contr bution (enter as negative)	59																	
TOTAL PROJECT COST				**$1,195,466**		**$3,096,714**		**$10,316,343**										**$14,608,523**

ESTIMATE SUMMARY

Project Title: [redacted] phase 1
Project Mgr/Lead: [redacted]
Project Number: 404932
WO & Task #: CS001661
Est. Revision # 00
Estimate Type - [redacted]

Estimate By: [redacted]
Date of Estimate: 5/11/2021
ISD:12/31/2022
Estimate # C-21-270D1

Template Revision # 01.61

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2021	2022	2023	2024	2025	2026
1	ROW / Easements / Land purchases										
2	Environmental Approvals / Permits	$6,100	0.0%	0.0%	$1,600	$4,500					
3	Outreach	$21,900	0.2%	0.1%		$8,000	$13,900				
4	Siting Approvals / Permits	$65,200	0.5%	0.4%	$4,900	$21,900	$38,400				
5	Engineering / Design	$439,500	3.6%	2.5%	$53,500	$188,700	$197,300				
6	Materials (Eversource purchased)	$4,607,800	37.7%	25.8%	$238,100	$1,732,100	$2,637,600				
7	Construction (incl matl's by contractors)	$4,523,500	37.0%	25.4%		$1,778,100	$2,745,400				
8	Testing / Commissioning	$1,568,800	12.8%	8.8%		$257,700	$1,311,100				
9	PMT Project Mgmt Team	$230,100	1.9%	1.3%	$4,600	$87,900	$137,600				
10	Removals	$68,400	0.6%	0.4%		$26,900	$41,500				
11	Other										
12	Risks	$697,000	5.7%	3.9%		$222,000	$475,000				
	Project Directs Total w/Risks	**$12,228,300**	100.0%	68.5%	**$302,700**	**$4,327,800**	**$7,597,800**				
13	Indirects/Overhead	$5,216,900		29.2%	$113,200	$1,873,600	$3,230,100				
14	AFUDC	$1,400		0.0%	$1,400						
	Project Total - Baseline Budget	**$17,446,600**		97.8%	**$417,300**	**$6,201,400**	**$10,827,900**				
15	Contingency	$394,500		2.2%		$158,200	$236,300				
	Project Total - Funding Approval Level	**$17,841,100**		100.0%	**$417,300**	**$6,359,600**	**$11,064,200**				
16	Reimbursables/Customer Contribution										
	Project Total (less reimbursables)	**$17,841,100**			**$417,300**	**$6,359,600**	**$11,064,200**				
	Amount of Escalation included above	$263,200					$263,200				
6	Total materials - Eversource	$4,607,800			$238,100	$1,732,100	$2,637,600				
	Total materials - Contractor	$101,761			-$39	$40,400	$61,400				
	Total materials	$4,709,561			$238,061	$1,772,500	$2,699,000				

NOTE: Risk / Contingency is 6.5% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	**-25%**	**25%**
	$13,381,000	**$22,301,000**

COMMENTS:

Project Scope:

[redacted]

Assumptions/Clarifications;

Indirect rates based on; 11 - CT , [redacted]

PMT time is split between (3) workorder numbers on this project.
[redacted]
Underground obstructions and additional pathways are anticipated and funds to mitigate the impact are placed in allowance items.
Soil contamination is to be handled by others
No rental costs required for laydown area.
Enginering internal construction external.
The [redacted] is based on Layout drawing 17801-33008 Rev AN dated 3/2021.
No remote input-output (RIO) equipment is required per project team.
Soil Disposal - Contaminated (20%), Non-contaminated 80%)
Additional Hand Digging Labor (50%)
Encounter rock or foundations in trench (15%)

RISKS

Potential UG Obstructions is in allowances to construction vendor	$	50,000
Severe Weather, Delays, OT	$	400,000
Design development	$	75,000
Additional removal costs	$	100,000
unforseen environmental disposal	$	72,000

Project Number: 404932
Date of Estimate: 5/11/2021
Est. Revision # 00
Template Revision # 01.61

CSTXX-CONSTRUCTION	R		Prior actuals to date Mhrs	Prior actuals to date DOLLARS	2021 Mhrs	2021 DOLLARS	2022 Mhrs	2022 DOLLARS	2023 Mhrs	2023 DOLLARS	2024 Mhrs	2024 DOLLARS	2025 Mhrs	2025 DOLLARS	2026 Mhrs	2026 DOLLARS	TOTAL Mhrs	TOTAL DOLLARS
							1		2		3		4		5			
Electrical Construction	LT																	
General Construction	LT																	
SCADA / Automation	LT																	
Telecom - Field	LT																	
Construction Reps (internal)	LT																	
Support Switch/Tag	LT				32	$1,696	32	$1,747									64	$3,443
Other (specify)	LT																	
Other (specify)	LT																	
Other (specify)	LT																	
LT Total					32	$1,696	32	$1,747									64	$3,443
Employee Expenses	AE	5%				$85		$88										$173
Construction Purchased Material	AM	1%				$16,467		$25,441										$41,908
Outside Construction Vendor	AQ				6,050	$1,646,693	9,075	$2,544,140									15,126	$4,190,833
Sales tax on Constr. Vendor																		
Vehicles (now in indirects section)	AV																	
Inspection services (Outside Vendor)	AQ																	
Construction Rep (Outside vendor)	AQ				620	$89,280	930	$137,938									1,550	$227,218
Rents and Leases	BR																	
CSTXX Subtotal						$1,754,221		$2,709,354										$4,463,575
Escalation						$ -		$ -		$ -		$ -		$ -		$ -		$ -
	P1																	
CSTXX Total					6,702	$1,754,221	10,037	$2,709,354									16,740	$4,463,575
ENRXX-TG ENGINEERING/DESIGN																		
Project Services/Drafting	LT				100	$5,300	80	$4,367									180	$9,667
T- Line Engineering/Design	LT																	
D- Street Engineering/Design	LT																	
Civil Engineering/Design	LT				240	$12,720	240	$13,102									480	$25,822
Substation (T) Engineering/Design	LT																	
Substation (D) Engineering/Design	LT			$49,169	960	$50,880	480	$26,203									1,440	$126,252
Protection & Controls Engineering	LT				120	$6,360	80	$4,367									200	$10,727
Survey Engineering	LT																	
SCADA / Automation Engineering	LT				80	$4,240	32	$1,747									112	$5,987
Telecom Engineering	LT				40	$2,120	24	$1,310									64	$3,430
Other - specify	LT			$4,374														$4,374
Other - specify	LT																	
LT Total				$53,543	1,540	$81,620	936	$51,096									2,476	$186,259
Employee Expenses	AE	5%				$4,081		$2,554										$6,635
Contractor Engineering - T-Lines	AQ																	
Contractor Engineering - D-Street	AQ																	
Contractor Engineering - T -Station	AQ																	
Contractor Engineering - D-Station	AQ																	
Contractor Engineering - P&C	AQ				320	$48,960	480	$75,643									800	$124,603
Contractor Engineering - Survey	AQ																	
Contractor Engineering - SCADA / Automatic	AQ				240	$36,000	320	$49,440									560	$85,440
Contractor Engineering - Telecom	AQ				120	$18,000	120	$18,540									240	$36,540
Contractor Engineering - Specify	AQ																	
Contractor Engineering - Specify	AQ																	
Contractor Engineering - Specify	AQ																	
Vehicles (now in indirects section)	AV																	
ENRXX Subtotal			-	$53,543	2,220	$188,661	1,856	$197,273	-		-		-		-		4,076	$439,477
Escalation																		
	P1																	
ENRXX Total			-	$53,543	2,220	$188,661	1,856	$197,273	-		-		-		-		4,076	$439,477
LNDXX-TG LAND																		
Real Estate	LT																	
Employee Expenses	AE	5%																
Purchase Land	AM																	
Vehicles (now in indirects section)	AV																	
Fees and Payments	BF																	
LNDXX Subtotal			-		-		-		-		-		-		-		-	
Escalation																		
	P1																	
LNDXX Total			-		-		-		-		-		-		-		-	
MATXX-TG MATERIAL																		
Eversource	AM			$238,061		$1,649,739		$2,511,728										$4,399,528
Outside Services	AM					$40,384		$61,485										$101,870
	AM																	
Freight																		
Sales Tax Eversouce/outside services		4%				$65,900		$100,384										$166,284
Other																		
MATXX Subtotal				$238,061		$1,756,024		$2,673,597										$4,667,682
Escalation																		
	P1																	
MATXX Total				$238,061		$1,756,024		$2,673,597										$4,667,682
PSMXX-PROJECT MANAGER & SUPPORT																		
Project Management (PM)	LT			$4,584	120	$6,360	264	$14,412									384	$25,356
Project Planning/Cost (IP)	LT				40	$2,120											40	$2,120
Contracts/Purchasing (C/P)	LT				40	$2,120											40	$2,120
System Planning	LT																	
Environmental	LT			$1,559	40	$4,520											40	$6,079
SCS - Notification	LT					$398		$697										$1,095
Legal	LT																	
Estimating	LT				40	$2,120											40	$2,120
Siting - Local Zoning	LT			$4,898		$1,100		$1,957										$7,955
Asset Management	LT				40	$2,120											40	$2,120
Other -	LT																	
Other -	LT																	
Other -	LT																	
Other -	LT																	
LT Total				$11,041	320	$20,858	264	$17,066									584	$48,965
Employee Expenses	AE	5%				$1,043		$853										$1,896
Project Support Vendor - PM	AQ				480	$72,000	792	$122,364	-	-	-	-					1,272	$194,364
Project Support Vendor - IP	AQ				-		-		-	-	-	-					-	
Project Support Vendor - C/P	AQ				-		-		-	-	-	-					-	
Project Support Vendor - System Planning	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Enviromental	AQ				-		-		-	-	-	-					-	
Project Support Vendor - SCS - Notification	AQ				-	$7,570	-	$13,246	-	-	-	-					-	$20,816
Project Support Vendor - Legal	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Estimating	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Siting - Local Zonin	AQ				-	$20,800	-	$36,462	-	-	-	-					-	$57,262
Project Support Vendor - Asset Management	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Project Support Vendor - Other	AQ				-		-		-	-	-	-					-	
Vehicles (now in indirects section)	AV																	
Property or CWIP tax large proj. allowance	BR																	
	BR																	
Fees and Payments - Enviromental	BF																	
Fees and Payments - Siting	BF																	
Fees and Payments - Other	BF																	
PSMXX Subtotal			-	$11,041	800	$122,271	1,056	$189,991	-		-		-		-		1,856	$323,303
Escalation																		
	P1																	
PSMXX Total			-	$11,041	800	$122,271	1,056	$189,991	-		-		-		-		1,856	$323,303
REMXX-TG REMOVAL																		
Engineering/Design	LT																	
Internal Construction	LT																	
LT Total																		
Employee Expenses	AE	15%																
Outside Services	AO																	
Contractor Labor	AQ					$26,888	257	$41,542									257	$68,430
Vehicles (now in indirects section)	AV																	
Rents and Leases	BR																	
REMXX Subtotal			-		-	$26,888	257	$41,542	-		-		-		-		257	$68,430
Escalation																		
	P1																	
REMXX Total			-		-	$26,888	257	$41,542	-		-		-		-		257	$68,430
TSTXX-TG TEST																		
Test / Field Engr. Labor (In House)	LT																	
Lead Commissioning Engr. (LCE) (internal)	AQ																	
Employee Expense	AE	10%																
Test / Field Engr. Labor (contractor)	AQ				826	$171,808	4,080	$874,099									4,906	$1,045,907
Lead Commissioning Engr. (LCE) (contactor)	AQ				413	$85,904	2,040	$437,050									2,453	$522,954
Vehicles (now in indirects section)	AV																	
TSTXX Subtotal						$257,712		$1,311,149										$1,568,861
Escalation																		
	P1																	
TSTXX Total					1,239	$257,712	6,120	$1,311,149									7,359	$1,568,861
SUBTOTAL PROJECT DIRECT COST			**-**	**$302,645**	**10,961**	**$4,105,777**	**19,327**	**$7,122,906**	**-**		**-**		**-**		**-**		**30,288**	**$11,531,328**
Risk																		
Risk						$222,000		$475,000										$697,000
Risk Total						$222,000		$475,000										$697,000
TOTAL PROJECT DIRECT COST			**-**	**$302,645**	**10,961**	**$4,327,777**	**19,327**	**$7,597,906**	**-**		**-**		**-**		**-**		**30,288**	**$12,228,328**
INDIRECTS																		
Non-Productive Time Allocation (ZB)	58	15.1%		$9,207		$15,678		$10,521										$35,406
Payroll Benefits Allocation (ZE) incl NPT	59	44.0%				$859		$885										$1,744
Gen SVC CO Overhead (ZF) incl NPT	60	75.0%		$46,244		$88,426		$58,815										$193,485
E&S Allocations (ZI)	61	55.0%		$48,695		$1,338,172		$2,469,827										$3,856,694
AS&E Allocations (ZJ)	62	1.3%		$4,937		$69,361		$121,280										$195,578
Stores Expense Allocation (ZC)	62	8.0%				$131,979		$203,908										$335,887
Lobby Stock																		
MDEC		5.0%		$3,355		$199,931		$345,246										$548,532
Vehicles		28.0%		$732		$29,169		$19,574										$49,475
	63																	
Indirects Subtotal				$113,170		$1,873,575		$3,230,056										$5,216,801
TOTAL PROJECT COST - Direct & Indirect (excl AFUDC)				**$415,815**		**$6,201,352**		**$10,827,962**										**$17,445,129**
AFUDC																		
AFUDC (ZK)				$1,356														$1,356
In Service Dollars																		
Cumulative IS$																		
AFUDC Subtotal				$1,356														$1,356
TOTAL PROJECT COST - Baseline Budget				**$417,171**		**$6,201,352**		**$10,827,962**										**$17,446,485**
Contingecy																		
Contingency						$158,158		$236,280										$394,438
Other																		
Contingency SubTotal						**$158,158**		**$236,280**										**$394,438**
TOTAL PROJECT COST - Approved Funding				$417,171		**$6,359,510**		**$11,064,242**										**$17,840,923**
Reimbursables / Customer Contribution																		
Reimbursables / Customer Contr bution (enter as negative)	59																	
TOTAL PROJECT COST				**$417,171**		**$6,359,510**		**$11,064,242**										**$17,840,923**

ESTIMATE SUMMARY

Project Title: [redacted] Phase 2
Project Mgr/Lead: [redacted]
Project Number: 404932
WO & Task #: CS001662
Est. Revision # 00
Estimate Type - [redacted]

Estimate By: [redacted]
Date of Estimate: 5/11/2021
ISD:12/31/2023
Estimate # C-21-270D2

Template Revision # 01.61

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2021	2022	2023	2024	2025	2026
1	ROW / Easements / Land purchases										
2	Environmental Approvals / Permits	$36,100	0.7%	0.5%			$12,400	$23,700			
3	Outreach	$9,100	0.2%	0.1%			$300	$8,800			
4	Siting Approvals / Permits	$24,900	0.5%	0.3%			$800	$24,100			
5	Engineering / Design	$173,700	3.4%	2.3%	$6,700		$101,600	$65,400			
6	Materials (Eversource purchased)	$1,840,600	36.1%	24.8%				$1,840,600			
7	Construction (incl matl's by contractors)	$1,483,000	29.1%	19.9%				$1,483,000			
8	Testing / Commissioning	$874,000	17.1%	11.8%			$38,600	$835,400			
9	PMT Project Mgmt Team	$111,300	2.2%	1.5%	$2,000	$2,700	$16,600	$90,000			
10	Removals	$124,600	2.4%	1.7%			$24,300	$100,300			
11	Other										
12	Risks	$420,000	8.2%	5.6%		$10,000	$410,000				
	Project Directs Total w/Risks	**$5,097,300**	100.0%	68.6%	**$8,700**	**$12,700**	**$604,600**	**$4,471,300**			
13	Indirects/Overhead	$2,136,800		28.7%	$15,300	$6,500	$193,300	$1,921,700			
14	AFUDC	$100		0.0%	$100						
	Project Total - Baseline Budget	**$7,234,200**		97.3%	**$24,100**	**$19,200**	**$797,900**	**$6,393,000**			
15	Contingency	$200,500		2.7%			$3,000	$197,500			
	Project Total - Funding Approval Level	**$7,434,700**		100.0%	**$24,100**	**$19,200**	**$800,900**	**$6,590,500**			
16	Reimbursables/Customer Contribution										
	Project Total (less reimbursables)	**$7,434,700**			**$24,100**	**$19,200**	**$800,900**	**$6,590,500**			
	Amount of Escalation included above	$324,400					$11,300	$313,100			
6	Total materials - Eversource	$1,840,600						$1,840,600			
	Total materials - Contractor	$94,000						$94,000			
	Total materials	$1,934,600						$1,934,600			

NOTE: Risk / Contingency is 9.1% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	**-25%**	**25%**
	$5,576,000	**$9,293,000**

COMMENTS:

Project Scope:

[redacted]

Assumptions/Clarifications;

Indirect rates based on; 11 - CT , Station work

PMT time is split between (3) workorder numbers on this project.
[redacted]
Underground obstructions are anticipated and funds to mitigate the impact are placed in risk item.
Soil contamination is to be handled by others
No rental costs required for laydown area
Enginering internal construction external.
No remote input-output (RIO) equipment is required per project team.
Soil Disposal - Contaminated (20%), Non-contaminated 80%)
Additional Hand Digging Labor (50%)
Encounter rock or foundations in trench (15%)
Prior costs charged to Work Order #CS001662 are included.

RISKS

Potential UG Obstructions	$	50,000
Severe Weather, Delays, OT	$	200,000
Design development	$	55,000
Additional removal costs	$	40,000
Additional bus, supports, and pathways	$	50,000
unforseen environmental disposal	$	25,000

Project Number: 404932
Date of Estimate: 5/11/2021
Est. Revision # 00
Template Revision # 01.61

CSTXX-CONSTRUCTION	R		Prior actuals to date Mhrs	Prior actuals to date DOLLARS	2021 Mhrs	2021 DOLLARS	2022 Mhrs	2022 DOLLARS	2023 Mhrs	2023 DOLLARS	2024 Mhrs	2024 DOLLARS	2025 Mhrs	2025 DOLLARS	2026 Mhrs	2026 DOLLARS	TOTAL Mhrs	TOTAL DOLLARS
							1		2		3		4		5			
Electrical Construction	LT																	
General Construction	LT																	
SCADA / Automation	LT																	
Telecom - Field	LT																	
Construction Reps (internal)	LT																	
Support Switch/Tag	LT								32	$1,799							32	$1,799
Other (specify)	LT																	
Other (specify)	LT																	
Other (specify)	LT																	
LT Total									32	$1,799							32	$1,799
Employee Expenses	AE	5%								$90								$90
Construction Purchased Material	AM	1%								$12,924								$12,924
Outside Construction Vendor	AQ								6,228	$1,292,371							6,228	$1,292,371
Sales tax on Constr. Vendor																		
Vehicles (now in indirects section)	AV																	
Inspection services (Outside Vendor)	AQ																	
Construction Rep (Outside vendor)	AQ								620	$94,717							620	$94,717
Rents and Leases	BR																	
CSTXX Subtotal										$1,401,901								$1,401,901
Escalation						$ -		$ -		$ -		$ -		$ -		$ -		$ -
	P1																	
CSTXX Total									6,880	$1,401,901							6,880	$1,401,901
ENRXX-TG ENGINEERING/DESIGN																		
Project Services/Drafting	LT						24	$1,310	48	$2,699							72	$4,009
T- Line Engineering/Design	LT																	
D- Street Engineering/Design	LT																	
Civil Engineering/Design	LT						60	$3,275	60	$3,374							120	$6,649
Substation (T) Engineering/Design	LT																	
Substation (D) Engineering/Design	LT			$6,666			240	$13,102	120	$6,747							360	$26,515
Protection & Controls Engineering	LT						40	$2,184	60	$3,374							100	$5,558
Survey Engineering	LT																	
SCADA / Automation Engineering	LT						24	$1,310	48	$2,699							72	$4,009
Telecom Engineering	LT						24	$1,310	8	$450							32	$1,760
Other - specify	LT																	
Other - specify	LT																	
LT Total				$6,666			412	$22,491	344	$19,343							756	$48,500
Employee Expenses	AE	5%						$1,125		$968								$2,093
Contractor Engineering - T-Lines	AQ																	
Contractor Engineering - D-Street	AQ																	
Contractor Engineering - T -Station	AQ																	
Contractor Engineering - D-Station	AQ																	
Contractor Engineering - P&C	AQ						240	$37,822	180	$29,217							420	$67,039
Contractor Engineering - Survey	AQ																	
Contractor Engineering - SCADA / Automatic	AQ						180	$27,810	60	$9,548							240	$37,358
Contractor Engineering - Telecom	AQ						80	$12,360	40	$6,365							120	$18,725
Contractor Engineering - Specify	AQ																	
Contractor Engineering - Specify	AQ																	
Contractor Engineering - Specify	AQ																	
Vehicles (now in indirects section)	AV																	
ENRXX Subtotal			-	$6,666	-		912	$101,608	624	$65,441	-		-		-		1,536	$173,715
Escalation																		
	P1																	
ENRXX Total			-	$6,666	-		912	$101,608	624	$65,441	-		-		-		1,536	$173,715
LNDXX-TG LAND																		
Real Estate	LT																	
Employee Expenses	AE	5%																
Purchase Land	AM																	
Vehicles (now in indirects section)	AV																	
Fees and Payments	BF																	
LNDXX Subtotal			-		-		-		-		-		-		-		-	
Escalation																		
	P1																	
LNDXX Total			-		-		-		-		-		-		-		-	
MATXX-TG MATERIAL																		
Eversource	AM									$1,755,513								$1,755,513
Outside Services	AM									$94,061								$94,061
	AM																	
Freight																		
Sales Tax Eversouce/outside services		4%								$72,116								$72,116
Other																		
MATXX Subtotal										$1,921,689								$1,921,689
Escalation																		
	P1																	
MATXX Total										$1,921,689								$1,921,689
PSMXX-PROJECT MANAGER & SUPPORT																		
Project Management (PM)	LT			$1,987			40	$2,184	80	$4,498							120	$8,669
Project Planning/Cost (IP)	LT																	
Contracts/Purchasing (C/P)	LT						24	$1,310									24	$1,310
System Planning	LT																	
Environmental	LT						106	$12,384	198	$23,689							304	$36,073
SCS - Notification	LT							$16		$438								$454
Legal	LT																	
Estimating	LT				24	$1,272											24	$1,272
Siting - Local Zoning	LT									$1,167								$1,167
Asset Management	LT				24	$1,272											24	$1,272
Other -	LT																	
Other -	LT																	
Other -	LT																	
Other -	LT																	
LT Total				$1,987	48	$2,544	170	$15,894	278	$29,792							496	$50,217
Employee Expenses	AE	5%				$127		$795		$1,490								$2,412
Project Support Vendor - PM	AQ				-		80	$12,360	528	$84,023	-		-		-		608	$96,383
Project Support Vendor - IP	AQ				-		-		-		-		-		-		-	
Project Support Vendor - C/P	AQ				-		-		-		-		-		-		-	
Project Support Vendor - System Planning	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Enviromental	AQ				-		-		-		-		-		-		-	
Project Support Vendor - SCS - Notification	AQ				-		-	$309	-	$8,328	-		-		-		-	$8,637
Project Support Vendor - Legal	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Estimating	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Siting - Local Zonin	AQ				-		-	$824	-	$22,915	-		-		-		-	$23,739
Project Support Vendor - Asset Management	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Other	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Other	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Other	AQ				-		-		-		-		-		-		-	
Project Support Vendor - Other	AQ				-		-		-		-		-		-		-	
Vehicles (now in indirects section)	AV																	
Property or CWIP tax large proj. allowance	BR																	
	BR																	
Fees and Payments - Enviromental	BF																	
Fees and Payments - Siting	BF																	
Fees and Payments - Other	BF																	
PSMXX Subtotal			-	$1,987	48	$2,671	250	$30,182	806	$146,548	-		-		-		1,104	$181,388
Escalation																		
	P1																	
PSMXX Total			-	$1,987	48	$2,671	250	$30,182	806	$146,548	-		-		-		1,104	$181,388
REMXX-TG REMOVAL																		
Engineering/Design	LT																	
Internal Construction	LT																	
LT Total																		
Employee Expenses	AE	15%																
Outside Services	AO																	
Contractor Labor	AQ						145	$24,337	580	$100,270							725	$124,607
Vehicles (now in indirects section)	AV																	
Rents and Leases	BR																	
REMXX Subtotal			-		-		145	$24,337	580	$100,270	-		-		-		725	$124,607
Escalation																		
	P1																	
REMXX Total			-		-		145	$24,337	580	$100,270	-		-		-		725	$124,607
TSTXX-TG TEST																		
Test / Field Engr. Labor (In House)	LT																	
Lead Commissioning Engr. (LCE) (internal)	AQ																	
Employee Expense	AE	10%																
Test / Field Engr. Labor (contractor)	AQ						120	$25,709	2,524	$556,964							2,644	$582,673
Lead Commissioning Engr. (LCE) (contactor)	AQ						60	$12,854	1,262	$278,482							1,322	$291,336
Vehicles (now in indirects section)	AV																	
TSTXX Subtotal								$38,563		$835,446								$874,009
Escalation																		
	P1																	
TSTXX Total							180	$38,563	3,786	$835,446							3,966	$874,009
SUBTOTAL PROJECT DIRECT COST			**-**	**$8,653**	**48**	**$2,671**	**1,487**	**$194,690**	**12,675**	**$4,471,295**	**-**		**-**		**-**		**14,211**	**$4,677,310**
Risk																		
Risk						$10,000		$410,000										$420,000
Risk Total						$10,000		$410,000										$420,000
TOTAL PROJECT DIRECT COST			**-**	**$8,653**	**48**	**$12,671**	**1,487**	**$604,690**	**12,675**	**$4,471,295**	**-**		**-**		**-**		**14,211**	**$5,097,310**
INDIRECTS																		
Non-Productive Time Allocation (ZB)	58	15.1%		$1,394		$383		$5,777		$7,666								$15,220
Payroll Benefits Allocation (ZE) incl NPT	59	44.0%								$911								$911
Gen SVC CO Overhead (ZF) incl NPT	60	75.0%		$6,967		$2,195		$33,122		$42,397								$84,681
E&S Allocations (ZI)	61	55.0%		$5,972		$2,817		$127,418		$1,421,811								$1,558,018
AS&E Allocations (ZJ)	62	1.3%		$302		$101		$4,512		$75,016								$79,931
Stores Expense Allocation (ZC)	62	8.0%								$144,623								$144,623
Lobby Stock																		
MDEC		5.0%		$619		$262		$11,679		$215,032								$227,592
Vehicles		28.0%		$83		$712		$10,748		$14,262								$25,805
	63																	
Indirects Subtotal				$15,337		$6,470		$193,256		$1,921,718								$2,136,781
TOTAL PROJECT COST - Direct & Indirect (excl AFUDC)				**$23,990**		**$19,141**		**$797,946**		**$6,393,013**								**$7,234,091**
AFUDC																		
AFUDC (ZK)				$64														$64
In Service Dollars																		
Cumulative IS$																		
AFUDC Subtotal				$64														$64
TOTAL PROJECT COST - Baseline Budget				**$24,054**		**$19,141**		**$797,946**		**$6,393,013**								**$7,234,155**
Contingecy																		
Contingency								$3,047		$197,497								$200,544
Other																		
Contingency SubTotal								**$3,047**		**$197,497**								**$200,544**
TOTAL PROJECT COST - Approved Funding				$24,054		**$19,141**		**$800,993**		**$6,590,510**								**$7,434,698**
Reimbursables / Customer Contribution																		
Reimbursables / Customer Contr bution (enter as negative)	59																	
TOTAL PROJECT COST				**$24,054**		**$19,141**		**$800,993**		**$6,590,510**								**$7,434,698**

REDACTED

[redacted]

Completed by [redacted] - 1/28/2015

This study exams the [redacted]

- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

ISSUES:

[redacted]

[redacted]

[redacted]

Please see the charts below for [redacted].

[redacted]

CONSIDERATIONS:

- [redacted]

The most cost effective solutions were investigated further and are being presented below. The first six options presented range in between $4.2M-$8.6M each. This is for the distribution line work only. The seventh option is a hybrid of Options 1 and 6 and costs $13.5M for the distribution work and an additional $7M for the substation work at Mansfield 12J. [redacted].

Option 8 is being presented as an alternative to the [redacted] This option is a hybrid of Options 1, 5 and 6 and costs approximately $21M for the distribution work and an additional $14M for the [redacted], for a total of $35M. [redacted] was estimated at $198M.

The first set of options (1-3) involve [redacted]

Only Options 7 and 8 will [redacted] Option 7 will [redacted]. Option 8 [redacted]

PROPOSED OPTIONS:

Option 1 -

Option 1

Note: The preliminary estimate does not include the cost of a

Option 2 -

Option 2 [redacted]

- [redacted]
- [redacted]
- [redacted]

[redacted]

Option 3 - [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]

Option 3 [redacted]

- [redacted]
- [redacted]
- [redacted]

[redacted].

Option 4 - [redacted]

[redacted]

- Install 2,000 ft. of 500 AL 23 kV aerial cable on Rt. 190 to connect the reconfigured 15M3 circuit from the ROW to the existing 151-60R on Rt. 190 *(Segment 13)*

Option 4 [redacted]

[redacted]

Note: The preliminary estimate includes an estimated cost of a $7M for a [redacted]

Option 5 - [redacted]

[redacted]

Option 5 [redacted]

[redacted]

Note: The preliminary estimate includes an estimated cost of $7M for a [redacted]

Option 6 - [redacted]

[redacted]

- [redacted]

Option 6 [redacted]

[redacted]

Note: The preliminary estimate includes an estimated cost of $7M for a new [redacted]

Option 7 – A [redacted]

[redacted]

- [redacted]

Option 7 [redacted]

Note: The preliminary estimate does not include the cost of a [redacted] but does include an estimated cost of $7M for a [redacted]

Option 8 – [redacted]

REDACTED

- [redacted]

Option 8 [redacted]

- [redacted]

Note: The preliminary estimate does not include the cost of a [redacted] It does include an estimated cost of $100K for [redacted] and $14M for [redacted]

REDACTED

BENEFIT ANALYSIS:

OPTION(S)	COST ($M)	27.6 kV LOAD RELIEF	COST PER MVA ($M)	STRANDED CUSTOMERS (1)
Existing	0.000	[redacted]	[redacted]	[redacted]
Option 1	8.596			
Option 2	4.846			
Option 3	4.242			
Option 4	12.635			
Option 5	12.523			
Option 6	12.149			
Option 7	20.268			
Option 8	34.468			

[redacted]

(2) Option 8 [redacted]

CONCLUSIONS:

[redacted]

REDACTED

[redacted]

Short Term Plan

[redacted], either Option 1, 2, or 3 would be the most economical in the short term.

Option 1 would be the preferred short term option given that it [redacted]

Long Term Plan

In order to [redacted]

[redacted]

[redacted]

With the cost of the [redacted] at nearly $200M, this option at a cost of approximately $35M is a viable cost effective alternative that can be achieved in a multi-step, multi-year process.

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

Project Title: [redacted]	☒	Prior Constructability Review Performed?
	☐	Program Related Site Specific Review?
Project Numbers(s): 40493201 (Transmission), CS001661 (Distribution Phase 1), CS001662 (Distribution Phase 2)	**Project Constructability Phase:**	
Date(s) of Constructability Review: 03/02/2021	☐ Conceptual Engineering Design	
03/09/2021	☐ Preliminary Engineering Design	
	☒ Detailed Engineering Design	

Project Scope Statement:
[redacted]

Department Review/Walkdown Attendees*:

Required [X]	Attended [X]	Department	Name	Required [X]	Attended [X]	Department	Name
☒	☒	Project Management	[redacted]	☒	☒	S/S Engineering	[redacted]
☐	☐	Asset Management		☐	☐	P&C Engineering	
☒	☒	Constr. Management		☒	☒	Civil Engineering	
☒	☒	S/S Technical / LCE		☐	☐	Telecom	
☐	☐	S/S Operations**		☒	☒	Environmental	
☐	☐	Field Engineering		☐	☐	Real Estate	
☐	☐	Line Engineering		☐	☐	T&D ROW	
☐	☐	Vegetation Management		☐	☐	Survey Engineering	
☐	☐	Siting		☐	☐	Cost Estimating	
☐	☐	Safety		☒	☒	Outreach (SCS)	
☐	☐	SCADA		☐	☐	Material Procurement	
☒	☒	Distribution Engineering					

*** Sign-off in the table above for the Detailed Engineering Design Constructability Review indicates that all Action Items/Concerns from prior Constructability Reviews have been mitigated/resolved as documented in this form. Not every department is required to attend walkdowns for every project but should be consulted for project impact considerations**

** Internal Eversource Substation Operations must be included in the review even if external construction resources are planned

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

[Project Manager] certifies that this review was performed to completeness, that all applicable departments were informed of the project and have had opportunity to provide input to this review:

[redacted] 3/26/2021

Name / Signature *Date*

Documents available for use prior to Constructability Review					
[X]	Document	[X]	Document	[X]	Document
☒	Initial Scope -Birdseye site plan -General Arrangement	☒	Preliminary Drawings -Civil Site Drawing -Electrical Drawing -Section Drawings	☐	Prints in hand for marking up -Panel Front/Read View -Control Enclosure Layout -Floor / Wall Plans
☒	Detailed Scope Document	☒	Proposed Schedule	☐	Construction Sequence/Timeline
☒	Previous Notes / Comments / Observations	☒	Major Material / Equipment List	☐	Replace / Reuse of equipment

Action Items and Resolutions:

Item No.	Const. Review Action Item/Concern	Design Resolution/Mitigation:
1	[redacted]	[redacted]
2	[redacted]	[redacted]
3		
4		
5		

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
A	**Engineering & Asset Management**		
1	**Scope of Work** - Is scope adequately developed and sufficiently detailed for intended deliverable? - Any complimentary projects or other adjacent obsolete equipment for inclusion? - Any overlapping projects that could impact work/outages? - Consider Physical Installation, P&C Scope, Civil Scope, Engineering studies, Design standard adherence - Any remote station impacts? - Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project	☐	[redacted]

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
			[redacted]
2	**Materials Identified/Ordered** -Any concerns with BOM/Major Materials? Review BOM lead times and project need dates -Specialty Major Materials: Identify Specialty Equipment & Materials potentials - temporary/replacement - long lead items? -Any Materials needed to facilitate construction access?	☐	[redacted]

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
			[redacted]
3	**Control House** - Review Unmapped equipment interferences, Control/Battery Enclosure Layout, HVAC System (if equipment added), space for new or modified equipment, AC / DC station breaker availability and service loading, Panel Space, Expansion, one-line and/or riser type panelboard drawings, other..	☐	
4	**Ratings & Dimensions** for Major Equipment. Any concerns upon field review? Equipment Rating One Line (and/or equipment thermal ratings tables) - Review for any errors in field	☐	
5	**Wall, Fence, Gate, and Foundation Considerations** -Any permanent / temporary alterations or relocations required? -Pre-Project Sound Measurements Needed? Sound Walls? -Take measurements for Foundation quantities, dimensions and concrete volumes -CIP Review/Ballistic needs. Any Physical Security Requirement Consideration? -Assess condition of existing yard equipment foundations and viability for reuse (if proposed) -Review station expansion areas (if needed) for structures, old foundations, etc. -Any Steel Structural Plan Considerations? -Any impacts to construction plan?	☐	

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Below Grade / Enclosure Raceway** - If possible, evaluate existing raceway and review spacing requirements. Review for any subsurface investigation needs or potential below grade obstructions. GPR/test pits needed? Geotechnical Investigation - is soil boring or resistivity investigation needed?	☐	[redacted]
7	**Underground Obstructions** -Drawing review concerns? -Is preconstruction or test excavation needed? -Is reuse of underground control cables / Conduits /replace Non-Shielded Cable feasible (if applicable) -Are spare conduits available? Are they useable? -Review if any areas will need to be plated for increased load bearing for equipment access (i.e. large Xfmr, etc.)	☐	
8	**Grounding Plan (Ground Grid)** - Will footprint impact layout or other equipment? Identify locations to improve grounding. Impacts to foundations and ground grid plans. Observations on wetlands or ability to perform tests	☐	
9	Nomenclature / Switching One-Line Diagram -Any obvious deviations from diagrams provided?	☐	
10	BPS Separation Requirements - Is this BPS Substation? Y/N (part of PAF) - Changes to pre-existing BPS standards?	☐	
11	IEC 61850 Substation Automation and Communication Requirements - Any Impacts/Retrofit needed?	☐	

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
12	Any Upgrades to ES Standards - Is retrofit needed to bring up to ES standards? Can that be done?	☐	[redacted]
B	**Construction**		
1	**Any safety hazards specific to the facility? i.e. Low Bus, Deterioration, etc.**	☐	[redacted]
2	**Prior known Site Specific Conditions** -Common or Obvious station Issues -Missing scope items that could impact costs?	☐	
3	**Identify/Consider Required Depts for Construction?** -Who is constructor: Internal vs External Resources -S/S Ops, GO, Test, Field Engineering, etc -Specialty Contractors Required? -Required Oversite Needed - Estimated level of CR and LCE support needed	☐	External elec/civil contractor and Testing Contractor

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
4	**Site Plan, Access, and Temporary Construction Facilities:** -Confirm maintenance access for proposed new or replaced equipment -Verify clear footprint for yard equipment / Property Plan -General access to site, can areas outside substation be utilized? -Substation Entry Plan (driveway and drive path modifications) - Identification of Unique Requirements, i.e. (access bridges, station service, etc.) -Site Development Plan (grading and drainage) with Cut/Fill -Existing Rock Conditions? Potential Impacts (rock quantity)? -Any police details needed for deliveries, restricted hours, and/or need for extended hour approvals -Any Sanitary Civil Requirements? (Septic tanks, etc) -Review turning radius for delivery trucks (if critical) -Any Substation Access and site/yard access Limitations? -Office Trailer Needs: Facilities, Utilities, Restroom, Container, Dumpster Space -Weather impacts to Site (Snow Placement) -Identify Material Laydown and Security -Where will new vs removed equipment go? -Construction permit for trailers outside substation fence?	☐	1. Any major maintenance replacement by Nov-Dec 2022 2. Footprint – ok 3. Access – laydown yes 4. No drivepath modifications required 5. No rock conditions/dev. Plan 6. Police details for major material delivery accounted for in the construction specification 7. Sanitary tie-in included 8. Confirm large enough gate for large material/turn radius deliveries 9. No SS access limitations 10. Coordinating laydown need with UCONN and associated space for items listed 11. Snow placement – contractor to liveload if necessary 12. 3X will go to investment recovery 13. Contractor to obtain water/sewer permit Permit, temporary power to the construction trailers 14. Contractor to supply matting in the wet land. The area to be used for laydown.
5	Unique Equipment Considerations: Gas insulated substation, Gas insulated line, Gas insulated bus, Pass Breaker, Statcom, Sync Condenser		N/A

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Outage & Energization Plan and Construction Sequence:** *Review electrical working clearances for equipment during construction, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized.* ***Considerations:*** -Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -Distribution Clearances -Clearance Holder Assignments -Drawings vs Field Conditions -Outage boundaries and interconnections -Phased approach needs for additional mobilizations -Verify outage sequence supports the planned construction sequence and timeline. (Lead Commissioning Engineer "LCE", Substation Operations, and Outage Planner input) -Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions -Additional outage requirements: Railroad Catenaries, Fiber outage, SCADA outage, Relay permissions -Seasonal or weather conditions impacts	☐	[redacted]
7	**Equipment Testing & Acceptance** -Grounding plans / Resources? Will we need grounds hung? -Hi-pot testing and where will the equipment be set up?	☐	[redacted]
8	Need for mobile generator and where connected (if needed)	☐	[redacted]
9	Need for mobile battery and where connected (if needed)	☐	[redacted]
10	OT work required or Notable Permit Conditions (special hours)?	☐	[redacted]
11	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	☐	[redacted]

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
C	**Environmental**		
1	Soil Pre-Characterization or Grab Sampling Completed/Planned	☐	Completed previously for [redacted]. Environmental to confirm no soil samples/testing required from outside of the [redacted]
2	**Desktop investigation and EAD Review** -Required Permits -Stormwater Considerations -Dewatering requirements -Wetland and buffer review	☐	1. SWPCP – [redacted] to work with vendor: 30 day prep time; 60 day burn time a. Will include tentative laydown, matting (SW), etc. b. [redacted]
3	Risk or presence of PCB's/Asbestos/Lead/SF6	☐	Potential PCBs/asbestos for removals
4	Transformer Spill Containment Recommended?	☐	Yes, the engineering design drawings includes the spill containment area.
5	Expanding Footprint / New Buildings or future Expansion Plans? (Enviro Impact)	☐	1. No soil test typically needed for expansion area (undisturbed) 2. Confirm need, and complete prior to mobilization if needed
6	Environmental oversight considerations? (Inspection type/Interval)	☐	Yes – weekly/biweekly – coordinate with [redacted]
7	Environmental mitigations - Any matting or seasonal needs? Review D&M Plan with CR.	☐	[redacted]
D	**Siting, S&CS, and T&D Real Estate**		
1	**Any regulatory concerns or approvals needed?** - Consider scope/design alterations to mitigate concerns - Consider Visual screening considerations (feasibility or location) -Zoning Relief and Permits required	☐	Privacy screening on all laydown fences
2	**Neighbor/Abutter impacts:** - Any noise, visual impacts, or sensitive abutters - Any changes to lighting or additional lighting needed?	☐	N/A
3	Review for roadway, gate access, trailers, equip height, noise, weekend/night work, or any potential public disturbance related to work	☐	N/A
4	Installation within Eversource Rights - Is Rights and Restrictions Review required?	☐	N/A

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
5	Expanding Footprint / New Buildings or future Expansion Plans?	☐	N/A
6	Proposed Equipment on same property? - Any Encroachments	☐	May need temp easement for retaining wall installation.
F	**Protection & Controls**		
1	Panel Graphic additions and/or Modifications	☐	Yes
2	Space on existing panels for new equipment? (front & rear of panel fronts)	☐	Yes
3	Panel fronts conform to drawings	☐	Yes
4	Access to bring new panels into control enclosure	☐	Yes
5	Nameplate list and location of nameplates	☐	Yes
6	Verifies that relays and meters that will be an interconnected project work are as shown on the drawings.	☐	[redacted]
7	Temporary protection, relays, control cable needed? How long will they be required?	☐	[redacted]
8	Will relay setting changes be needed? Any additional outage requirements for changes?		[redacted]
G	**Telecom Engineering**		
1	Review telecom equipment in existing control enclosure	☐	Yes
2	Review path to get telecom circuits into the station and paths within the control house. Determine whether new underground duct or overhead tray work is needed.	☐	Yes
3	Review current or proposed Telecom equipment power connections and validate with P&C any need for system 1 and system 2 separation.	☐	Yes
4	Review current Telecom fiber diversity and validate with P&C any fiber diversity requirements.	☐	Not required
5	Review and list any remote station impacts/updates	☐	Not required
6	Confirm whether correct interface equipment is available (i.e.) for fiber termination or multiplexor termination	☐	Not required

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
7	Confirm whether existing communications cabinets are enough to support additional telecommunications equipment installed	☐	Yes
8	Review space for any required additional communications cabinets which may be required to support additional telecommunications equipment installed	☐	Yes
9	Review third party Telecommunications at substation and confirm whether additional capacity or Ground Potential Rise protection is required	☐	Not required

Photos

(Ex. Equipment control cabinet, Breakers, MODs, CCVTs, PTs, Transformers)



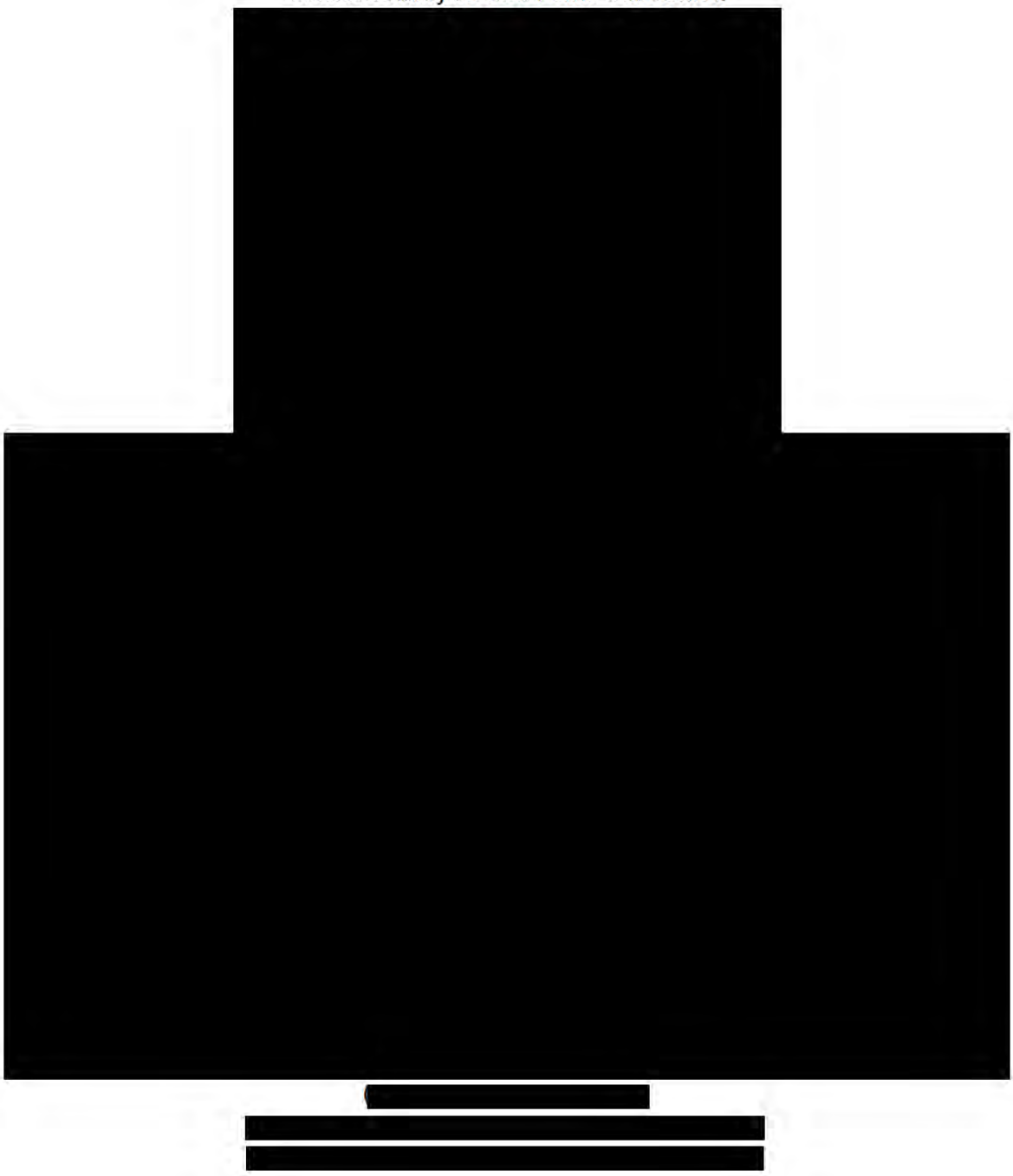
REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

[redacted]

EVERSOURCE

Constructability Review Form: **Substation**



REDACTED

EVERSOURCE

Constructability Review Form: **Substation**



Vegetation Removal to be completed on [redacted] in coordination with UConn.

[redacted]

Requested laydown area [redacted] in coordination with UConn.

REDACTED

EVERSOURCE

Constructability Review Form: **Substation**

[redacted]

Requested laydown area [redacted] in coordination with UConn.



Areas of existing matting and vegetation to be removed and replaced to support laydown expansion



Additional laydown to be utilized for contractor per coordination with UConn.

REDACTED

EVERSOURCE

Constructability Review Form: **Substation**



(Continued) Additional laydown to be utilized for contractor per coordination with UConn.

[redacted]

Today's Date:	**2/25/2021**
T-18 Date:	**7/1/2021**
T-90 Date:	**5/26/2021**

-CHANGE-
-NEW-

Project	Work Order #	TOA Work Request #	TOA Status	Planned Start	Planned End	Equipment Required to be OOS	Work to be Performed	Tagging Points	Tag Type	Stations	# of Days	T-Milestone Week	Recall Time
[redacted]													

[redacted]

Today's Date:	**2/25/2021**
T-18 Date:	**7/1/2021**
T-90 Date:	**5/26/2021**

-CHANGE-
-NEW-

Project	Work Order #	TOA Work Request #	TOA Status	Planned Start	Planned End	Equipment Required	Work to be Performed	Tagging Points	Tag Type	Stations	# of Days	T-Milestone	Recall
[redacted]													

[redacted]

Today's Date:	**2/25/2021**
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-CHANGE-
-NEW-

Project	Work Order #	TOA Work Request #	TOA Status	Planned Start	Planned End	Equipment Required to be OOS	Work to be Performed	Tagging Points	Tag Type	Stations	# of Days	T-Milestone Week	Recall Time
[redacted]													

[redacted]



[redacted]

[redacted] - [redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
[redacted] Install New 4X Transformers	SP				489	02-Dec-19 12 AM A	27-Apr-23 04 PM
INITIALIZATION AND SCOPE DEVELOPEMEI	SP				328	02-Dec-19 12 AM A	06-Sep-22 08 AM
CS001661	SP	START	SCHEDULE START MILESTONE		0	02-Dec-19 12 AM A	
Initial Funding	SP				0	06-Dec-19 12 AM A	04-May-20 04 PM A
CS001661	SP	PI1200	Project Initiator Develop Intitial Funding Request		0	06-Dec-19 12 AM A	06-Dec-19 12 AM A
CS001661	SP	PI1300	Initial Funding Request Approved @ EPAC		0	06-Dec-19 12 AM A	06-Dec-19 12 AM A
CS001661	SP	PI1000	Submit Initial Funding Request		0		06-Dec-19 12 AM A
CS001661	SP	PI1610	Power Plan Approval Create WO#		0	06-Dec-19 12 AM A	06-Dec-19 04 PM A
CS001661	SP	PI1400	Assign Project Manager Request Resources for Project Team		0	06-Dec-19 12 AM A	06-Dec-19 04 PM A
CS001661	SP	PI1500	Assign Scheduler		0	04-May-20 08 AM A	04-May-20 08 AM A
CS001661	SP	PI1600	Assign Cost Analyst		0	04-May-20 08 AM A	04-May-20 04 PM A
SDC Approval	SP				0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1100	ES Develop Electrical [redacted] Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1700	Review Conceptual Siting, Real Estate,SCS, & Permitting (If Required)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	SSF1000	Develop Soultions Selection Form (SSF)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1400	ES Engineering Develop P&C Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CGE1000	Develop Conceptual Grade Estimate (-25%+50% SDC)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1000	ES Engineering Develop Civil [redacted] Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1500	ES Engineering Develop Communications Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	SDC1000	Solution Design Committee(SDC) Approval		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1710	Conduct Conceptual Constructability Walk Down		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001661	SP	CE1600	Conduct Project Team Kickoff Meeting Verify SDC Need		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
Project Initiation	SP				53	05-Mar-20 12 AM A	30-Jul-21 04 PM
EPAC Partial Funding	SP				0	05-Mar-20 12 AM A	05-Mar-20 04 PM A
CS001661	SP	PF1000	EPAC Partial Funding Approval		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	ATCGE1010	Develop At Least Conceptual Grade Estimate (-25%+50% Partial Funding)		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	PE1600	Review Preliminary Siting & Permitting (If Required)		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	PE1700	Conduct Preliminary Constructability Walk Down		0	05-Mar-20 12 AM A	05-Mar-20 04 PM A
CS001661	SP	PAFP1000	Submit Partial Funding PAF for Internal Review		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	PAFP1100	Incorporate Internal Review Comments & Submit Partial Funding PAF to EPAC for Review		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	PAFP1200	Incorporate EPAC Partial Funding PAF Review Comments		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	PE1710	Create Engineering Scope Document		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001661	SP	PE1720	Engineering Scope Document Complete		0		05-Mar-20 04 PM A
EPAC Full Funding	SP				53	30-Nov-20 08 AM A	30-Jul-21 04 PM
CS001661	SP	PAFF2110	Prepare Draft Subsidiary Board Presentation		0	30-Nov-20 08 AM A	30-Nov-20 04 PM A
CS001661	SP	PAFF2120	Perform Risk Assessment (Enterprise Risk Management – ERM)		0	30-Nov-20 08 AM A	03-Feb-21 04 PM A

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	DE1900	Conduct FINAL Detail Constructability Walk Down	[redacted]	0	08-Feb-21 08 AM A	08-Feb-21 04 PM A
CS001661	SP	PAFF2130	Finalize Subsidiary Board Presentation		0	04-Feb-21 08 AM A	10-Feb-21 04 PM A
CS001661	SP	DE2000	Project Constructability Review Complete		0	09-Feb-21 08 AM A	12-Feb-21 04 PM A
CS001661	SP	DE1800	Review Detail Siting & Permitting (If Required)		0	05-Apr-21 08 AM A	09-Apr-21 04 PM A
CS001661	SP	DE1700	Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)		0	12-Apr-21 08 AM A	12-Apr-21 04 PM A
CS001661	SP	DE2010	Develop P&C Engineering Checklist to Support (+/-25% Full Funding)		0	16-Feb-21 08 AM A	23-Apr-21 04 PM A
CS001661	SP	DE2020	Develop Electrical Engineering Checklist to Support (+/-25% Full Funding)		0	16-Feb-21 08 AM A	23-Apr-21 04 PM A
CS001661	SP	DE1600	Create Planning Grade Estimate (+/-25% Full Funding)		0	16-Feb-21 08 AM A	12-May-21 04 PM A
CS001661	SP	PAFF2000	Submit Full Funding PAF for Internal Review		0	12-May-21 08 AM A	17-May-21 08 AM
CS001661	SP	PAFF2100	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC for Review		0	21-May-21 08 AM A	17-May-21 08 AM*
CS001661	SP	PAFF2200	Incorporate EPAC Full Funding PAF Review Comments		4	17-May-21 08 AM	20-May-21 04 PM
CS001661	SP	FF1000	EPAC Full Funding Approval		1	26-May-21 08 AM*	26-May-21 04 PM
CS001661	SP	FF1010	Finalize Subsidiary Board Presentation		5	07-Jun-21 08 AM*	11-Jun-21 04 PM
CS001661	SP	FF1020	Subsidiary Board Approval		34	14-Jun-21 08 AM	30-Jul-21 04 PM
T-Minus Milestones	SP				477	05-Mar-20 12 AM A	06-Sep-22 08 AM
T-Minus Milestones "A" Group	SP				269	05-Mar-20 12 AM A	25-Apr-22 04 PM
CS001661	SP	AT3001	Eng. Project Scoping Document Issued (Scope Lockdown)		0		05-Mar-20 12 AM A
CS001661	SP	AT0804	A-T-08.04 ALL PERMITS RECEIVED		0		12-Mar-21 04 PM A
CS001661	SP	AT1811	70% Design/Engineering Completed		0		17-Mar-21 12 AM A
CS001661	SP	AT0805E	IFC - Electrical (AG) w/Final BOM		0		31-Mar-21 04 PM A
CS001661	SP	AT2605	30% P&C Design / Engineering Completed		0		19-Apr-21 08 AM A
CS001661	SP	AT0805C	IFC - Civil (BG) w/BOM		0		22-Apr-21 08 AM A
CS001661	SP	AT0805PC	P&C IFC - P&C w/BOM		0		30-Jul-21 04 PM
CS001661	SP	AT2404	A-T-24.04 DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINE		0		05-Aug-21 04 PM*
CS001661	SP	AT1201	SCADA Date (Tab) Sheets/Signal List Sent to LCC		0		01-Sep-21 04 PM
CS001661	SP	AT0813	A-T-08.13 SITING PETITION AND APPLICATION FILED		0		24-Sep-21 04 PM*
CS001661	SP	AT00	T-00 - START OF CONSTRUCTION - WO#		0	04-Oct-21 08 AM*	
CS001661	SP	AT00.1	[redacted]		0	04-Oct-21 08 AM*	
CS001661	SP	AT0203	A-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE		0		04-Oct-21 04 PM*
CS001661	SP	AT1202	P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED		0		05-Nov-21 04 PM
CS001661	SP	AT0301	T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX		0		09-Nov-21 04 PM*
CS001661	SP	AT1805	T-18 - NX9 Preliminary Ratings to LCC for New Equipment (transformers are considered 'NEW EQUIPMENT')		0		09-Nov-21 04 PM*
CS001661	SP	AT1301	COMMISSIONING PLAN COMPLETE		0		23-Nov-21 04 PM
CS001661	SP	AT0404	[redacted]		0		05-Mar-22 04 PM
CS001661	SP	AT0401	A-T-04.01 ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEW		0		16-Apr-22 04 PM*
CS001661	SP	AT0409	A-T-04.09 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Non-transformer equipment)		0		25-Apr-22 04 PM*
T-Minus Milestones "B" Group (Non-Outage)	SP				140	17-May-21 08 AM	04-Oct-21 08 AM
CS001661	SP	BT203	B-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start		0		17-May-21 08 AM*

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	BT00	T-00 - START OF CONSTRUCTION - WO# [redacted] ELECTRICAL Non-Outage (CS00166)		0	04-Oct-21 08 AM*	
T-Minus Milestones "C" Group for Transformer Test- Ph	SP				477	17-May-21 08 AM	06-Sep-22 08 AM
CS001661	SP	CT203	C-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start		0		17-May-21 08 AM*
CS001661	SP	CT1811	CT-18 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer TEST ENERGIZATION)		0		25-Apr-22 04 PM*
CS001661	SP	CT00	C-T-00 - START OF CONSTRUCTION - CS00166 Phase 1		0	06-Sep-22 08 AM*	
ENVIRONMENTAL APPROVALS AND PERMI	SP				92	05-Mar-20 04 PM A	24-Sep-21 04 PM
PREPARE COMPLIANCE MATRICES - REGULATORY	SP				92	05-Mar-20 04 PM A	24-Sep-21 04 PM
CS001661	SP	1100	Incorporate Comments to Property Abutter Petition Letter		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001661	SP	1101	Receive Scope, Arrangement Drwg, Equip List (to support CSC Petition)		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001661	SP	1102	Outreach to Property Owners		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001661	SP	1103	Obtain Cultural Resources Approval		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001661	SP	1104	Prepare Preliminary Draft CSC Petition		0	14-Dec-20 08 AM A	16-Apr-21 04 PM A
CS001661	SP	1105	Prepare Property Abutter Petition Letter		0	10-May-21 08 AM A	10-May-21 04 PM A
CS001661	SP	1106	Mandatory Commenter Review of Preliminary Draft CSC Petition		2	19-Apr-21 08 AM A	18-May-21 04 PM
CS001661	SP	1107	Prepare Final CSC Petition / Submit Petition to CSC for Review		5	19-May-21 08 AM	25-May-21 04 PM
CS001661	SP	A1230	Prepared Compliance Matrices - Regulatory		87	05-Mar-20 04 PM A	17-Sep-21 04 PM
CS001661	SP	A1220	Prepared Compliance Matrices - Non-Reqgulatory (Commitments)		87	05-Mar-20 04 PM A	17-Sep-21 04 PM
CS001661	SP	1109	CSC Petition Approval (Tie to T-8)		1	24-Sep-21 08 AM	24-Sep-21 04 PM
CS001661	SP	1108	CSC Petition Review		119	29-May-21 08 AM*	24-Sep-21 04 PM
APPROVALS - FEDERAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001661	SP	A1180	Determine Requirment for and Prepare Permitting Docments - FEDERAL (CT) TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - STATE	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001661	SP	A1190	Determine Requirment for and Prepare Permitting Docments - STATE TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - REGIONAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001661	SP	A1200	Determine Requirment for and Prepare Permitting Docments - REGIONAL (CT) TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - LOCAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001661	SP	A1210	Determine Requirment for and Prepare Permitting Docments - LOCAL TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
ENGINEERING & DESIGN	SP				489	07-Feb-20 08 AM A	27-Apr-23 04 PM
Engineering Services Staffing	SP				0	07-Feb-20 08 AM A	19-Feb-21 04 PM A
CS001661	SP	A3370	Decision Required Regarding Engineering Staffing (ES, COC, BID)-EOC for Civil Only		0	07-Feb-20 08 AM A	16-Nov-20 12 AM A
Bid Process	SP				0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1280	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Bid Review / Score Bids/ Negotiations		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1300	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Notice to Proceed		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	TMP1190	(N/R per SP 7/31/20) Contractor Selection (Bid) - Engineering- Prepare / Issue RFP for Engineering Contractor	[redacted]	0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1210	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue RFP Out to Bid to Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1230	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Hold Pre-Bid Meeting for Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1310	(N/R per SP 7/31/20) Contractor Selection (Bid) - Engineering - Bid Period		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1320	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Award Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1330	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue DR		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001661	SP	TMP1340	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue PO		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
EOC - Engineer of Choice Process	SP				0	07-Dec-20 08 AM A	19-Feb-21 04 PM A
CS001661	SP	TMP1140	Engineering of Choice (EOC) - Provide RFP to Single Vendor		0	07-Dec-20 08 AM A	07-Dec-20 04 PM A
CS001661	SP	TMP1150	Engineering of Choice (EOC) - Vendor Responds with Proposal		0	08-Dec-20 08 AM A	14-Dec-20 04 PM A
CS001661	SP	TMP1180	Engineering of Choice (EOC) - EOC Committee Reviews at Monthly Meeting & Approves		0	15-Dec-20 08 AM A	15-Dec-20 04 PM A
CS001661	SP	TMP1200	Engineering of Choice (EOC) - DR Prepared by Project Engineer & Project Controls		0	15-Dec-20 08 AM A	23-Dec-20 04 PM A
CS001661	SP	TMP1220	Engineering of Choice (EOC) - PO Issued for Vendor -Preliminary Design Effort		0	16-Feb-21 08 AM A	17-Feb-21 04 PM A
CS001661	SP	TMP1240	Vendor Kick-Off Meeting		0	18-Feb-21 08 AM A	19-Feb-21 04 PM A
CS001661	SP	TMP1250	ES Supplies Final GEOTech Info to Vendor		0	15-Jan-21 08 AM A	19-Feb-21 04 PM A
Civil Engineering	SP				0	10-Aug-20 08 AM A	22-Apr-21 04 PM A
Civil Engineering 100%	SP				0	22-Feb-21 08 AM A	16-Mar-21 04 PM A
CS001661	SP	DSSE-1340	Vendor Incorporates Detail Comments and Issues 100% Civil Package to ES		0	22-Feb-21 08 AM A	01-Mar-21 04 PM A
CS001661	SP	DSSE-1350	ES Reviews and Comments 100% Civil Package		0	02-Mar-21 08 AM A	16-Mar-21 04 PM A
Civil Engineering IFC	SP				0	04-Mar-21 08 AM A	22-Apr-21 04 PM A
CS001661	SP	DSSE-1290	Vendor Incorporates 100% Design Comments Submits IFC Civil Package to ES w/BOM		0	04-Mar-21 08 AM A	08-Apr-21 04 PM A
CS001661	SP	DSSE-1320	ES Reviews IFC Civil Package		0	12-Apr-21 08 AM A	14-Apr-21 04 PM A
CS001661	SP	DSSE-1300	ES Issues Civil Package IFC w/BOM		0	15-Apr-21 08 AM A	22-Apr-21 04 PM A
Civil Engineering Detailed	SP				0	08-Feb-21 08 AM A	19-Feb-21 04 PM A
CS001661	SP	DSSE-1210	Vendor Incorporates Preliminary Comments and Issues Detailed Civil Package to ES		0	08-Feb-21 08 AM A	12-Feb-21 04 PM A
CS001661	SP	DSSE-1240	ES Reviews and Comments Detailed Civil Package		0	15-Feb-21 08 AM A	19-Feb-21 04 PM A
Civil Engineering Preliminary	SP				0	10-Aug-20 08 AM A	03-Feb-21 04 PM A
CS001661	SP	DSSE-1270	Design Package to Civil		0	10-Aug-20 08 AM A	01-Oct-20 04 PM A
CS001661	SP	DSSE-1250	Vendor Submits Preliminary Civil Package to ES		0	12-Jan-21 08 AM A	01-Feb-21 04 PM A
CS001661	SP	DSSE-1280	ES Reviews and Comments Preliminary Civil Package		0	01-Feb-21 08 AM A	03-Feb-21 04 PM A
Electrical Engineering	SP				93	18-Jun-20 08 AM A	05-Nov-21 04 PM
CS001661	SP	DSSE-260	Submit Plan/Profile to Siting & Permitting for Filing w/Regulator Authority (Should this be tied to the IFC)		0	20-Oct-20 08 AM A	12-Feb-21 04 PM A
CS001661	SP	DSSE-200	Detail (70%) Electrical Design Package Design		0	15-Feb-21 08 AM A	01-Mar-21 04 PM A

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	DSSE-205	Detail (70%) Electrical Design Package Drafting		0	02-Mar-21 08 AM A	19-Mar-21 04 PM A
CS001661	SP	DSSE-210	Final (100%) Electrical Design Package IFR		0	22-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001661	SP	DSSE-230	Electrical Engineering - BOM Complete		0	29-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001661	SP	DSSE-240	Electrical Engineering - Electrical Package IFC (Physical & Electrical)		0	29-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001661	SP	DSSE-460	Operating Instructions - SSED Review Draft Distribution OI		5	01-Nov-21 08 AM	05-Nov-21 04 PM
CS001661	SP	DSSE-920	Operating Instructions - SSED Review Draft Convex OI		5	01-Nov-21 08 AM	05-Nov-21 04 PM
Transformer- Vendor Drawings with Schematics	SP				0	27-Jul-20 08 AM A	12-Feb-21 04 PM A
CS001661	SP	DSSE-1150	ES Reviews & Comments Transformer Drawings & Schematics 4X		0	27-Oct-20 08 AM A	08-Jan-21 04 PM A
CS001661	SP	DSSE-1140	Vendor Submits Transformer Drawings & Schematics 4X (?????? Logic is incorrect????)		0	27-Jul-20 08 AM A	12-Feb-21 04 PM A
CS001661	SP	DSSE-1160	Vendor Submits Firm Transformer Drawings & Schematics 4X		0	27-Oct-20 08 AM A	12-Feb-21 04 PM A
Switch Gear - Vendor Drawings with Schematics	SP				0	18-Jun-20 08 AM A	01-Oct-20 04 PM A
CS001661	SP	1120	Vendor Submits Switch Gear Drawings & Schematics Switchgear		0	18-Jun-20 08 AM A	14-Aug-20 04 PM A
CS001661	SP	1121	ES Reviews & Comments Switch Gear Drawings & Schematics Switchgear		0	17-Aug-20 08 AM A	31-Aug-20 04 PM A
CS001661	SP	1122	Vendor Submits Firm Switch Gear Drawings & Schematics Switchgear		0	10-Sep-20 08 AM A	01-Oct-20 04 PM A
Circuit Switcher - Vendor Drawings with Schematics	SP				10	27-Oct-20 08 AM A	09-Jul-21 04 PM
CS001661	SP	1123	N/R Vendor Submits Circuit Switcher Drawings & Schematics Circuit Switcher		0	27-Oct-20 08 AM A	31-Mar-21 04 PM A
CS001661	SP	1124	N/R ES Reviews & Comments Circuit Switcher Drawings & Schematics Circuit Switcher		0	31-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001661	SP	1125	Vendor Submits Firm Circuit Switcher Drawings & Schematics Circuit Switcher		10	25-Jun-21 08 AM	09-Jul-21 04 PM
Distribution Thermal Ratings NX-9 (Transformer Repl	SP				436	02-Oct-20 08 AM A	27-Apr-23 04 PM
Thermal Ratings - Substation - Preliminary Thermal Da	SP				27	02-Oct-20 08 AM A	09-Nov-21 04 PM
CS001661	SP	NX9A-NC159	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature - GO!		0	05-Oct-20 08 AM A	05-Oct-20 04 PM A
CS001661	SP	NX9A-NC169	LTRC Submits 1-Line Nomenclature to TRC		0	09-Nov-20 08 AM A	13-Nov-20 04 PM A
CS001661	SP	NX9A-NC69	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX		0	02-Oct-20 08 AM A	16-Nov-20 04 PM A
CS001661	SP	NX9A-NC59	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings - GO!		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
CS001661	SP	NX9A-NC99	LTRC Requests P&C Checklist		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001661	SP	NX9A-NC79	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)		5	01-Oct-21 08 AM	07-Oct-21 04 PM
CS001661	SP	NX9A-NC139	LTRC Reviews and Sends Thermal Rating Data for TRC Review		5	08-Oct-21 08 AM*	15-Oct-21 04 PM
CS001661	SP	NX9A-NC129	TRC Reviews and Approves Thermal Rating Data		5	18-Oct-21 08 AM	22-Oct-21 04 PM
CS001661	SP	NX9A-NC119	LTRC Sends Thermal Rating Data for Approval & Submit to NURS		5	25-Oct-21 08 AM*	29-Oct-21 04 PM
CS001661	SP	NX9A-NC109	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE		1	01-Nov-21 08 AM	01-Nov-21 04 PM
CS001661	SP	NX9A-NC89	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Ratin		5	02-Nov-21 08 AM	08-Nov-21 04 PM
CS001661	SP	NX9A-NC149	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006		1	09-Nov-21 08 AM	09-Nov-21 04 PM
Thermal Ratings - Substation - Verify Thermal Data	SP				70	05-Apr-21 08 AM A	09-Nov-21 04 PM
CS001661	SP	NX9A-NC33	LTRC Reviews and Makes "GO / NO-GO" Decision - GO!		0	05-Apr-21 08 AM A	09-Apr-21 04 PM A
CS001661	SP	NX9A-NC35	LTRC Requests P&C Checklist		0	26-Apr-21 08 AM A	10-May-21 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	NX9A-NC31	PE to Verify Thermal Data Review PE Checklist (M7-EN-3006.2)		5	02-Aug-21 08 AM*	06-Aug-21 04 PM
CS001661	SP	NX9A-NC37	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)		5	01-Oct-21 08 AM	07-Oct-21 04 PM
CS001661	SP	NX9A-NC39	LTRC Reviews and Sends Thermal Rating Data for TRC Review		5	08-Oct-21 08 AM	15-Oct-21 04 PM
CS001661	SP	NX9A-NC41	TRC Reviews and Approves Thermal Rating Data		5	18-Oct-21 08 AM	22-Oct-21 04 PM
CS001661	SP	NX9A-NC43	LTRC Sends Thermal Rating Data for Approval & Submit to NURS		5	25-Oct-21 08 AM	29-Oct-21 04 PM
CS001661	SP	NX9A-NC45	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE		1	01-Nov-21 08 AM	01-Nov-21 04 PM
CS001661	SP	NX9A-NC47	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Ratin		5	02-Nov-21 08 AM	08-Nov-21 04 PM
CS001661	SP	NX9A-NC49	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006		1	09-Nov-21 08 AM	09-Nov-21 04 PM
Thermal Ratings - Substation - NX-9 Pre NX9-DOE	SP				1	28-Dec-22 08 AM	28-Dec-22 04 PM
CS001661	SP	NX9500	Scheduler - Send Email for 48Hrs Notification before DOE.		1	28-Dec-22 08 AM*	28-Dec-22 04 PM
Thermal Ratings - Substation - NX-9 Post NX9-DOE/ISD	SP				8	18-Apr-23 08 AM	27-Apr-23 04 PM
CS001661	SP	NX9FINAL50	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or CFM/ISD)		3	18-Apr-23 08 AM	20-Apr-23 04 PM
CS001661	SP	NX9FINAL60	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS		5	21-Apr-23 08 AM	27-Apr-23 04 PM
Thermal Ratings - Non NX-9 Thermal Ratings	SP				20	01-Oct-21 08 AM	29-Oct-21 04 PM
CS001661	SP	NX9A-EM44	P&C Develops and Provides LTRC with P&C Checklist & Thermal Ratings D		5	01-Oct-21 08 AM*	07-Oct-21 04 PM
CS001661	SP	NX9A-EM54	LTRC Prepares and Sends Thermal Rating Data for TRC Review		5	08-Oct-21 08 AM	15-Oct-21 04 PM
CS001661	SP	NX9A-EM64	TRC Reviews and Approves Thermal Rating Data		5	18-Oct-21 08 AM	22-Oct-21 04 PM
CS001661	SP	NX9A-EM74	LTRC Files Capability Sheets		5	25-Oct-21 08 AM	29-Oct-21 04 PM
P&C Engineering	SP				121	22-Jul-20 08 AM A	05-Nov-21 04 PM
CS001661	SP	DSSE-400	Prepare & Issue P&C Design Package to Drafting		0	22-Jul-20 08 AM A	23-Oct-20 04 PM A
CS001661	SP	DSSE-410	Drafting Prepare & Issue Back to P&C		0	26-Oct-20 08 AM A	28-Oct-20 04 PM A
CS001661	SP	A3380	Issue P&C Package Design		0	19-Apr-21 08 AM A	23-Apr-21 12 AM A
CS001661	SP	DSSE-480	PE INITIATE CASCADE FORMS (Apenndix A) for Construction		20	17-May-21 08 AM*	14-Jun-21 04 PM
CS001661	SP	DSSE-220	SDS Complete (~= P&C IFC)		25	25-Jun-21 08 AM*	30-Jul-21 04 PM
CS001661	SP	DSSE-990	P&C INITIATE SCADA Data Sheets		23	02-Aug-21 08 AM	01-Sep-21 04 PM
CS001661	SP	DSSE-450	Operating Instructions - Prepare and Issue Draft Distribution OI to Engineering		20	01-Oct-21 08 AM	29-Oct-21 04 PM
CS001661	SP	DSSE-470	Operating Instructions - P&C Review Draft Distribution OI		5	01-Nov-21 08 AM	05-Nov-21 04 PM
CS001661	SP	DSSE-930	Operating Instructions - P&C Review Draft Convex OI		5	01-Nov-21 08 AM	05-Nov-21 04 PM
Relay Settings	SP				43	02-Aug-21 08 AM	30-Sep-21 04 PM
CS001661	SP	DSSE-1330	ES Prepare Relay Settings		23	02-Aug-21 08 AM*	01-Sep-21 04 PM
CS001661	SP	DSSE-440	Peer Review & Issue Relay Settings IFC		20	02-Sep-21 08 AM	30-Sep-21 04 PM
MATERIAL PROCUREMENT	SP				355	12-Jun-20 08 AM A	31-Dec-22 04 PM
MATERIAL FOR P&C	SP				98	06-Oct-21 08 AM	01-Mar-22 04 PM
CS001661	SP	DSSE-510	MATERIAL - P&C - Prepare & Issue DR		5	06-Oct-21 08 AM	13-Oct-21 04 PM
CS001661	SP	DSSE-980	MATERIAL - P&C - Procurement Issue PO		10	14-Oct-21 08 AM	23-Oct-21 04 PM
CS001661	SP	DSSE-1000	MATERIAL - P&C - Material Vendor Delivery Leadtime		29	31-Jan-22 08 AM*	28-Feb-22 04 PM
CS001661	SP	DSSE-1010	MATERIAL - P&C - Material Handler Confirm Material Delivery to Site		1	01-Mar-22 08 AM	01-Mar-22 04 PM
MATERIAL FOR ELECTRICAL	SP				33	02-Aug-21 08 AM	16-Sep-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	DSSE-520	MATERIAL - Electrical - Prepare & Issue DR		5	02-Aug-21 08 AM*	06-Aug-21 04 PM
CS001661	SP	DSSE-590	Electrical (AG) Material Ordered		0		06-Aug-21 04 PM
CS001661	SP	DSSE-1020	MATERIAL - ELectrical - Procurement Issue PO		10	07-Aug-21 08 AM	16-Aug-21 04 PM
CS001661	SP	DSSE-1030	MATERIAL - ELectrical - Material Vendor Delivery Leadtime		30	17-Aug-21 08 AM	15-Sep-21 04 PM
CS001661	SP	DSSE-550	MATERIAL - Electrical - Material Handler Confirm Material Delivery to Site		1	16-Sep-21 08 AM	16-Sep-21 04 PM
MATERIAL FOR CIVIL	SP				29	02-Aug-21 08 AM	11-Sep-21 04 PM
CS001661	SP	DSSE-500	MATERIAL - CIVIL - Prepare & Issue DR		5	02-Aug-21 08 AM	06-Aug-21 04 PM
CS001661	SP	DSSE-600	Civil (BG) Material Ordered		0		06-Aug-21 04 PM
CS001661	SP	DSSE-1040	MATERIAL - CIVIL - Procurement Issue PO		5	07-Aug-21 08 AM	11-Aug-21 04 PM
CS001661	SP	DSSE-1050	MATERIAL - CIVIL - Material Vendor Delivery Leadtime		30	12-Aug-21 08 AM	10-Sep-21 04 PM
CS001661	SP	DSSE-560	MATERIAL - CIVIL - Material Handler Confirm Material Delivery to Site		1	11-Sep-21 08 AM	11-Sep-21 04 PM
MATERIAL FOR TRANSFORMER	SP				177	08-Sep-20 08 AM A	16-Apr-22 04 PM
CS001661	SP	DSSE-1170	N/R (per CK 9/14/20) MATERIAL - Transformer - Prepare & Issue LNTP for Vendor Dwgs. & Schematics		0	08-Sep-20 08 AM A	14-Sep-20 04 PM A
CS001661	SP	1126	N/R (per CK 9/14/20) MATERIAL - Transformer - Prep& Issue DR For Approval Drawing		0	08-Sep-20 08 AM A	14-Sep-20 04 PM A
CS001661	SP	1127	N/R (per CK 9/14/20) MATERIAL - Transformer - Procurement Issue PO For Approval Drawing		0	08-Sep-20 08 AM A	14-Sep-20 04 PM A
CS001661	SP	DSSE-530	MATERIAL - Transformer - Prepare & Issue DR		5	02-Aug-21 08 AM*	06-Aug-21 04 PM
CS001661	SP	DSSE-1180	Transformer Material Ordered		0		06-Aug-21 04 PM
CS001661	SP	DSSE-1060	MATERIAL - Transformer - Procurement Issue PO		10	07-Aug-21 08 AM	16-Aug-21 04 PM
CS001661	SP	DSSE-1070	MATERIAL - Transformer 4X - Material Vendor Delivery Leadtime		242	17-Aug-21 08 AM	15-Apr-22 04 PM
CS001661	SP	DSSE-570	MATERIAL - Transformer - Material Handler Confirm Material Delivery to Site		1	16-Apr-22 08 AM	16-Apr-22 04 PM
MATERIAL FOR SWITCHGEAR	SP				169	12-Jun-20 08 AM A	05-Apr-22 04 PM
CS001661	SP	1128	MATERIAL - Switchgear - Prepare & Issue DR For Approval Drawing (Need Pred to be added for Eng to provide Scope/Spec)		0	12-Jun-20 08 AM A	12-Jun-20 04 PM A
CS001661	SP	1129	MATERIAL - Switchgear - Procurement Issue PO For Approval Drawing		0	18-Jun-20 12 AM A	18-Jun-20 12 AM A
CS001661	SP	DSSE-540	MATERIAL - Switchgear- Prepare & Issue DR		5	02-Aug-21 08 AM*	06-Aug-21 04 PM
CS001661	SP	DSSE-1190	Switchgear Material Ordered		0		06-Aug-21 04 PM
CS001661	SP	DSSE-1080	MATERIAL - Switchgear - Procurement Issue PO		10	07-Aug-21 08 AM	16-Aug-21 04 PM
CS001661	SP	DSSE-1090	MATERIAL - Switchgear - Material Vendor Delivery Leadtime		231	17-Aug-21 08 AM	04-Apr-22 04 PM
CS001661	SP	DSSE-580	MATERIAL - Switchgear - Material Handler Confirm Material Delivery to Site		1	05-Apr-22 08 AM	05-Apr-22 04 PM
MATERIAL FOR CIRCUIT SWITCHER	SP				147	12-Oct-20 08 AM A	05-Mar-22 04 PM
CS001661	SP	1130	N/R (per CK 12-10-20) MATERIAL - Circuit Switcher - Prepare & Issue DR For App Drawing		0	13-Oct-20 08 AM A	19-Oct-20 04 PM A
CS001661	SP	1131	N/R (per CK 12-10-20) MATERIAL - Circuit Switcher - Procurement Issue PO For Approval Drawing		0	12-Oct-20 08 AM A	21-Oct-20 04 PM A
CS001661	SP	1115	MATERIAL - Circuit Switcher- Prepare & Issue DR		5	02-Aug-21 08 AM*	06-Aug-21 04 PM
CS001661	SP	1119	Circuit Switcher Material Ordered		0		06-Aug-21 04 PM
CS001661	SP	1117	MATERIAL - Circuit Switcher - Procurement Issue PO		10	07-Aug-21 08 AM	16-Aug-21 04 PM
CS001661	SP	1118	MATERIAL - Circuit Switcher - Material Vendor Delivery Leadtime		200	17-Aug-21 08 AM	04-Mar-22 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	1116	MATERIAL - Circuit Switcher - Material Handler Confirm Material Delivery to Site		1	05-Mar-22 08 AM	05-Mar-22 04 PM
OTHER MATERIALS(CIVIL, ELECTRICAL, P&C)	SP				355	02-Aug-21 08 AM	31-Dec-22 04 PM
CS001661	SP	1141	MATERIAL - Other Materials- Prepare & Issue DR		10	02-Aug-21 08 AM	13-Aug-21 04 PM
CS001661	SP	1169	Other Materials Ordered		0		13-Aug-21 04 PM
CS001661	SP	1149	MATERIAL - Other Materials - Procurement Issue PO		5	16-Aug-21 08 AM	20-Aug-21 04 PM
CS001661	SP	1159	MATERIAL - Other Materials - Material Vendor Delivery Leadtime		197	21-Aug-21 08 AM	05-Mar-22 04 PM
CS001661	SP	1139	MATERIAL - Other Materials - Material Handler Confirm Material Delivery to Site		1	31-Dec-22 08 AM	31-Dec-22 04 PM*
CONSTRUCTION	SP				365	01-Feb-21 08 AM A	17-Jan-23 04 PM
CONSTRUCTION SERVICES SELECTION	SP				5	01-Feb-21 08 AM A	06-Aug-21 04 PM
CONSTRUCTION SERVICES - BID PROCESS Civil	SP				5	01-Feb-21 08 AM A	06-Aug-21 04 PM
CS001661	SP	A3430	CONST.SERVICES - BID - Eversource provide Spec / RFP - Civil		0	01-Feb-21 08 AM A	15-Mar-21 04 PM A
CS001661	SP	A3440	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal - Civil		0	15-Mar-21 08 AM A	26-Apr-21 04 PM A
CS001661	SP	A3450	CONST.SERVICES - BID - Eversource reviews contractor proposals - Civil		0	27-Apr-21 08 AM A	07-May-21 04 PM A
CS001661	SP	A3460	CONST.SERVICES - BID - Contract is Awarded - PO Issued - Civil		5	02-Aug-21 08 AM	06-Aug-21 04 PM
CONSTRUCTION SERVICES - BID PROCESS Electric	SP				5	01-Feb-21 08 AM A	06-Aug-21 04 PM
CS001661	SP	1111	CONST.SERVICES - BID - Eversource provide Spec / RFP - Electrical		0	01-Feb-21 08 AM A	15-Mar-21 04 PM A
CS001661	SP	1112	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal - Electrical		0	15-Mar-21 08 AM A	26-Apr-21 04 PM A
CS001661	SP	1113	CONST.SERVICES - BID - Eversource reviews contractor proposals - Electrical		0	27-Apr-21 08 AM A	07-May-21 04 PM A
CS001661	SP	1114	CONST.SERVICES - BID - Contract is Awarded - PO Issued - Electrical		5	02-Aug-21 08 AM	06-Aug-21 04 PM
CONSTRUCTION - CIVIL	SP				5	04-Oct-21 08 AM	08-Oct-21 04 PM
CS001661	SP	A1120	Construction - Civil		5	04-Oct-21 08 AM	08-Oct-21 04 PM
CONSTRUCTION - ELECTRICAL	SP				309	04-Oct-21 08 AM	28-Dec-22 04 PM
CS001661	SP	A1130	Construction - Electrical Non Outage		226	04-Oct-21 08 AM	26-Aug-22 04 PM
CS001661	SP	A3550	Construction - Electrical - Phase 1		78	06-Sep-22 08 AM	28-Dec-22 04 PM
CONSTRUCTION - P&C	SP				9	06-Sep-22 08 AM	16-Sep-22 04 PM
CS001661	SP	A1140	Construction - P&C Implement Relay Settings		9	06-Sep-22 08 AM	16-Sep-22 04 PM
CONSTRUCTION - COMMUNICATIONS	SP				9	06-Sep-22 08 AM	16-Sep-22 04 PM
CS001661	SP	A1150	Construction - Field Communications		9	06-Sep-22 08 AM	16-Sep-22 04 PM
CONSTRUCTION - CONST.REP TASKS	SP				187	19-Apr-22 08 AM	17-Jan-23 04 PM
CS001661	SP	A1280	Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER INSTALLATION (13 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
CS001661	SP	A1290	Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER TEST ENERGIZATION (18 weeks before outage)		5	19-Apr-22 08 AM	25-Apr-22 04 PM
CS001661	SP	A1250	Construction Rep SUBMIT OUTAGE REQUESTS for NON-transformer equipment (4 weeks before outage)		5	19-Apr-22 08 AM	25-Apr-22 04 PM
CS001661	SP	A1260	Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)		10	03-Jan-23 08 AM	17-Jan-23 04 PM
CONSTRUCTION RESOURCE TRACKING	SP				311	04-Oct-21 08 AM	30-Dec-22 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	A1070	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT		1	04-Oct-21 08 AM	04-Oct-21 04 PM
CS001661	SP	A1080	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN		1	15-Sep-22 08 AM	15-Sep-22 04 PM
CS001661	SP	ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP		311	04-Oct-21 08 AM	30-Dec-22 04 PM
CS001661	SP	CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN		311	04-Oct-21 08 AM	30-Dec-22 04 PM
CONSTRUCTION OUTAGES	SP				389	04-Oct-21 08 AM	30-Dec-22 04 PM
CS001661	SP	CSM	Construction Start Milestone - Civil		0	04-Oct-21 08 AM	
CS001661	SP	TOA-Const	OUTAGE / General Construction Work		298	04-Oct-21 08 AM	15-Sep-22 04 PM
CS001661	SP	CFM	Construction Finish Milestone - Phase 1		0		30-Dec-22 04 PM
CS001661	SP	DOE	DATE OF ENERGIZATION		0		30-Dec-22 04 PM*
TEST OUTAGES	SP				5	16-Sep-22 08 AM	22-Sep-22 04 PM
CS001661	SP	TOA-Test	OUTAGE / Test Transformer		5	16-Sep-22 08 AM	22-Sep-22 04 PM
CONSTRUCTION CLOSEOUT	SP				2	03-Jan-23 08 AM	04-Jan-23 04 PM
CS001661	SP	DSSE-900	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)		2	03-Jan-23 08 AM	04-Jan-23 04 PM
TEST AND COMMISSION	SP				110	01-Mar-21 08 AM A	10-Jan-22 04 PM
TEST - SERVICES STAFFING DECISION	SP				35	01-Mar-21 08 AM A	20-Sep-21 04 PM
TEST SERVICES - CONTRACTOR OF CHOICE	SP				35	02-Aug-21 08 AM	20-Sep-21 04 PM
CS001661	SP	A3470	TEST SERVICES - COC - Eversource Provides Spec / RFQ to COC		5	02-Aug-21 08 AM	06-Aug-21 04 PM
CS001661	SP	A3480	TEST SERVICES - COC - COC Evaluates Spec and Provides Quote		10	09-Aug-21 08 AM	20-Aug-21 04 PM
CS001661	SP	A3490	TEST SERVICES - COC - Eversource Reviews Quote from COC		10	23-Aug-21 08 AM	03-Sep-21 04 PM
CS001661	SP	A3500	TEST SERVICES - COC - Eversource Awards Contract - PO Issued		10	07-Sep-21 08 AM	20-Sep-21 04 PM
TEST SERVICES - BID PROCESS	SP				5	01-Mar-21 08 AM A	06-Aug-21 04 PM
CS001661	SP	A3510	TEST SERVICES - BID - Eversource provide Spec / RFP		0	01-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001661	SP	A3520	TEST SERVICES - BID - Contractors Evaluate RFP and Provide Proposal		0	01-Apr-21 08 AM A	21-Apr-21 04 PM A
CS001661	SP	A3530	TEST SERVICES - BID - Eversource reviews contractor proposals		0	22-Apr-21 08 AM A	05-May-21 04 PM A
CS001661	SP	A3540	TEST SERVICES - BID - Eversource awards contract - PO Issued		5	02-Aug-21 08 AM	06-Aug-21 04 PM
LCE PLANNING	SP				79	02-Aug-21 08 AM	23-Nov-21 04 PM
CS001661	SP	LCE100	PM to Request Lead Commissioning Engineer GO/NO-GO		2	02-Aug-21 08 AM*	03-Aug-21 04 PM
CS001661	SP	LCE200	Assign Lead Commissioning Engineer		2	04-Aug-21 08 AM*	05-Aug-21 04 PM
CS001661	SP	LCE400	Develop Test and Commissioning Plan		21	23-Sep-21 08 AM	22-Oct-21 04 PM
CS001661	SP	LCE500	LCE Review and Approve Vendor's Test and Commissioning Plan		21	25-Oct-21 08 AM	23-Nov-21 04 PM
TEST ACTIVITIES	SP				75	21-Sep-21 08 AM	10-Jan-22 04 PM
CS001661	SP	LCE320	Mobilize Testing Vendor Prior to Construction		2	21-Sep-21 08 AM*	22-Sep-21 04 PM
CS001661	SP	LCE310	Mobilize LCE Prior to Construction		2	21-Sep-21 08 AM	22-Sep-21 04 PM
CS001661	SP	LCE610	LCE Oversee Execution of Test and Commissioning Plan		30	24-Nov-21 08 AM	07-Jan-22 04 PM
CS001661	SP	LCE620	Execute Test and Commissioning Plan		30	24-Nov-21 08 AM	07-Jan-22 04 PM
CS001661	SP	LCE700	LCE Ensure Test Group Prepare Electrical Field Mark Ups		1	10-Jan-22 08 AM	10-Jan-22 04 PM
PROJECT CLOSE OUT	SP				81	26-Feb-21 08 AM A	27-Apr-23 04 PM
CS001661	SP	DSSE-1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List		5	03-Jan-23 08 AM	09-Jan-23 04 PM
Civil As-Builts	SP				22	26-Feb-21 08 AM A	09-Feb-23 04 PM
CS001661	SP	DSSE-1120	N/R(per CK 2/26/21) Complete TD-176 CIVIL Design Prep & Issue As-Built Dwgs		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001661	SP	DSSE-860	Eversource Engineering Verifies Civil Mark Up As-Built Drawing Package	[redacted]	10	10-Jan-23 08 AM	24-Jan-23 04 PM
CS001661	SP	DSSE-970	Eversource Engineering Updates Civil As-Built Drawing Package		3	25-Jan-23 08 AM	27-Jan-23 04 PM
CS001661	SP	DSSE-870	ES Create Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field		8	30-Jan-23 08 AM	08-Feb-23 04 PM
CS001661	SP	DSSE-880	PM to Document Civil As-Built Drawings Complete		1	09-Feb-23 08 AM	09-Feb-23 04 PM
Electrical As-Builts	SP				25	26-Feb-21 08 AM A	14-Feb-23 04 PM
CS001661	SP	DSSE-1110	N/R(per CK 2/26/21) Complete TD-176 ELECTRICAL Design Prep & Issue As-Built Dwgs		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
CS001661	SP	DSSE-1130	Eversource Engineering Obtains Hard Copy As-Builts from the Field		3	10-Jan-23 08 AM	12-Jan-23 04 PM
CS001661	SP	DSSE-820	Eversource Engineering Verifies Quality of Electrical Mark Up As-Built Drawing Package		10	13-Jan-23 08 AM	27-Jan-23 04 PM
CS001661	SP	DSSE-940	Eversource Engineering Updates Electrical As-Built Drawing Package		3	30-Jan-23 08 AM	01-Feb-23 04 PM
CS001661	SP	DSSE-830	ES Create Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field		8	02-Feb-23 08 AM	13-Feb-23 04 PM
CS001661	SP	DSSE-840	PM to Document Electrical As-Built Drawings Complete		1	14-Feb-23 08 AM	14-Feb-23 04 PM
P&C As-Builts	SP				5	20-Jan-23 08 AM	26-Jan-23 04 PM
CS001661	SP	DSSE-950	P&C Submits SDS As-Builts		5	20-Jan-23 08 AM	26-Jan-23 04 PM
CS001661	SP	DSSE-960	P&C Submits Relay Setting As-Builts		5	20-Jan-23 08 AM	26-Jan-23 04 PM
Test Closout	SP				12	03-Jan-23 08 AM	19-Jan-23 04 PM
CS001661	SP	LCE800	LCE Ensures Marked up Prints Ready for Pick-up		2	03-Jan-23 08 AM	04-Jan-23 04 PM
CS001661	SP	LCE900	LCE Review Test Data and Issue Commissioning Report		10	05-Jan-23 08 AM	19-Jan-23 04 PM
SITE RESTORATION CLOSEOUT	SP				81	03-Jan-23 08 AM	27-Apr-23 04 PM
CS001661	SP	A1110	Restore / Remediate Site		81	03-Jan-23 08 AM	27-Apr-23 04 PM
MATERIAL, EQUIPMENT, COST, AND ASSET MANA	SP				40	03-Jan-23 08 AM	01-Mar-23 04 PM
CS001661	SP	A1020	Cost Analyst Prepares FINAL Units of Property		30	03-Jan-23 08 AM	14-Feb-23 04 PM
CS001661	SP	A1030	Asset Management Complete Asset Update(s) in CASCADE		30	18-Jan-23 08 AM	01-Mar-23 04 PM
PROJECT MANAGEMENT CLOSEOUT	SP				81	03-Jan-23 08 AM	27-Apr-23 04 PM
CS001661	SP	A1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.		30	03-Jan-23 08 AM	14-Feb-23 04 PM
CS001661	SP	A1270	Prepare TD-707 Document		30	03-Jan-23 08 AM	14-Feb-23 04 PM
CS001661	SP	FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)		0		27-Apr-23 04 PM
OVERHEAD / INDIRECTS	SP				11	20-Sep-21 08 AM	04-Oct-21 04 PM
PROJECT MANAGEMENT	SP				11	20-Sep-21 08 AM	04-Oct-21 04 PM
CS001661	SP	A1170	Prepare CAN (Construction Authorization Notice) AT0		11	20-Sep-21 08 AM	04-Oct-21 04 PM
CS001661	SP	1110	Prepare CAN (Construction Authorization Notice) BT0		11	20-Sep-21 08 AM	04-Oct-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
Mansfield 12J - Replace 12J-3X transformer	SP				610	02-Dec-19 12 AM A	19-Oct-23 04 PM
INITIALIZATION AND SCOPE DEVELOPEMEI	SP				531	02-Dec-19 12 AM A	27-Jun-23 04 PM
CS001662	SP	START	SCHEDULE START MILESTONE	[redacted]	0	02-Dec-19 12 AM A	
Initial Funding	SP				0	06-Dec-19 12 AM A	04-May-20 04 PM A
CS001662	SP	PI1200	Project Initiator Develop Intitial Funding Request		0	06-Dec-19 12 AM A	06-Dec-19 12 AM A
CS001662	SP	PI1300	Initial Funding Request Approved @ EPAC		0	06-Dec-19 12 AM A	06-Dec-19 12 AM A
CS001662	SP	PI1000	Submit Initial Funding Request		0		06-Dec-19 12 AM A
CS001662	SP	PI1610	Power Plan Approval Create WO#		0	06-Dec-19 12 AM A	06-Dec-19 04 PM A
CS001662	SP	PI1400	Assign Project Manager Request Resources for Project Team		0	06-Dec-19 12 AM A	06-Dec-19 04 PM A
CS001662	SP	PI1500	Assign Scheduler		0	04-May-20 08 AM A	04-May-20 08 AM A
CS001662	SP	PI1600	Assign Cost Analyst		0	04-May-20 08 AM A	04-May-20 04 PM A
SDC Approval	SP				0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1100	ES Develop Electrical Substation Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1700	Review Conceptual Siting, Real Estate,SCS, & Permitting (If Required)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	SSF1000	Develop Soultions Selection Form (SSF)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1400	ES Engineering Develop P&C Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CGE1000	Develop Conceptual Grade Estimate (-25%+50% SDC)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1000	ES Engineering Develop Civil Substation Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1500	ES Engineering Develop Communications Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	SDC1000	Solution Design Committee(SDC) Approval		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1710	Conduct Conceptual Constructability Walk Down		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
CS001662	SP	CE1600	Conduct Project Team Kickoff Meeting Verify SDC Need		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
Project Initiation	SP				57	05-Mar-20 12 AM A	05-Aug-21 04 PM
EPAC Partial Funding	SP				0	05-Mar-20 12 AM A	05-Mar-20 04 PM A
CS001662	SP	PF1000	EPAC Partial Funding Approval		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	ATCGE1010	Develop At Least Conceptual Grade Estimate (-25%+50% Partial Funding)		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	PE1600	Review Preliminary Siting & Permitting (If Required)		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	PE1700	Conduct Preliminary Constructability Walk Down		0	05-Mar-20 12 AM A	05-Mar-20 04 PM A
CS001662	SP	PAFP1000	Submit Partial Funding PAF for Internal Review		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	PAFP1100	Incorporate Internal Review Comments & Submit Partial Funding PAF to EPAC for Review		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	PAFP1200	Incorporate EPAC Partial Funding PAF Review Comments		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	PE1710	Create Engineering Scope Document		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
CS001662	SP	PE1720	Engineering Scope Document Complete		0		05-Mar-20 04 PM A
EPAC Full Funding	SP				57	30-Nov-20 08 AM A	05-Aug-21 04 PM
CS001662	SP	PAFF2110	Prepare Draft Subsidiary Board Presentation		0	30-Nov-20 08 AM A	30-Nov-20 04 PM A
CS001662	SP	PAFF2120	Perform Risk Assessment (Enterprise Risk Management – ERM)		0	30-Nov-20 08 AM A	03-Feb-21 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	PAFF2130	Finalize Subsidiary Board Presentation	[redacted]	0	04-Feb-21 08 AM A	04-Feb-21 08 AM A
CS001662	SP	DE1900	Conduct FINAL Detail Constructability Walk Down		0	16-Feb-21 08 AM A	16-Feb-21 04 PM A
CS001662	SP	DE2000	Project Constructability Review Complete		0	17-Feb-21 08 AM A	22-Feb-21 04 PM A
CS001662	SP	DE1700	Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)		0	01-Mar-21 08 AM A	04-Mar-21 04 PM A
CS001662	SP	DE1800	Review Detail Siting & Permitting (If Required)		0	01-Apr-21 08 AM A	01-Apr-21 04 PM A
CS001662	SP	DE1600	Create Planning Grade Estimate (+/-25% Full Funding)		0	23-Feb-21 08 AM A	05-Apr-21 04 PM A
CS001662	SP	PAFF2000	Submit Full Funding PAF for Internal Review		0	06-Apr-21 08 AM A	19-Apr-21 04 PM A
CS001662	SP	PAFF2100	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC for Review		3	20-Apr-21 08 AM A	19-May-21 04 PM
CS001662	SP	PAFF2200	Incorporate EPAC Full Funding PAF Review Comments		8	20-May-21 08 AM	01-Jun-21 04 PM
CS001662	SP	FF1000	EPAC Full Funding Approval		1	02-Jun-21 08 AM*	02-Jun-21 04 PM
CS001662	SP	FF1010	Subsidiary Board Approval		45	03-Jun-21 08 AM	05-Aug-21 04 PM
T-Minus Milestones	SP				772	05-Mar-20 12 AM A	27-Jun-23 04 PM
T-Minus Milestones "A" Group	SP				772	05-Mar-20 12 AM A	27-Jun-23 04 PM
CS001662	SP	AT3001	Eng. Project Scoping Document Issued (Scope Lockdown)		0		05-Mar-20 12 AM A
CS001662	SP	AT0804	A-T-08.04 ALL PERMITS RECEIVED		0		12-Mar-21 04 PM A
CS001662	SP	AT2605	30% Design / Engineering Completed		0		19-Apr-21 08 AM A
CS001662	SP	AT0805C	IFC - Civil (BG) w/BOM		0		22-Apr-21 08 AM A
CS001662	SP	AT0805E	IFC - Electrical (AG) w/Final BOM		0		17-May-21 08 AM
CS001662	SP	AT1811	70% Design/Engineering Completed		0		17-May-21 08 AM
CS001662	SP	AT2404	A-T-24.04 DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINE		0		07-Jul-21 04 PM
CS001662	SP	AT0813	A-T-08.13 SITING PETITION AND APPLICATION FILED		0		24-Sep-21 04 PM*
CS001662	SP	AT0805PC	P&C IFC - P&C w/BOM		0		29-Sep-21 04 PM
CS001662	SP	AT0805E.1	Electrical IFC		0		29-Sep-21 04 PM
CS001662	SP	AT00	T-00 - START OF CONSTRUCTION - WO#		0	04-Oct-21 08 AM*	
CS001662	SP	AT00.1	A-T-00 - Start Manfield 12J - Replace 12J-3X Transformer and Remove 27.6kV Equipment CIVIL (CS001662)		0	04-Oct-21 08 AM*	
CS001662	SP	AT0203	A-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE		0		04-Oct-21 04 PM*
CS001662	SP	AT1202	P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED		0		08-Oct-21 04 PM
CS001662	SP	AT1805	T-18 - NX9 Preliminary Ratings to LCC for New Equipment (transformers are considered 'NEW EQUIPMENT')		0		13-Oct-21 04 PM*
CS001662	SP	AT0301	T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX		0		01-Dec-21 04 PM*
CS001662	SP	AT1301	COMMISSIONING PLAN COMPLETE		0		16-Dec-21 04 PM
CS001662	SP	AT1201	SCADA Date (Tab) Sheets/Signal List Sent to LCC		0		29-Dec-21 04 PM
CS001662	SP	AT0409	A-T-04.09 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Non-transformer equipment)		0		25-Apr-22 04 PM*
CS001662	SP	AT0401	A-T-04.01 ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEW		0		24-Jan-23 04 PM*
CS001662	SP	AT0404	ALL FINAL RELAY PROTECTIVE SETTING ISSUED		0		27-Jun-23 04 PM
T-Minus Milestones "B" Group (Non-Outage)	SP				0	04-Oct-21 08 AM	04-Oct-21 08 AM
CS001662	SP	BT00	T-00 - START OF CONSTRUCTION - WO# [redacted]		0	04-Oct-21 08 AM*	
T-Minus Milestones "C" Group for Transformer Test- Ph	SP				336	04-Oct-21 04 PM	06-Sep-22 08 AM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	CT203	C-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start	[redacted]	0		04-Oct-21 04 PM*
CS001662	SP	CT1801	CT-18 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer TEST ENERGIZATION)		0		25-Apr-22 04 PM*
CS001662	SP	CT00	C-T-00 - START OF CONSTRUCTION - CS00166 Phase 1		0	06-Sep-22 08 AM*	
T-Minus Milestones "D" Group for Transformer Test- Ph	SP				545	04-Oct-21 04 PM	03-Apr-23 08 AM
CS001662	SP	DT0203	D-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start		0		04-Oct-21 04 PM*
CS001662	SP	DT1801	DT-18 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer TEST ENERGIZATION)		0		25-Apr-22 04 PM*
CS001662	SP	DT00	D-T-00 - START OF CONSTRUCTION - CS00166 Phase 2		0	03-Apr-23 08 AM*	
ENVIRONMENTAL APPROVALS AND PERMI	SP				92	05-Mar-20 08 AM A	24-Sep-21 04 PM
PREPARE COMPLIANCE MATRICES - REGULATORY	SP				92	05-Mar-20 08 AM A	24-Sep-21 04 PM
CS001662	SP	1100	Incorporate Comments to Property Abutter Petition Letter		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001662	SP	1101	Receive Scope, Arrangement Drwg, Equip List (to support CSC Petition)		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001662	SP	1103	Obtain Cultural Resources Approval		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
CS001662	SP	1102	Outreach to Property Owners		0	30-Nov-20 08 AM A	30-Nov-20 04 PM A
CS001662	SP	1104	Prepare Preliminary Draft CSC Petition		0	14-Dec-20 08 AM A	16-Apr-21 04 PM A
CS001662	SP	1106	Mandatory Commenter Review of Preliminary Draft CSC Petition		2	19-Apr-21 08 AM A	18-May-21 04 PM
CS001662	SP	1105	Prepare Property Abutter Petition Letter		6	17-May-21 08 AM	24-May-21 04 PM
CS001662	SP	1107	Prepare Final CSC Petition / Submit Petition to CSC for Review		4	19-May-21 08 AM	24-May-21 04 PM
CS001662	SP	A1230	Prepared Compliance Matrices - Regulatory		87	05-Mar-20 08 AM A	17-Sep-21 04 PM
CS001662	SP	A1220	Prepared Compliance Matrices - Non-Reqgulatory (Commitments)		87	05-Mar-20 08 AM A	17-Sep-21 04 PM
CS001662	SP	1109	CSC Petition Approval (Tie to T-8)		1	24-Sep-21 08 AM	24-Sep-21 04 PM
CS001662	SP	1108	CSC Petition Review		119	29-May-21 08 AM*	24-Sep-21 04 PM
APPROVALS - FEDERAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001662	SP	A1180	Determine Requirment for and Prepare Permitting Docments - FEDERAL (CT) TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - STATE	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001662	SP	A1190	Determine Requirment for and Prepare Permitting Docments - STATE TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - REGIONAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001662	SP	A1200	Determine Requirment for and Prepare Permitting Docments - REGIONAL (CT) TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - LOCAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001662	SP	A1210	Determine Requirment for and Prepare Permitting Docments - LOCAL TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
ENGINEERING & DESIGN	SP				610	07-Feb-20 08 AM A	19-Oct-23 04 PM
Engineering Services Staffing	SP				0	07-Feb-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	A3370	Decision Required Regarding Engineering Staffing (ES, COC, BID)		0	07-Feb-20 08 AM A	07-Feb-20 04 PM A
Bid Process	SP				0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1280	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Bid Review / Score Bids/ Negotiations		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	TMP1300	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Notice to Proceed	[redacted]	0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1190	(N/R per SP 7/31/20) Contractor Selection (Bid) - Engineering- Prepare / Issue RFP for Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1210	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue RFP Out to Bid to Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1230	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Hold Pre-Bid Meeting for Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1310	(N/R per SP 7/31/20) Contractor Selection (Bid) - Engineering - Bid Period		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1320	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Award Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1330	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue DR		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1340	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue PO		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
EOC - Engineer of Choice Process	SP				0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1180	(N/R per SP 7/31/20)Engineering of Choice (EOC) - EOC Committee Reviews at Monthly Meeting & Approves (?)		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1140	(N/R per SP 7/31/20)Engineering of Choice (EOC) - Provide RFP to Single Vendor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1200	(N/R per SP 7/31/20)Engineering of Choice (EOC) - DR Prepared by Project Engineer & Project Controls		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1220	(N/R per SP 7/31/20)Engineering of Choice (EOC) - PO Issued for Vendor -30% Design Effort		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
CS001662	SP	TMP1150	(N/R per SP 7/31/20)Engineering of Choice (EOC) - Vendor Responds with Proposal		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
Civil Engineering	SP				0	10-Aug-20 08 AM A	22-Apr-21 12 AM A
Civil Engineering	SP				0	10-Aug-20 08 AM A	22-Apr-21 12 AM A
Civil Engineering 100%	SP				0	22-Feb-21 08 AM A	08-Mar-21 04 PM A
CS001662	SP	DSSE-1340	Vendor Incorporates Detail Comments and Issues 100% Civil Package to ES		0	22-Feb-21 08 AM A	01-Mar-21 04 PM A
CS001662	SP	DSSE-1350	ES Reviews and Comments 100% Civil Package		0	02-Mar-21 08 AM A	08-Mar-21 04 PM A
Civil Engineering IFC	SP				0	04-Mar-21 08 AM A	22-Apr-21 12 AM A
CS001662	SP	DSSE-1290	Vendor Incorporates 100% Design Comments Submits IFC Civil Package to ES w/BOM		0	04-Mar-21 08 AM A	16-Apr-21 12 AM A
CS001662	SP	DSSE-1320	ES Reviews IFC Civil Package		0	19-Apr-21 12 AM A	21-Apr-21 12 AM A
CS001662	SP	DSSE-1300	ES Issues Civil Package IFC w/BOM		0	22-Apr-21 12 AM A	22-Apr-21 12 AM A
Civil Engineering Detailed	SP				0	08-Feb-21 08 AM A	19-Feb-21 04 PM A
CS001662	SP	DSSE-1210	Vendor Incorporates Preliminary Comments and Issues Detailed Civil Package to ES		0	08-Feb-21 08 AM A	12-Feb-21 04 PM A
CS001662	SP	DSSE-1240	ES Reviews and Comments Detailed Civil Package		0	15-Feb-21 08 AM A	19-Feb-21 04 PM A
Civil Engineering Preliminary	SP				0	10-Aug-20 08 AM A	03-Feb-21 04 PM A
CS001662	SP	DSSE-1270	Design Package to Civil		0	10-Aug-20 08 AM A	01-Oct-20 04 PM A
CS001662	SP	DSSE-1250	Vendor Submits Preliminary Civil Package to ES		0	12-Jan-21 08 AM A	01-Feb-21 04 PM A
CS001662	SP	DSSE-1280	ES Reviews and Comments Preliminary Civil Package		0	01-Feb-21 08 AM A	03-Feb-21 04 PM A
Electrical Engineering	SP				5	27-Jul-20 08 AM A	08-Oct-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	DSSE-260	Submit Plan/Profile to Siting & Permitting for Filing w/Regulator Authority (Should this be tied to the IFC)		0	27-Oct-20 08 AM A	12-Feb-21 04 PM A
CS001662	SP	DSSE-200	Detail (70%) Electrical Design Package Design		0	12-Feb-21 08 AM A	05-Mar-21 04 PM A
CS001662	SP	DSSE-205	Detail (70%) Electrical Design Package Drafting		0	08-Mar-21 08 AM A	22-Mar-21 04 PM A
CS001662	SP	DSSE-210	Final (100%) Electrical Design Package IFR		0	23-Mar-21 08 AM A	26-Mar-21 04 PM A
CS001662	SP	DSSE-230	Electrical Engineering - BOM Complete		0	29-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001662	SP	DSSE-240	Electrical Engineering - Electrical Package IFC (Physical & Electrical)		0	01-Apr-21 08 AM A	29-Apr-21 04 PM A
CS001662	SP	DSSE-460	Operating Instructions - SSED Review Draft Distribution OI		5	04-Oct-21 08 AM	08-Oct-21 04 PM
CS001662	SP	DSSE-920	Operating Instructions - SSED Review Draft Convex OI		5	04-Oct-21 08 AM	08-Oct-21 04 PM
Transformer- Vendor Drawings with Schematics	SP				0	27-Jul-20 08 AM A	01-Mar-21 04 PM A
CS001662	SP	DSSE-1150	ES Reviews & Comments Transformer Drawings & Schematics 3X		0	27-Oct-20 08 AM A	08-Jan-21 04 PM A
CS001662	SP	DSSE-1140	Vendor Submits Transformer Drawings & Schematics 3X (?????? Logic is incorrect????)		0	27-Jul-20 08 AM A	01-Mar-21 04 PM A
CS001662	SP	DSSE-1160	Vendor Submits Firm Transformer Drawings & Schematics 3X		0	20-Oct-20 08 AM A	01-Mar-21 04 PM A
Circuit Switcher - Vendor Drawings with Schematics	SP				0	20-Oct-20 08 AM A	20-Oct-20 04 PM A
CS001662	SP	1123	Vendor Submits Circuit Switcher Drawings & Schematics Circuit Switcher		0	20-Oct-20 08 AM A	20-Oct-20 04 PM A
CS001662	SP	1124	ES Reviews & Comments Circuit Switcher Drawings & Schematics Circuit Switcher		0	20-Oct-20 08 AM A	20-Oct-20 04 PM A
CS001662	SP	1125	Vendor Submits Firm Circuit Switcher Drawings & Schematics Circuit Switcher		0	20-Oct-20 08 AM A	20-Oct-20 04 PM A
Distribution Thermal Ratings NX-9 (Transformer Repl	SP				533	05-Oct-20 08 AM A	19-Oct-23 04 PM
Thermal Ratings - Substation - Preliminary Thermal Da	SP				27	05-Oct-20 08 AM A	13-Oct-21 04 PM
CS001662	SP	NX9A-NC159	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature - GO!		0	05-Oct-20 08 AM A	05-Oct-20 04 PM A
CS001662	SP	NX9A-NC69	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX		0	02-Nov-20 08 AM A	16-Nov-20 04 PM A
CS001662	SP	NX9A-NC169	LTRC Submits 1-Line Nomenclature to TRC		0	13-Nov-20 08 AM A	16-Nov-20 04 PM A
CS001662	SP	NX9A-NC59	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings - GO!		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
CS001662	SP	NX9A-NC99	LTRC Requests P&C Checklist		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
CS001662	SP	NX9A-NC79	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)		5	03-Sep-21 08 AM	10-Sep-21 04 PM
CS001662	SP	NX9A-NC139	LTRC Reviews and Sends Thermal Rating Data for TRC Review		5	13-Sep-21 08 AM*	17-Sep-21 04 PM
CS001662	SP	NX9A-NC129	TRC Reviews and Approves Thermal Rating Data		5	20-Sep-21 08 AM	24-Sep-21 04 PM
CS001662	SP	NX9A-NC119	LTRC Sends Thermal Rating Data for Approval & Submit to NURS		5	27-Sep-21 08 AM*	01-Oct-21 04 PM
CS001662	SP	NX9A-NC109	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE		1	04-Oct-21 08 AM	04-Oct-21 04 PM
CS001662	SP	NX9A-NC89	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Ratin		5	05-Oct-21 08 AM	12-Oct-21 04 PM
CS001662	SP	NX9A-NC149	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006		1	13-Oct-21 08 AM	13-Oct-21 04 PM
Thermal Ratings - Substation - Verify Thermal Data	SP				42	30-Sep-21 08 AM	01-Dec-21 04 PM
CS001662	SP	NX9A-NC31	PE to Verify Thermal Data Review PE Chectlist (M7-EN-3006.2)		5	30-Sep-21 08 AM	06-Oct-21 04 PM
CS001662	SP	NX9A-NC33	LTRC Reviews and Makes "GO / NO-GO" Decision		5	07-Oct-21 08 AM	14-Oct-21 04 PM
CS001662	SP	NX9A-NC35	LTRC Requests P&C Checklist		5	15-Oct-21 08 AM	21-Oct-21 04 PM
CS001662	SP	NX9A-NC37	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)		5	22-Oct-21 08 AM	28-Oct-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	NX9A-NC39	LTRC Reviews and Sends Thermal Rating Data for TRC Review	[redacted]	5	29-Oct-21 08 AM	04-Nov-21 04 PM
CS001662	SP	NX9A-NC41	TRC Reviews and Approves Thermal Rating Data		5	05-Nov-21 08 AM	12-Nov-21 04 PM
CS001662	SP	NX9A-NC43	LTRC Sends Thermal Rating Data for Approval & Submit to NURS		5	15-Nov-21 08 AM	19-Nov-21 04 PM
CS001662	SP	NX9A-NC45	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE		1	22-Nov-21 08 AM	22-Nov-21 04 PM
CS001662	SP	NX9A-NC47	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Ratin		5	23-Nov-21 08 AM	30-Nov-21 04 PM
CS001662	SP	NX9A-NC49	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006		1	01-Dec-21 08 AM	01-Dec-21 04 PM
Thermal Ratings - Substation - NX-9 Pre NX9-DOE	SP				1	18-Aug-23 08 AM	18-Aug-23 04 PM
CS001662	SP	NX9500	Scheduler - Send Email for 48Hrs Notification before DOE.		1	18-Aug-23 08 AM	18-Aug-23 04 PM
Thermal Ratings - Substation - NX-9 Post NX9-DOE/ISD	SP				8	10-Oct-23 08 AM	19-Oct-23 04 PM
CS001662	SP	NX9FINAL50	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or CFM/ISD)		3	10-Oct-23 08 AM	12-Oct-23 04 PM
CS001662	SP	NX9FINAL60	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS		5	13-Oct-23 08 AM	19-Oct-23 04 PM
Thermal Ratings - Non NX-9 Thermal Ratings	SP				20	01-Mar-22 08 AM	28-Mar-22 04 PM
CS001662	SP	NX9A-EM44	P&C Develops and Provides LTRC with P&C Checklist & Thermal Ratings D		5	01-Mar-22 08 AM*	07-Mar-22 04 PM
CS001662	SP	NX9A-EM54	LTRC Prepares and Sends Thermal Rating Data for TRC Review		5	08-Mar-22 08 AM	14-Mar-22 04 PM
CS001662	SP	NX9A-EM64	TRC Reviews and Approves Thermal Rating Data		5	15-Mar-22 08 AM	21-Mar-22 04 PM
CS001662	SP	NX9A-EM74	LTRC Files Capability Sheets		5	22-Mar-22 08 AM	28-Mar-22 04 PM
P&C Engineering	SP				156	22-Jul-20 08 AM A	29-Dec-21 04 PM
CS001662	SP	DSSE-400	Prepare & Issue P&C Design Package to Drafting		0	22-Jul-20 08 AM A	23-Oct-20 04 PM A
CS001662	SP	DSSE-410	Drafting Prepare & Issue Back to P&C		0	15-Feb-21 08 AM A	19-Feb-21 04 PM A
CS001662	SP	A3380	Issue P&C Package Design		0	23-Feb-21 08 AM A	01-Apr-21 04 PM A
CS001662	SP	DSSE-480	PE INITIATES CASCADE FORMS (Apenndix A) for Construction		20	17-May-21 08 AM	14-Jun-21 04 PM
CS001662	SP	DSSE-220	SDS Complete (~= P&C IFC)		63	01-Jul-21 08 AM*	29-Sep-21 04 PM
CS001662	SP	DSSE-450	Operating Instructions - Prepare and Issue Draft Distribution OI to Engineering		20	03-Sep-21 08 AM	01-Oct-21 04 PM
CS001662	SP	DSSE-470	Operating Instructions - P&C Review Draft Distribution OI		5	04-Oct-21 08 AM	08-Oct-21 04 PM
CS001662	SP	DSSE-930	Operating Instructions - P&C Review Draft Convex OI		5	04-Oct-21 08 AM	08-Oct-21 04 PM
CS001662	SP	DSSE-990	P&C INITIATE SCADA Data Sheets		61	30-Sep-21 08 AM*	29-Dec-21 04 PM
Relay Settings	SP				20	06-Aug-21 08 AM	02-Sep-21 04 PM
CS001662	SP	DSSE-440	Relay Settings - Prepare and Issue Relay Settings IFC- (Is standard Relay logic Needed?)		20	06-Aug-21 08 AM*	02-Sep-21 04 PM
MATERIAL PROCUREMENT	SP				474	08-Sep-20 08 AM A	27-Jun-23 04 PM
MATERIAL FOR TRANSFORMER	SP				366	08-Sep-20 08 AM A	24-Jan-23 04 PM
CS001662	SP	DSSE-1170	N/R (per CK 9/14/20) MATERIAL - Transformer - Prepare & Issue LNTP for Vendor Dwgs. & Schematics		0	08-Sep-20 08 AM A	14-Sep-20 04 PM A
CS001662	SP	1126	N/R (per CK 9/14/20) MATERIAL - Transformer - Prep& Issue DR For Approval Drawing		0	08-Sep-20 08 AM A	14-Sep-20 04 PM A
CS001662	SP	1127	N/R (per CK 9/14/20) MATERIAL - Transformer - Procurement Issue PO For Approval Drawing		0	08-Sep-20 08 AM A	14-Sep-20 04 PM A
CS001662	SP	DSSE-530	MATERIAL - Transformer - Prepare & Issue DR		10	06-Aug-21 08 AM	19-Aug-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	DSSE-1180	Transformer Material Ordered	[redacted]	0		19-Aug-21 04 PM
CS001662	SP	DSSE-1060	MATERIAL - Transformer - Procurement Issue PO		10	20-Aug-21 08 AM	29-Aug-21 04 PM
CS001662	SP	DSSE-1070	MATERIAL - Transformer 4X - Material Vendor Delivery Leadtime		512	30-Aug-21 08 AM	23-Jan-23 04 PM
CS001662	SP	DSSE-570	MATERIAL - Transformer - Material Handler Confirm Material Delivery to Site		1	24-Jan-23 08 AM	24-Jan-23 04 PM
MATERIAL FOR CIRCUIT SWITCHER	SP				474	09-Oct-20 08 AM A	27-Jun-23 04 PM
CS001662	SP	1130	MATERIAL - Circuit Switcher - Prepare & Issue DR For App Drawing (Need Pred to be added for Eng to provide Scope/Spec)		0	09-Oct-20 08 AM A	12-Oct-20 04 PM A
CS001662	SP	1131	MATERIAL - Circuit Switcher - Procurement Issue PO For Approval Drawing		0	13-Oct-20 08 AM A	20-Oct-20 04 PM A
CS001662	SP	1115	MATERIAL - Circuit Switcher- Prepare & Issue DR		10	06-Aug-21 08 AM	19-Aug-21 04 PM
CS001662	SP	1119	Circuit Switcher Material Ordered		0		19-Aug-21 04 PM
CS001662	SP	1117	MATERIAL - Circuit Switcher - Procurement Issue PO		10	20-Aug-21 08 AM	29-Aug-21 04 PM
CS001662	SP	1118	MATERIAL - Circuit Switcher - Material Vendor Delivery Leadtime		666	30-Aug-21 08 AM	26-Jun-23 04 PM
CS001662	SP	1116	MATERIAL - Circuit Switcher - Material Handler Confirm Material Delivery to Site		1	27-Jun-23 08 AM	27-Jun-23 04 PM
OTHER MATERIALS(CIVIL, ELECTRICAL, P&C)	SP				148	06-Aug-21 08 AM	12-Mar-22 04 PM
CS001662	SP	1129	MATERIAL - Other Materials- Prepare & Issue DR		10	06-Aug-21 08 AM	19-Aug-21 04 PM
CS001662	SP	1169	Other Materials Ordered		0		19-Aug-21 04 PM
CS001662	SP	1149	MATERIAL - Other Materials - Procurement Issue PO		5	20-Aug-21 08 AM	26-Aug-21 04 PM
CS001662	SP	1159	MATERIAL - Other Materials - Material Vendor Delivery Leadtime		197	27-Aug-21 08 AM	11-Mar-22 04 PM
CS001662	SP	1139	MATERIAL - Other Materials - Material Handler Confirm Material Delivery to Site		1	12-Mar-22 08 AM	12-Mar-22 04 PM*
CONSTRUCTION	SP				580	01-Feb-21 08 AM A	06-Sep-23 04 PM
CONSTRUCTION SERVICES SELECTION	SP				77	01-Feb-21 08 AM A	02-Sep-21 04 PM
CONSTRUCTION SERVICES - BID PROCESS Civil	SP				77	01-Feb-21 08 AM A	02-Sep-21 04 PM
CS001662	SP	A3430	CONST.SERVICES - BID - Eversource provide Spec / RFP - Civil		0	01-Feb-21 08 AM A	15-Mar-21 04 PM A
CS001662	SP	A3440	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal - Civil		0	15-Mar-21 08 AM A	21-Apr-21 04 PM A
CS001662	SP	A3450	CONST.SERVICES - BID - Eversource reviews contractor proposals - Civil		9	27-Apr-21 08 AM A	27-May-21 04 PM
CS001662	SP	A3460	CONST.SERVICES - BID - Contract is Awarded - PO Issued - Civil		20	06-Aug-21 08 AM	02-Sep-21 04 PM
CONSTRUCTION SERVICES - BID PROCESS Electrica	SP				77	01-Feb-21 08 AM A	02-Sep-21 04 PM
CS001662	SP	1111	CONST.SERVICES - BID - Eversource provide Spec / RFP - Electrical		0	01-Feb-21 08 AM A	15-Mar-21 04 PM A
CS001662	SP	1112	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal - Electrical		0	15-Mar-21 08 AM A	26-Apr-21 04 PM A
CS001662	SP	1113	CONST.SERVICES - BID - Eversource reviews contractor proposals - Electrical		9	27-Apr-21 08 AM A	27-May-21 04 PM
CS001662	SP	1114	CONST.SERVICES - BID - Contract is Awarded - PO Issued - Electrical		20	06-Aug-21 08 AM	02-Sep-21 04 PM
CONSTRUCTION - CIVIL	SP				5	03-Apr-23 08 AM	07-Apr-23 04 PM
CS001662	SP	A1120	Construction - Civil		5	03-Apr-23 08 AM	07-Apr-23 04 PM
CONSTRUCTION - ELECTRICAL	SP				468	04-Oct-21 08 AM	15-Aug-23 04 PM
CS001662	SP	A3580	Construction - Electrical Non Outage		226	04-Oct-21 08 AM	26-Aug-22 04 PM*
CS001662	SP	A1130	Construction - Electrical Phase 1 Outage		73	06-Sep-22 08 AM	20-Dec-22 04 PM
CS001662	SP	A3590	Construction - Electrical Phase 2 Outage		95	03-Apr-23 08 AM	15-Aug-23 04 PM

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CONSTRUCTION - P&C	SP				100	03-Apr-23 08 AM	22-Aug-23 04 PM
CS001662	SP	A1140	Construction - P&C Implement Relay Settings		100	03-Apr-23 08 AM	22-Aug-23 04 PM
CONSTRUCTION - COMMUNICATIONS	SP				100	03-Apr-23 08 AM	22-Aug-23 04 PM
CS001662	SP	A1150	Construction - Field Communications		100	03-Apr-23 08 AM	22-Aug-23 04 PM
CONSTRUCTION - CONST.REP TASKS	SP				349	19-Apr-22 08 AM	06-Sep-23 04 PM
CS001662	SP	A1280	Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER INSTALLATION (13 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
CS001662	SP	A1290	Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER TEST ENERGIZATION (18 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
CS001662	SP	A1250	Construction Rep SUBMIT OUTAGE REQUESTS for NON-transformer equipment (4 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
CS001662	SP	A1260	Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)		10	23-Aug-23 08 AM	06-Sep-23 04 PM
CONSTRUCTION RESOURCE TRACKING	SP				473	04-Oct-21 08 AM	22-Aug-23 04 PM
CS001662	SP	A1070	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT		1	05-Oct-21 08 AM	05-Oct-21 04 PM
CS001662	SP	A1080	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN		1	16-Sep-22 08 AM	16-Sep-22 04 PM
CS001662	SP	ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP		473	04-Oct-21 08 AM	22-Aug-23 04 PM
CS001662	SP	CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN		473	04-Oct-21 08 AM	22-Aug-23 04 PM
CONSTRUCTION OUTAGES	SP				590	04-Oct-21 08 AM	22-Aug-23 04 PM
CS001662	SP	CSM	Construction Start Milestone - Civil		0	04-Oct-21 08 AM	
CS001662	SP	TOA-Const	OUTAGE / General Construction Work		298	05-Oct-21 08 AM	16-Sep-22 04 PM
CS001662	SP	ISD	EQUIPMENT IN SERVICE DATE		0		22-Aug-23 04 PM*
CS001662	SP	CFM	Construction Finish Milestone - Overall		0		22-Aug-23 04 PM
TEST OUTAGES	SP				5	03-Apr-23 08 AM	07-Apr-23 04 PM
CS001662	SP	TOA-Test	OUTAGE / Test Transformer		5	03-Apr-23 08 AM	07-Apr-23 04 PM
CONSTRUCTION CLOSEOUT	SP				2	23-Aug-23 08 AM	24-Aug-23 04 PM
CS001662	SP	DSSE-900	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)		2	23-Aug-23 08 AM	24-Aug-23 04 PM
TEST AND COMMISSION	SP				178	01-Mar-21 08 AM A	01-Feb-22 04 PM
TEST - SERVICES STAFFING DECISION	SP				105	01-Mar-21 08 AM A	14-Oct-21 04 PM
TEST SERVICES - CONTRACTOR OF CHOICE	SP				35	25-Aug-21 08 AM	14-Oct-21 04 PM
CS001662	SP	A3470	TEST SERVICES - COC - Eversource Provides Spec / RFQ to COC		5	25-Aug-21 08 AM*	31-Aug-21 04 PM
CS001662	SP	A3480	TEST SERVICES - COC - COC Evaluates Spec and Provides Quote		10	01-Sep-21 08 AM	15-Sep-21 04 PM
CS001662	SP	A3490	TEST SERVICES - COC - Eversource Reviews Quote from COC		10	16-Sep-21 08 AM	29-Sep-21 04 PM
CS001662	SP	A3500	TEST SERVICES - COC - Eversource Awards Contract - PO Issued		10	30-Sep-21 08 AM	14-Oct-21 04 PM
TEST SERVICES - BID PROCESS	SP				77	01-Mar-21 08 AM A	02-Sep-21 04 PM
CS001662	SP	A3510	TEST SERVICES - BID - Eversource provide Spec / RFP		0	01-Mar-21 08 AM A	31-Mar-21 04 PM A
CS001662	SP	A3520	TEST SERVICES - BID - Contractors Evaluate RFP and Provide Proposal		0	01-Apr-21 08 AM A	21-Apr-21 04 PM A
CS001662	SP	A3530	TEST SERVICES - BID - Eversource reviews contractor proposals		10	22-Apr-21 08 AM A	28-May-21 04 PM
CS001662	SP	A3540	TEST SERVICES - BID - Eversource awards contract - PO Issued		20	06-Aug-21 08 AM	02-Sep-21 04 PM
LCE PLANNING	SP				148	17-May-21 08 AM	16-Dec-21 04 PM
CS001662	SP	LCE100	PM to Request Lead Commissioning Engineer GO/NO-GO		2	17-May-21 08 AM	18-May-21 04 PM
CS001662	SP	LCE200	Assign Lead Commissioning Engineer		2	06-Jul-21 08 AM*	07-Jul-21 04 PM

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	LCE400	Develop Test and Commissioning Plan		21	18-Oct-21 08 AM	16-Nov-21 04 PM
CS001662	SP	LCE500	LCE Review and Approve Vendor's Test and Commissioning Plan		21	17-Nov-21 08 AM	16-Dec-21 04 PM
TEST ACTIVITIES	SP				72	16-Oct-21 08 AM	01-Feb-22 04 PM
CS001662	SP	LCE310	Mobilize LCE Prior to Construction		2	16-Oct-21 08 AM	17-Oct-21 04 PM
CS001662	SP	LCE320	Mobilize Testing Vendor Prior to Construction		2	16-Oct-21 08 AM	17-Oct-21 04 PM
CS001662	SP	LCE620	LCE Ensure Test Group Prepare Electrical Field Mark Ups		1	17-Dec-21 08 AM	17-Dec-21 04 PM
CS001662	SP	LCE610	LCE Oversee Execution of Test and Commissioning Plan		30	17-Dec-21 08 AM	01-Feb-22 04 PM
CS001662	SP	LCE700	Execute Test and Commissioning Plan		30	17-Dec-21 08 AM	01-Feb-22 04 PM
PROJECT CLOSE OUT	SP				40	26-Feb-21 08 AM A	19-Oct-23 04 PM
CS001662	SP	DSSE-1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List		5	23-Aug-23 08 AM	29-Aug-23 04 PM
Civil As-Builts	SP				22	26-Feb-21 08 AM A	29-Sep-23 04 PM
CS001662	SP	DSSE-1120	N/R(per CK 2/26/21) Complete TD-176 CIVIL Design Prep & Issue As-Built Dwgs		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
CS001662	SP	DSSE-860	Eversource Engineering Verifies Civil Mark Up As-Built Drawing Package		10	30-Aug-23 08 AM	13-Sep-23 04 PM
CS001662	SP	DSSE-970	Eversource Engineering Updates Civil As-Built Drawing Package		3	14-Sep-23 08 AM	18-Sep-23 04 PM
CS001662	SP	DSSE-870	ES Create Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field		8	19-Sep-23 08 AM	28-Sep-23 04 PM
CS001662	SP	DSSE-880	PM to Document Civil As-Built Drawings Complete		1	29-Sep-23 08 AM	29-Sep-23 04 PM
Electrical As-Builts	SP				25	26-Feb-21 08 AM A	12-Oct-23 04 PM
CS001662	SP	DSSE-1110	N/R(per CK 2/26/21) Complete TD-176 ELECTRICAL Design Prep & Issue As-Built Dwgs		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
CS001662	SP	DSSE-1130	Eversource Engineering Obtains Hard Copy As-Builts from the Field		3	07-Sep-23 08 AM	11-Sep-23 04 PM
CS001662	SP	DSSE-820	Eversource Engineering Verifies Quality of Electrical Mark Up As-Built Drawing Package		10	12-Sep-23 08 AM	25-Sep-23 04 PM
CS001662	SP	DSSE-940	Eversource Engineering Updates Electrical As-Built Drawing Package		3	26-Sep-23 08 AM	28-Sep-23 04 PM
CS001662	SP	DSSE-830	ES Create Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field		8	29-Sep-23 08 AM	11-Oct-23 04 PM
CS001662	SP	DSSE-840	PM to Document Electrical As-Built Drawings Complete		1	12-Oct-23 08 AM	12-Oct-23 04 PM
P&C As-Builts	SP				5	07-Sep-23 08 AM	13-Sep-23 04 PM
CS001662	SP	DSSE-950	P&C Submits SDS As-Builts		5	07-Sep-23 08 AM	13-Sep-23 04 PM
CS001662	SP	DSSE-960	P&C Submits Relay Setting As-Builts		5	07-Sep-23 08 AM	13-Sep-23 04 PM
Test Closout	SP				10	23-Aug-23 08 AM	06-Sep-23 04 PM
CS001662	SP	A3290	LCE Ensures Marked up Prints Ready for Pick-up		5	23-Aug-23 08 AM	29-Aug-23 04 PM
CS001662	SP	A3570	LCE Review Test Data and Issue Commissioning Report		5	30-Aug-23 08 AM	06-Sep-23 04 PM
SITE RESTORATION CLOSEOUT	SP				10	23-Aug-23 08 AM	06-Sep-23 04 PM
CS001662	SP	A1110	Restore / Remediate Site		10	23-Aug-23 08 AM	06-Sep-23 04 PM
MATERIAL, EQUIPMENT, COST, AND ASSET MANA(	SP				40	23-Aug-23 08 AM	19-Oct-23 04 PM
CS001662	SP	A1020	Cost Analyst Prepares FINAL Units of Property		30	23-Aug-23 08 AM	04-Oct-23 04 PM
CS001662	SP	A1030	Asset Management Complete Asset Update(s) in CASCADE		30	07-Sep-23 08 AM	19-Oct-23 04 PM
PROJECT MANAGEMENT CLOSEOUT	SP				40	23-Aug-23 08 AM	19-Oct-23 04 PM
CS001662	SP	A1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.		30	23-Aug-23 08 AM	04-Oct-23 04 PM
CS001662	SP	A1270	Prepare TD-707 Document		30	23-Aug-23 08 AM	04-Oct-23 04 PM

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
CS001662	SP	FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	[redacted]	0		19-Oct-23 04 PM
OVERHEAD / INDIRECTS	SP				11	20-Sep-21 08 AM	04-Oct-21 04 PM
PROJECT MANAGEMENT	SP				11	20-Sep-21 08 AM	04-Oct-21 04 PM
CS001662	SP	A1170	Prepare CAN (Construction Authorization Notice) AT0		11	20-Sep-21 08 AM*	04-Oct-21 04 PM
CS001662	SP	1110	Prepare CAN (Construction Authorization Notice) BT0,CT0, DT0		11	20-Sep-21 08 AM*	04-Oct-21 04 PM

[redacted] [redacted] 18-May-21 03 PM

Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
Mansfield 12J Expansion (40493201)	SP				697	02-Dec-19 12 AM A	27-Feb-24 04 PM
INITIALIZATION AND SCOPE DEVELOPEMEI	SP				470	02-Dec-19 12 AM A	03-Apr-23 08 AM
40493201	SP	START	SCHEDULE START MILESTONE	[redacted]	0	02-Dec-19 12 AM A	
Initial Funding	SP				0	06-Dec-19 12 AM A	04-May-20 04 PM A
40493201	SP	PI1200	Project Initiator Develop Intitial Funding Request		0	06-Dec-19 12 AM A	06-Dec-19 12 AM A
40493201	SP	PI1300	Initial Funding Request Approved @ EPAC		0	06-Dec-19 12 AM A	06-Dec-19 12 AM A
40493201	SP	PI1000	Submit Initial Funding Request		0		06-Dec-19 12 AM A
40493201	SP	PI1610	Power Plan Approval Create WO#		0	06-Dec-19 12 AM A	06-Dec-19 04 PM A
40493201	SP	PI1400	Assign Project Manager Request Resources for Project Team		0	06-Dec-19 12 AM A	06-Dec-19 04 PM A
40493201	SP	PI1500	Assign Scheduler		0	04-May-20 08 AM A	04-May-20 08 AM A
40493201	SP	PI1600	Assign Cost Analyst		0	04-May-20 08 AM A	04-May-20 04 PM A
SDC Approval	SP				0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1100	ES Develop Electrical Substation Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1700	Review Conceptual Siting, Real Estate,SCS, & Permitting (If Required)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	SSF1000	Develop Soultions Selection Form (SSF)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1400	ES Engineering Develop P&C Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CGE1000	Develop Conceptual Grade Estimate (-25%+50% SDC)		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1000	ES Engineering Develop Civil Substation Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1500	ES Engineering Develop Communications Conceptual Engineering Design in Accordance with Deliverables Checklist		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	SDC1000	Solution Design Committee(SDC) Approval		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1710	Conduct Conceptual Constructability Walk Down		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
40493201	SP	CE1600	Conduct Project Team Kickoff Meeting Verify SDC Need		0	12-Dec-19 12 AM A	12-Dec-19 04 PM A
Project Initiation	SP				58	05-Mar-20 12 AM A	06-Aug-21 04 PM
EPAC Partial Funding	SP				0	05-Mar-20 12 AM A	05-Mar-20 04 PM A
40493201	SP	PF1000	EPAC Partial Funding Approval		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	ATCGE1010	Develop At Least Conceptual Grade Estimate (-25%+50% Partial Funding)		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	PE1600	Review Preliminary Siting & Permitting (If Required)		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	PE1700	Conduct Preliminary Constructability Walk Down		0	05-Mar-20 12 AM A	05-Mar-20 04 PM A
40493201	SP	PAFP1000	Submit Partial Funding PAF for Internal Review		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	PAFP1100	Incorporate Internal Review Comments & Submit Partial Funding PAF to EPAC for Review		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	PAFP1200	Incorporate EPAC Partial Funding PAF Review Comments		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	PE1710	Create Engineering Scope Document		0	05-Mar-20 08 AM A	05-Mar-20 04 PM A
40493201	SP	PE1720	Engineering Scope Document Complete		0		05-Mar-20 04 PM A
EPAC Full Funding	SP				58	20-Oct-20 08 AM A	06-Aug-21 04 PM
40493201	SP	PAFF2110	Prepare Draft Subsidiary Board Presentation		0	02-Nov-20 08 AM A	23-Nov-20 04 PM A
40493201	SP	DE1800	Review Detail Siting & Permitting (If Required)		0	20-Oct-20 08 AM A	12-Feb-21 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	DE1900	Conduct FINAL Detail Constructability Walk Down	[redacted]	0	01-Mar-21 08 AM A	01-Mar-21 04 PM A
40493201	SP	DE1700	Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)		0	01-Mar-21 08 AM A	04-Mar-21 04 PM A
40493201	SP	DE2000	Project Constructability Review Complete		0	02-Mar-21 08 AM A	05-Mar-21 04 PM A
40493201	SP	DE1600	Create Planning Grade Estimate (+/-25% Full Funding)		0	16-Feb-21 08 AM A	12-May-21 04 PM A
40493201	SP	PAFF2000	Submit Full Funding PAF for Internal Review		8	06-Apr-21 08 AM A	26-May-21 04 PM
40493201	SP	PAFF2100	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC for Review		3	27-May-21 08 AM	01-Jun-21 04 PM
40493201	SP	PAFF2120	Perform Risk Assessment (Enterprise Risk Management – ERM)		15	30-Nov-20 08 AM A	07-Jun-21 04 PM
40493201	SP	PAFF2200	Incorporate EPAC Full Funding PAF Review Comments		5	02-Jun-21 08 AM	08-Jun-21 04 PM
40493201	SP	FF1000	EPAC Full Funding Approval		1	09-Jun-21 08 AM	09-Jun-21 04 PM
40493201	SP	PAFF2130	Finalize Subsidiary Board Presentation		9	08-Jun-21 08 AM	18-Jun-21 04 PM
40493201	SP	PAFF2210	Subsidiary Board Approval		34	21-Jun-21 08 AM	06-Aug-21 04 PM*
T-Minus Milestones	SP				686	05-Mar-20 12 AM A	03-Apr-23 08 AM
T-Minus Milestones "A" Group	SP				594	05-Mar-20 12 AM A	31-Dec-22 04 PM
40493201	SP	AT3001	Eng. Project Scoping Document Issued (Scope Lockdown)		0		05-Mar-20 12 AM A
40493201	SP	AT1811	70% Design/Engineering Completed		0		22-Mar-21 12 AM A
40493201	SP	AT0805E	IFC - Electrical (AG) w/Final BOM		0		05-Apr-21 04 PM A
40493201	SP	AT0805C	IFC - Civil (BG) w/BOM		0		22-Apr-21 08 AM A
40493201	SP	AT0804	A-T-08.04 ALL PERMITS RECEIVED		0		17-May-21 08 AM
40493201	SP	AT1201	SCADA Date (Tab) Sheets/Signal List Sent to LCC		0		17-May-21 08 AM
40493201	SP	AT0805PC	P&C IFC - P&C w/BOM		0		17-May-21 08 AM
40493201	SP	AT0301	T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX		0		15-Jul-21 04 PM*
40493201	SP	AT2605	30% Design / Engineering Completed		0		30-Jul-21 04 PM
40493201	SP	AT0813	A-T-08.13 SITING PETITION AND APPLICATION FILED		0		24-Sep-21 04 PM*
40493201	SP	AT00	T-00 - START OF CONSTRUCTION - WO# Start [redacted]		0	04-Oct-21 08 AM*	
40493201	SP	AT00.1	A-T-00 - Start [redacted]		0	04-Oct-21 08 AM*	
40493201	SP	AT0203	A-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)-CIVIL		0		04-Oct-21 04 PM*
40493201	SP	AT1202	P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED		0		12-Oct-21 04 PM
40493201	SP	AT1805	T-18 - NX9 Preliminary Ratings to LCC for New Equipment (transformers are considered 'NEW EQUIPMENT')		0		14-Oct-21 04 PM*
40493201	SP	AT0401	A-T-04.01 ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEW		0		09-Mar-22 04 PM*
40493201	SP	AT0409	A-T-04.09 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Non-transformer equipment)		0		25-Apr-22 04 PM*
40493201	SP	AT2404	A-T-24.04 DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINE		0		16-Aug-22 04 PM*
40493201	SP	AT1301	COMMISSIONING PLAN COMPLETE		0		21-Sep-22 04 PM
40493201	SP	AT0404	ALL FINAL RELAY PROTECTIVE SETTING ISSUED		0		31-Dec-22 04 PM
T-Minus Milestones "B" Group (Non-Outage)	SP				1	04-Oct-21 08 AM	04-Oct-21 04 PM
40493201	SP	BT00	T-00 - START OF CONSTRUCTION - WO# Start [redacted] (40493201)		0	04-Oct-21 08 AM*	

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	BT0203	B-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start	[redacted]	0		04-Oct-21 04 PM*
T-Minus Milestones "C" Group for Transformer Test- Ph	SP				336	04-Oct-21 04 PM	06-Sep-22 08 AM
40493201	SP	CT0203	C-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start		0		04-Oct-21 04 PM*
40493201	SP	CT1811	CT-18 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer TEST ENERGIZATION)		0		25-Apr-22 04 PM*
40493201	SP	CT00	C-T-00 - START OF CONSTRUCTION - 40493201 Phase 1		0	06-Sep-22 08 AM*	
T-Minus Milestones "D" Group for Transformer Test- Ph	SP				545	04-Oct-21 04 PM	03-Apr-23 08 AM
40493201	SP	DT0203	D-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE) - Electrical Start		0		04-Oct-21 04 PM*
40493201	SP	DT1801	DT-18 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION T		0		25-Apr-22 04 PM*
40493201	SP	DT00	D-T-00 - START OF CONSTRUCTION - 40493201 Phase 2		0	03-Apr-23 08 AM*	
ENVIRONMENTAL APPROVALS AND PERMIT	SP				92	05-Mar-20 08 AM A	24-Sep-21 04 PM
PREPARE COMPLIANCE MATRICES - REGULATORY	SP				92	05-Mar-20 08 AM A	24-Sep-21 04 PM
40493201	SP	1100	Incorporate Comments to Property Abutter Petition Letter		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
40493201	SP	1101	Receive Scope, Arrangement Drwg, Equip List (to support CSC Petition)		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
40493201	SP	1102	Outreach to Property Owners		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
40493201	SP	1103	Obtain Cultural Resources Approval		0	23-Nov-20 08 AM A	23-Nov-20 04 PM A
40493201	SP	1105	Prepare Property Abutter Petition Letter		0	03-Mar-21 08 AM A	24-Mar-21 04 PM A
40493201	SP	1104	Prepare Preliminary Draft CSC Petition		0	14-Dec-20 08 AM A	16-Apr-21 04 PM A
40493201	SP	1106	Mandatory Commenter Review of Preliminary Draft CSC Petition		0	03-May-21 08 AM A	07-May-21 04 PM A
40493201	SP	1107	Prepare Final CSC Petition / Submit Petition to CSC for Review		10	28-Apr-21 08 AM A	28-May-21 04 PM
40493201	SP	A1230	Prepared Compliance Matrices - Regulatory		87	05-Mar-20 08 AM A	17-Sep-21 04 PM
40493201	SP	A1220	Prepared Compliance Matrices - Non-Reqgulatory (Commitments)		87	05-Mar-20 08 AM A	17-Sep-21 04 PM
40493201	SP	1109	CSC Petition Approval (Tie to T-8)		1	24-Sep-21 08 AM	24-Sep-21 04 PM
40493201	SP	1108	CSC Petition Review		119	29-May-21 08 AM	24-Sep-21 04 PM
APPROVALS - FEDERAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
40493201	SP	A1180	Determine Requirment for and Prepare Permitting Docments - FEDERAL (CT) TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - STATE	SP				0	08-Mar-21 08 AM A	16-Apr-21 04 PM A
40493201	SP	A1190	Determine Requirment for and Prepare Permitting Docments - STATE TBD (STORM WATER)		0	08-Mar-21 08 AM A	16-Apr-21 04 PM A
APPROVALS - REGIONAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
40493201	SP	A1200	Determine Requirment for and Prepare Permitting Docments - REGIONAL (CT) TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
APPROVALS - LOCAL	SP				0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
40493201	SP	A1210	Determine Requirment for and Prepare Permitting Docments - LOCAL TBD		0	08-Mar-21 08 AM A	12-Mar-21 04 PM A
ENGINEERING & DESIGN	SP				697	07-Feb-20 08 AM A	27-Feb-24 04 PM
Engineering Services Staffing	SP				0	07-Feb-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	A3370	Decision Required Regarding Engineering Staffing (ES, COC, BID)		0	07-Feb-20 08 AM A	07-Feb-20 04 PM A
Bid Process	SP				0	31-Jul-20 08 AM A	31-Jul-20 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	TMP1280	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Bid Review / Score Bids/ Negotiations	[redacted]	0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1300	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Notice to Proceed		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1190	(N/R per SP 7/31/20) Contractor Selection (Bid) - Engineering- Prepare / Issue RFP for Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1210	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue RFP Out to Bid to Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1230	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Hold Pre-Bid Meeting for Engineering Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1310	(N/R per SP 7/31/20) Contractor Selection (Bid) - Engineering - Bid Period		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1320	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Award Contractor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1330	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue DR		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1340	(N/R per SP 7/31/20)Contractor Selection (Bid) - Engineering - Issue PO		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
EOC - Engineer of Choice Process	SP				0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1180	(N/R per SP 7/31/20)Engineering of Choice (EOC) - EOC Committee Reviews at Monthly Meeting & Approves (?)		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1140	(N/R per SP 7/31/20)Engineering of Choice (EOC) - Provide RFP to Single Vendor		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1200	(N/R per SP 7/31/20)Engineering of Choice (EOC) - DR Prepared by Project Engineer & Project Controls		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1220	(N/R per SP 7/31/20)Engineering of Choice (EOC) - PO Issued for Vendor -30% Design Effort		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
40493201	SP	TMP1150	(N/R per SP 7/31/20)Engineering of Choice (EOC) - Vendor Responds with Proposal		0	31-Jul-20 08 AM A	31-Jul-20 04 PM A
Civil Engineering	SP				0	10-Aug-20 08 AM A	22-Apr-21 04 PM A
Civil Engineering	SP				0	10-Aug-20 08 AM A	22-Apr-21 04 PM A
Civil Engineering 100%	SP				0	22-Feb-21 08 AM A	10-Mar-21 04 PM A
40493201	SP	DSSE-1340	Vendor Incorporates Detail Comments and Issues 100% Civil Package to ES		0	22-Feb-21 08 AM A	01-Mar-21 04 PM A
40493201	SP	DSSE-1350	ES Reviews and Comments 100% Civil Package		0	02-Mar-21 08 AM A	10-Mar-21 04 PM A
Civil Engineering IFC	SP				0	04-Mar-21 08 AM A	22-Apr-21 04 PM A
40493201	SP	DSSE-1290	Vendor Incorporates 100% Design Comments Submits IFC Civil Package to ES w/BOM		0	04-Mar-21 08 AM A	05-Mar-21 04 PM A
40493201	SP	DSSE-1320	ES Reviews IFC Civil Package		0	08-Mar-21 08 AM A	08-Mar-21 04 PM A
40493201	SP	DSSE-1300	ES Issues Civil Package IFC w/BOM		0	01-Apr-21 08 AM A	22-Apr-21 04 PM A
Civil Engineering Detailed	SP				0	08-Feb-21 08 AM A	19-Feb-21 04 PM A
40493201	SP	DSSE-1210	Vendor Incorporates Preliminary Comments and Issues Detailed Civil Package to ES		0	08-Feb-21 08 AM A	12-Feb-21 04 PM A
40493201	SP	DSSE-1240	ES Reviews and Comments Detailed Civil Package		0	15-Feb-21 08 AM A	19-Feb-21 04 PM A
Civil Engineering Preliminary	SP				0	10-Aug-20 08 AM A	03-Feb-21 04 PM A
40493201	SP	DSSE-1270	Design Package to Civil		0	10-Aug-20 08 AM A	01-Oct-20 04 PM A
40493201	SP	DSSE-1250	Vendor Submits Preliminary Civil Package to ES		0	12-Jan-21 08 AM A	01-Feb-21 04 PM A
40493201	SP	DSSE-1280	ES Reviews and Comments Preliminary Civil Package		0	01-Feb-21 08 AM A	03-Feb-21 04 PM A

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
Electrical Engineering	SP			[redacted]	5	20-Oct-20 08 AM A	12-Oct-21 04 PM
40493201	SP	DSSE-260	Submit Plan/Profile to Siting & Permitting for Filing w/Regulator Authority (Should this be tied to the IFC)		0	20-Oct-20 08 AM A	12-Feb-21 04 PM A
40493201	SP	DSSE-200	Detail (70%) Electrical Design Package Design		0	29-Jan-21 08 AM A	05-Mar-21 04 PM A
40493201	SP	DSSE-205	Detail (70%) Electrical Design Package Drafting		0	08-Mar-21 08 AM A	22-Mar-21 04 PM A
40493201	SP	DSSE-210	Final (100%) Electrical Design Package IFR		0	22-Mar-21 08 AM A	26-Mar-21 04 PM A
40493201	SP	DSSE-230	Electrical Engineering - BOM Complete		0	29-Mar-21 08 AM A	31-Mar-21 04 PM A
40493201	SP	DSSE-240	Electrical Engineering - Electrical Package IFC (Physical & Electrical)		0	29-Mar-21 08 AM A	31-Mar-21 04 PM A
40493201	SP	DSSE-460	Operating Instructions - SSED Review Draft Distribution OI		5	05-Oct-21 08 AM	12-Oct-21 04 PM
40493201	SP	DSSE-920	Operating Instructions - SSED Review Draft Convex OI		5	05-Oct-21 08 AM	12-Oct-21 04 PM
Distribution Thermal Ratings NX-9 (Transformer Repla	SP				687	02-Oct-20 08 AM A	27-Feb-24 04 PM
Thermal Ratings - Substation - Preliminary Thermal Dat	SP				27	02-Oct-20 08 AM A	14-Oct-21 04 PM
40493201	SP	NX9A-NC69	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX		0	02-Oct-20 08 AM A	16-Nov-20 04 PM A
40493201	SP	NX9A-NC169	LTRC Submits 1-Line Nomenclature to TRC		0	09-Nov-20 08 AM A	16-Nov-20 04 PM A
40493201	SP	NX9A-NC159	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature		0	11-Jan-21 08 AM A	15-Jan-21 04 PM A
40493201	SP	NX9A-NC59	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings - GO!		0	22-Mar-21 08 AM A	02-Apr-21 04 PM A
40493201	SP	NX9A-NC99	LTRC Requests P&C Checklist		0	29-Mar-21 08 AM A	02-Apr-21 04 PM A
40493201	SP	NX9A-NC79	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)		5	07-Sep-21 08 AM	13-Sep-21 04 PM
40493201	SP	NX9A-NC139	LTRC Reviews and Sends Thermal Rating Data for TRC Review		5	14-Sep-21 08 AM	20-Sep-21 04 PM
40493201	SP	NX9A-NC129	TRC Reviews and Approves Thermal Rating Data		5	21-Sep-21 08 AM	27-Sep-21 04 PM
40493201	SP	NX9A-NC119	LTRC Sends Thermal Rating Data for Approval & Submit to NURS		5	28-Sep-21 08 AM	04-Oct-21 04 PM
40493201	SP	NX9A-NC109	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE		1	05-Oct-21 08 AM	05-Oct-21 04 PM
40493201	SP	NX9A-NC89	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Ratin		5	06-Oct-21 08 AM	13-Oct-21 04 PM
40493201	SP	NX9A-NC149	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006		1	14-Oct-21 08 AM	14-Oct-21 04 PM
Thermal Ratings - Substation - Verify Thermal Data	SP				32	05-Apr-21 08 AM A	15-Jul-21 04 PM
40493201	SP	NX9A-NC33	LTRC Reviews and Makes "GO / NO-GO" Decision - GO!		0	05-Apr-21 08 AM A	09-Apr-21 04 PM A
40493201	SP	NX9A-NC35	LTRC Requests P&C Checklist		0	26-Apr-21 08 AM A	01-May-21 04 PM A
40493201	SP	NX9A-NC37	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)		5	08-Jun-21 08 AM	14-Jun-21 04 PM
40493201	SP	NX9A-NC39	LTRC Reviews and Sends Thermal Rating Data for TRC Review		5	15-Jun-21 08 AM*	21-Jun-21 04 PM
40493201	SP	NX9A-NC41	TRC Reviews and Approves Thermal Rating Data		5	22-Jun-21 08 AM	28-Jun-21 04 PM
40493201	SP	NX9A-NC31	PE to Verify Thermal Data Review PE Chectlist (M7-EN-3006.2)		24	01-Jun-21 08 AM*	02-Jul-21 04 PM
40493201	SP	NX9A-NC43	LTRC Sends Thermal Rating Data for Approval & Submit to NURS		5	29-Jun-21 08 AM	06-Jul-21 04 PM
40493201	SP	NX9A-NC45	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE		1	07-Jul-21 08 AM	07-Jul-21 04 PM
40493201	SP	NX9A-NC47	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Ratin		5	08-Jul-21 08 AM	14-Jul-21 04 PM
40493201	SP	NX9A-NC49	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006		1	15-Jul-21 08 AM	15-Jul-21 04 PM
Thermal Ratings - Substation - NX-9 Pre NX9-DOE	SP				1	29-Dec-22 08 AM	29-Dec-22 04 PM
40493201	SP	NX9500	Scheduler - Send Email for 48Hrs Notification before DOE.		1	29-Dec-22 08 AM*	29-Dec-22 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
Thermal Ratings - Substation - NX-9 Post NX9-DOE/ISD	SP			[redacted]	8	15-Feb-24 08 AM	27-Feb-24 04 PM
40493201	SP	NX9FINAL50	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or CFM/ISD)		3	15-Feb-24 08 AM	20-Feb-24 04 PM
40493201	SP	NX9FINAL60	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS		5	21-Feb-24 08 AM	27-Feb-24 04 PM
Thermal Ratings - Non NX-9 Thermal Ratings	SP				20	01-Feb-22 08 AM	01-Mar-22 04 PM
40493201	SP	NX9A-EM44	P&C Develops and Provides LTRC with P&C Checklist & Thermal Ratings D		5	01-Feb-22 08 AM*	07-Feb-22 04 PM
40493201	SP	NX9A-EM54	LTRC Prepares and Sends Thermal Rating Data for TRC Review		5	08-Feb-22 08 AM	14-Feb-22 04 PM
40493201	SP	NX9A-EM64	TRC Reviews and Approves Thermal Rating Data		5	15-Feb-22 08 AM	22-Feb-22 04 PM
40493201	SP	NX9A-EM74	LTRC Files Capability Sheets		5	23-Feb-22 08 AM	01-Mar-22 04 PM
P&C Engineering	SP				103	22-Jul-20 08 AM A	12-Oct-21 04 PM
40493201	SP	DSSE-400	Prepare & Issue P&C Design Package to Drafting		0	22-Jul-20 08 AM A	09-Oct-20 04 PM A
40493201	SP	DSSE-410	Drafting Prepare & Issue Back to P&C (draft Logic Diagram Schematics/Ader		0	26-Oct-20 08 AM A	28-Oct-20 04 PM A
40493201	SP	DSSE-1360	Prepare & Issue P&C Design Package to Drafting (includes Logic Diagrams)		0	28-Oct-20 08 AM A	30-Oct-20 04 PM A
40493201	SP	DSSE-220	SDS Complete (~= P&C IFC)		0	26-Apr-21 08 AM A	30-Apr-21 12 AM A
40493201	SP	DSSE-990	P&C INITIATE SCADA Data Sheets		0	28-Apr-21 08 AM A	30-Apr-21 12 AM A
40493201	SP	DSSE-480	PE INITIATES CASCADE FORMS (Apenndix A) for Construction		20	17-May-21 08 AM*	14-Jun-21 04 PM
40493201	SP	A3380	Issue P&C Package Design (includes Logic Diagrams)		39	07-Jun-21 08 AM*	30-Jul-21 04 PM
40493201	SP	DSSE-450	Operating Instructions - Prepare and Issue Draft Distribution OI to Engineering		20	07-Sep-21 08 AM	04-Oct-21 04 PM
40493201	SP	DSSE-470	Operating Instructions - P&C Review Draft Distribution OI		5	05-Oct-21 08 AM	12-Oct-21 04 PM
40493201	SP	DSSE-930	Operating Instructions - P&C Review Draft Convex OI		5	05-Oct-21 08 AM	12-Oct-21 04 PM
Relay Settings	SP				20	09-Aug-21 08 AM	03-Sep-21 04 PM
40493201	SP	DSSE-440	Relay Settings - Prepare and Issue Relay Settings IFC- (Is standard Relay logic Needed?)		20	09-Aug-21 08 AM	03-Sep-21 04 PM
MATERIAL PROCUREMENT	SP				147	09-Aug-21 08 AM	13-Mar-22 04 PM
MATERIAL FOR P&C	SP				144	09-Aug-21 08 AM	08-Mar-22 04 PM
40493201	SP	DSSE-510	MATERIAL - P&C - Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	DSSE-980	MATERIAL - P&C - Procurement Issue PO		5	23-Aug-21 08 AM	27-Aug-21 04 PM
40493201	SP	DSSE-1000	MATERIAL - P&C - Material Vendor Delivery Leadtime		192	28-Aug-21 08 AM	07-Mar-22 04 PM
40493201	SP	DSSE-1010	MATERIAL - P&C - Material Handler Confirm Material Delivery to Site		1	08-Mar-22 08 AM	08-Mar-22 04 PM*
MATERIAL FOR ELECTRICAL	SP				55	09-Aug-21 08 AM	26-Oct-21 04 PM
40493201	SP	DSSE-520	MATERIAL - Electrical - Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	DSSE-590	Electrical (AG) Material Ordered		0		20-Aug-21 04 PM
40493201	SP	DSSE-1020	MATERIAL - ELectrical - Procurement Issue PO		5	23-Aug-21 08 AM	27-Aug-21 04 PM
40493201	SP	DSSE-1030	MATERIAL - ELectrical - Material Vendor Delivery Leadtime		59	28-Aug-21 08 AM	25-Oct-21 04 PM
40493201	SP	DSSE-550	MATERIAL - Electrical - Material Handler Confirm Material Delivery to Site		1	26-Oct-21 08 AM	26-Oct-21 04 PM*
MATERIAL FOR CIVIL	SP				60	09-Aug-21 08 AM	02-Nov-21 04 PM
40493201	SP	DSSE-500	MATERIAL - CIVIL - Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	DSSE-600	Civil (BG) Material Ordered		0		20-Aug-21 04 PM
40493201	SP	DSSE-1040	MATERIAL - CIVIL - Procurement Issue PO		7	23-Aug-21 08 AM	31-Aug-21 04 PM
40493201	SP	DSSE-1050	MATERIAL - CIVIL - Material Vendor Delivery Leadtime		62	01-Sep-21 08 AM	01-Nov-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	DSSE-560	MATERIAL - CIVIL - Material Handler Confirm Material Delivery to Site		1	02-Nov-21 08 AM	02-Nov-21 04 PM*
MATERIAL FOR RELAY AND CONTROL ENCLOSURE	SP				126	09-Aug-21 08 AM	09-Feb-22 04 PM
40493201	SP	DSSE-530	MATERIAL - Relay and Control House - Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	DSSE-1180	Relay and Control House Material Ordered		0		20-Aug-21 04 PM
40493201	SP	DSSE-1060	MATERIAL - Relay and Control House - Procurement Issue PO		5	23-Aug-21 08 AM	27-Aug-21 04 PM
40493201	SP	DSSE-1070	MATERIAL - Relay and Control House - Material Vendor Delivery Leadtime		165	28-Aug-21 08 AM	08-Feb-22 04 PM
40493201	SP	DSSE-570	MATERIAL - Relay and Control House - Material Handler Confirm Material Delivery to Site		1	09-Feb-22 08 AM	09-Feb-22 04 PM*
MATERIAL FOR RELAY PANELS	SP				145	09-Aug-21 08 AM	09-Mar-22 04 PM
40493201	SP	DSSE-540	MATERIAL - Relay Panels- Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	DSSE-1190	Relay Panels Material Ordered		0		20-Aug-21 04 PM
40493201	SP	DSSE-1080	MATERIAL - Relay Panels - Procurement Issue PO		5	23-Aug-21 08 AM	27-Aug-21 04 PM
40493201	SP	DSSE-1090	MATERIAL - Relay Panels- Material Vendor Delivery Leadtime		193	28-Aug-21 08 AM	08-Mar-22 04 PM
40493201	SP	DSSE-580	MATERIAL - Relay Panels - Material Handler Confirm Material Delivery to Site		1	09-Mar-22 08 AM	09-Mar-22 04 PM*
MATERIAL FOR CIRCUIT BREAKERS	SP				147	09-Aug-21 08 AM	13-Mar-22 04 PM
40493201	SP	1115	MATERIAL - Breakers- Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	1119	Breakers Material Ordered		0		20-Aug-21 04 PM
40493201	SP	1117	MATERIAL - Circuit Breakers - Procurement Issue PO		5	23-Aug-21 08 AM	27-Aug-21 04 PM
40493201	SP	1118	MATERIAL - Circuit Breakers - Material Vendor Delivery Leadtime		197	28-Aug-21 08 AM	12-Mar-22 04 PM
40493201	SP	1116	MATERIAL - Circuit Breakers - Material Handler Confirm Material Delivery to Site		1	13-Mar-22 08 AM	13-Mar-22 04 PM*
OTHER MATERIALS(CIVIL, ELECTRICAL, P&C)	SP				99	09-Aug-21 08 AM	31-Dec-21 04 PM
40493201	SP	1129	MATERIAL - Other Materials- Prepare & Issue DR		10	09-Aug-21 08 AM	20-Aug-21 04 PM
40493201	SP	1169	Other Materials Ordered		0		20-Aug-21 04 PM
40493201	SP	1149	MATERIAL - Other Materials - Procurement Issue PO		5	23-Aug-21 08 AM	27-Aug-21 04 PM
40493201	SP	1159	MATERIAL - Other Materials - Material Vendor Delivery Leadtime		125	28-Aug-21 08 AM	30-Dec-21 04 PM
40493201	SP	1139	MATERIAL - Other Materials - Material Handler Confirm Material Delivery to Site		1	31-Dec-21 08 AM	31-Dec-21 04 PM*
CONSTRUCTION	SP				667	01-Feb-21 08 AM A	12-Jan-24 04 PM
CONSTRUCTION SERVICES SELECTION	SP				63	01-Feb-21 08 AM A	13-Aug-21 04 PM
CONSTRUCTION SERVICES - BID PROCESS Civil	SP				63	15-Mar-21 08 AM A	13-Aug-21 04 PM
40493201	SP	A3430	CONST.SERVICES - BID - Eversource provide Spec / RFP - Civil		0	15-Mar-21 08 AM A	15-Mar-21 04 PM A
40493201	SP	A3440	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal - Civil		0	15-Mar-21 08 AM A	26-Apr-21 04 PM A
40493201	SP	A3450	CONST.SERVICES - BID - Eversource reviews contractor proposals - Civil		15	27-Apr-21 08 AM A	07-Jun-21 04 PM
40493201	SP	A3460	CONST.SERVICES - BID - Contract is Awarded - PO Issued - Civil		5	09-Aug-21 08 AM*	13-Aug-21 04 PM
CONSTRUCTION SERVICES - BID PROCESS Electrica	SP				63	01-Feb-21 08 AM A	13-Aug-21 04 PM
40493201	SP	1111	CONST.SERVICES - BID - Eversource provide Spec / RFP - Electrical		0	01-Feb-21 08 AM A	15-Mar-21 04 PM A
40493201	SP	1112	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal - Electrical		0	15-Mar-21 08 AM A	26-Apr-21 04 PM A
40493201	SP	1113	CONST.SERVICES - BID - Eversource reviews contractor proposals - Electrical		15	27-Apr-21 08 AM A	07-Jun-21 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	1114	CONST.SERVICES - BID - Contract is Awarded - PO Issued - Electrical	[redacted]	5	09-Aug-21 08 AM	13-Aug-21 04 PM
CONSTRUCTION - CIVIL	SP				226	04-Oct-21 08 AM	26-Aug-22 04 PM
40493201	SP	A1120	Construction - Civil		226	04-Oct-21 08 AM	26-Aug-22 04 PM
CONSTRUCTION - ELECTRICAL	SP				560	04-Oct-21 08 AM	28-Dec-23 04 PM
40493201	SP	A3550	Construction - Electrical Non-Outage		226	04-Oct-21 08 AM	26-Aug-22 04 PM*
40493201	SP	A1130	Construction - Electrical - Phase 1 Outage		80	06-Sep-22 08 AM	30-Dec-22 04 PM
40493201	SP	A3560	Construction - Electrical - Phase 2 Outage		187	03-Apr-23 08 AM	28-Dec-23 04 PM
CONSTRUCTION - P&C	SP				9	01-Mar-22 08 AM	11-Mar-22 04 PM
40493201	SP	A1140	Construction - P&C Implement Relay Settings		9	01-Mar-22 08 AM	11-Mar-22 04 PM*
CONSTRUCTION - COMMUNICATIONS	SP				104	03-Apr-23 08 AM	28-Aug-23 04 PM
40493201	SP	A1150	Construction - Field Communications		104	03-Apr-23 08 AM	28-Aug-23 04 PM
CONSTRUCTION - CONST.REP TASKS	SP				436	19-Apr-22 08 AM	12-Jan-24 04 PM
40493201	SP	A1280	Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER INSTALLATION (13 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
40493201	SP	A1290	Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER TEST ENERGIZATION (18 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
40493201	SP	A1250	Construction Rep SUBMIT OUTAGE REQUESTS for NON-transformer equipment (4 weeks before outage)		5	19-Apr-22 08 AM*	25-Apr-22 04 PM
40493201	SP	A1260	Construction Rep Finalize CASCADE Forms (within 14 days following ISD)		10	29-Dec-23 08 AM	12-Jan-24 04 PM
CONSTRUCTION RESOURCE TRACKING	SP				560	04-Oct-21 08 AM	28-Dec-23 04 PM
40493201	SP	A1070	RESOURCE ONLY ACTIVITY - CONSTRUCTION - Non-Outage Start		1	04-Oct-21 08 AM	04-Oct-21 04 PM
40493201	SP	A1080	RESOURCE ONLY ACTIVITY - CONSTRUCTION - Non-Outage Finish		1	26-Aug-22 08 AM	26-Aug-22 04 PM
40493201	SP	A3590	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT-Phase 1		1	06-Sep-22 08 AM	06-Sep-22 04 PM
40493201	SP	ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP - Non Outage		311	04-Oct-21 08 AM	30-Dec-22 04 PM
40493201	SP	CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN - Phase		80	06-Sep-22 08 AM	30-Dec-22 04 PM
40493201	SP	A3570	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN- Phase 1		1	30-Dec-22 08 AM	30-Dec-22 04 PM
40493201	SP	ConRep-S10	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP - Outage Phase1		80	06-Sep-22 08 AM	30-Dec-22 04 PM
40493201	SP	CONSTelec20	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN - Non-Oı		311	04-Oct-21 08 AM	30-Dec-22 04 PM
40493201	SP	A3580	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT-Phase 2		1	03-Apr-23 08 AM	03-Apr-23 04 PM
40493201	SP	A3600	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN- Phase 2		1	28-Dec-23 08 AM	28-Dec-23 04 PM
40493201	SP	ConRep-S20	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP - Outage Phase 2		187	03-Apr-23 08 AM	28-Dec-23 04 PM
40493201	SP	CONSTelec10	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN - Phase		187	03-Apr-23 08 AM	28-Dec-23 04 PM
CONSTRUCTION OUTAGES	SP				700	04-Oct-21 08 AM	28-Dec-23 04 PM
40493201	SP	CSM	Construction Start Milestone - Non- Outage(Civil & Electrical)		0	04-Oct-21 08 AM	
40493201	SP	Const	NON OUTAGE / General Construction Work (Civil & Electrical)		281	04-Oct-21 08 AM	26-Aug-22 04 PM
40493201	SP	CSM10	Construction Start Milestone - Outage Phase 1		0	06-Sep-22 08 AM	
40493201	SP	TOA-Const	OUTAGE / General Construction Work- Phase 1		100	06-Sep-22 08 AM	30-Dec-22 04 PM
40493201	SP	CFM	Construction Finish Milestone - Phase 1		0		31-Dec-22 04 PM
40493201	SP	DOE	DATE OF ENERGIZATION-Phase 1		0		31-Dec-22 04 PM*

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	CFM20	Construction Finish Milestone - Non-Outage (Civil & Electrical)	[redacted]	0		31-Dec-22 04 PM
40493201	SP	CSM20	Construction Start Milestone - Outage Phase 2		0	03-Apr-23 08 AM	
40493201	SP	TOA-Const10	OUTAGE / General Construction Work- Phase 2		130	03-Apr-23 08 AM	31-Aug-23 04 PM
40493201	SP	ISD	EQUIPMENT IN SERVICE DATE		0		28-Dec-23 04 PM*
40493201	SP	CFM10	Construction Finish Milestone- Phase 2		0		28-Dec-23 04 PM
TEST OUTAGES	SP				147	06-Sep-22 08 AM	07-Apr-23 04 PM
40493201	SP	TOA-Test	OUTAGE / Test Transformer- Phase 1		5	06-Sep-22 08 AM	12-Sep-22 04 PM
40493201	SP	TOA-Test10	OUTAGE / Test Transformer- Phase 2		5	03-Apr-23 08 AM	07-Apr-23 04 PM
CONSTRUCTION CLOSEOUT	SP				2	29-Dec-23 08 AM	02-Jan-24 04 PM
40493201	SP	DSSE-900	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)		2	29-Dec-23 08 AM	02-Jan-24 04 PM
TEST AND COMMISSION	SP				408	01-Mar-21 08 AM A	30-Dec-22 04 PM
TEST - SERVICES STAFFING DECISION	SP				73	01-Mar-21 08 AM A	27-Aug-21 04 PM
TEST SERVICES - CONTRACTOR OF CHOICE	SP				0	03-May-21 08 AM A	03-May-21 04 PM A
40493201	SP	A3500	N/R TEST SERVICES - COC - Eversource Awards Contract - PO Issued		0	03-May-21 08 AM A	03-May-21 04 PM A
40493201	SP	A3470	N/R TEST SERVICES - COC - Eversource Provides Spec / RFQ to COC		0	03-May-21 08 AM A	03-May-21 04 PM A
40493201	SP	A3480	N/R TEST SERVICES - COC - COC Evaluates Spec and Provides Quote		0	03-May-21 08 AM A	03-May-21 04 PM A
40493201	SP	A3490	N/R TEST SERVICES - COC - Eversource Reviews Quote from COC		0	03-May-21 08 AM A	03-May-21 04 PM A
TEST SERVICES - BID PROCESS	SP				73	01-Mar-21 08 AM A	27-Aug-21 04 PM
40493201	SP	A3510	TEST SERVICES - BID - Eversource provide Spec / RFP		0	01-Mar-21 08 AM A	31-Mar-21 04 PM A
40493201	SP	A3520	TEST SERVICES - BID - Contractors Evaluate RFP and Provide Proposal		0	01-Apr-21 08 AM A	21-Apr-21 04 PM A
40493201	SP	A3530	TEST SERVICES - BID - Eversource reviews contractor proposals		15	22-Apr-21 08 AM A	07-Jun-21 04 PM
40493201	SP	A3540	TEST SERVICES - BID - Eversource awards contract - PO Issued		15	09-Aug-21 08 AM	27-Aug-21 04 PM
LCE PLANNING	SP				32	08-Aug-22 08 AM	21-Sep-22 04 PM
40493201	SP	LCE100	PM to Request Lead Commissioning Engineer GO/NO-GO		5	08-Aug-22 08 AM*	12-Aug-22 04 PM
40493201	SP	LCE200	Assign Lead Commissioning Engineer		2	15-Aug-22 08 AM*	16-Aug-22 04 PM
40493201	SP	LCE400	Develop Test and Commissioning Plan		20	19-Aug-22 08 AM	16-Sep-22 04 PM
40493201	SP	LCE500	LCE Review and Approve Vendor's Test and Commissioning Plan		3	19-Sep-22 08 AM	21-Sep-22 04 PM
TEST ACTIVITIES	SP				335	28-Aug-21 08 AM	30-Dec-22 04 PM
40493201	SP	LCE320	Mobilize Testing Vendor Prior to Construction		2	28-Aug-21 08 AM*	29-Aug-21 04 PM
40493201	SP	LCE310	Mobilize LCE Prior to Construction		2	17-Aug-22 08 AM	18-Aug-22 04 PM
40493201	SP	LCE620	Execute Test and Commissioning Plan		30	22-Sep-22 08 AM	03-Nov-22 04 PM
40493201	SP	LCE610	LCE Oversee Execution of Test and Commissioning Plan		38	22-Sep-22 08 AM	16-Nov-22 04 PM
40493201	SP	LCE700	LCE Ensure Test Group Prepare Electrical Field Mark Ups		38	04-Nov-22 08 AM	30-Dec-22 04 PM
PROJECT CLOSE OUT	SP				40	26-Feb-21 08 AM A	27-Feb-24 04 PM
40493201	SP	DSSE-1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List		5	29-Dec-23 08 AM	05-Jan-24 04 PM
Civil As-Builts	SP				22	26-Feb-21 08 AM A	07-Feb-24 04 PM
40493201	SP	DSSE-1120	N/R(per CK 2/26/21) Complete TD-176 CIVIL Design Prep & Issue As-Built Dwgs		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
40493201	SP	DSSE-860	Eversource Engineering Verifies Civil Mark Up As-Built Drawing Package		10	08-Jan-24 08 AM	22-Jan-24 04 PM
40493201	SP	DSSE-970	Eversource Engineering Updates Civil As-Built Drawing Package		3	23-Jan-24 08 AM	25-Jan-24 04 PM

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Project ID	Project Lead	Activity ID	Activity Name	Activity Scheduler	Remaining Duration	Start	Finish
40493201	SP	DSSE-870	ES Create Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field		8	26-Jan-24 08 AM	06-Feb-24 04 PM
40493201	SP	DSSE-880	PM to Document Civil As-Built Drawings Complete		1	07-Feb-24 08 AM	07-Feb-24 04 PM
Electrical As-Builts	SP				25	26-Feb-21 08 AM A	14-Feb-24 04 PM
40493201	SP	DSSE-1110	N/R(per CK 2/26/21) Complete TD-176 ELECTRICAL Design Prep & Issue As-Built Dwgs		0	26-Feb-21 08 AM A	26-Feb-21 04 PM A
40493201	SP	DSSE-1130	Eversource Engineering Obtains Hard Copy As-Builts from the Field		3	10-Jan-24 08 AM	12-Jan-24 04 PM
40493201	SP	DSSE-820	Eversource Engineering Verifies Quality of Electrical Mark Up As-Built Drawing Package		10	16-Jan-24 08 AM	29-Jan-24 04 PM
40493201	SP	DSSE-940	Eversource Engineering Updates Electrical As-Built Drawing Package		3	30-Jan-24 08 AM	01-Feb-24 04 PM
40493201	SP	DSSE-830	ES Create Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field		8	02-Feb-24 08 AM	13-Feb-24 04 PM
40493201	SP	DSSE-840	PM to Document Electrical As-Built Drawings Complete		1	14-Feb-24 08 AM	14-Feb-24 04 PM
P&C As-Builts	SP				5	10-Jan-24 08 AM	17-Jan-24 04 PM
40493201	SP	DSSE-950	P&C Submits SDS As-Builts		5	10-Jan-24 08 AM	17-Jan-24 04 PM
40493201	SP	DSSE-960	P&C Submits Relay Setting As-Builts		5	10-Jan-24 08 AM	17-Jan-24 04 PM
Test Closout	SP				7	29-Dec-23 08 AM	09-Jan-24 04 PM
40493201	SP	LCE800	LCE Ensures Marked up Prints Ready for Pick-up		5	29-Dec-23 08 AM	05-Jan-24 04 PM
40493201	SP	LCE900	LCE Review Test Data and Issue Commissioning Report		2	08-Jan-24 08 AM	09-Jan-24 04 PM
SITE RESTORATION CLOSEOUT	SP				10	29-Dec-23 08 AM	12-Jan-24 04 PM
40493201	SP	A1110	Restore / Remediate Site		10	29-Dec-23 08 AM	12-Jan-24 04 PM
MATERIAL, EQUIPMENT, COST, AND ASSET MANA(	SP				40	29-Dec-23 08 AM	27-Feb-24 04 PM
40493201	SP	A1020	Cost Analyst Prepares FINAL Units of Property		30	29-Dec-23 08 AM	12-Feb-24 04 PM
40493201	SP	A1030	Asset Management Complete Asset Update(s) in CASCADE		30	16-Jan-24 08 AM	27-Feb-24 04 PM
PROJECT MANAGEMENT CLOSEOUT	SP				40	29-Dec-23 08 AM	27-Feb-24 04 PM
40493201	SP	A1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.		30	29-Dec-23 08 AM	12-Feb-24 04 PM
40493201	SP	A1270	Prepare TD-707 Document		30	29-Dec-23 08 AM	12-Feb-24 04 PM
40493201	SP	FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)		0		27-Feb-24 04 PM
OVERHEAD / INDIRECTS	SP				11	20-Sep-21 08 AM	04-Oct-21 04 PM
PROJECT MANAGEMENT	SP				11	20-Sep-21 08 AM	04-Oct-21 04 PM
40493201	SP	A1170	Prepare CAN (Construction Authorization Notice) AT0, BT0, CT0		11	20-Sep-21 08 AM	04-Oct-21 04 PM
40493201	SP	1110	Prepare CAN (Construction Authorization Notice) DT0		11	20-Sep-21 08 AM	04-Oct-21 04 PM

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EVERSOURCE
Project Authorization Form

Operations Project Authorization Form

Approved at August 1, 2018 EPAC
Link to Meeting Minutes

Date Prepared: 07/16/2018	**Project Title: [redacted]-Xfmr & PCE install**
Company/ies: Eversource CT	**Project ID Number: CS00247**
Organization: Asset Management	**Class(es) of Plant: Distribution Substation**
Project Initiator: [redacted]	**Project Category: SS Transformer Reliability**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: [redacted]**
Estimated in service date: 2020	**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: $6,636,000	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding of $6,636,000 to [redacted]. The prior authorized dollars indicated below is for engineering and ordering long lead time materials.

[redacted]

[redacted]

EVERSOURCE
Project Authorization Form

[redacted]

This project was previously approved for $2,700,000 on 4/2017 for engineering and long lead time material purchases.

Project Costs Summary Financial Evaluation

Note: Dollar values are in thousands

	Prior Authorized*	2017	2018	2019	Total
Capital Additions Direct	$2,531	$7	$4,312	$1,194	$5,513
Less Customer Contribution	$0	$0	$0	$0	$0
Removals Net of Salvage	$0	$0	$44	$12	$56
Total - Direct Spending	$2,531	$7	$4,356	$1,206	$5,569
Capital Additions - Indirect	$124	$4	$540	$263	$808
Subtotal Request	$2,655	$11	$4,896	$1,469	$6,376
AFUDC	$45	$0	$92	$167	$259
Total Request	$2,700	$11	$4,989	$1,636	$6,636

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	Prior Years	2018	2019	Total
Straight Time Labor	$2	$166	$86	$254
Overtime Labor	$0	$0	$0	$0
Outside Services	$4	$1,169	$1,120	$2,294
Materials	$0	$3,021	$0	$3,021
Other, including contingency amounts	$0	$0	$0	$0
Total	$7	$4,356	$1,206	$5,569

Indirect Capital Costs	Prior Years	2018	2019	Total
Indirects/Overheads (including benefits)	$4	$540	$263	$808
Capitalized interest or AFUDC, if any	$0	$92	$167	$259
Total	$4	$633	$430	$1,067
Total Capital Costs	$11	$4,989	$1,636	$6,636
Less Total Customer Contribution	$0	$0	$0	$0
Total Capital Project Costs	$11	$4,989	$1,636	$6,636
Total O&M Project Costs	$0	$0	$0	$0

Note: Explain unique payment provisions, if applicable

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Future Financial Impacts:

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

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

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

Is there an ARO associated with this project? If yes, please provide details: There are no ARO requirements for this project.

Are there other environmental cleanup costs associated with this project? If yes, please provide details: N/A

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Technical Justification:

Project Need Statement

[redacted]

Project Objectives

The main objective of this project is to improve reliability by [redacted]

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Project Scope

The scope of the project is to:

[redacted]

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A baseline sound report was performed and provided by engineering at the time of the siting request for an exemption.

- Engineering is working with the Siting and Construction Services group. An outreach effort was confirmed by engineering and will be carried out to abutters.
- A sound study will be performed once all equipment associated with this project has been installed and energized to confirm the substation meets Connecticut guidelines. If the sound levels exceed the state sound levels a sound wall will be engineered and installed to mitigate this issue.

This project is similar to the [redacted] but with an increase of approximately $800K due to the following scope differences;

- [redacted]
- [redacted].

Background / Justification

[redacted]

A review of the proposed [redacted]

REDACTED

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[redacted]

Business Process and / or Technical Improvements:

- Improved customer reliability and complying with [redacted]
- The [redacted]
- [redacted]
- [redacted]
- [redacted]
  - [redacted]

Alternatives Considered with Cost Estimates

One alternative was to [redacted]. Due to a previous request for material funding, a [redacted]

An alternative is to [redacted], would cost more due to mobilizing construction crews twice and in requesting work zone clearances. The estimated cost to install [redacted] is $3,223k using internal resources and $3,795k using external resources.

Another alternative is to [redacted]

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Project Schedule

Milestone/Phase Name	Estimated Completion Date
Procurement	6/2017
Siting and Outreach review	6/2018
Civil Eng. Dwg issue	7/2018
Elec Eng. Dwg issue	11/2018
Construction start	2018/2019
Construction completion	2020

Regulatory Approvals

Siting Council has filed a notice of exception (7/2018)

Risks and Risk Mitigation Plans

Engineering is working with SCLL Committee to get proper mitigation in place.

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Internal engineering resources not available to perform the work.	2018	Low	If internal resources will not be available, external resources will be obtained well in advance to ensure availability and least possible cost.
System abnormal configuration	2018/2019	Medium	[redacted]
Actual cost higher than estimated due to scope changes.	2019	Low	The scope will be held to the project description. [redacted]

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SCLL Conditions	2019	Medium	[redacted]
Customer Permission / Siting Council / Municipal approvals	2018	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach will be initiated.
Delays due to inclement weather is always a risk	2019	Low - Medium	Every opportunity to keep outage schedules from changing are made. This project will be constructed by outside contractors.
Delay of installing equipment for lack of funding this project	2019	medium	[redacted] was ordered with a pre-approval of $2.7M. The risk is landing the equipment on a foundation that has not yet been approved. The project has been delayed in approvals elevating the risk to medium.
Sound levels exceed state guidelines	2020	Low	The risk level has been set to low due to the manufactures specification on reduced noise levels. A sound study will be performed after all installed equipment has been energized.

References

- ES SYS PLAN 010
- ES SYS PLAN 015

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



Figure 1 – [redacted]

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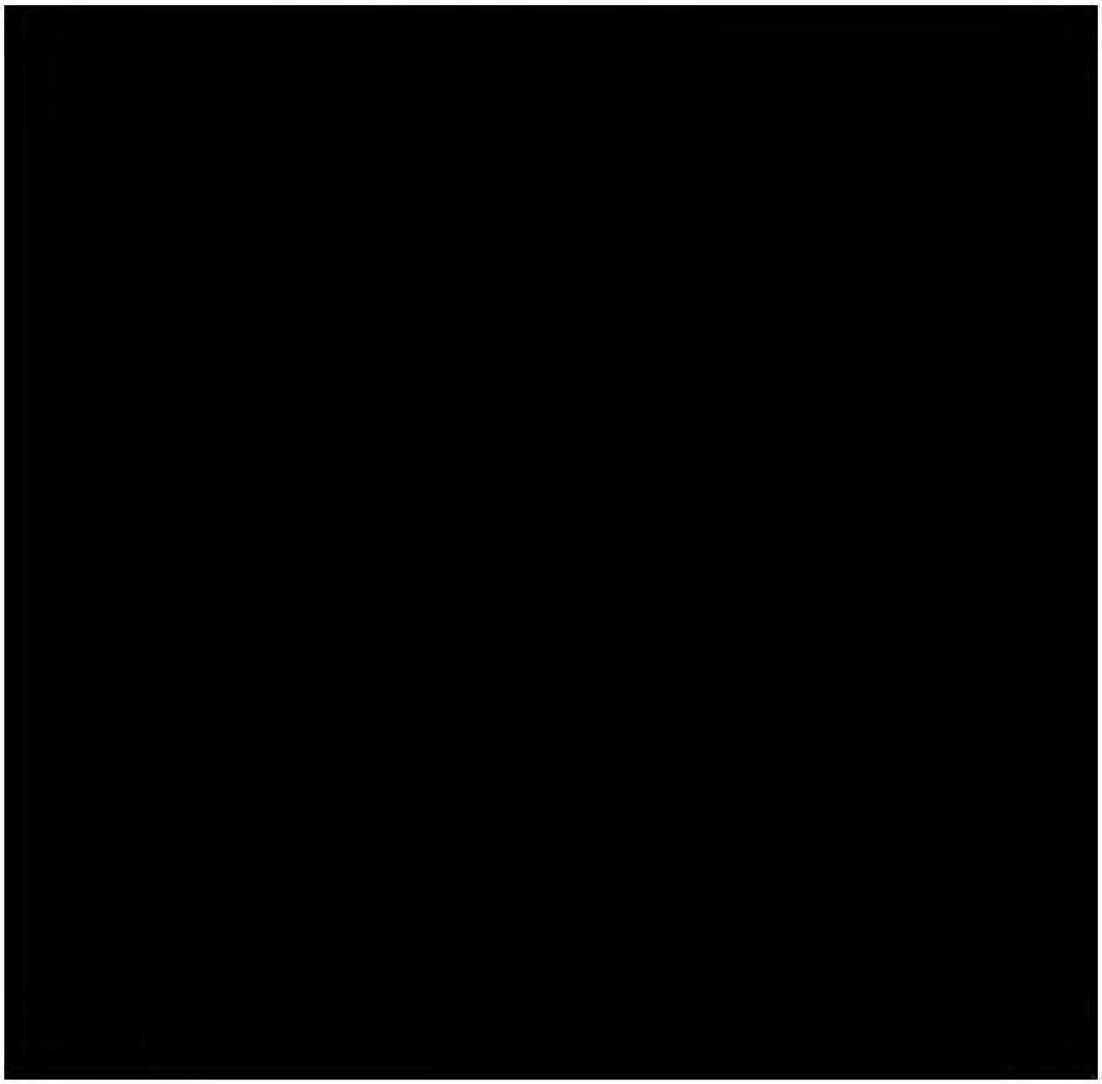

Figure 2 – [redacted]

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Figure 3 –Aerial view of [redacted] showing existing abutters.

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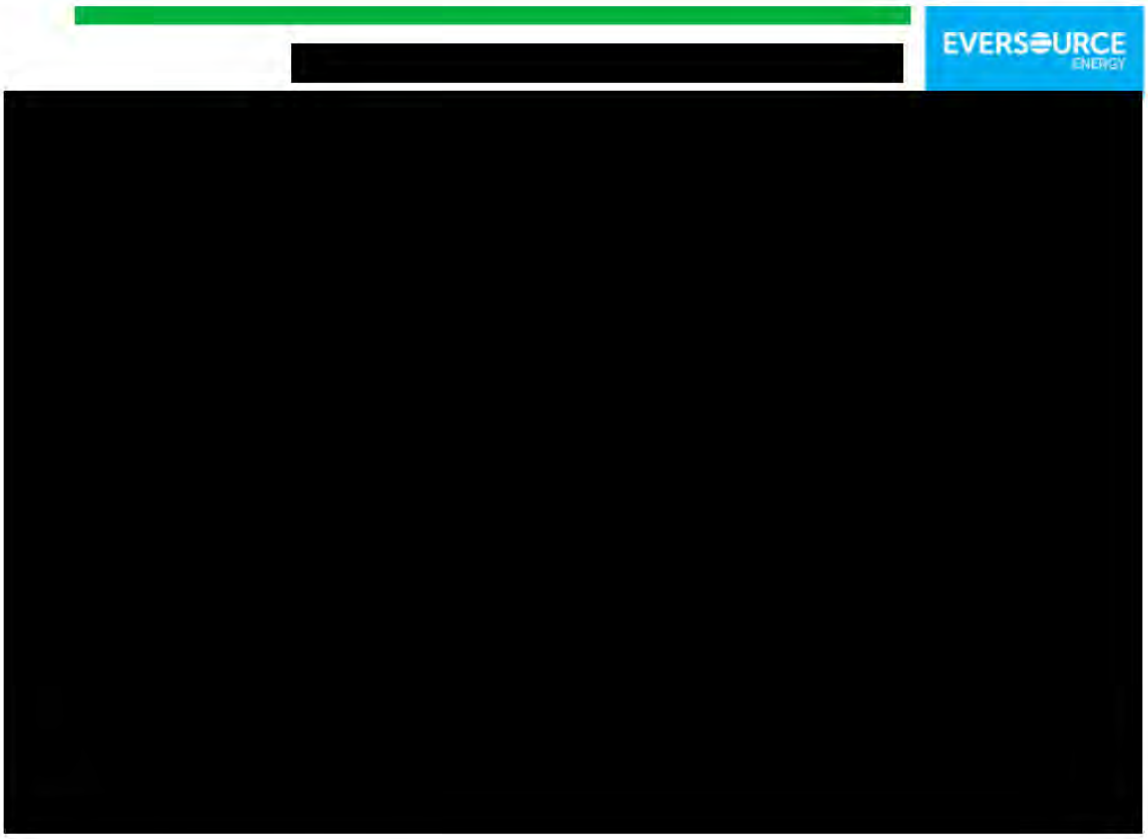

Figure 4 - Bubble chart indicating

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Load Factor= [redacted]
Note [redacted]

To Devices											
							Ratings				
Substation	To Circuit	Cummalative Load	To Device	kV	Peak on Existing Device Amps	Peak on Existing Device MVA	Normal MVA	Emergency MVA	Load on Device W/ Transfer MVA	Remaining Capacity on Adjacient Circuit MVA	Type of Transfer
[redacted]											

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From Devices					
From Circuit	Device Closed	Device Open	AMPS Transferred	MVA Transferred	Notes:
[redacted]					

Load Transferred From				
From	MVA	Amps	kV	Note
[redacted]				

Load Transferred To
[redacted]

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Project Checklist – Transmission and Substation

Checklist for Studies and Processes of a Transmission & Substation Capital Project						
Project Name: [redacted] & PCE install					**PAF No: CS00247**	
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?					No	
STANDARDS						
Does the project include standard equipment and designs?					Yes	
SUBSTATION ENGINEERING						
Does this impact Revenue Metering					Yes	
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	
P&C ENGINEERING						
OP-22 - Are PMUs and DDR required?					No	
If BPS, is an NPCC Directory #4 presentation required?					No	

Engineering is working with SCLL Committee to get proper mitigation in place.

REDACTED

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Checklist for Studies and Processes of a Transmission & Substation Capital Project	
Project Name: [redacted] & PCE install	**PAF No: CS00247**
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?	Medium
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

Funding Project Cash Flow **CS00247** ***ISD:*** **12/31/19**

Operating Company	[redacted]
Budget Year	2017
Budget Status on Jan 1	TAF
Latest Approved Status or ISD	PPAF
SS Description	[redacted]
PURA Initiative	[redacted]
Project Mgr	[redacted]
Project Engineering Mgr	[redacted]
Accounting Work Order #	CS002471

RP use CF Loaders Estimate not overstated DME
Partial PAF approved due to [redacted]

($000's)

RESOURCES	Prior Yrs Actual	JAN Actual	FEB Actual	MAR Actual	APR Actual	MAY Actual	JUN Actual	JUL Actual	AUG Actual	SEP Actual	OCT Actual	NOV Actual	DEC Actual	TOTAL 2017	TOTAL Project
DIRECT															
LT - CT_L01:Labor EESCO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.2	0.6	0.5	2.5	2.5
LT - CT_LO1:Labor EECT - Civil, Elect, Test	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L01-LT - Total Labor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.2	0.6	0.5	2.5	2.5
AE - CT_EE0:Employee Expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AM - CT_M12:Materials-Stores M11 Purchases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AO - CT_OS1:OS Svc-Contr Env	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AQ - CT_OS0:OS Svc-Contr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	4.4	4.4
AV - CT_V00:Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P1 - CT_A01:Other Misc Acct, Contingency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KR - CT_C01:Contributions, Fees & Payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BR - CT_J00:Rents + Leases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Direct - Excluding Labor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	4.4	4.4
Total Direct - Including Labor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	4.5	0.6	0.5	6.8	6.8
INDIRECT															
CT_ZNP:Non-Productive EESCO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.4	0.4
CT_ZNP:Non-Productive EECT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CT_Z91:Alloc-Mat loaders (Excludes >25K)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CT_Z93:Alloc-PR load Payroll Benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CT_Z94:Alloc-GSCOH EESCO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.1	0.5	0.3	1.9	1.9
CT_Z96:Alloc- E+S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.1	0.2	1.2	1.2
CT_Z92:Alloc-Misc Costs Cap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.3
CT_Z90:Alloc- AS+E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1
CT_Z98:Alloc - Veh Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.9	0.8	0.7	4.0	4.0
Subtotal X-AFUDC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.4	5.4	1.4	1.2	10.8	10.8
CT_Z95:Alloc-AFUDC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Total Project Prior To Date-->Month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.4	5.4	1.4	1.2	11.0	11.0
Total Project - Cumulative To Date	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.9	8.3	9.8	11.0	11.0	
CF vs. Resource Sheet - Conditional Format		0.00	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	0.00	#REF!	0.00		
Budget		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Latest Approved Budget / Projection		0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.7	15.7	15.7	15.7	13.6	76.5	
Monthly Actual & ----------->YTD Actual		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.4	5.4	1.4	1.2	11.0	YTD Act
Variance Mo. Actual vs. Mo. Budget &--->YTD vs. Budget		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.4	5.4	1.4	1.2	11.0	YTD Var
Variance Mo. Actual vs. Budget & ----------->YE vs. Budget		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.4	5.4	1.4	1.2	11.0	YE Var
Variance Mo. Actual vs. LAB &----------->YTD vs. LAB														0.0	YTD Var
Variance Mo. Actual vs. LAB & ----------->YE vs. LAB		0.0	0.0	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(14.2)	(14.3)	(10.3)	(14.3)	(12.4)	(65.5)	YE Var

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Elec	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Test	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	
Labor Rate - Elect, Test & Other	E - T - Other	[redacted]													
Labor Rate - Civil	Civil														
(Elect Man Days) x Labor Rate (E - T - Other)	Elec	0	0	0	0	0	0	0	0	0	0	0	0	0.0	%
% of Electrical Labor Cost	Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]
% of Electrical Labor Cost	Elec Support	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
(Other Man Days) x Labor Rate (E - T - Other)	Other	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Other Labor Cost	Other Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
(Test Man Days) x Labor Rate (E - T - Other)	Test	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Test Labor Cost	Test Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
(Civil Man Days) x Labor Rate (Civil)	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Civil Labor Cost	Civil Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Elect Labor Cost	Switching	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Switching Cost	SW Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
Total +.01 Conditional Formating=Zero	CLP Lab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	CLP Veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Special Misc Adj Man Days	Man Days	0	0	0	0	0	0	0	0	0	0	0	0	0	
Special Misc Adj $	SMA	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Special Misc Vehicle $	SMV	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]

TM1 Projects OH Rates Cube as of 9-13-17

Indirects		Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec
NUSCO Non-Productive (ZB)		0.2058	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851
CL&P Non-Productive (ZB)		0.2058	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851	0.1851
Stores (ZC)		0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
CL&P Payroll Benefits (ZE)		0.4024	0.4024	0.4024	0.4024	0.4024	0.4024	0.4024	0.4024	0.4024	0.4024	0.4024	0.4024
NUSCO Gen Svcs Ovrhd (ZF)		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E&S Substations (ZI)		0.1080	0.1080	0.1080	0.1080	0.1080	0.1080	0.1080	0.1080	0.1100	0.1100	0.1100	0.1100
MDEC (ZM)		0.0313	0.0313	0.0313	0.0313	0.0313	0.0313	0.0313	0.0313	0.0250	0.0250	0.0250	0.0250
Admin Sal & Exp (ZJ)		0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0113	0.0100	0.0100	0.0100	0.0100
AFUDC (annual) (ZK)		0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660	0.0660
AFUDC (monthly) (ZK)		0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055
Vehicles (ZV)		0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000

Funding Project Cash Flow CS00247 **ISD: 12/31/19**

Operating Company	CL&P
Budget Year	2018
Budget Status on Jan 1	PPAF
Latest Approved Status or ISD	PAF Pend
SS Description	[redacted]
PURA Initiative	[redacted]
Project Mgr	[redacted]
Project Engineering Mgr	[redacted]
Accounting Work Order #	CS002471

RP use CF Loaders Estimate not overstated DME
Partial PAF approved due to [redacted]

($000's)

RESOURCES DIRECT	Prior Yrs Actual	JAN Actual	FEB Actual	MAR Actual	APR Actual	MAY Fcst	JUN Fcst	JUL Fcst	AUG Fcst	SEP Fcst	OCT Fcst	NOV Fcst	DEC Fcst	TOTAL 2018	TOTAL Project
LT - CT_L01:Labor EESCO	2.5	0.9	0.2	0.4	1.5	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	122.9	125.4
LT - CT_LO1:Labor EECT - Civil, Elect, Test	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	9.5	9.5	9.5	9.5	42.7	42.7
L01-LT - Total Labor	**2.5**	**0.9**	**0.2**	**0.4**	**1.5**	**15.0**	**15.0**	**15.0**	**19.7**	**24.5**	**24.5**	**24.5**	**24.5**	**165.6**	**168.0**
AE - CT_EE0:Employee Expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AM - CT_M12:Materials-Stores M11 Purchases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,020.9	0.0	0.0	0.0	0.0	0.0	3,020.9	3,020.9
AO - CT_OS1:OS Svc-Contr Env	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	10.0	10.0	50.0	50.0
AQ - CT_OS0:OS Svc-Contr	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	223.9	223.9	223.9	223.9	223.9	1,119.5	1,123.8
AV - CT_V00:Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P1 - CT_A01:Other Misc Acct, Contingency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KR - CT_C01:Contributions, Fees & Payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BR - CT_J00:Rents + Leases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Direct - Excluding Labor	**4.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3,020.9**	**233.9**	**233.9**	**233.9**	**233.9**	**233.9**	**4,190.3**	**4,194.7**
Total Direct - Including Labor	**6.8**	**0.9**	**0.2**	**0.4**	**1.5**	**15.0**	**15.0**	**3,035.9**	**253.6**	**258.4**	**258.4**	**258.4**	**258.4**	**4,355.9**	**4,362.7**
INDIRECT															
CT_ZNP:Non-Productive EESCO	0.4	0.0	0.0	0.1	0.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	18.8	19.2
CT_ZNP:Non-Productive EECT	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.5	1.5	1.5	1.5	6.7	6.7
CT_Z91:Alloc-Mat loaders (Excludes >25K)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.2	0.0	0.0	0.0	0.0	0.0	94.2	94.2
CT_Z93:Alloc-PR load Payroll Benefits	0.0	0.0	0.0	0.0	0.0	6.1	6.1	6.1	8.3	10.5	10.5	10.5	10.5	68.3	68.3
CT_Z94:Alloc-GSCOH EESCO	1.9	0.7	0.1	0.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	4.2
CT_Z96:Alloc- E+S	1.2	0.4	0.1	0.1	2.6	4.2	4.2	4.2	47.7	49.1	49.1	49.1	49.1	259.8	261.0
CT_Z92:Alloc-Misc Costs Cap	0.3	0.1	0.0	0.0	0.1	0.6	0.6	0.6	6.6	6.8	6.8	6.8	6.8	35.9	36.2
CT_Z90:Alloc- AS+E	0.1	0.0	0.0	0.0	0.0	0.3	0.3	7.1	2.8	2.8	2.8	2.8	2.8	21.8	21.9
CT_Z98:Alloc - Veh Clear	0.1	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.9	4.9	4.9	4.9	4.9	32.6	32.7
	4.0	**1.4**	**0.3**	**0.6**	**4.3**	**16.4**	**16.4**	**117.4**	**72.3**	**77.8**	**77.8**	**77.8**	**77.8**	**540.4**	**544.4**
Subtotal X-AFUDC	**10.8**	**2.3**	**0.4**	**0.9**	**5.8**	**31.4**	**31.4**	**3,153.3**	**325.9**	**336.2**	**336.2**	**336.2**	**336.2**	**4,896.3**	**4,907.1**
CT_Z95:Alloc-AFUDC	0.1	0.1	0.1	0.1	0.1	0.1	0.3	6.8	14.1	15.5	16.9	18.4	19.8	92.3	92.4
Total Project Prior To Date-->Month	**11.0**	**2.3**	**0.5**	**1.0**	**5.9**	**31.6**	**31.7**	**3,160.1**	**340.0**	**351.7**	**353.1**	**354.6**	**356.1**	**4,988.5**	**4,999.5**
Total Project - Cumulative To Date	**11.0**	**13.3**	**13.8**	**14.8**	**20.7**	**52.2**	**83.9**	**3,244.0**	**3,584.0**	**3,935.7**	**4,288.9**	**4,643.5**	**4,999.5**	**4,999.5**	
CF vs. Resource Sheet - Conditional Format		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Budget		20.1	20.1	20.2	20.3	20.4	59.1	260.8	3,097.6	274.8	237.1	199.4	200.1	4,430.0	
Latest Approved Budget / Projection		24.7	24.4	24.8	24.6	24.7	8.7	8.7	2,415.4	16.9	17.0	17.0	17.1	2,623.5	
Monthly Actual & ----------->YTD Actual		2.3	0.5	1.0	5.9									9.7	YTD Act
Variance Mo. Actual vs. Mo. Budget &--->YTD vs. Budget		(17.7)	(19.7)	(19.2)	(14.5)									(71.1)	YTD Var
Variance Mo. Actual vs. Budget & ----------->YE vs. Budget		(17.7)	(19.7)	(19.2)	(14.5)	11.2	(27.4)	2,899.3	(2,757.6)	77.1	116.0	155.2	155.9	558.5	YE Var
Variance Mo. Actual vs. LAB &----------->YTD vs. LAB														0.0	YTD Var
Variance Mo. Actual vs. LAB & ----------->YE vs. LAB		(22.3)	(23.9)	(23.5)	(18.7)	6.9	23.0	3,151.4	(2,075.4)	334.8	336.2	337.6	339.0	2,365.0	YE Var

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Elec	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Test	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Other	0	0	0	0	0	0	0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	90	
Labor Rate - Elect, Test & Other	E - T - Other	[redacted]													
Labor Rate - Civil	Civil														
(Elect Man Days) x Labor Rate (E - T - Other)	Elec	0	0	0	0	0	0	0	0	0	0	0	0	0.0	%
% of Electrical Labor Cost	Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]
% of Electrical Labor Cost	Elec Support	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
(Other Man Days) x Labor Rate (E - T - Other)	Other	0	0	0	0	0	0	0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
% of Other Labor Cost	Other Vehicle	0	0	0	0	0	0	0						0.0	[redacted]
(Test Man Days) x Labor Rate (E - T - Other)	Test	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Test Labor Cost	Test Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]
(Civil Man Days) x Labor Rate (Civil)	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Civil Labor Cost	Civil Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]
% of Elect Labor Cost	Switching	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Switching Cost	SW Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]
Total +.01 Conditional Formating=Zero	CLP Lab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
Total	CLP Veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Special Misc Adj Man Days	Man Days	0	0	0	0	0	0	0	0	0	0	0	0	0	
Special Misc Adj $	SMA	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Special Misc Vehicle $	SMV	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]

TM1 Projects OH Rates Cube as of 3/1/18

Indirects	Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec
NUSCO Non-Productive (ZB)	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535
CL&P Non-Productive (ZB)	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535
Stores (ZC)	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
CL&P Payroll Benefits (ZE)	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034
NUSCO Gen Svcs Ovrhd (ZF)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E&S Substations (ZI)	0.1080	0.1080	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800
MDEC (ZM)	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250
Admin Sal & Exp (ZJ)	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100
AFUDC (annual) (ZK)	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495	0.0495
AFUDC (monthly) (ZK)	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041	0.0041
Vehicles (ZV)	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000

***Funding Project Cash Flow* CS00247** **ISD: 12/31/19**

Operating Company	CL&P
Budget Year	2019
Budget Status on Jan 1	PPAF
Latest Approved Status or ISD	PAF Pend
SS Description	[redacted]
PURA Initiative	[redacted]
Project Mgr	[redacted]
Project Engineering Mgr	[redacted]
Accounting Work Order #	CS002471

RP use CF Loaders Estimate not overstated DME
Partial PAF approved due to [redacted]

($000's)

RESOURCES DIRECT	Prior Yrs Actual	JAN Fcst	FEB Fcst	MAR Fcst	APR Fcst	MAY Fcst	JUN Fcst	JUL Fcst	AUG Fcst	SEP Fcst	OCT Fcst	NOV Fcst	DEC Fcst	TOTAL 2019	TOTAL Project
LT - CT_L01:Labor EESCO	125.4	10.0	10.0	10.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.0	162.4
LT - CT_LO1:Labor EECT - Civil, Elect, Test	42.7	9.8	9.8	9.8	9.8	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.8	91.5
L01-LT - Total Labor	168.0	19.8	19.8	19.8	16.8	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.8	253.9
AE - CT_EE0:Employee Expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AM - CT_M12:Materials-Stores M11 Purchases	3,020.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,020.9
AO - CT_OS1:OS Svc-Contr Env	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0
AQ - CT_OS0:OS Svc-Contr	1,123.8	223.9	223.9	223.9	223.9	223.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1,120.1	2,243.9
AV - CT_V00:Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P1 - CT_A01:Other Misc Acct, Contingency	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KR - CT_C01:Contributions, Fees & Payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BR - CT_J00:Rents + Leases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Direct - Excluding Labor	4,194.7	223.9	223.9	223.9	223.9	223.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1,120.1	5,314.8
Total Direct - Including Labor	4,362.7	243.7	243.7	243.7	240.7	233.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1,206.0	5,568.7
INDIRECT															
CT_ZNP:Non-Productive EESCO	19.2	1.5	1.5	1.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	24.9
CT_ZNP:Non-Productive EECT	6.7	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	14.2
CT_Z91:Alloc-Mat loaders (Excludes >25K)	94.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.2
CT_Z93:Alloc-PR load Payroll Benefits	68.3	8.6	8.6	8.6	7.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.7	105.9
CT_Z94:Alloc-GSCOH EESCO	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2
CT_Z96:Alloc- E+S	261.0	30.6	30.6	30.6	30.1	28.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	150.8	411.9
CT_Z92:Alloc-Misc Costs Cap	38.2	6.4	6.4	6.4	6.3	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.4	67.6
CT_Z90:Alloc- AS+E	21.9	2.7	2.7	2.7	2.6	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	35.0
CT_Z98:Alloc - Veh Clear	32.7	4.0	4.0	4.0	3.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.2	49.8
	544.4	55.2	55.2	55.2	52.2	45.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	263.3	807.7
Subtotal X-AFUDC	4,907.1	298.9	298.9	298.9	292.9	278.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1,469.2	6,376.3
CT_Z95:Alloc-AFUDC	92.4	11.5	12.1	12.8	13.5	14.2	14.5	14.6	14.6	14.6	14.7	14.7	14.7	166.6	259.0
Total Project Prior To Date-->Month	4,999.5	310.4	311.0	311.7	306.4	293.1	15.3	14.6	14.6	14.6	14.7	14.7	14.7	1,635.8	6,635.4
Total Project - Cumulative To Date	4,999.5	5,309.9	5,620.9	5,932.7	6,239.1	6,532.2	6,547.5	6,562.0	6,576.6	6,591.3	6,605.9	6,620.6	6,635.4	6,635.4	
CF vs. Resource Sheet - Conditional Format		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Budget		210.8	368.0	363.7	364.5	370.4	211.8	14.1	14.1	14.2	14.2	14.2	14.3	1,974.3	
Latest Approved Budget / Projection		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Monthly Actual & ————————>YTD Actual														0.0	YTD Act
Variance Mo. Actual vs. Mo. Budget &-- >YTD vs. Budget														0.0	YTD Var
Variance Mo. Actual vs. Budget & ————>YE vs. Budget		99.5	(56.9)	(52.0)	(58.1)	(77.3)	(196.5)	0.5	0.5	0.5	0.5	0.5	0.5	(338.5)	YE Var
Variance Mo. Actual vs. LAB &————>YTD vs. LAB														0.0	YTD Var
Variance Mo. Actual vs. LAB & ————>YE vs. LAB		310.4	311.0	311.7	306.4	293.1	15.3	14.6	14.6	14.6	14.7	14.7	14.7	1,635.8	YE Var

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Elec	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Test	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Other	[redacted]					0	0	0	0	0	0	0	[redacted]	
Labor Rate - Elect, Test & Other	E - T - Other	[redacted]													
Labor Rate - Civil	Civil														
(Elect Man Days) x Labor Rate (E - T - Other)	Elec	0	0	0	0	0	0	0	0	0	0	0	0	0.0	%
% of Electrical Labor Cost	Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]
% of Electrical Labor Cost	Elec Support	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
(Other Man Days) x Labor Rate (E - T - Other)	Other	[redacted]					0	0	0	0	0	0	0	[redacted]	
% of Other Labor Cost	Other Vehicle						0	0	0	0	0	0	0		
(Test Man Days) x Labor Rate (E - T - Other)	Test	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Test Labor Cost	Test Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
(Civil Man Days) x Labor Rate (Civil)	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Civil Labor Cost	Civil Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Elect Labor Cost	Switching	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Switching Cost	SW Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
Total +.01 Conditional Formating=Zero	CLP Lab	[redacted]					0.0	0.0	0.0	0.0	0.0	0.0	0.0	[redacted]	
Total	CLP Veh						0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Special Misc Adj Man Days	Man Days	0	0	0	0	0	0	0	0	0	0	0	0	0	
Special Misc Adj $	SMA	0	0	0	0	0	0	0	0	0	0	0	0	0.0	
% of Special Misc Vehicle $	SMV	0	0	0	0	0	0	0	0	0	0	0	0	0.0	[redacted]

TM1 Projects OH Rates Cube as of 3/1/18

Indirects		Jan	Feb	Mar	April	May	June	July	August	Sept	Oct	Nov	Dec
NUSCO Non-Productive (ZB)		0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535
CL&P Non-Productive (ZB)		0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535	0.1535
Stores (ZC)		0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
CL&P Payroll Benefits (ZE)		0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034	0.4034
NUSCO Gen Svcs Ovrhd (ZF)		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E&S Substations (ZI)		0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
MDEC (ZM)		0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250	0.0250
Admin Sal & Exp (ZJ)		0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100
AFUDC (annual) (ZK)		0.0267	0.0267	0.0267	0.0267	0.0267	0.0267	0.0267	0.0267	0.0267	0.0267	0.0267	0.0267
AFUDC (monthly) (ZK)		0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022
Vehicles (ZV)		0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000

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Operations Project Authorization Form

Approved on May 12, 2022 EPAC

Link to Meeting Minutes

Project Title: [redacted] 2nd Xfmr, Switchgear, & 115kV Circuit Breaker Addition	**Project Number: 404940, CS00261**
Date Prepared: 06/02/2022	**Company: Eversource CT**
Organization: System Planning	**Class(es) of Plant: T SS, D SS**
Project Initiator: [redacted]	**Project Category: Stations – Transformers / Circuit Breakers**
Managing Organization: Transmission / Major Projects	**Schedule ID#: 80053152 (D); 40494001 (T)**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: 12/31/2023	**Emergency Related Request? No**
Eng./Constr. Resources Budgeted? Yes	**Facility Type (check all that apply): ☒ PTF non-regional ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)**
Total Capital Request: $14,439K (D - $10,672K; T - $3,767K)	**Authorization Type: Full Funding**

[1] Executive Summary

This project is seeking full funding approval of $14,439K ($3,767K for 404940 and $10,672K for CS00261) to support material procurement, construction, and test services for upgrades to the [redacted].

Currently, [redacted].

Initial funding of $70K for 404940 was approved in PowerPlan on 05/21/2019. The project was presented to and approved at the Solution Design Committee (SDC) on 02/19/2020. Partial funding of $478K for 404940 was approved in PowerPlan on 03/22/2021 and $1,612.9K for CS00261 was approved in PowerPlan on 03/23/2021. As of 04/14/2022, $393K for 404940 and

$283K for CS00261 has been spent to complete preliminary design, associated planning grade estimates, a constructability review, single contingency load loss (SCLL) considerations, and full funding Project Authorization Form (PAF) development.

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[2] Project Costs Summary

Project Total Cost

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	2025	2026	2027	Total
1. ROW / Easements / Land Acquisition	$								
2. Environmental Approvals / Permits	$14		$3	$3					$5
3. Outreach	$38	$0	$35	$36					$71
4. Siting Approvals / Permits	$6	$3	$16	$2					$21
5. Engineering / Design	$622	$224	$271	$276					$771
6. Materials (Eversource purchased)	$418		$2,552	$1,860					$4,413
7. Construction (incl matl's by contractors)	$18	$5	$841	$1,210					$2,056
8. Testing / Commissioning	$69		$224	$297					$521
9. Project Mgmt. Team	$103	$118	$73	$89					$280
10. Removals	$	$24	$8	$19					$51
11. Other	$								
12. Risks	$		$491	$579					$1,070
SUBTOTAL DIRECTS W/ RISKS	**$1,287**	$373	$4,514	$4,372					$9,260
13. Indirects/Overhead	$728	$279	$1,632	$2,333					$4,244
14. AFUDC	$76	$24	$252	$235					$511
PROJECT TOTAL – BASELINE BUDGET	**$2,090**	$676	$6,398	$6,940					$14,014
15. Contingency	$		$227	$198					$425
TOTAL CAPITAL REQUEST	**$2,090**	$676	$6,625	$7,138					$14,439
16. Reimbursables/Customer Contribution	$								
PROJECT TOTAL (LESS REIMBURSABLES)	**$2,090**	$676	$6,625	$7,138					$14,439
O&M	$								
TOTAL REQUEST	**$2,090**	$676	$6,625	$7,138					$14,439

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Distribution CS00261

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	2025	2026	2027	Total
1. ROW / Easements / Land Acquisition	$								
2. Environmental Approvals / Permits	$12		$1	$2					$3
3. Outreach	$38		$18	$18					$36
4. Siting Approvals / Permits	$5								
5. Engineering / Design	$546	$87	$216	$225					$528
6. Materials (Eversource purchased)	$305		$1,825	$1,859					$3,684
7. Construction (incl matl's by contractors)	$9	$1	$296	$1,075					$1,371
8. Testing / Commissioning	$34		$62	$255					$317
9. Project Mgmt. Team	$58	$42	$33	$81					$156
10. Removals	$	$24		$17					$41
11. Other	$								
12. Risks	$		$318	$488					$806
SUBTOTAL DIRECTS W/ RISKS	**$1,006**	$153	$2,768	$4,021					$6,942
13. Indirects/Overhead	$561	$124	$888	$2,109					$3,120
14. AFUDC	$45	$6	$137	$156					$299
PROJECT TOTAL – BASELINE BUDGET	**$1,612**	$283	$3,793	$6,286					$10,361
15. Contingency	$		$135	$177					$311
TOTAL CAPITAL REQUEST	**$1,612**	$283	$3,928	$6,462					$10,672
16. Reimbursables/Customer Contribution	$								
PROJECT TOTAL (LESS REIMBURSABLES)	**$1,612**	$283	$3,928	$6,462					$10,672
O&M	$								
TOTAL REQUEST	**$1,612**	$283	$3,928	$6,462					$10,672

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Detail other costs, project risk items and their allocations: Distribution

Risk	Allocation
1. Potential UG Obstructions	$100,000
2. Severe Weather, Delays, OT	$90,000
3. Design Development	$150,000
4. Environmental - potential soil contamination	$165,000
5. Wetland Impact	$75,000
6. Permits Delay	$55,000
7. Local Impact, outreach	$155,000
8. Connecticut Siting Council (CSC) Outreach	$15,500
Total	$805,500

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Transmission 404940

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	2025	2026	2027	Total
1. ROW / Easements / Land Acquisition	$								
2. Environmental Approvals / Permits	$3		$2	$1					$3
3. Outreach	$	$0	$17	$18					$36
4. Siting Approvals / Permits	$1	$3	$16	$2					$21
5. Engineering / Design	$76	$136	$55	$51					$243
6. Materials (Eversource purchased)	$113		$727	$1					$728
7. Construction (incl matl's by contractors)	$9	$4	$545	$135					$685
8. Testing / Commissioning	$34		$162	$42					$204
9. Project Mgmt. Team	$45	$76	$40	$8					$124
10. Removals	$		$8	$2					$10
11. Other	$								
12. Risks	$		$174	$91					$265
SUBTOTAL DIRECTS W/ RISKS	**$281**	$220	$1,746	$352					$2,318
13. Indirects/Overhead	$167	$155	$744	$224					$1,123
14. AFUDC	$30	$18	$115	$79					$212
PROJECT TOTAL – BASELINE BUDGET	**$478**	$393	$2,605	$655					$3,653
15. Contingency			$92	$21					$114
TOTAL CAPITAL REQUEST	**$478**	$393	$2,697	$676					$3,767
16. Reimbursables/Customer Contribution	$								
PROJECT TOTAL (LESS REIMBURSABLES)	**$478**	$393	$2,697	$676					$3,767
O&M	$								
TOTAL REQUEST	**$478**	$393	$2,697	$676					$3,767

Refer to Attachments A1, A2, and A3 for detailed cost estimate sheets.

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Detail other costs, project risk items and their allocations: Transmission

Risk	Allocation
1. Potential UG Obstructions	$80,000
2. Severe Weather, Delays, OT	$56,000
3. Design Development	$59,900
4. Environmental - potential soil contamination	$42,000
5. Wetland Impact	$19,500
6. SCS Outreach	$7,500
Total	$264,900

Explain unique payment provisions, if applicable:

Not Applicable

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

Not applicable

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[3] Technical Justification

Project Need, Objective and Justification

Distribution Needs:

[redacted] with one (1) unit of switchgear that has [redacted] are required to improve reliability by [redacted]

[redacted]

[redacted]

The [redacted] provides [redacted]

Transmission Needs:

As previously stated, [redacted] and to adhere to the

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Distribution System Planning Guide, Transmission Planning proposes adding [redacted]

Project Objectives

The main project objectives are to address [redacted] by implementing the following system upgrades:

- [redacted]

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Project Scope

The scope of work is provided below. See Attachments D and F for nomenclature and substation layout removals, respectively. See Attachments E and G for nomenclature and substation layout additions, respectively.

1. Above Grade Electrical Modifications/Additions:

Transmission (404940)

Substation layout is affected with the [redacted] as listed below:

a. [redacted]

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[redacted]

e. Install one lightning mast and foundation.
   i. Lightning mast is to be designed by steel pole vendor per the most current Eversource standards.
   ii. Spread footer foundation will be used for the lightning mast foundation.
   iii. Foundation design will include the required calculations.

Distribution (CS00261)

[redacted]

h. Pre-project noise study, AC/DC load analysis, and battery capacity analysis has been completed.

i. [redacted]

2. Above Grade Structural Modifications/Additions:

Transmission

a. [redacted]

b. [redacted]

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Distribution

a. [redacted]

II. Below Grade

Transmission

a. [redacted]

iii. New foundation will be required for the new lightning mast.

b. Ground Grid Modifications/Expansion:

i. [redacted]

c. Raceway Additions/Modifications

i. [redacted]

Note: [redacted]

Distribution

a. Foundation Addition/Modifications:

i. [redacted]

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ii. [redacted]

2. Ground Grid Modifications/Expansion:
   a. [redacted]

3. Raceway Additions/Modifications
   a. [redacted]

III. Control Enclosure Evaluation

1. Control Enclosure physical space evaluation –
   a. The existing control enclosure has sufficient space for new equipment and existing raceways are adequate to maintain separation per Eversource SUB013.
2. AC Station Service loading and evaluation of existing AC panel boards –
   a. Existing drawings indicate that the [redacted]
3. DC Battery/Charger Impacts and evaluation of existing DC panel boards –
   a. [redacted]
   b. [redacted]
   c. Existing drawings indicate that the [redacted]

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4. HVAC addition/modifications –

   HVAC, ventilation and H2 sensing upgrades are not required within the control enclosure as part of this scope of work.

IV. Construction, Outage and Energization Considerations

1. [redacted]
2. The new mobile position will be relocated and established prior to removal of the existing mobile position.
3. Transmission scope of work shall be constructed first, followed by Distribution scope of work.

V. Protection & Controls Scope of Work

1. [redacted]

f. Program primary System 1 line relays at [redacted] for Directional Comparison [redacted]

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o. [redacted]

2. The new Distribution Switchgear Enclosure will include the following:

[redacted]

3. [redacted]

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b. [redacted]

A constructability review was performed on March 16, 2022 (see Attachment C).

Substation Equipment

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

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Background

The [redacted]

The [redacted]

The [redacted]

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[4] Alternatives Considered

This project was presented to the Solution Design Committee on February 19, 2020 and Alternative #1 was chosen as the approved solution.

The costs in the Alternatives section below for the [redacted] project reflect estimates presented at the SDC meeting in 2020. Since then, an updated estimate has been developed for the Preferred option which has experienced an increase in costs of approximately 32%. The other alternatives would have experienced a similar order of magnitude increase as did the Preferred solution.

Alternative #1 (This is the Preferred solution):

This alternative [redacted] Figure 1 below shows the one-line diagram for this alternative.

[redacted] further protection scope for this alternative is provided in the Scope section of this document. This is the preferred alternative because it follows the DSPG planning criteria, provides better protection than Alternative 3 and costs significantly less than Alternative 2.

All work for this alternative is expected to take place within the existing substation fence. Customer impacts should be minimal with this alternative since an expansion of the fence line is not required, the new equipment will not be taller than the tallest existing piece of equipment and the sound levels are expected to be below the maximum property line sound pressure levels allowed by State Regulations. A Notice of Exemption to the Connecticut Siting Council will be needed. There are no current Asset Management projects that would conflict with this project. [redacted]

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Figure 1: Transmission Alternative 1, [redacted]

Planning grade cost estimate for the Transmission portion of this alternative is $3.76M.
Planning grade cost estimate for the Distribution portion of this alternative is $10.67M.

Alternative 2 (This Alternative is Not Recommended):

This alternative consists of the [redacted] he figure below shows the one-line diagram for this alternative.



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[redacted] Also, the transmission cost for this alternative is over 3 times greater than the preferred.

Work required for this alternative will require a [redacted]; a Petition submitted to the Connecticut Siting Council will be needed. [redacted]. There are no current Asset Management projects that would conflict with this project. [redacted].



Figure 2: Transmission Alternative 2, [redacted]

Conceptual grade cost estimate for the Transmission portion of this alternative is $10.9M.

Planning grade cost estimate for the Distribution portion of this alternative is $7.3M.

Alternative 3 (This Alternative is Not Recommended):

This alternative consists of the [redacted]

The figure below shows the one-line diagram for this alternative.

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The [redacted] The cost of this alternative compared to the preferred is marginal and provides less protection; therefore, this is not the preferred alternative.

All work for this alternative is expected to take place within the [redacted] the new equipment will not be taller than the tallest existing piece of equipment and the sound levels are expected to be below the maximum property line sound pressure levels allowed by State Regulators. A Notice of Exemption to the Connecticut Siting Council will be needed. There are no current Asset Management projects that would conflict with this project. [redacted]



Figure 3: Transmission Alternative 3, [redacted]

Conceptual grade cost estimate for the Transmission portion of this alternative is $2.1M.

Planning grade cost estimate for the Distribution portion of this alternative is $7.3M.

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[5] Project Schedule

Milestone	Scheduled Completion Date
Project Need by Date	12/31/2021
Date of IFR Approval	May 2019
Complete Conceptual design of Alternative(s)	12/30/2019
Initiator complete SSF form	02/10/2020
SDC Presentation Date(s)	02/19/2020
Conversion of Tx development costs, 183 to 107 (applicable to projects that require SSF approval but do not require ISO alternative selection)	N/A
Preliminary Design Complete	11/18/2021
Preliminary Design Constructability review complete	06/02/2021
Full funding estimate complete	05/02/2022
Full funding estimate review	05/02/2022
Initiator complete PAF form	05/02/2022
EPAC Funding Dates (Partial)	01/20/2021
EPAC Funding Dates (Full)	05/11/2022
Detail Design Complete	05/03/2022
Final Constructability Review Complete	03/16/2022
Targeted Milestone Dates:	
· Siting Approval (if applicable)	08/15/2022
· Env. Approvals (if applicable)	N/A
· Outage & Energization Plan Issued	TBD
· All Material on Site	08/06/2023
· Outage Permit(s) Approved	TBD based on material delivery
IFC Design Complete	05/31/2022
Start of Construction	09/06/2022
Project ISD	10/30/2023 (D), 12/30/2023 (T)
Relay Settings Issued (*Required for Full Funding requests)	06/28/2022
ISO Related Milestones (for applicable projects)	
· ISO Preferred Alternative Selected	N/A
· Conversion of Tx development costs, 183 to 107 · (following ISO preferred alternative selection)	N/A
· PAC Presentation	N/A
· TCA Submittal	N/A
PPA Approval	10/27/2021

Refer to Attachment B1 for the Distribution schedule and Attachment B2 for the Transmission schedule.

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[6] Regulatory Approvals

An Exempt Modification is required to be submitted to the Connecticut Siting Council.

A [redacted] was approved on 10/27/2021.

[7] Risk and Risk Mitigation Plans

Contingency:

A contingency amount of $425K has been included in the total project estimate to account for any unknowns. The table below shows the individual contingency contributions per work order number.

Project Number/Work Order #	Contingency Amount
404940/40494001	$113,600
CS00261/CS002611	$311,400
Total	**$425,000**

[redacted]

Risk Mitigation:

Risk	Mitigation
1. Potential UG Obstructions	UG obstructions may be observed during Civil excavations and will be taken care of at that time. Have alternative paths for conduit. Risk is allocated in the project budget for unexpected UG obstructions
2. Severe Weather, Delays, OT	Construction delays caused by weather and storm duty are possible; try to be flexible with construction schedule. Risk is allocated in the project budget for delays.
3. Design Development	The design and review process will be done in detail as the project IFC design is being completed. Risk is allocated to the project budget for any changes in detailed design.
4. Environmental	As civil construction starts there could be contaminated soil that would require to be dealt with. Risk is allocated to the project budget for removal of any possible contaminated soil.
5. Wetland Impact	It is not expected that wetlands will be impacted during the construction of this project since all work will be completed within the existing fence line. Risk has been allocated to the project budget to account for any wetland impacts.

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Risk	Mitigation
6. Permits Delay	Permit delays could cause delays in construction start or material delivery. Risk is allocated to the project budget for these delays.
7. Local Impact	Abutters have shown some resistance to projects in the area in the past. There has been some outreach already and thus far there has been no resistance for this upcoming project. Risk has been allocated to the project budget for any delays that may be caused from abutters during the CSC approval process.
8. SCS Outreach	Since the project will be constructed [redacted] an Exempt Modification will be submitted to the SCS for approval; no issues are expected for this approval process. Risk has been allocated to the project budget for any issues that may arise during the approval process.

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[8] References

References
1. Distribution System Planning Guide
2. [redacted] dated 04/12/2019
3. [redacted] dated 04/08/2020
4. [redacted] partial funding PAF, dated 02/05/2021

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

Attachment	Included in Submittal?
A1. Cost Estimate for Distribution	*YES*
A2. Cost Estimate for Transmission	*YES*
A3. Cost Estimate – Total Project	*YES*
B1. P6 Schedule for Distribution	*YES*
B2. P6 Schedule for Transmission	*YES*
C. Constructability Review	*YES*
D. 19703-91001-REV AG2 AH2 Nomenclature Removals	*YES*
E. 19703-91001-REV AG2 AH2 Nomenclature Additions	*YES*
F. 19703-33001-REV AH AG Layout Removals	*YES*
G. 19703-33001-REV AH AG Layout Additions	*YES*

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Project Authorization Form

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]		**Project Number: 404940, CS00261**	
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):	10/27/2021		
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?	TBD		
Is there an impact to the existing ground grid?	Yes		
Is a Transient Over Voltage (TOV) analysis required?	No		

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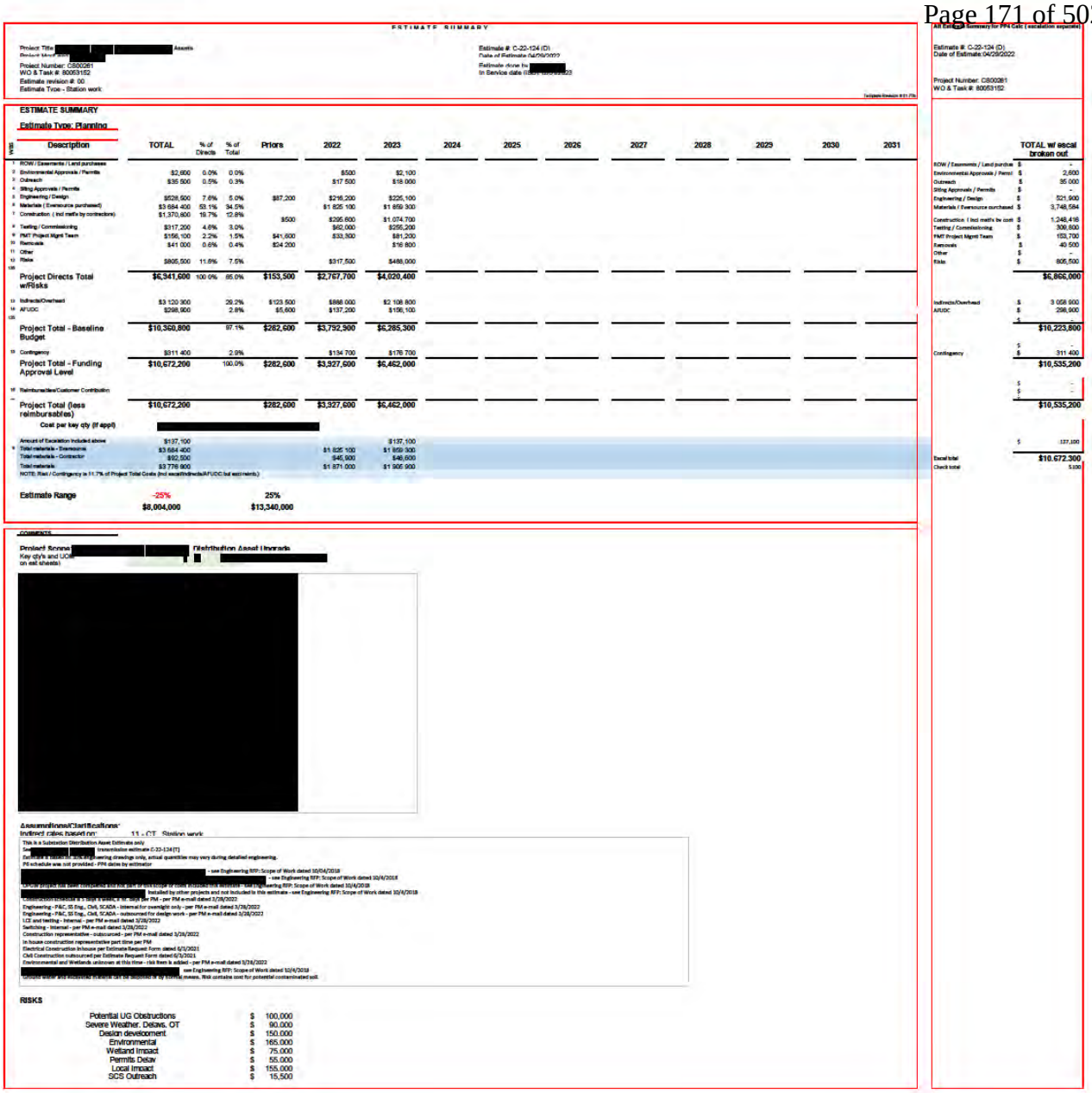
Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] – 2nd Xfmr, Switchgear, & 115kV Circuit Breaker	**Project Number: 404940, CS00261**
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?	Yes, for [redacted] remote work
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? *(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	
What is the level of outreach expected?	Medium
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?	No
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



ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases														
2	Environmental Approvals / Permits	$2,600	0.0%	0.0%		$500	$2,100								
3	Outreach	$35 500	0.5%	0.3%		$17 500	$18 000								
4	Siting Approvals / Permits														
5	Engineering / Design	$528,500	7.6%	5.0%	$87,200	$216,200	$225,100								
6	Materials (Eversource purchased)	$3 684 400	53.1%	34.5%		$1 825 100	$1 859 300								
7	Construction (Incl matl's by contractors)	$1,370,800	19.7%	12.8%	$500	$295 600	$1 074 700								
8	Testing / Commissioning	$317,200	4.6%	3.0%		$62,000	$255,200								
9	PMT Project Mgmt Team	$156,100	2.2%	1.5%	$41,600	$33,500	$81,200								
10	Removals	$41 000	0.6%	0.4%	$24 200		$16 800								
11	Other														
12	Risks	$805,500	11.6%	7.5%		$317,500	$488,000								
13	**Project Directs Total w/Risks**	**$6,941,600**	100.0%	65.0%	**$153,500**	**$2,767,700**	**$4,020,400**								
14	Indirects/Overhead	$3 120 300		29.2%	$123 500	$888 000	$2 108 800								
15	AFUDC	$298,900		2.8%	$5,600	$137,200	$156,100								
16	**Project Total - Baseline Budget**	**$10,360,800**		97.1%	**$282,600**	**$3,792,900**	**$6,285,300**								
17	Contingency	$311 400		2.9%		$134 700	$176 700								
18	**Project Total - Funding Approval Level**	**$10,672,200**		100.0%	**$282,600**	**$3,927,600**	**$6,462,000**								
19	Reimbursables/Customer Contribution														
20	**Project Total (less reimbursables)**	**$10,672,200**			**$282,600**	**$3,927,600**	**$6,462,000**								
	Cost per key qty (if appl)	[redacted]													
	Amount of Escalation included above	$137,100					$137,100								
9	Total materials - Eversource	$3 684 400				$1 825 100	$1 859 300								
	Total materials - Contractor	$92,500				$46,500	$46,000								
	Total materials	$3 776 900				$1 871 000	$1 905 900								

NOTE: Risk / Contingency is 11.7% of Project Total Costs (incl escal/Indirects/AFUDC but excl reimb.)

Estimate Range	-25%	25%
	$8,004,000	$13,340,000

All Escal'd Summary for PPI Calc (escalation separated)

Estimate # C-22-124 (D)
Date of Estimate:04/29/2022

Project Number: C800261
WO & Task #: 80053152

		TOTAL w/ escal broken out
ROW / Easements / Land purchas	$	-
Environmental Approvals / Permi	$	2,600
Outreach	$	35 000
Siting Approvals / Permits	$	-
Engineering / Design	$	521,900
Materials (Eversource purchased	$	3,748,584
Construction (Incl matl's by cont	$	1,248,416
Testing / Commissioning	$	309,800
PMT Project Mgmt Team	$	153,700
Removals	$	40 500
Other	$	-
Risks	$	805,500
		$6,866,000
Indirects/Overhead	$	3 058 900
AFUDC	$	298,900
		$10,223,800
	$	-
Contingency	$	311 400
		$10,535,200
	$	-
	$	-
	$	-
		$10,535,200
	$	-137,100
Excel total		**$10,672,300**
Check total		5100

COMMENTS

Project Scope: [redacted] Distribution Asset Upgrade
Key qty's and UOM: [redacted]
on est sheets)

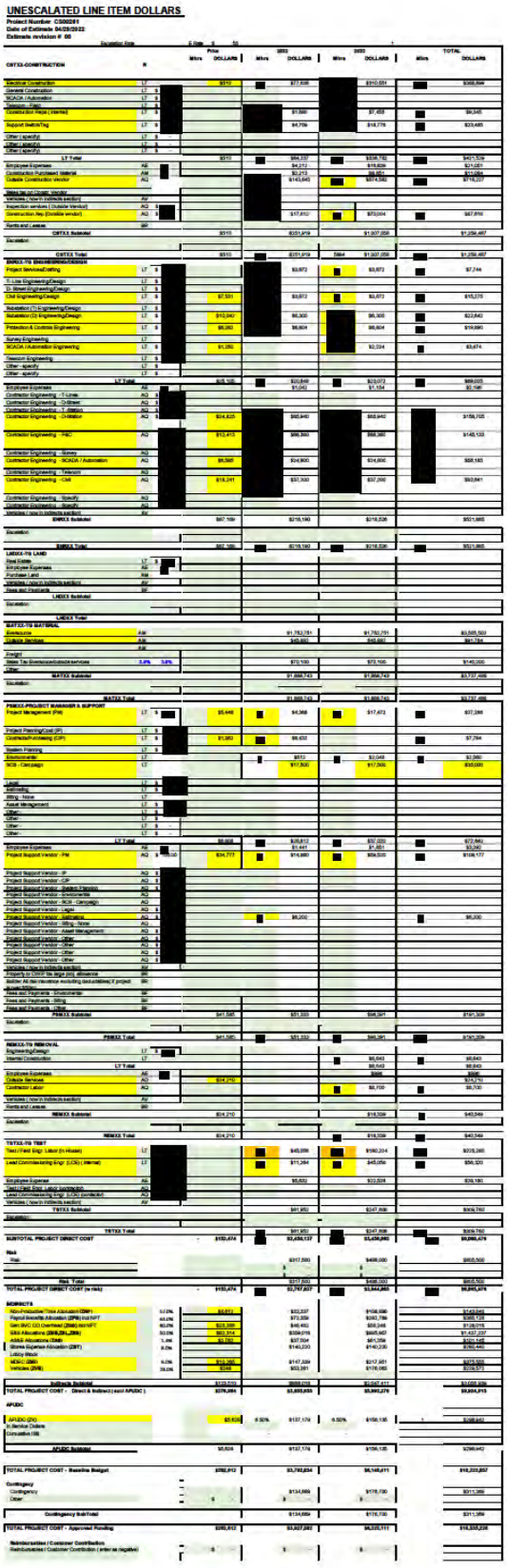
[redacted]

Assumptions/Clarifications:
Indirect rates based on: 11 - CT - Station work

This is a Substation Distribution Asset Estimate only
Se[redacted] transmission estimate (C-22-124 (T))
Fa[redacted] engineering drawings only, actual quantities may vary during detailed engineering.
PM schedule was not provided - PPI dates by estimator
[redacted] - see Engineering RFP: Scope of Work dated 10/04/2018
[redacted] - see Engineering RFP: Scope of Work dated 10/4/2018
[redacted] - see Engineering RFP: Scope of Work dated 10/4/2018
[redacted] installed by other projects and not included in this estimate - see Engineering RFP: Scope of Work dated 10/4/2018
[redacted] per PM - per PM e-mail dated 3/28/2022
Engineering - P&C, IS Eng., Civil, SCADA - internal for oversight only - per PM e-mail dated 3/28/2022
Engineering - P&C, IS Eng., Civil, SCADA - outsourced for design work - per PM e-mail dated 3/28/2022
LCI and testing - Internal - per PM e-mail dated 3/28/2022
Switching - Internal - per PM e-mail dated 3/28/2022
Construction representative - outsourced - per PM e-mail dated 3/28/2022
In house construction representative part time per PM
Electrical Construction Inhouse per Estimate Request Form dated 6/3/2021
Civil Construction outsourced per Estimate Request Form dated 6/3/2021
Environmental and Wetlands unknown at this time - risk item is added - per PM e-mail dated 3/28/2022
[redacted] see Engineering RFP: Scope of Work dated 10/4/2018
[redacted] Risk contains cost for potential contaminated soil.

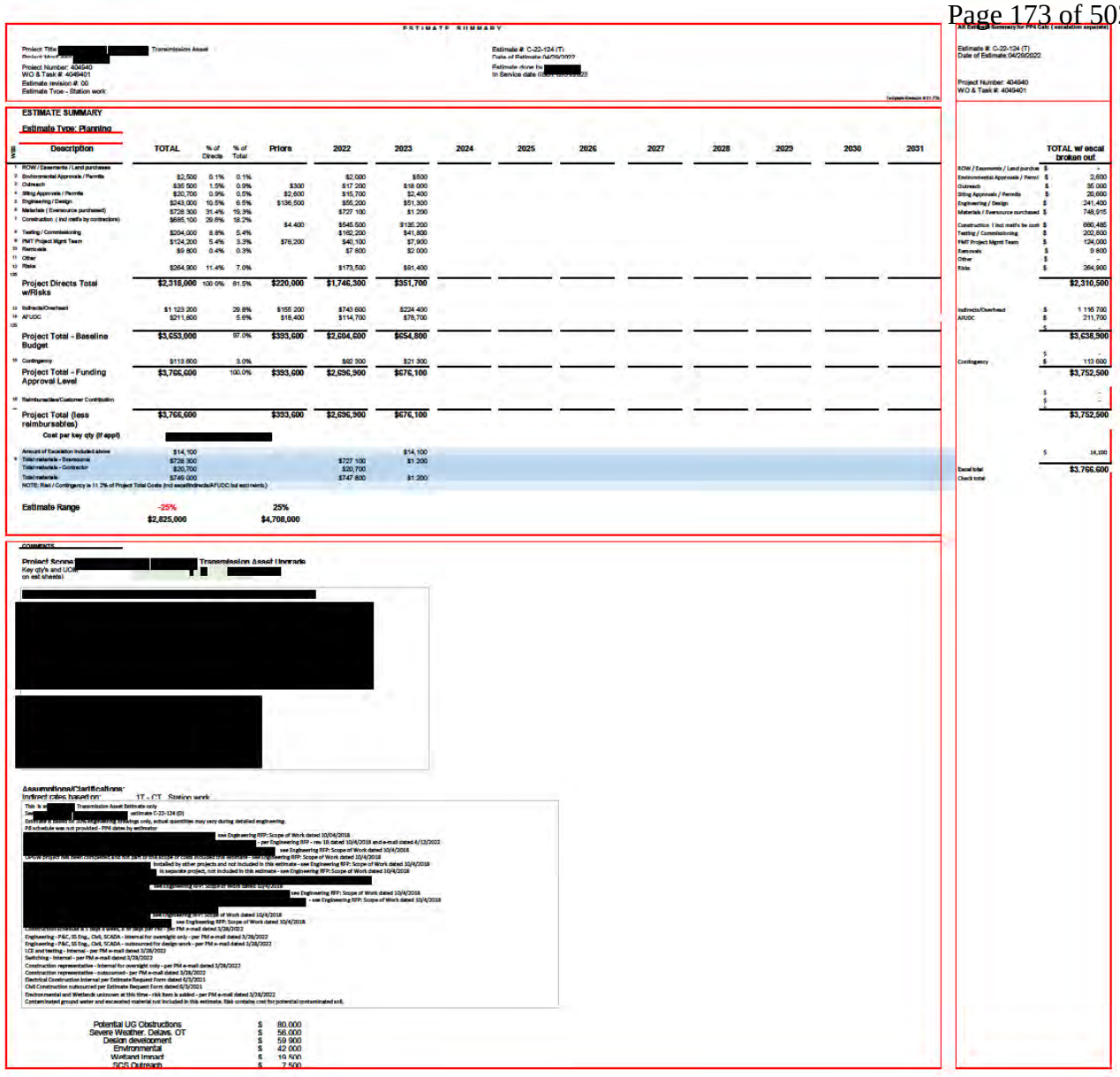
RISKS

Potential UG Obstructions	$ 100,000
Severe Weather, Delays, OT	$ 90,000
Design development	$ 150,000
Environmental	$ 165,000
Wetland Impact	$ 75,000
Permits Delay	$ 55,000
Local Impact	$ 155,000
SDS Outreach	$ 15,500



UNESCALATED LINE ITEM DOLLARS

Project Number: CS00301
Date of Estimate: 04/28/2022
Estimate revision #: 00



ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases	$2,500	0.1%	0.1%		$2,000	$500								
2	Environmental Approvals / Permits	$35,500	1.5%	0.9%	$300	$17,200	$18,000								
3	Outreach	$20,700	0.9%	0.5%	$2,600	$15,700	$2,400								
4	Siting Approvals / Permits	$243,000	10.5%	6.5%	$136,500	$55,200	$51,300								
5	Engineering / Design	$728,300	31.4%	19.3%		$727,100	$1,200								
6	Materials (Eversource purchased)	$685,100	29.6%	18.2%	$4,400	$545,500	$135,200								
7	Construction (incl mat'ls by contractors)	$204,000	8.8%	5.4%		$162,200	$41,800								
8	Testing / Commissioning	$124,200	5.4%	3.3%	$76,200	$40,100	$7,900								
9	PMT Project Mgmt Team	$9,800	0.4%	0.3%		$7,800	$2,000								
10	Removals														
11	Other														
12	Risks	$264,900	11.4%	7.0%		$173,500	$91,400								
13	Project Directs Total w/Risks	$2,318,000	100.0%	61.5%	$220,000	$1,746,300	$351,700								
14	Indirects/Overhead	$1,123,200		29.8%	$155,200	$743,600	$234,400								
15	AFUDC	$211,800		5.6%	$18,400	$114,700	$78,700								
16	Project Total - Baseline Budget	$3,653,000		97.0%	$393,600	$2,604,600	$654,800								
17	Contingency	$113,800		3.0%		$92,300	$21,300								
18	Project Total - Funding Approval Level	$3,766,600		100.0%	$393,600	$2,696,900	$676,100								
19	Reimbursables/Customer Contribution														
20	Project Total (less reimbursables)	$3,766,600			$393,600	$2,696,900	$676,100								
	Cost per key qty (if appl)	[redacted]													
	Amount of Escalation included above	$14,100					$14,100								
9	Total materials - Eversource	$728,300				$727,100	$1,200								
	Total materials - Contractor	$20,700				$20,700									
	Total materials	$749,000				$747,800	$1,200								
	NOTE: Risk / Contingency is 11.2% of Project Total Costs (not escal'ed/indirects/AFUDC but escl'ed)														
	Estimate Range	-25% $2,825,000			25% $4,708,000										

TOTAL w/ escal broken out

ROW / Easements / Land purchas	$	-
Environmental Approvals / Permi	$	2,600
Outreach	$	35,000
Siting Approvals / Permits	$	20,600
Engineering / Design	$	241,400
Materials / Eversource purchased	$	748,915
Construction. (incl mat'ls by cont	$	660,485
Testing / Commissioning	$	202,800
PMT Project Mgmt Team	$	124,000
Removals	$	9,800
Other	$	-
Risks	$	264,900
		$2,310,500
Indirects/Overhead	$	1,116,700
AFUDC	$	211,700
	$	-
		$3,638,900
	$	-
Contingency	$	113,600
		$3,752,500
	$	-
	$	-
		$3,752,500
	$	14,100
Excel total		$3,766,600
Check total		

COMMENTS

Project Scope: [redacted] Transmission Asset Upgrade

Key qty's and UOM on est sheets)

[redacted]

Assumptions/Clarifications:

Indirect rates based on: 1T - CT Station work

This is an [redacted] Transmission Asset Estimate only

See [redacted] estimate C-22-124 (D)

Conceptual estimate with engineering drawings only, actual quantities may vary during detailed engineering.

P6 schedule was not provided - PPI dates by estimator

[redacted] see Engineering RFP: Scope of Work dated 10/04/2018

[redacted] - per Engineering RFP - rev 1B dated 10/4/2018 and e-mail dated 4/12/2022

[redacted] see Engineering RFP: Scope of Work dated 10/4/2018

Above section for new construction not for sale and load forecast. Estimate not reviewed by Engineering RFP: Scope of Work dated 10/4/2018

[redacted] installed by other projects and not included in this estimate - see Engineering RFP: Scope of Work dated 10/4/2018

[redacted] is separate project, not included in this estimate - see Engineering RFP: Scope of Work dated 10/4/2018

[redacted] see Engineering RFP: Scope of Work dated 10/4/2018

[redacted] see Engineering RFP: Scope of Work dated 10/4/2018

[redacted] - see Engineering RFP: Scope of Work dated 10/4/2018

[redacted] see Engineering RFP: Scope of Work dated 10/4/2018

[redacted] see Engineering RFP: Scope of Work dated 10/4/2018

Construction Duration is 1 task 4 days, 4 to begin per PM - Per PM e-mail dated 3/28/2022

Engineering - P&C, IS Eng., Civil, SCADA - internal for oversight only - per PM e-mail dated 3/28/2022

Engineering - P&C, IS Eng., Civil, SCADA - outsourced for design work - per PM e-mail dated 3/28/2022

ICE and testing - Internal - per PM e-mail dated 3/28/2022

Switching - Internal - per PM e-mail dated 3/28/2022

Construction representative - Internal for oversight only - per PM e-mail dated 3/28/2022

Construction representative - outsourced - per PM e-mail dated 3/28/2022

Electrical Construction Interval per Estimate Request Form dated 6/3/2021

Civil Construction outsourced per Estimate Request Form dated 6/3/2021

Environmental and Wetlands unknown at this time - risk item is added - per PM e-mail dated 3/28/2022

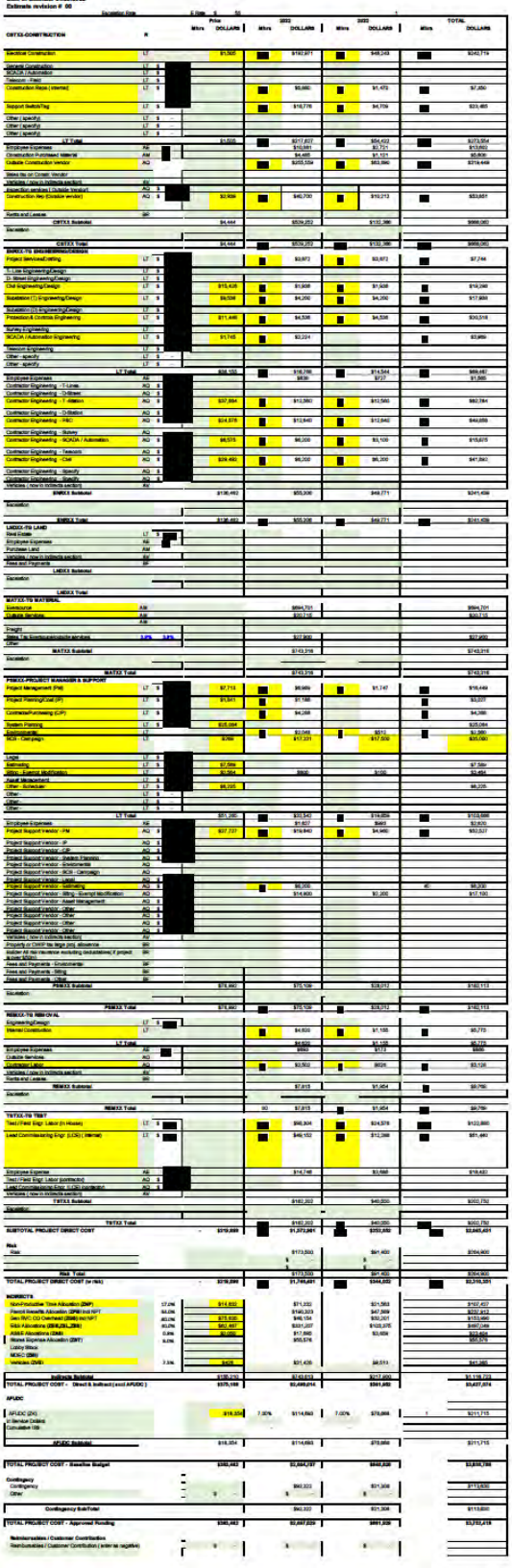
Contaminated ground water and excavated material not included in this estimate. Risk contains cost for potential contaminated soil.

Potential UG Obstructions	$	80,000
Severe Weather Delays, OT	$	56,000
Design development	$	59,900
Environmental	$	42,000
Wetland Impact	$	10,500
SCS Outreach	$	7,500

[redacted] 6/2/2022

UNESCALATED LINE ITEM DOLLARS

Project Number 404046
Date of Estimate 04/28/2022
Estimate revision # 00



PJ 1 With Gant EXP Finish Comments 01-Jun-22 14:09

EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
80053152 [redacted] - Add Second Transformer and Switchgear (CS00261)			739	739	10-May-21 A	0	18-Apr-24	26-Apr-23				
80053152.01 INITIALIZATION AND SCOPE DEVELOPEMENT			310	310	12-May-22 A	-138	06-Aug-23	02-Jun-22				
80053152.01.09 Project Initiation			26	26	12-May-22 A	-106	17-Jun-22	02-Jun-22				
80053152.01.09.3 EPAC Full Funding			26	26	12-May-22 A	-106	17-Jun-22	02-Jun-22				
PAFF2200		Incorporate EPAC Full Funding PAF Review Comments	15	3	12-May-22 A	-111	02-Jun-22	02-Jun-22		Fnish 18 May	[redacted]	
FF1000	EPAC-F	EPAC Full Funding Approval	1	1	03-Jun-22	-111	03-Jun-22					
FF1010	PPA-FF	Full Funding PowerPlan Approval	10	10	06-Jun-22	-106	17-Jun-22					
80053152.01.12 T-Minus Milestones			294	294	03-Jun-22	-138	06-Aug-23					
80053152.01.12.01 Civil T-Minus Milestones			132	132	13-Jun-22	-74	21-Dec-22					
AT0805C	BG-IFC	Civil IFC - Civil (BG) w/BOM	0	0		81	13-Jun-22					
AT0814		ALL CONSTRUCTION CONTRACTS IN PLACE	0	0		45	19-Jul-22					
AT0203		CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	0	0		44	20-Jul-22					
AT0813		SITING PETITION AND APPLICATION FILED	0	0		18	15-Aug-22					
AT00	SOC	A-T-00 - START OF CONSTRUCTION - Civil	0	0	06-Sep-22*	0			Mandatory Start			
AT0401		ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	0	0		-110	21-Dec-22					
80053152.01.12.02 [redacted] T-Milestones			429	429	03-Jun-22	-199	06-Aug-23					
BT1811	ENG-DT	Detail Elect Detail Design/Engineering Completed	0	0		230	03-Jun-22					
BT0901		[redacted]	0	0		202	01-Jul-22					
BT0805E	AG-IFC	Elect & P&C IFC - Electrical (AG) w/Final BOM	0	0		188	15-Jul-22					
BT1801		BT-18 ALL FIRM TOA APPLICATIONS DUE TO LCC	0	0		57	20-Jul-22*		Finish On or Before			
BT0203		CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	0	0		182	21-Jul-22					
BT1202		P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED	0	0		181	22-Jul-22					
BT0404		[redacted]	0	0		178	25-Jul-22					
BT2404		DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINEER)	0	0		169	03-Aug-22					

2022 023

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Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

TASK filter: Not Complete.

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
BT0301		[redacted]	0	0		148	03-Aug-22			tie to vendor 70% activity		
BT1301		COMMISSIONING PLAN COMPLETE	0	0		139	02-Sep-22					
BT00	SOC	T-00 START OF CONSTRUCTION - Transformer	0	0	20-Jan-23*	0			Mandatory Start			
BT0401		ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	0	0		-199	06-Aug-23					
80053152.01.12.4 [redacted] T-Milestones			305	305	03-Jun-22	-92	04-Apr-23					
CT1811	ENG-DT	Detail Elect Detail Design/Engineering Completed	0	0		213	03-Jun-22					
CT0901		[redacted]	0	0		185	01-Jul-22					
CT0805E	AG-IFC	Elect & P&C IFC - Electrical (AG) w/Final BOM	0	0		171	15-Jul-22					
CT0203		CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	0	0		165	21-Jul-22					
CT1202		P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED	0	0		164	22-Jul-22					
CT0404		[redacted]	0	0		161	25-Jul-22					
CT2404		DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINEER)	0	0		152	03-Aug-22					
CT0301		[redacted]	0	0		131	03-Aug-22			tie to vendor 70% activity		
CT1805		[redacted]	0	0		152	03-Aug-22					
CT1301		COMMISSIONING PLAN COMPLETE	0	0		122	02-Sep-22					
CT00	SOC	T-00 START OF CONSTRUCTION - Electrical	0	0	03-Jan-23*	0			Mandatory Start			
CT0401		ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	0	0		-92	04-Apr-23					
80053152.04 SITING APPROVALS AND PERMITS			319	319	10-May-21 A	14	15-Aug-22	15-Aug-22				
3570		Permitting - Siting Team Review Scope to Determine Siting Requirements (e.g. zoning)	272	10	10-May-21 A	14	08-Jun-22	08-Jun-22				
3575		Permitting - Review and Approve	47	47	09-Jun-22	14	15-Aug-22	15-Aug-22				
80053152.05 ENGINEERING & DESIGN			389	389	18-Apr-22 A	115	01-Nov-23	24-Jun-22				
80053152.05.1 Civil Engineering			30	30	02-May-22 A	-78	13-Jun-22	20-May-22				
80053152.05.1.03 Civil Engineering IFC Design			30	30	02-May-22 A	-78	13-Jun-22	20-May-22				
CE1300	V-IFC	Vendor Engineer Develop Civil Substation IFC	25	15	02-May-22 A	-78	06-Jun-22	20-May-22				

Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

TASK filter: Not Complete.

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
CE1310	ES-IFC	ES Engineering Review Civil Substation IFC	5	5	07-Jun-22*	-78	13-Jun-22		Start On or After			
80053152.05.02 Electrical Engineering			66	66	20-Apr-22 A	436	22-Jul-22	10-Jun-22				
EE920		Operating Instructions - SSED Review Draft Convex OI	5	5	18-Jul-22	110	22-Jul-22					
EE460		Operating Instructions - SSED Review Draft Distribution OI	5	5	18-Jul-22	110	22-Jul-22					
CSD1000	CASCAI	PE Initiate CASCADE Forms (Appendix A) for Construction Package	5	5	18-Jul-22	436	22-Jul-22					
80053152.05.02.4 Electrical Engineering IFC Design			61	61	20-Apr-22 A	-140	15-Jul-22	10-Jun-22				
EE1300	V-IFC	Vendor Engineer Develop	57	9	20-Apr-22 A	-140	11-Jul-22	24-May-22		HDR Running Late Due to		
EE1540	V-IFC	Vendor Engineer Develop	57	9	20-Apr-22 A	-140	11-Jul-22	24-May-22		HDR Running Late Due to		
EE1310	ES-IFC	ES Engineering Review	4	4	12-Jul-22*	-140	15-Jul-22	10-Jun-22	Start On or After	HDR Running Late Due to		
80053152.05.02.7			5	5	05-Jul-22	-140	11-Jul-22					
SWG1220			5	5	05-Jul-22*	-140	11-Jul-22		Start On or After			
80053152.05.03			340	340	27-Jun-22	115	01-Nov-23					
80053152.05.03.01 Thermal Ratings - Substation - Preliminary Thermal Data			27	27	27-Jun-22	102	03-Aug-22					
NX9A-NC79		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	5	5	27-Jun-22	102	01-Jul-22			Process Box 4		
NX9A-NC139		LTRC Reviews and Sends Thermal Rating Data for TRC Review	5	5	05-Jul-22	102	11-Jul-22			Process Box 5		
NX9A-NC129		TRC Reviews and Approves Thermal Rating Data	5	5	12-Jul-22	102	18-Jul-22			Process Box 6		
NX9A-NC119		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	5	5	19-Jul-22	102	25-Jul-22			Process Box 7		
NX9A-NC109		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	1	1	26-Jul-22	102	26-Jul-22			Process Box 8		
NX9A-NC89	NX-9	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	5	5	27-Jul-22	102	02-Aug-22			Process Box 9		
NX9A-NC149		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006	1	1	03-Aug-22	102	03-Aug-22			Process Box 8		
80053152.05.03.02 Thermal Ratings - Substation - Verify Thermal Data			27	27	27-Jun-22	428	03-Aug-22					
NX9A-NC37		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	5	5	27-Jun-22	89	01-Jul-22			Process Box 4		
NX9A-NC31		PE to Verify Thermal Data Review PE Checklist (M7-EN-3006.2)	5	5	27-Jun-22*	450	01-Jul-22		Start On or After	Process Box 1 Ask Criss Cas		
NX9A-NC39		LTRC Reviews and Sends Thermal Rating Data for TRC Review	5	5	05-Jul-22	89	11-Jul-22			Process Box 5		

2022 | 023

Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
◆ Mile...

TASK filter: Not Complete.

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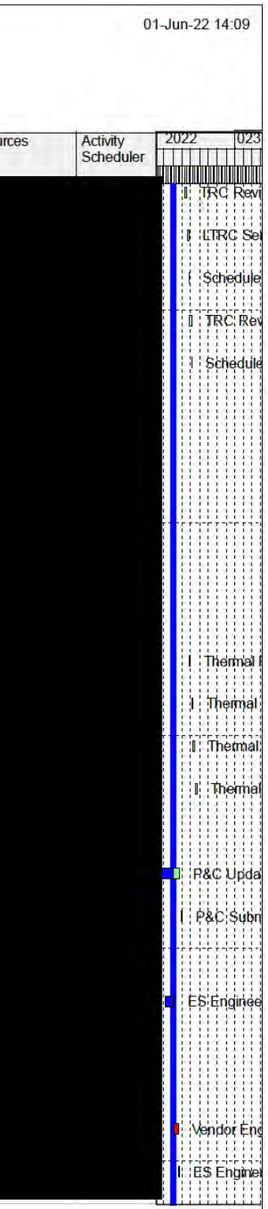
EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
NX9A-NC41		TRC Reviews and Approves Thermal Rating Data	5	5	12-Jul-22	89	18-Jul-22			Process Box 6	[redacted]	
NX9A-NC43		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	5	5	19-Jul-22	89	25-Jul-22			Process Box 7		
NX9A-NC45		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	1	1	26-Jul-22	89	26-Jul-22			Process Box 8		
NX9A-NC47	NX-9	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	5	5	27-Jul-22	89	02-Aug-22			Process Box 9		
NX9A-NC49		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006	1	1	03-Aug-22	89	03-Aug-22			Process Box 8		
80053152.05.03.03 Thermal Ratings - Substation - NX-9 Pre NX9-DOE			1	1	19-Oct-23	124	19-Oct-23					
NX9500		Scheduler - Send Email for 48Hrs Notification before DOE.	1	1	19-Oct-23	124	19-Oct-23					
80053152.05.03.04 Thermal Ratings - Substation - NX-9 Post NX9-DOE/ISD			8	8	23-Oct-23	115	01-Nov-23					
NX9FINAL50		Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or CFM/ISD)	3	3	23-Oct-23	115	25-Oct-23					
NX9FINAL60		[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	5	5	26-Oct-23	115	01-Nov-23					
80053152.05.03.05 Thermal Ratings - NX-9 Thermal Ratings			20	20	26-Jul-22	292	22-Aug-22					
NX9A-EM44		Thermal Rating - P&C Develops and Provides LTRC with P&C Checklist & Thermal Ratings Data	5	5	26-Jul-22*	292	01-Aug-22		Start On or After	Process Box 4		
NX9A-EM54	NX-9	Thermal Rating - LTRC Prepares and Sends Thermal Rating Data for TRC Review	5	5	02-Aug-22	292	08-Aug-22			Process Box 5		
NX9A-EM64		Thermal Rating - TRC Reviews and Approves Thermal Rating Data	5	5	09-Aug-22	292	15-Aug-22			Process Box 6		
NX9A-EM74		Thermal Rating - LTRC Files Capability Sheets	5	5	16-Aug-22	292	22-Aug-22			Process Box 7		
80053152.05.06 P&C Engineering			69	69	18-Apr-22 A	109	25-Jul-22	24-Jun-22				
OP1020		P&C Updates OP-24 Appendix B	49	4	18-Apr-22 A	124	24-Jun-22	24-Jun-22				
OP1030	OP-24	P&C Submits OP-24 Appendix B to ISO-NE	5	5	27-Jun-22	124	01-Jul-22					
80053152.05.06.02 P&C Engineering Detail Design			22	27	04-May-22 A	-1	03-Jun-22	03-Jun-22				
PC1110	ES-DTL	ES Engineering Review P&C Detail Design	22	27	04-May-22 A	-1	03-Jun-22	03-Jun-22				
80053152.05.06.04 P&C Engineering IFC Design			35	35	06-Jun-22	109	25-Jul-22					
80053152.05.06.04.03 P&C Design Package			15	15	06-Jun-22	-1	24-Jun-22					
PC1320	V-IFC	Vendor Engineer Develop P&C IFC	10	10	06-Jun-22	-1	17-Jun-22					
PC1330		ES Engineering Review P&C IFC	5	5	20-Jun-22	-1	24-Jun-22					



Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

Page 4 of 11

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
80053152.05.06.04.01 Relay Settings			20	20	27-Jun-22	109	25-Jul-22					
PC1400	ES-RSE	Complete P&C Relay Settings	20	20	27-Jun-22	109	25-Jul-22					
80053152.06 MATERIAL PROCUREMENT			294	294	06-Jun-22	176	06-Aug-23	30-Dec-22				
80053152.06.01 MATERIAL FOR P&C			139	139	20-Jun-22	-1	09-Jan-23					
PC510	DR-RM	MATERIAL - P&C - Prepare & Issue DR	5	5	27-Jun-22	95	01-Jul-22					
PC980		MATERIAL - P&C - Procurement Issue PO	10	10	05-Jul-22	95	18-Jul-22					
PC1000		MATERIAL - P&C - Material Vendor Delivery Leadtime	30	30	19-Jul-22	137	17-Aug-22					
PC1010	M-DELI\	MATERIAL - P&C - Confirm Material Delivery to Site	1	1	18-Aug-22	137	18-Aug-22					
80053152.06.01.01 MATERIAL FOR RELAY PANELS			94	94	20-Jun-22	40	01-Nov-22					
PC8530	DR-RM	MATERIAL - RELAY PANELS - Prepare & Issue DR	5	5	20-Jun-22	43	24-Jun-22					
PC8540		MATERIAL - RELAY PANELS - Procurement Issue PO	10	10	27-Jun-22	43	11-Jul-22					
PC8560		MATERIAL - RELAY PANELS - Material Vendor Delivery Leadtime	112	112	12-Jul-22	62	31-Oct-22					
PC8550	M-DELI\	MATERIAL - RELAY PANELS - Confirm Material Delivery to Site	1	1	01-Nov-22	62	01-Nov-22					
80053152.06.01.02 MATERIAL FOR CONTROL CABLES			139	139	20-Jun-22	-1	09-Jan-23					
PC8570	DR-RM	MATERIAL - CONTROL CABLES - Prepare & Issue DR	5	5	20-Jun-22	-1	24-Jun-22					
PC8580		MATERIAL - CONTROL CABLES - Procurement Issue PO	10	10	27-Jun-22	-1	11-Jul-22					
PC8600		MATERIAL - CONTROL CABLES - Material Vendor Delivery Leadtime	182	182	12-Jul-22	-1	09-Jan-23					
PC8590	M-DELI\	MATERIAL - CONTROL CABLES - Confirm Material Delivery to Site	1	1	03-Jan-23	-1	03-Jan-23					
80053152.06.02 MATERIAL FOR ELECTRICAL			128	128	18-Jul-22	-1	21-Jan-23					
EE520	DR-RM	MATERIAL - Electrical - Prepare & Issue DR	5	5	18-Jul-22	51	22-Jul-22					
EE590	DR-AGM	Electrical (AG) Material Ordered	0	0		51	22-Jul-22					
EE1020		MATERIAL - Electrical - Procurement Issue PO	10	10	23-Jul-22	74	01-Aug-22					
EE1030		MATERIAL - Electrical - Material Vendor Delivery Leadtime	79	79	02-Aug-22	74	19-Oct-22					
EE550	M-DELI\	MATERIAL - Electrical - Confirm Material Delivery to Site	1	1	20-Oct-22	74	20-Oct-22					

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Actual Work | Critical Remaining Work

Page 5 of 11

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
80053152.06.02.01 MATERIAL FOR CABLE TRENCH			91	91	18-Jul-22	24	26-Nov-22					
EE1400	DR-RM	MATERIAL - CABLE TRENCH - Prepare & Issue DR	5	5	18-Jul-22	24	22-Jul-22					
EE1430	DR-AGM	CABLE TRENCH (AG) Material Ordered	0	0		24	22-Jul-22					
EE1410		MATERIAL - CABLE TRENCH - Procurement Issue PO	10	10	25-Jul-22	24	05-Aug-22					
EE1420		MATERIAL - CABLE TRENCH - Material Vendor Delivery Leadtime	112	112	06-Aug-22	37	25-Nov-22					
EE1390	M-DELIV	MATERIAL - CABLE TRENCH - Confirm Material Delivery to Site	1	1	26-Nov-22	37	26-Nov-22					
80053152.06.02.02 MATERIAL FOR STRUCTURAL STEEL			128	128	18-Jul-22	-1	21-Jan-23					
EE1450	DR-RM	MATERIAL - STRUCTURAL STEEL - Prepare & Issue DR	5	5	18-Jul-22	-2	22-Jul-22					
EE1480	DR-AGM	STRUCTURAL STEEL (AG) Material Ordered	0	0		-2	22-Jul-22					
EE1460		MATERIAL - STRUCTURAL STEEL - Procurement Issue PO	10	10	25-Jul-22	-2	05-Aug-22					
EE1470		MATERIAL - STRUCTURAL STEEL - Material Vendor Delivery Leadtime	168	168	06-Aug-22	-2	20-Jan-23					
EE1440	M-DELIV	MATERIAL - STRUCTURAL STEEL - Confirm Material Delivery to Site	1	1	21-Jan-23	-2	21-Jan-23					
80053152.06.02.03 MATERIAL FOR [redacted]			101	101	18-Jul-22	26	10-Dec-22					
EE1500	DR-RM	MATERIAL - [redacted] Prepare & Issue DR	5	5	18-Jul-22	27	22-Jul-22					
EE1530	DR-AGM	[redacted] (AG) Material Ordered	0	0		27	22-Jul-22					
EE1510		MATERIAL - [redacted] - Procurement Issue PO	10	10	25-Jul-22	27	05-Aug-22					
EE1520		MATERIAL - [redacted] Material Vendor Delivery Leadtime	126	126	06-Aug-22	40	09-Dec-22					
EE1490	M-DELIV	MATERIAL - [redacted] Confirm Material Delivery to Site	1	1	10-Dec-22	40	10-Dec-22					
80053152.06.03 MATERIAL FOR CIVIL			132	132	14-Jun-22	-74	21-Dec-22					
CE500	DR-RM	MATERIAL - CIVIL - Prepare & Issue DR	5	5	14-Jun-22	-78	20-Jun-22					
CE600	DR-BGM	Civil (BG) Material Ordered	0	0		-78	20-Jun-22					
CE1040		MATERIAL - CIVIL - Procurement Issue PO	3	3	21-Jun-22	-78	23-Jun-22					
CE1050		MATERIAL - CIVIL - Material Vendor Delivery Leadtime	180	180	24-Jun-22	-110	20-Dec-22					
CE560	M-DELIV	MATERIAL - CIVIL - Confirm Material Delivery to Site	1	1	21-Dec-22	-110	21-Dec-22					

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Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
80053152.06.03.01 MATERIAL FOR REBAR			67	67	14-Jun-22	-9	17-Sep-22					
CE1780	DR-RM	MATERIAL - REBARS - Prepare & Issue DR	5	5	14-Jun-22	-11	20-Jun-22					
CE1810	DR-BGM	REBARS Ordered	0	0		-11	20-Jun-22					
CE1790		MATERIAL - REBARS - Procurement Issue PO	3	3	21-Jun-22	-11	23-Jun-22					
CE1800		MATERIAL - REBARS - Material Vendor Delivery Leadtime	85	85	24-Jun-22	-15	16-Sep-22					
CE1770	M-DELI	MATERIAL - REBARS - Confirm Material Delivery to Site	1	1	17-Sep-22	-15	17-Sep-22					
80053152.06.03.02 MATERIAL FOR ANCHOR BOLTS			67	67	14-Jun-22	-9	16-Sep-22					
CE1730	DR-RM	MATERIAL - ANCHOR BOLTS - Prepare & Issue DR	5	5	14-Jun-22	-10	20-Jun-22					
CE1760	DR-BGM	ANCHOR BOLTS Ordered	0	0		-10	20-Jun-22					
CE1740		MATERIAL - ANCHOR BOLTS - Procurement Issue PO	3	3	21-Jun-22	-10	23-Jun-22					
CE1750		MATERIAL - ANCHOR BOLTS - Material Vendor Delivery Leadtime	84	84	24-Jun-22	-14	15-Sep-22					
CE1720	M-DELI	MATERIAL - ANCHOR BOLTS - Confirm Material Delivery to Site	1	1	16-Sep-22	-14	16-Sep-22					
80053152.06.04 MATERIAL FOR TRANSFORMER			144	144	06-Jun-22	326	30-Dec-22	30-Dec-22				
DSSE-530	DR-MM	MATERIAL - Transformer - Prepare & Issue DR	5	5	06-Jun-22	1	10-Jun-22			To be ordered right after Epac approval no		
DSSE-1180	DR-AGM	Transformer Material Ordered	0	0		465	10-Jun-22					
DSSE-1060		MATERIAL - Transformer - Procurement Issue PO	10	10	13-Jun-22	1	24-Jun-22					
DSSE-1070		MATERIAL - Transformer - Material Vendor Delivery Leadtime	189	189	25-Jun-22	3	30-Dec-22	30-Dec-22		LOA - Dec 2022 delivery		
80053152.06.05 MATERIAL FOR SWITCHGEAR			183	183	12-Jul-22	-64	04-Apr-23					
SWG1110	DR-MM	SWG-MATERIAL - SWITCHGEAR - Prepare & Issue DR	5	5	12-Jul-22	-64	18-Jul-22					
SWG1120		SWG-MATERIAL - SWITCHGEAR - Procurement Issue PO	5	5	19-Jul-22	-64	25-Jul-22					
SWG1090		SWG-MATERIAL - SWITCHGEAR - Material Vendor Delivery Leadtime	252	252	26-Jul-22	-92	03-Apr-23					
SWG580	M-DELI	SWG-MATERIAL - SWITCHGEAR - Confirm Material Delivery to Site	1	1	04-Apr-23	-92	04-Apr-23					
80053152.06.06 MATERIAL FOR CIRCUITSWITCHER			265	265	18-Jul-22	-138	06-Aug-23					
EE1350	DR-RM	MATERIAL - CIRCUIT SWITCHER - Prepare & Issue DR	5	5	18-Jul-22	-140	22-Jul-22					

Remaining Level of Effort Remaining Work Mile...
Actual Work Critical Remaining Work

Page 7 of 11

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
EE1380	DR-AGM	CIRCUIT SWITCHER Material Ordered	0	0		-140	22-Jul-22					
EE1360		MATERIAL - CIRCUIT SWITCHER - Procurement Issue PO	10	10	25-Jul-22	-140	05-Aug-22					
EE1370		MATERIAL - CIRCUIT SWITCHER - Material Vendor Delivery Leadtime	365	365	06-Aug-22	-199	05-Aug-23					
EE1340	M-DELIV	MATERIAL - CIRCUIT SWITCHER - Confirm Material Delivery to Site	1	1	06-Aug-23	-199	06-Aug-23					
80053152.07 CONSTRUCTION			357	357	31-May-22	117	30-Oct-23	26-Apr-23				
80053152.07.1 CONSTRUCTION SERVICES - BID PROCESS			35	35	31-May-22	-10	19-Jul-22					
3430		CONST.SERVICES - BID - Eversource provide Spec / RFP	5	5	31-May-22	-10	06-Jun-22			YES BID		
3440		CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal	15	15	07-Jun-22	-10	27-Jun-22					
3450		CONST.SERVICES - BID - Eversource reviews contractor proposals	5	5	28-Jun-22	-10	05-Jul-22					
3620		CONST.SERVICES - BID - Contract is Awarded - DR Prepared Issued	5	5	06-Jul-22	-10	12-Jul-22					
3460		CONST.SERVICES - BID – Contract is Awarded - PO Issued	5	5	13-Jul-22	-10	19-Jul-22					
80053152.07.01 CONSTRUCTION - CIVIL			45	45	15-Aug-22	-36	18-Oct-22					
3630		Mobilize and Prep	5	5	15-Aug-22*	-28	22-Aug-22		Start On or After			
1120		Construction - Civil - Foundations	43	43	06-Sep-22*	-54	18-Oct-22		Start On or After			
80053152.07.02 CONSTRUCTION - ELECTRICAL			244	244	26-Aug-22	0	26-Apr-23					
80053152.07.02.01 TRANSFORMER			244	244	26-Aug-22	0	26-Apr-23					
1130		Construction - Electrical - Non-Outage XFRMR Structural steel & 115 Mobile XFRMR Connection	10	10	26-Aug-22*	0	04-Sep-22		Mandatory Start			
3640		Construction - Electrical - Outage XFRMR work - (Transmission Work) Mobile Sub	13	13	06-Sep-22*	0	18-Sep-22		Mandatory Start			
3650		Construction - Electrial - Non-Outage XFRMR Work	60	60	03-Jan-23*	0	03-Mar-23		Mandatory Start			
3660		Construction - Electrial - Outage - To put XFRMR In-Service	10	10	17-Apr-23*	0	26-Apr-23		Mandatory Start			
80053152.07.02.02 SWITCHGEAR			177	177	01-Nov-22	0	26-Apr-23					
3670		Construction - Electrial - Non-Outage SWG construction	120	120	01-Nov-22*	0	28-Feb-23		Mandatory Start			
3680		Construction - Electrial - Outage - To put SWG In-Service	10	10	17-Apr-23*	0	26-Apr-23		Mandatory Start			
80053152.07.05 CONSTRUCTION - P&C			244	244	26-Aug-22	179	26-Apr-23	26-Apr-23				

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Remaining Level of Effort Remaining Work Mile...
Actual Work Critical Remaining Work

Page 8 of 11

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
1140		Construction - P&C Implement Relay Settings	244	244	26-Aug-22*	179	26-Apr-23	26-Apr-23	Mandatory Start			
80053152.07.06 CONSTRUCTION - COMMUNICATIONS			244	244	26-Aug-22	179	26-Apr-23	26-Apr-23				
1150		Construction - Field Communications	244	244	26-Aug-22*	179	26-Apr-23	26-Apr-23	Mandatory Start			
80053152.07.92 CONSTRUCTION - CONSTREP TASKS			472	472	16-Jul-22	129	30-Oct-23					
1280		[redacted]	5	5	16-Jul-22	162	20-Jul-22		As Late As Possible			
1250		[redacted]	5	5	16-Jul-22	57	20-Jul-22		As Late As Possible			
1290		[redacted]	5	5	21-Aug-23	58	25-Aug-23					
1260		[redacted]	10	10	21-Oct-23	129	30-Oct-23					
80053152.07.94 CONSTRUCTION RESOURCE TRACKING			274	274	20-Jan-23	2	20-Oct-23					
1070		RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT	1	1	20-Jan-23*	275	20-Jan-23		Start On or After			
ConRep-S		RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	177	177	27-Apr-23	2	20-Oct-23					
CONSTelec		RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	177	177	27-Apr-23	2	20-Oct-23					
1080		RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN	1	1	20-Oct-23*	2	20-Oct-23		Start On or After			
80053152.07.96 CONSTRUCTION OUTAGES			274	274	20-Jan-23	181	20-Oct-23					
TOA-Const	OUT	OUTAGE / General Construction Work	274	274	20-Jan-23*	2	20-Oct-23		Start On or After			
CSM	CRH	Construction Start Milestone	0	0	27-Apr-23*	358			Start On or After			
CFM		Construction Finish Milestone	0	0		2	20-Oct-23			FIX Reasouce only activities		
ISD	ISD	EQUIPMENT IN SERVICE DATE (requires FOOB constraint)	0	0		2	20-Oct-23*		Finish On or Before			
80053152.09 TEST AND COMMISSION			65	65	02-Aug-22	242	02-Nov-22					
80053152.09.02 LCE PLANNING			24	24	02-Aug-22	80	02-Sep-22					
LCE200		Assign Lead Commissioning Engineer	2	2	02-Aug-22*	80	03-Aug-22		Start On or After	In house but we need an LCE, LCE TBD		
LCE400	V-COMF	Develop Test and Commissioning Plan	10	10	08-Aug-22	80	19-Aug-22					
LCE500	ES-COM	LCE Review and Approve Vendor's Test and Commissioning Plan	10	10	22-Aug-22	80	02-Sep-22			N/R		
80053152.09.04 TEST ACTIVITIES			91	91	04-Aug-22	354	02-Nov-22					

2022 023

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
LCE310		Mobilize Commissioning Engineer Prior to Construction	2	2	04-Aug-22	118	05-Aug-22				[redacted]	
LCE610		LCE Oversee Execution of Test and Commissioning Plan	30	30	03-Sep-22	354	02-Oct-22					
LCE620		Execute Test and Commissioning Plan	30	30	03-Oct-22	354	01-Nov-22					
LCE700		LCE Ensure Test Group Prepare Electrical Field Mark Ups	1	1	02-Nov-22	354	02-Nov-22					
80053152.10 PROJECT CLOSE OUT			376	376	19-Oct-22	0	18-Apr-24					
CV1000	V-FLDAS	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)	21	21	19-Oct-22	264	17-Nov-22					
PM1000	PM	PM to Document Civil As-Built Drawings Complete	1	1	16-Feb-23	264	16-Feb-23					
CV1500	ES-FLS/	FE Files Civil Design Drawings at Station	30	30	17-Feb-23	264	31-Mar-23					
TD1100		Complete TD-707 Turnover Document / Forward to SOC & Mailing List	5	5	23-Oct-23	6	27-Oct-23					
EV1000	V-FLDAS	Prepare Electrical Field Mark Ups	21	21	07-Nov-23	0	07-Dec-23					
PC8000	V-FLDAS	Prepare P&C Field Mark Ups	21	21	07-Nov-23	0	07-Dec-23					
PM1100	PM	PM to Document Electrical As-Built Drawings Complete (Electrical & P&C)	1	1	07-Mar-24	0	07-Mar-24					
EV1500	ES-FLS/	FE Files Substation Design Drawings at Station	30	30	08-Mar-24	0	18-Apr-24					
PC8500	ES-FLS/	FE Files P&C Design Drawings at Station	30	30	08-Mar-24	0	18-Apr-24					
80053152.10.01 Civil As-Builts			60	60	18-Nov-22	264	15-Feb-23					
CV1100	ES-ASB	Eversource Engineering Prepares & Sends Civil Field Mark Up Packge to Vendor	5	5	18-Nov-22	264	25-Nov-22					
CV1200	V-ASB	Vendor Engineering Verifies Civil Mark Ups and Updates As-Built Drawing Package. Submits Final Package to ES	30	30	28-Nov-22	264	10-Jan-23					
CV1300	ES-ASB	Eversource Engineering Verifies Quality of Submitted Civil Drawings	20	20	11-Jan-23	264	08-Feb-23					
CV1400	ES-ASB	ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	5	09-Feb-23	264	15-Feb-23					
80053152.10.02 Electrical As-Builts			60	60	08-Dec-23	0	06-Mar-24					
EV1100	ES-ASB	Eversource Engineering Prepares & Sends Electrical Field Mark Up Packge to Vendor	5	5	08-Dec-23	0	14-Dec-23					
EV1200	V-ASB	Vendor Engineering Verifies Electrical Mark Ups and Updates As-Built Drawing Package. Submits Final Package to ES	30	30	15-Dec-23	0	30-Jan-24					
EV1300	ES-ASB	Eversource Engineering Verifies Quality of Submitted Electrical Drawings	20	20	31-Jan-24	0	28-Feb-24					
EV1400	ES-ASB	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	5	29-Feb-24	0	06-Mar-24					

2022 023

Mobilize
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Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

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Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
80053152.10.03 P&C As-Builts			60	60	08-Dec-23	0	06-Mar-24					
PC1111	ES-ASB	Eversource Engineering Prepares & Sends Electrical Field Mark Up Packge to Vendor	5	5	08-Dec-23	0	14-Dec-23					
PC1200	V-ASB	Vendor Engineering Verifies P&C Mark Ups and Updates As-Built Drawing Package. Submits Final Package to ES	30	30	15-Dec-23	0	30-Jan-24					
PC1300	ES-ASB	Eversource Engineering Verifies Quality of Submitted P&C Drawings	20	20	31-Jan-24	0	28-Feb-24					
PC1411	ES-ASB	P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	5	29-Feb-24	0	06-Mar-24					
80053152.10.04 Test Closout			11	11	23-Oct-23	0	06-Nov-23					
LCE800		LCE Ensures Marked up Prints Ready for Pick-up	1	1	23-Oct-23	0	23-Oct-23					
LCE900		LCE Review Test Data and Issue Commissioning Report	10	10	24-Oct-23	0	06-Nov-23					
80053152.10.05 SITE RESTORATION CLOSEOUT			10	10	23-Oct-23	113	03-Nov-23					
1110		Restore / Remediate Site	10	10	23-Oct-23	113	03-Nov-23					
80053152.10.06 MATERIAL, EQUIPMENT, COST, AND ASSET MANAGEMENT CLOSEOUT			36	36	23-Oct-23	87	13-Dec-23					
1020		Cost Analyst Prepares FINAL Units of Property	30	30	23-Oct-23	93	05-Dec-23					
1030		Asset Management Complete Asset Update(s) in CASCADE	30	30	31-Oct-23	87	13-Dec-23					
80053152.10.07 PROJECT MANAGEMENT CLOSEOUT			123	123	23-Oct-23	0	18-Apr-24					
1040		PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	30	30	23-Oct-23	92	05-Dec-23					
1270		Prepare TD-707 Document	30	30	23-Oct-23	92	05-Dec-23					
FINISH		Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	0	0		0	18-Apr-24					
80053152.13 OVERHEAD / INDIRECTS			2	2	20-Jul-22	111	21-Jul-22					
80053152.13.01 PROJECT MANAGEMENT			2	2	20-Jul-22	111	21-Jul-22					
1170		Prepare CAN (Construction Authorization Notice)	1	1	20-Jul-22	-10	20-Jul-22					
3690		Prepare CAN (Construction Authorization Notice)	1	1	21-Jul-22	111	21-Jul-22					

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2022 023

Prepare C

Prepare C

Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
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Page 11 of 11

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
40494001 [redacted] (404940)			1303	979	19-Apr-19 A	0	25-Jun-24	15-Aug-22				
40494001.01 INITIALIZATION AND SCOPE DEVELOPEMENT			1095	771	19-Apr-19 A	0	26-Aug-23	06-Jun-22				
START		SCHEDULE START MILESTONE	0	0	19-Apr-19 A							
40494001.01.01 Initial Funding			120	30	19-Apr-19 A		09-Oct-19 A					
PI1200		Project Initiator Develop Initial Funding Request	10	10	19-Apr-19 A		03-May-19 A					
PI1000		Submit Initial Funding Request	0	0			03-May-19 A					
PI1300	EPAC-I	Initial Funding Request Approved	0	10	06-May-19 A		06-May-19 A					
PI1400	PM-AM	Assign Project Manager	0	10	18-Sep-19 A		18-Sep-19 A					
PI1500		Assign Scheduler	0	5	09-Oct-19 A		09-Oct-19 A					
PI1600		Assign Cost Analyst	0	5	09-Oct-19 A		09-Oct-19 A					
40494001.01.02 SDC Approval			443	200	17-Mar-20 A		16-Dec-21 A					
SSF1000		Develop Solutions Selection Form (SSF)	20	20	17-Mar-20 A		14-Apr-20 A					
SDC1000	SDC	Solution Design Committee(SDC) Approval	5	10	08-Mar-21 A		12-Mar-21 A					
CE1600		Conduct Project Team Kickoff Meeting	1	1	08-Mar-21 A		08-Mar-21 A					
CE1710		Conduct Conceptual Constructability Walk Down	1	1	15-Nov-21 A		15-Nov-21 A					
CGE1000	EST-SD(	Develop Conceptual Grade Estimate (-25%+50%)	1	10	18-Nov-21 A		18-Nov-21 A					
CE1700		Review Conceptual Siting & Permitting (If Required)	6	10	09-Dec-21 A		16-Dec-21 A					
40494001.01.09 Project Initiation			345	325	22-Jan-21 A	-26	06-Jun-22	06-Jun-22				
40494001.01.09.00 Engineering Scope Development			43	72	30-Aug-21 A		29-Oct-21 A					
PE1400	V-CONC	Vendor Develops P&C Conceptual Scope Design in Accordance with Deliverables Checklist	25	20	30-Aug-21 A		04-Oct-21 A					
PE1740	ES-CON	ES Reviews P&C Conceptual Scope Design in Accordance with Deliverables Checklist	9	10	22-Sep-21 A		04-Oct-21 A					
PE1100	V-CONC	Vendor Develops Electrical Substation Conceptual Engineering Scope Design in Accordance with Deliverables Checklist	10	20	01-Oct-21 A		15-Oct-21 A					
PE1000	V-CONC	Vendor Develops Civil Substation Conceptual Engineering Scope Design in Accordance with Deliverables Checklist	9	20	01-Oct-21 A		15-Oct-21 A					
PE1750	ES-CON	ES Reviews Electrical Substation Conceptual Engineering Scope Design in Accordance with Deliverables Checklist	10	10	18-Oct-21 A		29-Oct-21 A					

2022 023

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Page 1 of 15

TASK filter: All Activities

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
PE1730	ES-CON	ES Reviews Civil Substation Conceptual Engineering Scope Design in Accordance with Deliverables Checklist	9	10	18-Oct-21 A		29-Oct-21 A					
40494001.01.09.01 Civil Engineering Preliminary Design			30	26	01-Nov-21 A		14-Dec-21 A					
DE2010	V-PRELI	Vendor Engineer Develop Civil Substation Preliminary Design	13	25	01-Nov-21 A		18-Nov-21 A					
DE2020	ES-PRE	ES Engineering Review Civil Substation Preliminary Design	16	10	22-Nov-21 A		14-Dec-21 A					
40494001.01.09.02 Electrical Engineering Preliminary Design			31	26	01-Nov-21 A		15-Dec-21 A					
DE2030	V-PRELI	Vendor Engineer Develop Electrical Substation Preliminary Design	13	25	01-Nov-21 A		18-Nov-21 A					
DE2040	ES-PRE	ES Engineering Review Electrical Substation Preliminary Design	17	10	22-Nov-21 A		15-Dec-21 A					
40494001.01.09.06 P&C Engineering Preliminary Design			31	26	01-Nov-21 A		15-Dec-21 A					
DE2090	V-PRELI	Vendor Engineer Develop P&C Preliminary Design	12	25	01-Nov-21 A		18-Nov-21 A					
DE2100	ES-PRE	ES Engineering Review P&C Preliminary Design	17	10	22-Nov-21 A		15-Dec-21 A					
40494001.01.09.2 EPAC Partial Funding			228	208	22-Jan-21 A		16-Dec-21 A					
ATCGE1010	EST-PAF	Develop At Least Conceptual Grade Estimate (-25%+50%)	10	10	22-Jan-21 A		05-Feb-21 A					
PAFP1000		Submit Partial Funding PAF for Internal Review	5	10	05-Feb-21 A		12-Feb-21 A					
PAFP1100		Incorporate Internal Review Comments & Submit Partial Funding PAF to EPAC for Review	4	5	08-Feb-21 A		12-Feb-21 A					
PAFP1200		Incorporate EPAC Partial Funding PAF Review Comments	3	5	15-Feb-21 A		19-Feb-21 A					
PF1000	EPAC-P	EPAC Partial Funding Approval	1	1	22-Feb-21 A		22-Feb-21 A					
PE1710		Create Engineering Scope Document	124	10	05-Mar-21 A		27-Aug-21 A					
PE1720	Scope Comp	Engineering Scope Document Complete	0	0			27-Aug-21 A					
PE1700		Conduct Preliminary Constructability Walk Down	1	1	16-Dec-21 A		16-Dec-21 A					
40494001.01.09.3 EPAC Full Funding			103	103	10-Jan-22 A	-26	06-Jun-22	06-Jun-22				
DE1700		Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)	4	4	10-Jan-22 A		13-Jan-22 A					
DE1710	Construc	Project Constructability Review Complete	5	5	10-Mar-22 A		16-Mar-22 A					
DE1600	EST-FUL	Create Planning Grade Estimate (+/-25% Full Funding)	36	10	14-Mar-22 A		02-May-22 A			Ask Braden		
DE1900		Conduct Detail Constructability Walk Down	1	1	16-Mar-22 A		16-Mar-22 A					

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Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
DE1800		Review Detail Siting & Permitting (If Required)	1	1	30-Mar-22 A		30-Mar-22 A					
PAFF2000		Submit Full Funding PAF for Internal Review	6	6	07-Apr-22 A		14-Apr-22 A					
PAFF2100	PAF Submit	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC for Review	1	4	02-May-22 A		02-May-22 A					
PAFF2110		EPAC Full Funding Meeting	0	0			12-May-22 A					
PAFF2200		Incorporate EPAC Full Funding PAF Review Comments	15	11	13-May-22 A	-26	03-Jun-22	03-Jun-22				
FF1000	EPAC-F	EPAC Full Funding Approval	1	1	06-Jun-22	-26	06-Jun-22	06-Jun-22				
40494001.01.12 T-Minus Milestones			618	616	15-Dec-21 A	0	26-Aug-23					
40494001.01.12.01 Civil T-Minus Milestones			211	211	28-Feb-22 A	-36	26-Sep-22					
AT2605	ENG-SC	Eng. Project Scoping Document Issued (Scope Lockdown)	0	0			28-Feb-22 A					
AT0805C	BG-IFC	Civil IFC Civil	0	0		69	13-Jun-22					
AT1801		T-18 All Firm TOA Applications due to LCC	0	0		-120	15-Aug-22*		Finish On or Before			
AT0801		Permits Approved / Received (Environmental, Local)	0	0		6	15-Aug-22					
AT0814		Construction Contracts / PSA In-Place	0	0		4	17-Aug-22					
AT00	SOC	T-00 Civil Construction Start	0	0	22-Aug-22*	0			Mandatory Start	Spring of 22		
AT0203		Go / No-Go [CAN] Const. Author. Notice Form Completed for Civil	0	0		-17	07-Sep-22					
AT0401		Final Material Receipt Review Complete (delivered on site)	0	0		-36	26-Sep-22					
40494001.01.12.02 Electrical T-Milestones			381	379	15-Dec-21 A	-2	31-Dec-22					
BT2605	ENG-PR	Preliminary Design / Engineering Completed	0	0			15-Dec-21 A					
BT0805E	AG-IFC	Elect IFC - Electrical (AG) w/Final BOM	0	0		202	10-Jun-22			s		
BT1805		B-T-18.05 NX-9 Rating to LCC + ISO for New 'T' Equipment (NC=Per Procedure/120 calendar days before DOE)	0	0		22	03-Aug-22*		Finish On or Before			
BT0301		B-T-03.01 NX-9 Ratings to LCC & ISO for Existing Equipment (EM=Per Procedure/15 business days before DOE)	0	0		-6	10-Aug-22*		Finish On or Before			
BT0203		Go / No-Go [CAN] Const. Author. Notice Form Completed for Electrical	0	0		127	24-Aug-22					
BT1811	ENG-DT	Detail Design/Engineering Completed	0	0			25-Aug-22 A					
BT1801		T-18 All Firm TOA Applications due to LCC	0	0			29-Aug-22 A		Finish On or Before			

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
BT00	SOC	T-00 Electrical Construction Start	0	0	30-Dec-22*	0			Mandatory Start	late spring 22		
BT0401		Final Material Receipt Review Complete (delivered on site)	0	0		-2	31-Dec-22					
40494001.01.12.06 P&C T-Minus Milestones			427	427	24-Jun-22	0	26-Aug-23					
CT0805P	P&C-IFC	P&C IFC - P&C w/BOM	0	0		427	24-Jun-22					
CT2404		Determine / Assign Lead Commissioning Engineer	0	0		45	11-Jul-23					
CT1301		Commission Plan Complete	0	0		14	11-Aug-23					
CT00	SOC	T-00 P&C Construction Start	0	0	26-Aug-23*	0			Mandatory Start	late spring 22		
40494001.04 SITING APPROVALS AND PERMITS			295	295	14-Jun-21 A	4	15-Aug-22	15-Aug-22				
40494001.04.01 PERMITTING - Local - Short Form			295	295	14-Jun-21 A	4	15-Aug-22	15-Aug-22				
A3590		Permitting - PM Send Scope to Siting Team	1	1	14-Jun-21 A		14-Jun-21 A					
A3600		Permitting - Siting Team Review Scope to Determine Siting Requirements (e.g. zoning)	247	10	15-Jun-21 A	4	08-Jun-22*	08-Jun-22	Finish On or Before			
A3610		Permitting - If Requirements Exist, Pursue Appropriate Actions, Permits, etc.	222	10	19-Jul-21 A	6	06-Jun-22*	06-Jun-22	Finish On or Before	CSC, Exempt Mod needed		
A3640		Permitting - Permit Approval ,	47	47	09-Jun-22*	4	15-Aug-22	15-Aug-22	Start On or After	CSC, Exempt Mod needed		
40494001.05 ENGINEERING & DESIGN			716	716	08-Mar-21 A	115	11-Jan-24	24-Jun-22				
A3370		Decision Required Regarding Engineering Staffing (ES, COC, BID)	1	5	08-Mar-21 A		08-Mar-21 A					
40494001.05.01 Civil Engineering			320	320	08-Mar-21 A	-25	13-Jun-22					
40494001.05.01.01 Civil Engineering Detail Design			86	78	15-Dec-21 A		19-Apr-22 A					
CE1200	V-DTL	Vendor Engineer Develop Civil Substation Detail Design	75	25	15-Dec-21 A		04-Apr-22 A			Expected by 28th March		
CE1210	ES-DTL	ES Engineering Review Civil Substation Detail Design	10	10	06-Apr-22 A		19-Apr-22 A					
40494001.05.01.02 Civil Engineering IFC Design			30	30	02-May-22 A	-25	13-Jun-22					
CE1300	V-IFC	Vendor Engineer Develop Civil Substation IFC	19	4	02-May-22 A		26-May-22 A					
CE1310	ES-IFC	ES Engineering Review Civil Substation IFC	10	10	31-May-22 A	-25	13-Jun-22			sync w other proj		
40494001.05.01.03 Civil Engineering Service/Contracts			94	100	08-Mar-21 A		19-Jul-21 A					
40494001.05.01.03.01 Bid Process			94	100	08-Mar-21 A		19-Jul-21 A					

2022 023

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Page 4 of 15

TASK filter: All Activities

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
TMP1310		Contractor Selection (Bid) - Engineering- Prepare / Issue RFP for Engineering Contractor	46	10	08-Mar-21 A		10-May-21 A					
TMP1320		Contractor Selection (Bid) - Engineering - Issue RFP Out to Bid to Engineering Contractor	9	10	11-May-21 A		24-May-21 A					
TMP1330		Contractor Selection (Bid) - Engineering - Bid Period	14	10	25-May-21 A		14-Jun-21 A					
TMP1350		Contractor Selection (Bid) - Engineering - Bid Review / Score Bids/ Negotiations	6	5	15-Jun-21 A		22-Jun-21 A					
TMP1360		Contractor Selection (Bid) - Engineering - Award Contractor	5	5	23-Jun-21 A		29-Jun-21 A					
TMP1370		Contractor Selection (Bid) - Engineering - Issue DR	1	1	30-Jun-21 A		30-Jun-21 A					
TMP1380		Contractor Selection (Bid) - Engineering - Issue PO	11	18	01-Jul-21 A		16-Jul-21 A					
TMP1390		Contractor Selection (Bid) - Engineering - Notice to Proceed	1	1	19-Jul-21 A		19-Jul-21 A		Start On or After			
40494001.05.01.03.02 EOC - Engineer of Choice Process			1	1	12-Mar-21 A		12-Mar-21 A					
TMP1180		N/R Engineering of Choice (EOC) - EOC Committee Reviews at Monthly Meeting & Approves (?)	1	1	12-Mar-21 A		12-Mar-21 A					
TMP1140		N/R Engineering of Choice (EOC) - Provide RFP to Single Vendor	1	1	12-Mar-21 A		12-Mar-21 A					
TMP1200		N/R Engineering of Choice (EOC) - DR Prepared by Project Engineer & Project Controls	1	1	12-Mar-21 A		12-Mar-21 A					
TMP1220		N/R Engineering of Choice (EOC) - PO Issued for Vendor -Preliminary Design Effort	1	1	12-Mar-21 A		12-Mar-21 A					
TMP1150		N/R Engineering of Choice (EOC) - Vendor Responds with Proposal	1	1	12-Mar-21 A		12-Mar-21 A					
40494001.05.02 Electrical Engineering			536	522	22-Nov-21 A	115	11-Jan-24	10-Jun-22				
CSD1000	CASCAI	PE Initiate CASCADE Forms (Appendix A) for Construction Package	5	5	06-Jun-22	49	10-Jun-22					
40494001.05.02.01 Electrical Engineering Detail Design			56	56	31-Jan-22 A		19-Apr-22 A					
EE1200	V-DTL	Vendor Engineer Develop Electrical Substation Detail Design	45	25	31-Jan-22 A		04-Apr-22 A					
EE1210	ES-DTL	ES Engineering Review Electrical Substation Detail Design	11	11	05-Apr-22 A		19-Apr-22 A					
40494001.05.02.02 Electrical Engineering IFC Design			37	37	20-Apr-22 A	-4	10-Jun-22	10-Jun-22				
EE1300	V-IFC	Vendor Engineer Develop Electrical Substation IFC	26	20	20-Apr-22 A		26-May-22 A			Runing Late Due to Drawings		
EE1310	ES-IFC	ES Engineering Review Electrical Substation IFC	9	9	31-May-22*	-4	10-Jun-22	10-Jun-22	Start On or After	Runing Late Due to Drawings		
40494001.05.02.1 Substation NX9			536	522	22-Nov-21 A	115	11-Jan-24					
40494001.05.02.1.01 Substation - Preliminary Thermal Data			176	162	22-Nov-21 A	475	03-Aug-22					

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
NX9A-NC05		LTRC Submits 1-Line Nomenclature to TRC	2	5	22-Nov-21 A		23-Nov-21 A			Process Box 1	[redacted]	
NX9A-NC03		LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature	5	5	13-Dec-21 A		17-Dec-21 A			Process Box 2		
NX9A-NC07		LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings	4	5	20-Dec-21 A		23-Dec-21 A			Process Box 2		
NX9A-NC09		LTRC Requests P&C Checklist - Line 1043	10	5	07-Mar-22 A		21-Mar-22 A			Process Box 1		
NX9A-NC01		PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX	10	10	01-Jun-22*	510	14-Jun-22		Start On or After	Process Box 3		
NX9A-NC11		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	5	5	27-Jun-22	16	01-Jul-22			Process Box 4		
NX9A-NC13		LTRC Reviews and Sends Thermal Rating Data for TRC Review	5	5	05-Jul-22	16	11-Jul-22			Process Box 5		
NX9A-NC15		TRC Reviews and Approves Thermal Rating Data	5	5	12-Jul-22	16	18-Jul-22			Process Box 6		
NX9A-NC17		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	5	5	19-Jul-22	16	25-Jul-22			Process Box 7		
NX9A-NC19		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	1	1	26-Jul-22	16	26-Jul-22			Process Box 8		
NX9A-NC21	NX-9	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	5	5	27-Jul-22	16	02-Aug-22			Process Box 9		
NX9A-NC23		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006	1	1	03-Aug-22	16	03-Aug-22			Process Box 8		
40494001.05.02.1.02 Substation - Verify Thermal Data			42	42	13-Jun-22	-4	10-Aug-22					
NX9A-NC31		PE to Verify Thermal Data Review PE Chectlist (M7-EN-3006.2)	5	5	13-Jun-22	-4	17-Jun-22			Process Box 1		
NX9A-NC33		LTRC Reviews and Makes "GO / NO-GO" Decision	5	5	20-Jun-22	-4	24-Jun-22			Process Box 2		
NX9A-NC35		LTRC Requests P&C Checklist	5	5	27-Jun-22	-4	01-Jul-22			Process Box 2		
NX9A-NC37		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	5	5	05-Jul-22	-4	11-Jul-22			Process Box 4		
NX9A-NC39		LTRC Reviews and Sends Thermal Rating Data for TRC Review	5	5	12-Jul-22	-4	18-Jul-22			Process Box 5		
NX9A-NC41		TRC Reviews and Approves Thermal Rating Data	5	5	19-Jul-22	-4	25-Jul-22			Process Box 6		
NX9A-NC43		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	5	5	26-Jul-22	-4	01-Aug-22			Process Box 7		
NX9A-NC45		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	1	1	02-Aug-22	-4	02-Aug-22			Process Box 8		
NX9A-NC47	NX-9	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	5	5	03-Aug-22	-4	09-Aug-22			Process Box 9		
NX9A-NC49		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006	1	1	10-Aug-22	-4	10-Aug-22			Process Box 8		
40494001.05.02.1.03 Substation - NX-9 Pre NX9-DOE			1	1	28-Dec-23	116	28-Dec-23					

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Page 6 of 15

TASK filter: All Activities

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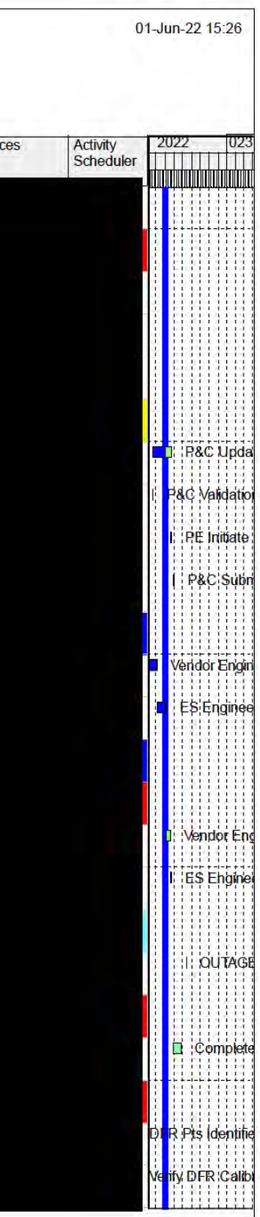
EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
NX9500		Scheduler - Send Email for 48Hrs Notification before DOE.	1	1	28-Dec-23	116	28-Dec-23				[redacted]	
40494001.05.02.1.04 Substation - NX-9 Post NX9-DOE/ISD			8	8	02-Jan-24	115	11-Jan-24					
NX9FINAL50		Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or ISD)	3	3	02-Jan-24	115	04-Jan-24					
NX9A600		Scheduler - 72 Hrs to Put in Service the NX-9 and Send to TOP Director in NURS after DOE/PM Note of Complition.	1	1	04-Jan-24	115	04-Jan-24					
NX9FINAL60		[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	5	5	05-Jan-24	115	11-Jan-24					
40494001.05.06 P&C Engineering			161	332	27-Dec-21 A	467	15-Aug-22	24-Jun-22				
OP1020		P&C Updates OP-24 Appendix B	49	4	18-Apr-22 A	497	24-Jun-22	24-Jun-22	Start On or After			
OP1010		P&C Validation of PAF's Initial Assessment Go/No-Go	2	2	20-Apr-22 A		21-Apr-22 A					
CSD1030	CASCAI	PE Initiate CASCADE Forms (Appendix A) for Construction Package	5	5	20-Jun-22	39	24-Jun-22					
OP1030	OP-24	P&C Submits OP-24 Appendix B to ISO-NE	5	5	27-Jun-22	497	01-Jul-22					
40494001.05.06.01 P&C Engineering Detail Design			111	99	27-Dec-21 A	16	03-Jun-22	03-Jun-22				
PC1100	V-DTL	Vendor Engineer Develop P&C Detail Design	90	25	27-Dec-21 A		04-May-22 A			Finish 4 May		
PC1110	ES-DTL	ES Engineering Review P&C Detail Design	22	10	04-May-22 A	16	03-Jun-22	03-Jun-22	Start On or After			
40494001.05.06.02 P&C Engineering IFC Design			125	124	17-Feb-22 A	4	15-Aug-22	17-Jun-22				
40494001.05.06.02.03 P&C Design Package			50	50	06-Jun-22	-19	15-Aug-22	17-Jun-22				
PC1320	V-IFC	Vendor Engineer Develop P&C IFC	10	10	06-Jun-22	16	17-Jun-22	17-Jun-22				
PC1330		ES Engineering Review P&C IFC	5	5	20-Jun-22	16	24-Jun-22					
40494001.05.06.02.03.1 Outage Permit Process			1	1	15-Aug-22	-84	15-Aug-22					
OPERM1000		[redacted]	1	1	15-Aug-22*	-84	15-Aug-22		Start On or After			
40494001.05.06.02.01 Relay Settings			20	20	27-Jun-22	19	25-Jul-22					
PC1400	ES-RSE	Complete P&C Relay Settings	20	20	27-Jun-22	19	25-Jul-22					
40494001.05.06.02.02 P&C DFR Design			104	103	17-Feb-22 A	25	15-Jul-22					
A-DFR1060		DFR Pts Identified	0	0			17-Feb-22 A					
A-DFR1000		Verify DFR Calibration is Required	0	1	17-Feb-22 A		17-Feb-22 A					



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Page 7 of 15

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
A-DFR1040	CASCAI	Verify CASCADE Forms Exists for S/S DFR, if not then Initiate Form	3	3	13-Jun-22	45	15-Jun-22					
A-DFR1010		P&C Prepare Configuration for DFRs	5	5	27-Jun-22	25	01-Jul-22					
A-DFR1020		Peer Review and Comment DFR Configuration	5	5	05-Jul-22	25	11-Jul-22					
A-DFR1030		P&C Issue Configuration For DFR	3	3	12-Jul-22	25	14-Jul-22					
A-DFR1050		DFR Config Complete	1	1	15-Jul-22	25	15-Jul-22					
40494001.06 MATERIAL PROCUREMENT			428	428	19-Apr-21 A	-1	31-Dec-22					
40494001.06.1 MATERIAL FOR P&C			89	89	27-Jun-22	39	01-Nov-22					
DSSE-510	DR-RM	MATERIAL - P&C - Prepare & Issue DR	5	5	27-Jun-22	41	01-Jul-22					
DSSE-980		MATERIAL - P&C - Procurement Issue PO	5	5	05-Jul-22	41	11-Jul-22					
DSSE-1000		MATERIAL - P&C - Material Vendor Delivery Leadtime	112	112	12-Jul-22	58	31-Oct-22					
DSSE-1010	M-DELI\	MATERIAL - P&C - Material Handler Confirm Material Delivery to Site	1	1	01-Nov-22	58	01-Nov-22					
40494001.06.2 MATERIAL FOR ELECTRICAL			139	139	13-Jun-22	-1	31-Dec-22					
DSSE-520	DR-RM	MATERIAL - Electrical - Prepare & Issue DR	5	5	13-Jun-22	-2	17-Jun-22					
DSSE-530	DR-AGM	Electrical (AG) Material Ordered	0	0		-2	17-Jun-22					
DSSE-1020		MATERIAL - ELectrical - Procurement Issue PO	10	10	20-Jun-22	-2	01-Jul-22					
DSSE-1030		MATERIAL - Electrical - Material Vendor Delivery Leadtime	182	182	02-Jul-22	-2	30-Dec-22					
DSSE-550	M-DELI\	MATERIAL - Electrical - Material Handler Confirm Material Delivery to Site	1	1	31-Dec-22	-2	31-Dec-22					
40494001.06.3 MATERIAL FOR CIVIL			73	73	14-Jun-22	-25	26-Sep-22					
DSSE-500	DR-RM	MATERIAL - CIVIL - Prepare & Issue DR	5	5	14-Jun-22	-25	20-Jun-22					
DSSE-540	DR-BGM	Civil (BG) Material Ordered	0	0		-25	20-Jun-22					
DSSE-1040		MATERIAL - CIVIL - Procurement Issue PO	5	5	21-Jun-22	-25	27-Jun-22					
DSSE-1050		MATERIAL - CIVIL - Material Vendor Delivery Leadtime	90	90	28-Jun-22	-36	25-Sep-22					
DSSE-560	M-DELI\	MATERIAL - CIVIL - Material Handler Confirm Material Delivery to Site	1	1	26-Sep-22	-36	26-Sep-22					
40494001.06.6 MATERIAL FOR BREAKERS			274	274	19-Apr-21 A		19-May-22 A					

2022 023

Verify CASC
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Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

Page 8 of 15

TASK filter: All Activities

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PJ 1 With Gant EXP Finish Comments 01-Jun-22 15:26

EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
DSSE-1150	DR-MM	MATERIAL - BREAKER - Prepare & Issue DR (breakers)	5	5	19-Apr-21 A		23-Apr-21 A				[redacted]	
DSSE-1180	DR-AGM	Breaker (AG) Material Ordered	0	0			23-Apr-21 A					
DSSE-1160		MATERIAL - BREAKER - Procurement Issue PO	30	10	03-May-21 A		14-Jun-21 A					
DSSE-1140		MATERIAL - BREAKER - Material Vendor Delivery Leadtime	115	120	11-Jan-22 A		05-May-22 A					
DSSE-1155		BREAKER - Material transportation from wharehouse to site	25	25	25-Apr-22 A		19-May-22 A		Start On or After	Status 19 May		
DSSE-1130	M-DELI	MATERIAL - BREAKER - Material Handler Confirm Material Delivery to Site	0	0			19-May-22 A					
40494001.07 CONSTRUCTION			703	826	15-Mar-21 A	0	30-Dec-23					
CSM	CRH	Construction Start Milestone	0	0	22-Aug-22*	0			Mandatory Start			
TOA-Const	OUT	OUTAGE / General Construction Work	116	116	23-Aug-22	379	16-Dec-22					
CFM		Construction Finish Milestone	0	0		0	30-Dec-23					
ISD	ISD	EQUIPMENT IN SERVICE DATE (requires FOOB constraint)	0	0		0	30-Dec-23*		Finish On or Before			
40494001.07.SEG-404940-02 SEGMENT 404940-02 - Construction			30	586	28-Feb-22 A		11-Apr-22 A					
404940-02-8-10CV		Segment - Civil - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-8-20OH		Segment - OH - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-8-30UG		Segment - UG - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-0		N/R SEGMENT - SUMMARY - 404940-02 - Remote End work for [redacted]	30	586	28-Feb-22 A		11-Apr-22 A					
404940-02-8-30PE		Segment - Permitting - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-8-40FE		Segment - ST Field Eng - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-8-50EL		Segment - ST Electricians - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-8-60FC		Segment - ST Communications- 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-02-0-SM		SEGMENT - SM - 404940-02 - Remote End work for [redacted]	0	0	28-Feb-22 A							
404940-02-9-FM		SEGMENT - FM - 404940-02 - Remote End work for [redacted]	0	0			28-Feb-22 A					
40494001.07.SEG-404940-02.WO-6771160 WO 6771160 - D Support			42	849	28-Feb-22 A		11-Apr-22 A					
40494001.07.SEG-404940-02.WO-6771160.0 WO 6771160 - D-Support Milestones			0	0	28-Feb-22 A		28-Feb-22 A					

2022 023

Segment - Civil
Segment - OH
Segment - UG
N/R SEGMEN
Segment - Perm
Segment - ST F
Segment - ST E
Segment - ST C
SEGMENT - SM
SEGMENT - FM

Remaining Level of Effort
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Page 9 of 15

TASK filter: All Activities

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
WO-6771160-0-SM		6771160 - Remote End work for [redacted] - D-Support - SM	0	0	28-Feb-22 A							
WO-6771160-99-FM		6771160 - Remote End work for [redacted] - D-Support - FM	0	0			28-Feb-22 A					
40494001.07.SEG-404940-02.WO-6771160.00 WO 6771160 - Summary Milestones			0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771160-00-SM		6771160 - Remote End work for [redacted] - SM	0	0	28-Feb-22 A							
WO-6771160-9-FM		6771160 - Remote End work for [redacted] - FM	0	0			28-Feb-22 A					
40494001.07.SEG-404940-02.WO-6771160.10 WO 6771160 - Pre-Construction			0	807	04-Apr-22 A		04-Apr-22 A					
6771160-0-280		N/R 280 - Prereq - Deliverables Complete - Work Order Ready to Close	0	0			04-Apr-22 A		As Late As Possible			
6771160-0-310		N/R 310 - Prereq - Financial Close Out	0	0			04-Apr-22 A					
40494001.07.SEG-404940-02.WO-6771160.30 WO 6771160 - Construction			42	42	28-Feb-22 A		11-Apr-22 A					
WO-6771160-UG-10		6771160 - Underground - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771160-OH-10		6771160 - Overhead - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771160-ST-EL-10		6771160 - Station - Electrician - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771160-ST-FC-10		6771160 - Station - Field Comm - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771160-ST-FE-10		6771160 - Station - Field Engineer - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
6771160-10		N/R N/R 10 - GENERAL CONSTRUCTION	7	0	04-Apr-22 A		11-Apr-22 A					
40494001.07.SEG-404940-02.WO-6771160.40 WO 6771160 - Post-Construction			0	0	04-Apr-22 A		04-Apr-22 A					
6771160-9-300		N/R 300 - Postreq - Send Equipment Details to CASCADE	0	0			04-Apr-22 A					
40494001.07.SEG-404940-03 SEGMENT 404940-03 - Construction			30	586	28-Feb-22 A		11-Apr-22 A					
404940-03-8-10CV		Segment - Civil - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-03-8-20OH		Segment - OH - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-03-8-30UG		Segment - UG - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-03-0		SEGMENT - SUMMARY -404940-03 - Remote End work for [redacted]	30	586	28-Feb-22 A		11-Apr-22 A					
404940-03-8-30PE		Segment - Permitting - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-03-8-40FE		Segment - ST Field Eng - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					

2022 | 023

6771160 - Remo
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Segment - Civil
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Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

Page 10 of 15

TASK filter: All Activities

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
404940-03-8-50EL		Segment - ST Electricians - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A				[redacted]	
404940-03-8-60FC		Segment - ST Communications- 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A		28-Feb-22 A					
404940-03-0-SM		SEGMENT - SM - 404940-03 - Remote End work for [redacted]	0	0	28-Feb-22 A							
404940-03-9-FM		SEGMENT - FM - 404940-03 - Remote End work for [redacted]	0	0			28-Feb-22 A					
40494001.07.SEG-404940-03.WO-6771727 WO 6771727 - D Support			30	586	28-Feb-22 A		11-Apr-22 A					
40494001.07.SEG-404940-03.WO-6771727.0 WO 6771727 - D-Support Milestones			0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771727-0-SM		6771727 - Remote End work for [redacted] - D-Support - SM	0	0	28-Feb-22 A							
WO-6771727-99-FM		6771727 - Remote End work for [redacted] - D-Support - FM	0	0			28-Feb-22 A					
40494001.07.SEG-404940-03.WO-6771727.00 WO 6771727 - Summary Milestones			0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771727-00-SM		6771727 - Remote End work for [redacted] - SM	0	0	28-Feb-22 A							
WO-6771727-9-FM		6771727 - Remote End work for [redacted] - FM	0	0			28-Feb-22 A					
40494001.07.SEG-404940-03.WO-6771727.10 WO 6771727 - Pre-Construction			0	807	04-Apr-22 A		04-Apr-22 A					
6771727-0-280		N/R 280 - Prereq - Deliverables Complete - Work Order Ready to Close	0	0			04-Apr-22 A		As Late As Possible			
6771727-0-310		N/R 310 - Prereq - Financial Close Out	0	0			04-Apr-22 A					
40494001.07.SEG-404940-03.WO-6771727.30 WO 6771727 - Construction			42	42	28-Feb-22 A		11-Apr-22 A					
WO-6771727-UG-10		6771727 - Underground - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771727-OH-10		6771727 - Overhead - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771727-ST-EL-10		6771727 - Station - Electrician - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771727-ST-FC-10		6771727 - Station - Field Comm - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
WO-6771727-ST-FE-10		6771727 - Station - Field Engineer - TSupport	0	0	28-Feb-22 A		28-Feb-22 A					
6771727-10		N/R N/R 10 - GENERAL CONSTRUCTION	7	0	04-Apr-22 A		11-Apr-22 A					
40494001.07.SEG-404940-03.WO-6771727.40 WO 6771727 - Post-Construction			0	0	04-Apr-22 A		04-Apr-22 A					
6771727-9-300		N/R 300 - Postreq - Send Equipment Details to CASCADE	0	0			04-Apr-22 A					
40494001.07.01 CONSTRUCTION - CIVIL			403	403	15-Mar-21 A	0	18-Oct-22					

2022 | 023

Segment - ST:E
Segment - ST:C
SEGMENT - SM
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6771727 - Remo
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Remaining Level of Effort | Remaining Work | ◆ Mile...
Actual Work | Critical Remaining Work

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
ACC1100		Construction - Civil	40	40	22-Aug-22*	0	18-Oct-22		Mandatory Start			
40494001.07.01.2 CONSTRUCTION SERVICES - BID PROCESS			361	361	15-Mar-21 A	-26	17-Aug-22					
A3550		STAFFING DECISION: EVERSOURCE OR OUTSOURCE BID/COC CONSTRUCTION	10	5	15-Mar-21 A		26-Mar-21 A					
A3430		CONST.SERVICES - BID - Eversource provide Spec / RFP	10	10	07-Jun-22	-26	20-Jun-22					
A3440		CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal	20	20	21-Jun-22	-26	19-Jul-22					
A3450		CONST.SERVICES - BID - Eversource reviews contractor proposals	10	10	20-Jul-22	-26	02-Aug-22					
A3620		CONST.SERVICES - BID - Contract is Awarded - DR Preparing Issued	10	10	03-Aug-22	-26	16-Aug-22					
A3460		CONST.SERVICES - BID - Contract is Awarded - PO Issued	1	1	17-Aug-22	-26	17-Aug-22					
40494001.07.01.1 CONSTRUCTION SERVICES - CONTRACTOR OF CHOICE			1	5	04-May-21 A		04-May-21 A					
A3390		N/R - CONST.SERVICES - COC - Eversource Provides Spec / RFQ to COC	1	1	04-May-21 A		04-May-21 A					
A3400		N/R - CONST.SERVICES - COC - COC Evaluates Spec and Provides Quote	1	1	04-May-21 A		04-May-21 A					
A3410		N/R - CONST.SERVICES - COC - Eversource Reviews Quote from COC	1	5	04-May-21 A		04-May-21 A					
A3420		N/R - CONST.SERVICES - COC - Eversource Awards Contract - PO Issued	1	5	04-May-21 A		04-May-21 A					
40494001.07.02 CONSTRUCTION - ELECTRICAL			117	117	05-Sep-23	0	30-Dec-23					
A1130		Construction - Electrical	117	117	05-Sep-23*	0	30-Dec-23		Mandatory Start			
40494001.07.94 CONSTRUCTION RESOURCE TRACKING			496	496	22-Aug-22	0	30-Dec-23					
ConRep-S		RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	496	496	22-Aug-22	0	30-Dec-23					
CONSTelec		RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	496	496	22-Aug-22	0	30-Dec-23					
A1070		RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT	1	1	23-Aug-22	494	23-Aug-22					
A1080		RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN	1	1	16-Dec-22	379	16-Dec-22					
40494001.09 TEST AND COMMISSION			684	684	15-Mar-21 A	142	03-Dec-23					
40494001.09.01 TEST - SERVICES STAFFING DECISION			70	79	15-Mar-21 A		21-Jun-21 A					
A1010		STAFFING DECISION: EVERSOURCE OR OUTSOURCE BID/COC TESTING	40	5	15-Mar-21 A		07-May-21 A					
40494001.09.01.01 TEST SERVICES - CONTRACTOR OF CHOICE			1	39	21-Jun-21 A		21-Jun-21 A					

2022 023

Remaining Level of Effort | Remaining Work | Mile...
Actual Work | Critical Remaining Work

Page 12 of 15

TASK filter: All Activities

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
TSCOC100		N/R - TEST SERVICES - COC - Eversource Provides Spec / RFQ to COC	1	5	21-Jun-21 A		21-Jun-21 A					
TSCOC200		N/R - TEST SERVICES - COC - COC Evaluates Spec and Provides Quote	1	10	21-Jun-21 A		21-Jun-21 A					
TSCOC300		N/R - TEST SERVICES - COC - Eversource Reviews Quote from COC	1	10	21-Jun-21 A		21-Jun-21 A					
TSCOC400		N/R - TEST SERVICES - COC - Eversource Awards Contract - PO Issued	1	10	21-Jun-21 A		21-Jun-21 A					
40494001.09.01.02 TEST SERVICES - BID PROCESS			1	39	21-Jun-21 A		21-Jun-21 A					
TSBID100		TEST SERVICES - BID - Eversource provide Spec / RFP	1	5	21-Jun-21 A		21-Jun-21 A					
TSBID200		TEST SERVICES - BID - Contractors Evaluate RFP and Provide Proposal	1	10	21-Jun-21 A		21-Jun-21 A					
TSBID300		TEST SERVICES - BID - Eversource reviews contractor proposals	1	10	21-Jun-21 A		21-Jun-21 A					
TSBID400		TEST SERVICES - BID - Eversource awards contract - PO Issued	1	10	21-Jun-21 A		21-Jun-21 A					
40494001.09.02 LCE PLANNING			440	440	13-Dec-21 A	140	12-Sep-23					
LCE100		PM to Request Lead Commissioning Engineer GO/NO-GO (Preliminary design is often the predecessor)	2	2	13-Dec-21 A		14-Dec-21 A					
LCE200		Assign Lead Commissioning Engineer	26	26	05-Jun-23*	10	11-Jul-23		Start On or After			
LCE400	V-COMF	Develop Test and Commissioning Plan	21	21	14-Jul-23	10	11-Aug-23					
LCE500	ES-COM	LCE Review and Approve Vendor's Test and Commissioning Plan	21	21	14-Aug-23	140	12-Sep-23					
40494001.09.04 TEST ACTIVITIES			145	145	12-Jul-23	205	03-Dec-23					
LCE310		Mobilize LCE Prior to Construction	2	2	12-Jul-23	14	13-Jul-23					
LCE320		Mobilize Testing Vendor Prior to Construction	2	2	12-Jul-23	14	13-Jul-23					
LCE610		LCE Oversee Execution of Test and Commissioning Plan	81	81	13-Sep-23	206	02-Dec-23					
LCE620		Execute Test and Commissioning Plan	81	81	13-Sep-23	205	02-Dec-23					
LCE700		LCE Ensure Test Group Prepare Electrical Field Mark Ups	1	1	03-Dec-23	205	03-Dec-23					
40494001.10 PROJECT CLOSE OUT			423	423	19-Oct-22	0	25-Jun-24					
CV1000	V-FLDAS	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)	21	21	19-Oct-22	311	17-Nov-22					
PM1000	PM	PM to Document Civil As-Built Drawings Complete	1	1	16-Feb-23	311	16-Feb-23					
CV1500	ES-FLS/	FE Files Civil Design Drawings at Station	30	30	17-Feb-23	311	31-Mar-23					

2022 | 023

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EVERSOURCE

Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
A1260		Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)	10	10	02-Jan-24	83	16-Jan-24					
EV1000	V-FLDAS	Prepare Electrical Field Mark Ups	21	21	18-Jan-24	0	15-Feb-24					
PC1000	V-FLDAS	Prepare P&C Field Mark Ups	21	21	18-Jan-24	0	15-Feb-24					
PM1100	PM	PM to Document Electrical As-Built Drawings Complete (Electrical & P&C)	1	1	13-May-24	0	13-May-24					
EV1500	ES-FLS/	FE Files Substation Design Drawings at Station	30	30	14-May-24	0	25-Jun-24					
PC1500	ES-FLS/	FE Files P&C Design Drawings at Station	30	30	14-May-24	0	25-Jun-24					
40494001.10.01 Civil As-Builts			60	60	18-Nov-22	311	15-Feb-23					
CV1100	ES-ASB	Eversource Engineering Prepares & Sends Civil Field Mark Up Packge to Vendor	5	5	18-Nov-22	311	25-Nov-22					
CV1200	V-ASB	Vendor Engineering Verifies Civil Mark Ups and Updates As-Built Drawing Package. Submits Final Package to ES	30	30	28-Nov-22	311	10-Jan-23					
CV1300	ES-ASB	Eversource Engineering Verifies Quality of Submitted Civil Drawings	20	20	11-Jan-23	311	08-Feb-23					
CV1400	ES-ASB	ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	5	09-Feb-23	311	15-Feb-23					
40494001.10.02 Electrical As-Builts			60	60	16-Feb-24	0	10-May-24					
EV1100	ES-ASB	Eversource Engineering Prepares & Sends Electrical Field Mark Up Packge to Vendor	5	5	16-Feb-24	0	23-Feb-24					
EV1200	V-ASB	Vendor Engineering Verifies Electrical Mark Ups and Updates As-Built Drawing Package. Submits Final Package to ES	30	30	26-Feb-24	0	05-Apr-24					
EV1300	ES-ASB	Eversource Engineering Verifies Quality of Submitted Electrical Drawings	20	20	08-Apr-24	0	03-May-24					
EV1400	ES-ASB	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	5	06-May-24	0	10-May-24					
40494001.10.03 P&C As-Builts			60	60	16-Feb-24	0	10-May-24					
PC1340	ES-ASB	Eversource Engineering Prepares & Sends Electrical Field Mark Up Packge to Vendor	5	5	16-Feb-24	0	23-Feb-24					
PC1200	V-ASB	Vendor Engineering Verifies P&C Mark Ups and Updates As-Built Drawing Package. Submits Final Package to ES	30	30	26-Feb-24	0	05-Apr-24					
PC1300	ES-ASB	Eversource Engineering Verifies Quality of Submitted P&C Drawings	20	20	08-Apr-24	0	03-May-24					
PC1310	ES-ASB	P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	5	06-May-24	0	10-May-24					
40494001.10.04 Test Closout			11	11	02-Jan-24	0	17-Jan-24					
LCE800		LCE Ensures Marked up Prints Ready for Pick-up	1	1	02-Jan-24	0	02-Jan-24					
LCE900		LCE Review Test Data and Issue Commissioning Report	10	10	03-Jan-24	0	17-Jan-24					

2022 023

Remaining Level of Effort Remaining Work Mile...
Actual Work Critical Remaining Work

Page 14 of 15

TASK filter: All Activities

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Activity ID	Activity Flag	Activity Name	At ompletion Duration	Original Duration	Start	Total Float	Finish	Expected Finish	Primary Constraint	Comments	Resources	Activity Scheduler
40494001.10.05 SITE RESTORATION CLOSEOUT			10	10	02-Jan-24	113	16-Jan-24					
A1110		Restore / Remediate Site	10	10	02-Jan-24	113	16-Jan-24					
40494001.10.06 MATERIAL, EQUIPMENT, COST, AND ASSET MANAGEMENT CLOSEOUT			40	40	02-Jan-24	83	28-Feb-24					
A1020		Cost Analyst Prepares FINAL Units of Property	30	30	02-Jan-24	93	13-Feb-24					
A1030		Asset Management Complete Asset Update(s) in CASCADE	30	30	17-Jan-24	83	28-Feb-24					
40494001.10.07 PROJECT MANAGEMENT CLOSEOUT			123	123	02-Jan-24	0	25-Jun-24					
DSSE-1100		Complete TD-707 Turnover Document / Forward to SOC & Mailing List	5	5	02-Jan-24	118	08-Jan-24					
A1040		PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	30	30	02-Jan-24	92	13-Feb-24					
FINISH		Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	0	0		0	25-Jun-24					
40494001.13 OVERHEAD / INDIRECTS			5	5	18-Aug-22	86	24-Aug-22					
40494001.13.01 PROJECT MANAGEMENT			5	5	18-Aug-22	86	24-Aug-22					
A1170		Prepare CAN for Civil (Construction Authorization Notice)	5	5	18-Aug-22	-26	24-Aug-22*		Finish On or Before			Prepare
A3630		Prepare CAN for Electrical (Construction Authorization Notice)	5	5	18-Aug-22	86	24-Aug-22					Prepare

2022 023

Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
◆ Mile...

Page 15 of 15

TASK filter: All Activities

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Constructability Review Form: [redacted]

Project Title: [redacted]	☐ Prior Constructability Review Performed? ☐ Program Related Site Specific Review?
Project Numbers(s): CS00261 404940	**Project Constructability Phase:** ☐ Conceptual Engineering Design ☒ Preliminary Engineering Design ☐ Detailed Engineering Design
Date(s) of Constructability Review: 03/16/2022 Click to enter a date	
Project Scope Statement: [redacted]	

Department Review/Walkdown Attendees*:

Required [X]	Attended [X]	Department	Name	Required [X]	Attended [X]	Department	Name
☐	☐	Project Management	[redacted]	☐	☐	S/S Engineering	[redacted]
☐	☐	Asset Management		☐	☐	P&C Engineering	
☐	☐	Constr. Management		☐	☐	Civil Engineering	
☐	☐	S/S Technical / LCE		☐	☐	Telecom	
☐	☐	S/S Operations**		☐	☐	Environmental	
☐	☐	Field Engineering		☐	☐	Real Estate	
☐	☐	Line Engineering		☐	☐	T&D ROW	
☐	☐	Vegetation Management		☐	☐	Survey Engineering	
☐	☐	Siting		☐	☐	Cost Estimating	
☐	☐	Safety		☐	☐	Outreach (SCS)	
☐	☐	SCADA		☐	☐	Material Procurement	
☐	☐	HDR		☐	☐	Construction Rep	
☐	☐	HDR		☐	☐	Construction Rep	
☐	☐	HDR		☐	☐		
☐	☐			☐	☐		
☐	☐			☐	☐		

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Constructability Review Form: **Substation**

* Sign-off in the table above for the Detailed Engineering Design Constructability Review indicates that all Action Items/Concerns from prior Constructability Reviews have been mitigated/resolved as documented in this form. Not every department is required to attend walkdowns for every project but should be consulted for project impact considerations

** Internal Eversource Substation Operations must be included in the review even if external construction resources are planned

[Project Manager] certifies that this review was performed to completeness, that all applicable departments were informed of the project and have had opportunity to provide input to this review:

[redacted] 3/16/22

Name / Signature *Date*

Documents available for use prior to Constructability Review					
[X]	Document	[X]	Document	[X]	Document
☐	Initial Scope -Birdseye site plan -General Arrangement	☒	Preliminary Drawings -Civil Site Drawing -Electrical Drawing -Section Drawings	☐	Prints in hand for marking up -Panel Front/Read View -Control Enclosure Layout -Floor / Wall Plans
☒	Detailed Scope Document	☒	Proposed Schedule	☒	Construction Sequence/Timeline
☐	Previous Notes / Comments / Observations	☒	Major Material / Equipment List	☐	Replace / Reuse of equipment

Action Items and Resolutions:

Item No.	Const. Review Action Item/Concern	Design Resolution/Mitigation:
1		
2		
3		
4		
5		

REDACTED

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
A	**Engineering & Asset Management**		
1	**Scope of Work** - Is scope adequately developed and sufficiently detailed for intended deliverable? - Any complimentary projects or other adjacent obsolete equipment for inclusion? - Any overlapping projects that could impact work/outages? - Consider Physical Installation, P&C Scope, Civil Scope, Engineering studies, Design standard adherence - Any remote station impacts? - Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project	☐	[redacted]
2	**Materials Identified/Ordered** -Any concerns with BOM/Major Materials? Review BOM lead times and project need dates -Specialty Major Materials: Identify Specialty Equipment & Materials potentials - temporary/replacement - long lead items? -Any Materials needed to facilitate construction access?	☐	
3	**Control House** - Review Unmapped equipment interferences, Control/Battery Enclosure Layout, HVAC System (if equipment added), space for new or modified equipment, AC / DC station breaker availability and service loading, Panel Space, Expansion, one-line and/or riser type panelboard drawings, other..	☐	
4	**Ratings & Dimensions** for Major Equipment. Any concerns upon field review? Equipment Rating One Line (and/or equipment thermal ratings tables) - Review for any errors in field	☐	[redacted]

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
5	**Wall, Fence, Gate, and Foundation Considerations** -Any permanent / temporary alterations or relocations required? -Pre-Project Sound Measurements Needed? Sound Walls? -Take measurements for Foundation quantities, dimensions and concrete volumes -CIP Review/Ballistic needs. Any Physical Security Requirement Consideration? -Assess condition of existing yard equipment foundations and viability for reuse (if proposed) -Review station expansion areas (if needed) for structures, old foundations, etc. -Any Steel Structural Plan Considerations? -Any impacts to construction plan?	☐	GATE 16' → 20' SOUND STUDY ✓ DRIVE WAY
6	**Below Grade / Enclosure Raceway** - If possible, evaluate existing raceway and review spacing requirements. Review for any subsurface investigation needs or potential below grade obstructions. GPR/test pits needed? Geotechnical Investigation - is soil boring or resistivity investigation needed?	☐	TEST PITS NEEDED
7	**Underground Obstructions** -Drawing review concerns? -Is preconstruction or test excavation needed? -Is reuse of underground control cables / Conduits /replace Non-Shielded Cable feasible (if applicable) -Are spare conduits available? Are they useable? -Review if any areas will need to be plated for increased load bearing for equipment access (i.e. large Xfmr, etc.)	☐	TEST PITS FOR TRENCH & MAJOR FOUNDATIONS FEEDERS TO MH IN ROW MOBILE ACCESS NEEDED AT ALL TIMES
8	**Grounding Plan (Ground Grid)** - Will footprint impact layout or other equipment? Identify locations to improve grounding. Impacts to foundations and ground grid plans. Observations on wetlands or ability to perform tests	☐	[redacted]

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
9	Nomenclature / Switching One-Line Diagram -Any obvious deviations from diagrams provided?	☑	
10	BPS Separation Requirements - Is this BPS Substation? Y/N (part of PAF) - Changes to pre-existing BPS standards?	☐	NO
11	IEC 61850 Substation Automation and Communication Requirements - Any Impacts/Retrofit needed?	☐	NO
12	Any Upgrades to ES Standards - Is retrofit needed to bring up to ES standards? Can that be done?	☐	[redacted]
B	**Construction**		
1	**Any safety hazards specific to the facility? i.e. Low Bus, Deterioration, etc.**	☐	[redacted]
2	**Prior known Site Specific Conditions** -Common or Obvious station Issues -Missing scope items that could impact costs?	☒	
3	**Identify/Consider Required Depts for Construction?** -Who is constructor: Internal vs External Resources -S/S Ops, GO, Test, Field Engineering, etc -Specialty Contractors Required? -Required Oversite Needed - Estimated level of CR and LCE support needed	☐	EXTERNAL CIVIL INTERNAL ELECTRICAL & TEST LCE NEEDED

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
4	**Site Plan, Access, and Temporary Construction Facilities:** -Confirm maintenance access for proposed new or replaced equipment -Verify clear footprint for yard equipment / Property Plan -General access to site, can areas outside substation be utilized? -Substation Entry Plan (driveway and drive path modifications) - Identification of Unique Requirements, i.e. (access bridges, station service, etc.) -Site Development Plan (grading and drainage) with Cut/Fill -Existing Rock Conditions? Potential Impacts (rock quantity)? -Any police details needed for deliveries, restricted hours, and/or need for extended hour approvals -Any Sanitary Civil Requirements? (Septic tanks, etc) -Review turning radius for delivery trucks (if critical) -Any Substation Access and site/yard access Limitations? -Office Trailer Needs: Facilities, Utilities, Restroom, Container, Dumpster Space -Weather impacts to Site (Snow Placement) -Identify Material Laydown and Security -Where will new vs removed equipment go? -Construction permit for trailers outside substation fence?	☐	[redacted]
5	Unique Equipment Considerations: Gas insulated substation, Gas insulated line, Gas insulated bus, Pass Breaker, Statcom, Sync Condenser		[redacted]

REDACTED

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Outage & Energization Plan and Construction Sequence:** *Review electrical working clearances for equipment during construction, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized.* ***Considerations:*** -Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -Distribution Clearances -Clearance Holder Assignments -Drawings vs Field Conditions -Outage boundaries and interconnections -Phased approach needs for additional mobilizations -Verify outage sequence supports the planned construction sequence and timeline. (Lead Commissioning Engineer "LCE", Substation Operations, and Outage Planner input) -Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions -Additional outage requirements: Railroad Catenaries, Fiber outage, SCADA outage, Relay permissions -Seasonal or weather conditions impacts	☐	[redacted] [redacted]
7	**Equipment Testing & Acceptance** -Grounding plans / Resources? Will we need grounds hung? -Hi-pot testing and where will the equipment be set up?	☒	
8	Need for mobile generator and where connected (if needed)	☒	
9	Need for mobile battery and where connected (if needed)	☒	
10	OT work required or Notable Permit Conditions (special hours)?	☒	
11	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	☒	

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
C	**Environmental**		
1	Soil Pre-Characterization or Grab Sampling Completed/Planned	☐	
2	**Desktop investigation and EAD Review** -Required Permits -Stormwater Considerations -Dewatering requirements -Wetland and buffer review	☐	
3	Risk or presence of PCB's/Asbestos/Lead/SF6	☐	
4	Transformer Spill Containment Recommended?	☐	
5	Expanding Footprint / New Buildings or future Expansion Plans? (Enviro Impact)	☐	
6	Environmental oversight considerations? (Inspection type/Interval)	☐	
7	Environmental mitigations - Any matting or seasonal needs? Review D&M Plan with CR.	☐	
D	**Siting, S&CS, and T&D Real Estate**		
1	**Any regulatory concerns or approvals needed?** - Consider scope/design alterations to mitigate concerns - Consider Visual screening considerations (feasibility or location) -Zoning Relief and Permits required	☐	
2	**Neighbor/Abutter impacts:** - Any noise, visual impacts, or sensitive abutters - Any changes to lighting or additional lighting needed?	☐	
3	Review for roadway, gate access, trailers, equip height, noise, weekend/night work, or any potential public disturbance related to work	☐	
4	Installation within Eversource Rights - Is Rights and Restrictions Review required?	☐	
5	Expanding Footprint / New Buildings or future Expansion Plans?	☐	
6	Proposed Equipment on same property? - Any Encroachments	☐	

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
F	**Protection & Controls**		
1	Panel Graphic additions and/or Modifications	☒	
2	Space on existing panels for new equipment? (front & rear of panel fronts)	☐	[redacted]
3	Panel fronts conform to drawings	☑	
4	Access to bring new panels into control enclosure	☑	
5	Nameplate list and location of nameplates	☒	
6	Verifies that relays and meters that will be an interconnected project work are as shown on the drawings.	☒	
7	Temporary protection, relays, control cable needed? How long will they be required?	☐	NOT NEEDED
8	Will relay setting changes be needed? Any additional outage requirements for changes?		YES
G	**Telecom Engineering**		
1	Review telecom equipment in existing control enclosure	☒	
2	Review path to get telecom circuits into the station and paths within the control house. Determine whether new underground duct or overhead tray work is needed.	☒	
3	Review current or proposed Telecom equipment power connections and validate with P&C any need for system 1 and system 2 separation.	☒	
4	Review current Telecom fiber diversity and validate with P&C any fiber diversity requirements.	☒	
5	Review and list any remote station impacts/updates	☒	
6	Confirm whether correct interface equipment is available (i.e.) for fiber termination or multiplexor termination	☒	
7	Confirm whether existing communications cabinets are enough to support additional telecommunications equipment installed	☒	

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
8	Review space for any required additional communications cabinets which may be required to support additional telecommunications equipment installed	X	
9	Review third party Telecommunications at substation and confirm whether additional capacity or Ground Potential Rise protection is required	X	

Photos

(Ex. Equipment control cabinet, Breakers, MODs, CCVTs, PTs, Transformers)

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Outage & Energization Plan and Construction Sequence:** *Review electrical working clearances for equipment during construction, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized.* ***Considerations:*** -Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -Distribution Clearances -Clearance Holder Assignments -Drawings vs Field Conditions -Outage boundaries and interconnections -Phased approach needs for additional mobilizations -Verify outage sequence supports the planned construction sequence and timeline. (Lead Commissioning Engineer "LCE", Substation Operations, and Outage Planner input) -Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions -Additional outage requirements: Railroad Catenaries, Fiber outage, SCADA outage, Relay permissions -Seasonal or weather conditions impacts	☐	[redacted] [redacted]
7	**Equipment Testing & Acceptance** -Grounding plans / Resources? Will we need grounds hung? -Hi-pot testing and where will the equipment be set up?	☒	
8	Need for mobile generator and where connected (if needed)	☒	
9	Need for mobile battery and where connected (if needed)	☒	
10	OT work required or Notable Permit Conditions (special hours)?	☒	
11	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	☒	



[redacted]

[redacted]

[redacted]

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Operations Supplement Request Form

Approved on May 23, 2024 EPAC

Link to Meeting Minutes

Project Title: [redacted] 2nd Xfmr, Switchgear & 115kV Circuit Breaker Addition	**Project Number: 404940, CS00261**
Date Prepared: 05/15/2024	**Company: Eversource CT**
Organization: Transmission Project Management	**Class(es) of Plant: T SS , D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformer, Stations – Circuit Breakers**
Managing Organization: Project Mgt and Construction	**Schedule ID#: 40494001**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Project Manager's Director: [redacted]	**Estimated in service date: May 2024**
Current Authorized Amount: $14,439K (D - $10,672K; T - $3,767K)	**Emergency Related Request? No**
Supplement Request: $1,855K (D - $1,159K; T - $695K)	**Supplement Type: Supplement**
Total Capital Request: $16,294K (D - $11,831K; T - $4,463K)	**ISO-NE Approval Required (check all that apply): ☐ PAC ☐ TCA**
EJ Community: No	

[1] Background

[redacted]

A full funding request of $14,439K ($3,767K – 404940; $10,672K – CS00261) for this project was approved in PowerPlan on June 28-29, 2022. The Transmission portion of the project was placed into service on December 29, 2023, and charges to date are $4,018K. There are still some outstanding vendor invoices and restoration work to be performed after the distribution

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construction is completed. The Distribution portion of the project is expected to go into service on May 31, 2024, and total charges to date are $10,536K. Work is currently in progress to connect the new switchgear to the new 2X transformer. This request is for an additional $695K (404940) for a new total of $4,463K and $1,159K (CS00261) for a new total of $11,831K.

The additional project funding is due to scope changes as discussed below. The in service date (ISD) for the Distribution portion of the project has been extended from December 2023 to May 2024, due to the resequencing of construction tasks to go from temporary to final configuration.

[2] Supplement Justification Overview

The primary driver of this supplement is increased cost associated with scope added to the project. [redacted]

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[3] Supplement Justification Detail

The reasons for the project authorization supplement of $1,855K are summarized below.

1. **Environmental Approvals / Permits: $164K (Transmission $94K, Distribution $69K)**– Additional cost incurred to dispose of soil from new foundations and trench excavations.

2. **Outreach: ($56K) (Transmission ($34K), Distribution ($23K))**– Although significant outreach effort was utilized throughout the project, including multiple on site meetings with abutters, less than estimated outreach costs were incurred.

3. **Siting Approvals / Permitting: ($7) (Transmission ($10K), Distribution $3K)**– While a petition was required to permanently move the north fence of the substation, less than estimated siting costs were incurred.

4. **Engineering / Design: $286K (Transmission $89K, Distribution $197K)**– Additional cost to design the temporary configuration plus re-design was required to transition from temporary configuration to the final configuration.

5. **Materials (by Eversource): $1,349K (Transmission $266K, Distribution $1,084K)**– There was $935K in additional materials to implement the temporary configuration. There was also $396K discrepancy between the budget for major materials (transformer, switchgear, and circuit switchers) and the actual cost ($3,372K budget vs. $3,768K actuals: difference between estimate and actual PO value at placement.

6. **Construction: $1,284K (Transmission $351K, Distribution $933K)**– Increased cost to construct the temporary configuration and re-sequence construction tasks to transition from temporary configuration to final configuration.

   Major tasks for temporary configuration include:

   - [redacted]
   - [redacted]
   - [redacted]

7. **Testing / Commissioning: $262K (Transmission $161K, Distribution $101K)** – Additional cost for testing of equipment for the temporary configuration.

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8. **Project Management Team: $25K (Transmission $27K, Distribution ($2K))–** Additional cost for planning and managing the added temporary configuration scope.
9. **Risk: ($1,070K) (Transmission ($265K), Distribution ($806K))–** The original estimate included $1,070K of risk budget.
10. **Indirects / Overhead: ($693K) (Transmission $148K, Distribution ($840K))–** The indirects were lower due to lower allocations at the time of the estimate.
11. **AFUDC: $425K (Transmission ($18K), Distribution $443K)–** AFUDC is tied to project duration and costs.
12. **Contingency: ($114K) (Transmission ($114K))–** The original estimate included $425K of contingency. Some contingency will be retained for activities related to restoration and pending petition approval to permanently move the north fence (new fence, expand ground grid and replant trees).

Total Supplement Request: $1,855K

Please find a copy of the prior authorization document attached as reference.

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[4] Supplement Cost Summary

The table below summarizes the line item categories from the original project estimates and the updated project estimates.

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

Line item Category	Prior Authorized	New Total Request	Variance (Supplemental Request)
1. ROW / Easements / Land Acquisition	$	$	$
2. Environmental Approvals / Permits	$5	$169	$164
3. Outreach	$71	$15	($56)
4. Siting Approvals / Permits	$21	$14	($7)
5. Engineering / Design	$771	$1,057	$286
6. Materials (Eversource purchased)	$4,413	$5,762	$1,349
7. Construction (incl materials by contractors)	$2,056	$3,340	$1,284
8. Testing / Commissioning	$521	$783	$262
9. Project Mgmt. Team	$280	$305	$25
10. Removals	$51	$51	$0
11. Other	$	$	$
12. Risks	$1,070	$0	($1,070)
SUBTOTAL DIRECTS W/ RISKS	**$9,260**	**$11,496**	**$2,237**
13. Indirects/Overhead	$4,244	$3,551	($693)
14. AFUDC	$511	$936	$425
PROJECT TOTAL – BASELINE BUDGET	**$14,014**	**$15,983**	**$1,969**
15. Contingency	$425	$311	($114)
TOTAL CAPITAL REQUEST	**$14,439**	**$16,294**	**$1,855**
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$14,439**	**$16,294**	**$1,855**

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Distribution CS00261

Line item Category	Prior Authorized	New Total Request	Variance (Supplemental Request)
1. ROW / Easements / Land Acquisition	$	$	$
2. Environmental Approvals / Permits	$3	$72	$69
3. Outreach	$36	$13	($23)
4. Siting Approvals / Permits	$	$3	$3
5. Engineering / Design	$528	$725	$197
6. Materials (Eversource purchased)	$3,684	$4,768	$1,084
7. Construction (incl materials by contractors)	$1,371	$2,304	$933
8. Testing / Commissioning	$317	$418	$101
9. Project Mgmt. Team	$156	$154	($2)
10. Removals	$41	$41	$0
11. Other	$	$	$
12. Risks	$806	$0	($806)
SUBTOTAL DIRECTS W/ RISKS	**$6,942**	**$8,498**	**$1,556**
13. Indirects/Overhead	$3,120	$2,280	($840)
14. AFUDC	$299	$742	$443
PROJECT TOTAL – BASELINE BUDGET	**$10,361**	**$11,520**	**$1,159**
15. Contingency	$311	$311	$0
TOTAL CAPITAL REQUEST	**$10,672**	**$11,831**	**$1,159**
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$10,672**	**$11,831**	**$1,159**

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Transmission 404940

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

Line item Category	Prior Authorized	New Total Request	Variance (Supplemental Request)
1. ROW / Easements / Land Acquisition	$	$	$
2. Environmental Approvals / Permits	$3	$97	$94
3. Outreach	$36	$2	($34)
4. Siting Approvals / Permits	$21	$11	($10)
5. Engineering / Design	$243	$332	$89
6. Materials (Eversource purchased)	$728	$994	$266
7. Construction (incl materials by contractors)	$685	$1,036	$351
8. Testing / Commissioning	$204	$365	$161
9. Project Mgmt. Team	$124	$151	$27
10. Removals	$10	$10	$
11. Other	$	$	$
12. Risks	$265	$0	($265)
SUBTOTAL DIRECTS W/ RISKS	**$2,318**	**$2,998**	**$679**
13. Indirects/Overhead	$1,123	$1,271	$148
14. AFUDC	$212	$194	($18)
PROJECT TOTAL – BASELINE BUDGET	**$3,653**	**$4,463**	**$809**
15. Contingency	$114	$0	($114)
TOTAL CAPITAL REQUEST	**$3,767**	**$4,463**	**$695**
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$3,767**	**$4,463**	**$695**

REDACTED

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Project Authorization Form

Total Supplement Request by Year

Distribution CS00261

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

Line item Category	2024	2025	2026	2027	Total
1. ROW / Easements / Land Acquisition	$	$	$	$	$
2. Environmental Approvals / Permits	$69	$	$	$	$69
3. Outreach	($23)	$	$	$	($23)
4. Siting Approvals / Permits	($3)	$	$	$	($3)
5. Engineering / Design	$197	$	$	$	$197
6. Materials (Eversource purchased)	$1,084	$	$	$	$1,084
7. Construction (incl malt's by contractors)	$933	$	$	$	$933
8. Testing / Commissioning	$101	$	$	$	$101
9. Project Mgmt. Team	($2)	$	$	$	($2)
10. Removals	$0	$	$	$	$0
11. Other	$	$	$	$	$
12. Risks	($806)	$	$	$	($806)
SUBTOTAL DIRECTS W/ RISKS	**$1,556**	**$**	**$**	**$**	**$1,556**
13. Indirects/Overhead	($840)	$	$	$	($840)
14. AFUDC	$443	$	$	$	$443
PROJECT TOTAL – BASELINE BUDGET	**$1,159**	**$**	**$**	**$**	**$1,159**
15. Contingency	$0	$	$	$	$0
TOTAL CAPITAL REQUEST	**$1,159**	**$**	**$**	**$**	**$1,159**
16. Reimbursables/Customer Contribution	$	$	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$1,159**	**$**	**$**	**$**	**$1,159**
O&M	$	$	$	$	$
TOTAL REQUEST	**$1,159**	**$**	**$**	**$**	**$1,159**

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Project Authorization Form

Total Supplement Request by Year

Transmission 404940

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

Line item Category	2024	2025	2026	2027	Total
1. ROW / Easements / Land Acquisition	$	$	$	$	$
2. Environmental Approvals / Permits	$94	$	$	$	$94
3. Outreach	($34)	$	$	$	($34)
4. Siting Approvals / Permits	($10)	$	$	$	($10)
5. Engineering / Design	$89	$	$	$	$89
6. Materials (Eversource purchased)	$266	$	$	$	$266
7. Construction (incl malt's by contractors)	$351	$	$	$	$351
8. Testing / Commissioning	$161	$	$	$	$161
9. Project Mgmt. Team	$27	$	$	$	$27
10. Removals	$	$	$	$	$
11. Other	$	$	$	$	$
12. Risks	($265)	$	$	$	($265)
SUBTOTAL DIRECTS W/ RISKS	**$679**	**$**	**$**	**$**	**$679**
13. Indirects/Overhead	148	$	$	$	148
14. AFUDC	($18)	$	$	$	($18)
PROJECT TOTAL – BASELINE BUDGET	**$809**	**$**	**$**	**$**	**$809**
15. Contingency	($114)	$	$	$	($114)
TOTAL CAPITAL REQUEST	**$695**	**$**	**$**	**$**	**$695**
16. Reimbursables/Customer Contribution	$	$	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$695**	**$**	**$**	**$**	**$695**
O&M	$	$	$	$	$
TOTAL REQUEST	**$695**	**$**	**$**	**$**	**$695**

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APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

Operations Project Authorization Form

Approved at May 27, 2020 EPAC
Link to Meeting Minutes

Date Prepared: 05/11/2020	**Project Title: [redacted] – 2nd Transformer & Switchgear**
Company/ies: Eversource CT	**Project ID Number: CS00272**
Organization: System Planning	**Class(es) of Plant: Distribution [redacted]**
Project Initiator: [redacted]	**Project Category: Stations - Transformers**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Install New Transformer & Switchgear**
Estimated in service date: 05/31/2022	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Yes	**Capital Investment Part of Original Operating Plan? Yes**
Authorization Type: Full Funding	**O&M Expenses Part of the Original Operating Plan? N/A**
Total Request: $10,489,354	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding of $10,489,354 to install a [redacted] Initial funding of $577,400 was approved in PowerPlan on July 15, 2017 for preliminary engineering. As of March 31, 2020, the total spend on the project is $96,000. [redacted] pecification has been prepared and sent out for bids, plan and section views have been prepared, constructability walk downs have been completed, and a bid package for a civil engineering contractor has been prepared and sent out for bids.

[redacted]

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APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

[redacted]

The [redacted]. Distribution project CD00891 will [redacted]. The CD00891 project is currently under construction with an estimated in service by summer 2022. With the latest forecast for 2022 showing [redacted]

In addition to the above [redacted]. The addition of a second [redacted]. See Attachment 1 [redacted]

Project Costs Summary

Note: Dollar values are in thousands

	Prior TAF 10% Authorized	2020 (including Prior Actuals)	2021	2022	Totals
Capital Additions - Direct	$376	$694	$2,857	$3,412	$6,963
Less Customer Contribution	$0	$	$	$	$
Removals net of Salvage 6%	$24	$17	$61	$4	$82
Total - Direct Spending	$400	$711	$2,918	$3,416	$7,045
Capital Additions – Indirect	$144	$525	$1,587	$640	$2752
Subtotal Request	$544	$1237	$4,505	$4,056	$9,798
AFUDC	$33	$42	$219	$431	$692
Total Capital Request	$577	$1278	$4,724	$4,487	$10,489
O&M	$0	$	$	$	$
Total Request	$577	$1278	$4,724	$4,487	**$10,489**

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2020 (including Prior Actuals)	2021	2022	Total
Straight Time Labor	$321	$703	$192	$1216
Overtime Labor	$	$	$	$
Outside Services	$321	$646	$530	$1,497
Materials	$35	$1,426	$1,469	$2,930
Other, incl. contingency amounts (describe)	$34	$143	$1,226	$1,402
Total	$711	$2,918	$3,416	$7,045
Indirect Capital Costs	**2020**	**2021**	**2022**	**Total**
Indirects/Overheads (incl. benefits)	$525	$1,587	$640	$2,752
Capitalized Interest or AFUDC, if any	$42	$219	$431	$692
Total	$567	$1,806	$1,071	$3,444
Total Capital Costs	$1278	$4,724	$4,487	$10,489
Less Total Customer Contribution	$	$	$	$
Total Capital Project Costs	$1278	$4,724	$4,487	**$10,489**
Total O&M Project Costs	$	$	$	$

Note: Explain unique payment provisions, if applicable

A contingency amount of $1,402k is included for the use of external resources if required.

Future Financial Impacts:

Provide below the estimated future costs that will result from the project: N/A
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

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

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

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

Are there other environmental cleanup costs associated with this project? No. The station was installed since 2008 and should not require additional environmental remediation
If yes, please provide details:

Technical Justification:

Project Need Statement

[redacted], located in [redacted]

The [redacted]

Distribution project CD00891 was approved to [redacted] Also, this project is requesting the [redacted]

A new [redacted] customer was energized at the end of 2019. [redacted]

[redacted]

Project Objectives

The main objectives of this project are to improve adherence to SYS PLAN 010 reliability criteria; accommodate load growth in the area; [redacted] a [redacted] This project will also [redacted].

Project Scope

The scope of the project is to:

- [redacted] This [redacted]
  - The Environmental group has concluded that an oil sump is not required for the installation of the [redacted].
- A baseline sound study has been completed. The calculated values are listed below:
  - Sound pressure level due to the two transformers on the property line to the East: 27 dBA
  - Sound pressure level due to the two transformers on the property line to the North: 27.6 dBA
  - Sound pressure level due to the two transformers on the property line to the West: 31.1 dBA
  - Sound pressure level due to the two transformers on the property line to the South: 26.1 dBA
  - The maximum night time property line sound pressure level allowed by CT State Regulations: 51 dBA
- [redacted]

[redacted]

Refer to Figure 1 for nomenclature diagram indicating new equipment connections. The [redacted] Refer to Figures 3 and 4 for aerial views.

Background / Justification

[redacted] bubble chart) provided in the attachments section of this presentation (Fig.2) for additional information.

The chart indicates [redacted]

[redacted]

Approximately [redacted]

A review of the proposed [redacted]

A sound study was performed and it concludes property line sound pressure levels due to [redacted] will remain well below the maximum property line sound pressure levels allowed by State Regulations. No sound walls were assumed as part of the sound study due to the large distances between the transformers and the property lines.

- The sound study calculated values are listed below:
  - Sound pressure level due to the two transformers on the property line to the East: 27 dBA
  - Sound pressure level due to the two transformers on the property line to the North: 27.6 dBA

- Sound pressure level due to the two transformers on the property line to the West: 31.1 dBA
- Sound pressure level due to the two transformers on the property line to the South: 26.1 dBA
- The maximum night time property line sound pressure level allowed by CT State Regulations: 51 dBA

It is not anticipated a sound wall will be required due to the distances of the nearest residence to the substation.

Business Process and / or Technical Improvements

The benefit to customers will be improved reliability during [redacted]

Alternatives Considered with Cost Estimates

One alternative is to do nothing; however, this is not recommended because [redacted]

Another alternative is to [redacted]. However, Distribution Engineering has a project approved (CD00891) requesting [redacted].

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Full Funding Approval	May 2020
Procurement	7/31/2020
Siting/outreach contact	7/31/2020
Civil Dwg Issue	8/31/2020
Electrical Dwg Issue	2/1/2021
Construction start	2/1/2021
Construction completion and In Service	05/31/2022

Regulatory Approvals

The Connecticut Siting Council will need to approve the project. Since no fence modifications are required, no objection is anticipated. An exempt mod will be filed later this spring.

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Internal engineering resources not available to perform the work.	2020	Medium	If internal resources will not be available, external resources will be obtained well in advance to ensure availability and least possible cost. The contingency cost is included in the full funding request in case external resources are used.
Internal construction resources not available to perform the work.	2020	Medium	If internal resources will not be available, external resources will be obtained well in advance to ensure availability and least possible cost. The contingency cost is included in the full funding request in case external resources are used.
Materials Shortage or long lead times	2020	Medium	The switchgear, will be ordered well in advance to ensure delivery in early 2021. A system spare transformer that is already available will be used for this project
[redacted]	2021	Medium	[redacted]
[redacted]	2021	Low	[redacted]

References

- "[redacted]
- Eversource SYS PLAN 015
- Project CD00891 ([redacted]
- Project CD00902 ([redacted]
- Kickoff Meeting 12-14-17 Notes
- Constructability Meeting 10-16-19 Notes
- [redacted] Walk Down 12-23-19 Notes

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

- Figure 1 – Nomenclature drawing showing location of new equipment placement
- Figure 2 – 2019 Chart indicating [redacted]
- Figure 3 – Aerial view of [redacted]
- Figure 4 –Aerial view of [redacted]
- Attachment 1 – Backup Cost Estimate
- Attachment 2 – Notes on [redacted]
- Attachment 3 – Constructability Review Form



Figure 1 – Nomenclature drawing showing location of new equipment placement

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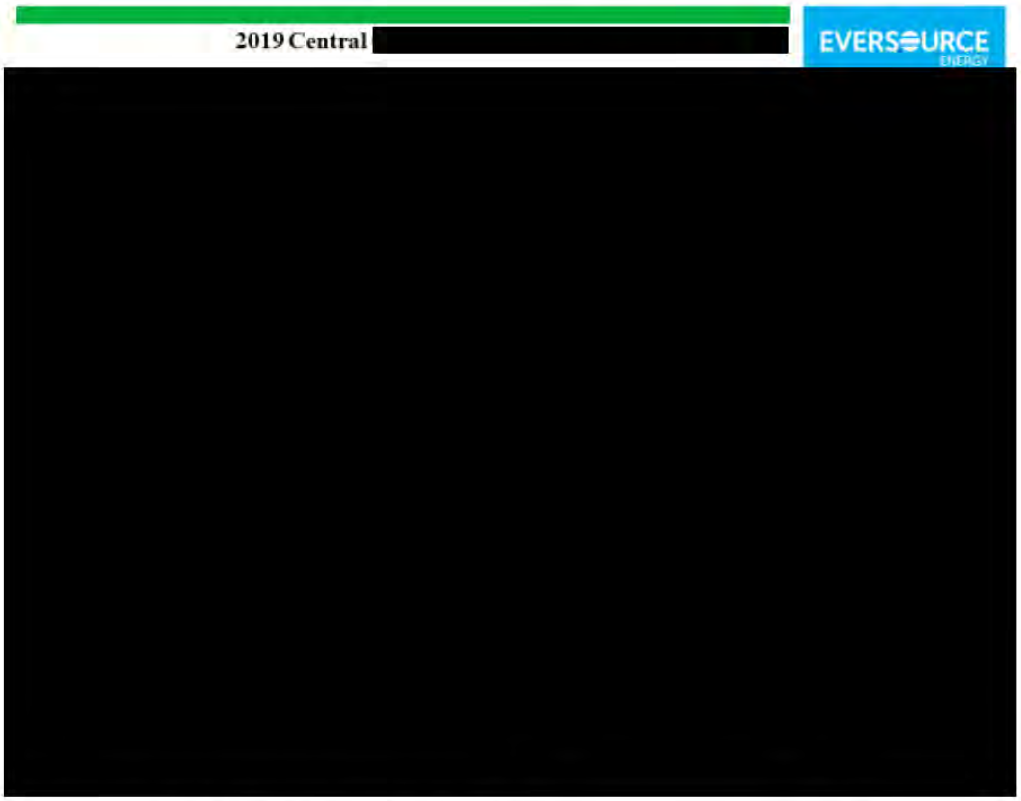

Figure 2 – 2019 Chart indicating



Figure 3 – Aerial view of [redacted]



Figure 4 –Aerial view of [redacted]

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APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

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 project execution.

Checklist for Studies and Processes of a Transmission & Substation Capital Project					
Project Name: [redacted] d Transformer & Switchgear				**PAF No: CS00272**	
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?	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	Yes				
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?	No				
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?	Yes				

EVERSOURCE
APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

Checklist for Studies and Processes of a Transmission & Substation Capital Project	
Project Name: [redacted] Transformer & Switchgear	**PAF No: CS00272**
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?	Medium
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 Eversource Engineering
Who prepared the estimate?	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes - Full Review

Cost Estimate Backup Details

See attached

Eversource Energy Estimate Overview and Cover Sheet

Project Title: [redacted] - Install Xfrm SWGR
Prepared By: [redacted]
Project Mgr/Lead: TBD
Date of Est.: 03-12-20
PAF / Project #: CS00272
ISD: 05/31/2021
Estimate Number: TBD

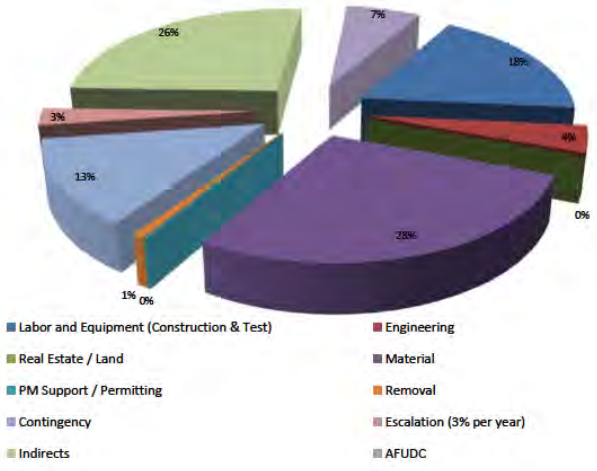
Est. Type: Planning Range -25% +25% (TAF)

Project Scope: [redacted] ead Commissioning Engineer mandays are included in the estimate.

Assumptions:
Engineering to be outsourced with in-house review, construction to be outsourced.
This estimate is based on TPS description only, actual quantities may vary during detailed engineering.
Material estimates based on previous work, vendor quotes, and RS Means.
Labor estimates based on previous work, [redacted]
All new equipment will be installed within the confines of the existing fenced yard.
No additional allowances have been added for [redacted]
Estimate includes an average of 10% contingency on direct costs which equates to 2.4% contingency of total cost.

2.1. Project Cost Summary

Labor and Equipment (Construction & Test)	$ 1,901,454
Engineering	$ 438,948
Real Estate / Land	$ -
Material	$ 2,930,288
PM Support / Permitting	$ 18,750
Removal	$ 72,267
Contingency	$ 1,402,281
Escalation (3% per year)	$ 281,086
Indirects	$ 2,752,465
AFUDC	$ 691,815
Total Project Cost	**$ 10,489,354**



Project Title: [redacted] - Install Xfrm SWGR PAF / Project #: CS00272	Prior Yrs $	2020 Mdays	N/A $	2021 MDays	1 $	2022 MDays	2 $	2023 MDays	3 $	2024 MDays	4 $	TOTAL MDays	N/A $	%	Escalation 3.0%
ENRXX-TG ENG / DESIGN															Avg ENG Rate
Substation Engineering	$30,231		$9,250		$1,850		$0		$0		$0		$41,331		
Substation Design			$27,750		$11,100		$0		$0		$0		$38,850		
Substation Drafting			$27,750		$7,400		$0		$0		$0		$35,150		
Protection & Control Engineering			$22,200		$5,550		$0		$0		$0		$27,750		
Transmission Line & Civil Engineering			$20,350		$0		$0		$0		$0		$20,350		
Underground Transmission Line Engineering			$0		$0		$0		$0		$0		$0		
Survey Engineering			$7,400		$0		$0		$0		$0		$7,400		
Telecom Engineering			$0		$0		$0		$0		$0		$0		
SS Technical Engineer			$0		$0		$0		$0		$0		$0		
Apparatus Specialist			$14,800		$0		$0		$0		$0		$14,800		
Escalation					$777		$0		$0		$0		$777		
LT Subtotal	$30,231		$129,500		$26,677		$0		$0		$0		$186,408	$186,408	=If Crossfoot Verification
Distribution Contractor Engineering	$0		$250,000		$0		$0		$0		$0		$250,000		370
Eng Contractor = W19 x Material & Construction Cost	$3,317		$0		$0		$0		$0		$0		$3,317		
Contingency			$37,950		$2,668		$0		$0		$0		$40,618		
Escalation					$80		$0		$0		$0		$80		
ENRXX TOTAL	$33,548		$417,450		$29,425		$0		$0		$0		$480,423	$480,423	=If Crossfoot Verification
PSMXX-PROJECT MGR & SUPPORT															
Project Management/Engineer (PM)			$11,100		$7,400		$0		$0		$0		$18,500		
Project Planning/Cost (IP)			$0		$0		$0		$0		$0		$0		
Contracts/Purchasing (C/P)			$0		$0		$0		$0		$0		$0		
System Planning			$0		$0		$0		$0		$0		$0		
Environmental			$0		$0		$0		$0		$0		$0		
Siting / Permits			$0		$0		$0		$0		$0		$0		
Legal	$0		$0		$0		$0		$0		$0		$0		
Estimating	$0		$0		$0		$0		$0		$0		$0		
Escalation					$222		$0		$0		$0		$222		
LT Subtotal	$0		11,100		$7,622		$0		$0		$0		$18,722	$18,722	=If Crossfoot Verification
Employee Expenses	$63		$111		$76		$0		$0		$0		$250		
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			$1,121		$770		$0		$0		$0		$1,891		
Escalation					$25		$0		$0		$0		$25		
PSMXX-PROJECT MGR & SUPPORT TOTAL	$63		$12,332		$8,493		$0		$0		$0		$20,888	$20,888	=If Crossfoot Verification
CSTXX-CONSTRUCTION - Additions %															In House MDay Rate
Civil (Internal)	$0		$130,480		$83,880		$0		$0		$0		$214,360		
Electrical (Internal)			$0		$445,560		$0		$0		$0		$445,560		
Test (Internal)	$0		$4,740		$80,580		$189,600		$0		$0		$274,920		
Other - Switch / Tag Support (Internal)	$0		$0		$0		$0		$0		$0		$0		
Construction Reps (internal)	$0		$0		$0		$0		$0		$0		$0		
Escalation					$18,301		$11,547		$0		$0		$29,848		
LT Subtotal	$0		$135,220		$628,321		$201,147		$0		$0		$964,688	$964,688	=If Crossfoot Verification
Employee Expenses	$0		$1,352		$6,283		$2,011		$0		$0		$9,646		Contractor MDay Rate
Contractor Civil	$0		$0		$0		$0		$0		$0		$0		
Contractor Electrical	$0		$22,400		$0		$33,600		$0		$0		$56,000		
Contractor Test	$0		$0		$0		$0		$0		$0		$0		
Contractor Other-LCE			$12,000		$238,800		$252,000		$0		$0		$502,800		
Contractor Construction Reps	$0		$0		$0		$0		$0		$0		$0		
Misc. Costs (rigging, oil handling, mob / demob, material testing, soil mgt, etc.)	$0		$0		$200,000		$0		$0		$0		$200,000		
Contractor Equipment = % of Total Construction Labor	$0		$31,524		$122,004		$44,640		$0		$0		$198,168		
Lead Commissioning Engineer	$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			$20,250		$119,541		$1,210,565		$0		$0		$1,350,356		
Escalation					$20,599		$93,958		$0		$0		$114,557		
CSTXX TOTAL	$0		$222,746		$1,335,548		$1,837,921		$0		$0		$3,396,215	$3,396,215	=If Crossfoot Verification
REMXX-TG REMOVAL - %															In House MDay Rate
Civil	$0		$13,048		$8,388		$0		$0		$0		$21,436		
Electrical	$0		$0		$44,556		$0		$0		$0		$44,556		
Escalation					$1,588		$0		$0		$0		$1,588		
LT Subtotal	$0		$13,048		$54,532		$0		$0		$0		$67,580	$67,580	=If Crossfoot Verification
Employee Expenses	$0		$130		$545		$0		$0		$0		$675		Contractor MDay Rate
Contractor Civil	$0		$0		$0		$0		$0		$0		$0		
Contractor Electrical	$0		$2,240		$0		$3,360		$0		$0		$5,600		
Contractors - Include Sales Tax	$0		$0		$0		$0		$0		$0		$0		
Contingency			$1,542		$5,508		$336		$0		$0		$7,386		
Escalation					$182		$225		$0		$0		$407		
REMXX TOTAL	$0		$16,960		$60,767		$3,921		$0		$0		$81,648	$81,648	=If Crossfoot Verification
MATXX-TG MATERIAL (Includes Tax)															
Misc Purchases (Credit Card Etc.)	$0		$2,025		$11,954		$5,334		$0		$0		$19,313		Construction Labor
Stock	$0		$33,000		$14,000		$14,121		$0		$0		$61,121		
Direct	$0		$0		$1,400,000		$1,449,854		$0		$0		$2,849,854		
Contingency Excluding Big Ticket Items			-$26,923		$14,260		$14,693		$0		$0		$2,030		
Escalation					$43,206		$90,376		$0		$0		$133,582		
MATXX TOTAL	$0		$8,102		$1,483,420		$1,574,378		$0		$0		$3,065,900	$3,065,900	=If Crossfoot Verification
Contingency Excludes Large Items	$0		$2,727,320		$0		$0		$0		$0		$2,727,320		Note Only - Large Items
LNDXX-TG LAND															ENG Blended Rate
Real Estate	$0		$0		$0		$0		$0		$0		$0		
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		
Fees & Payments	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0		
Escalation					$0		$0		$0		$0		$0		
LNDXX TOTAL	$0		$0		$0		$0		$0		$0		$0	$0	=If Crossfoot Verification
DIRECT COST TOTAL	$33,611		$677,590		$2,917,653		$3,416,220		$0		$0		$7,045,074		
INDIRECTS															
Non-Productive Allocation (ZB-TM1-ZNP)	$4,898		$43,475		$104,788		$28,535		$0		$0		$181,696		
Payroll Benefits Allocation (ZE-TM1-Z93)	$0		$141,345		$296,121		$80,637		$0		$0		$518,103		
Material Stores Allocation (Stock) <25k (ZC-TM1-Z91)	$0		-$201,922		$106,947		$110,198		$0		$0		$15,223		Excludes Big Ticket Tabs
Gen Service Co. OH Allocation (ZF-TM1-Z94)	$24,306		$0		$0		$0		$0		$0		$24,306		
E&S Allocation (25%<20M<3%) - (ZI-TM1-Z96)	$25,428		$395,926		$828,989		$316,186		$0		$0		$1,566,529		
Misc. Dist. Exp. Cap. Allocation (ZH-TM1-Z92)	$848		$0		$0		$0		$0		$0		$848		
AS&E Allocations (ZJ-TM1-Z90)	$1,104		$8,586		$55,308		$51,373		$0		$0		$116,371		
Vehicle Allocations (ZV-TM1-Z98)	$464		$80,883		$194,954		$53,088		$0		$0		$329,389		
INDIRECT Subtotal	$57,048		$468,293		$1,587,107		$640,017		$0		$0		$2,752,465	2,752,465	=If Crossfoot Verification
AFUDC (ZK - TM1-Z95)	$5,341		$36,554		$219,141		$430,779		$0		$0		$691,815		Annual Rate
PROJECT COST TOTAL	$96,000		$1,182,437		$4,723,901		$4,487,016		$0		$0		$10,489,354	$10,489,354	=If Crossfoot Verification

Calc OH's	Prior Years	2020	Subtotal	2021	Subtotal	2022	Subtotal	2023	Subtotal	2024	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	$30,231		$129,500		$25,900		$0		$0		$0		$185,631		
Civil	$0		$143,528		$92,268		$0		$0		$0		$235,796		
Electrical	$0		$0		$490,116		$0		$0		$0		$490,116		
Test	$0		$4,740		$80,580		$189,600		$0		$0		$274,920		
Other Support/Switch/Constr Rep/RE	$0		$11,100		$7,400		$0		$0		$0		$18,500		
LT Sub - Total	$30,231		288,868		696,264		189,600		0		0		$1,204,963		$1,204,963
Employee Expenses	$63		$1,593		$6,904		$2,011		$0		$0		$10,571		
Materials	$0		$35,025		$1,425,954		$1,469,309		$0		$0		$2,930,288		
Contractors	$3,317		$318,164		$560,804		$333,600		$0		$0		$1,215,885		
Environmental	$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		$33,940		$142,747		$1,225,594		$0		$0		$1,402,281		
Escalation	$0		$0		$84,980		$196,106		$0		$0		$281,086		
Contingency & Escalation Subtotal	$0		$33,940		$227,727		$1,421,700		$0		$0		$1,683,367		
DIRECT TOTAL	$33,548		$677,590		$2,917,653		$3,416,220		$0		$0		$7,045,074		
Overhead Subtotal	$62,389		$504,847		$1,806,248		$1,070,796		$0		$0		$3,444,280		
PROJECT COST TOTAL	$95,937		$1,182,437		$4,723,901		$4,487,016		$0		$0		$10,489,354		$10,489,291

Summary by Activity															
Labor & Equipment (Construction & Test)	$0		$202,496		$1,177,107		$521,851		$0		$0		$1,901,454		
Engineering	$33,548		$379,500		$25,900		$0		$0		$0		$438,948		
Real Estate / Land	$0		$0		$0		$0		$0		$0		$0		
Material	$0		$35,025		$1,425,954		$1,469,309		$0		$0		$2,930,288		
Project Management Support / Permitting	$63		$11,211		$7,476		$0		$0		$0		$18,750		
Removals	$0		$15,418		$53,489		$3,360		$0		$0		$72,267		
Contingency	$0		$33,940		$142,747		$1,225,594		$0		$0		$1,402,281		
Escalation	$0		$0		$84,980		$196,106		$0		$0		$281,086		
Indirects	$57,048		$468,293		$1,587,107		$640,017		$0		$0		$2,752,465		
AFUDC	$5,341		$36,554		$219,141		$430,779		$0		$0		$691,815		
PROJECT COST TOTAL	$96,000		$1,182,437		$4,723,901		$4,487,016		$0		$0		$10,489,354		$10,489,354

Attachment 2 - Notes on

Switchgear Justification:
At this time, there are two projects CD00902 and CD00891 in various stages of approval/development that greatly depend on the future availability of at least
Project CD00891 calls for the

Improve Customer Reliability by

There are

New Circuit

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Constructability Review Form

Submit a PDF copy of this signed form to TranEPAC@eversource.com along with the PAF

Project Number(s): CS00272	**Project Title:** [redacted] – Add Transf and Switchgear
Date of Constructability Review: 10/16/2019	Constr. Reviews also held on 12/15/17 and 12/18/19

Constructability Review Team: *list below the department and names of all who participated in the constructability review walkdown*

Lead*	Department**	Name and Title
☒	Project Management	[redacted] Project Engineering Manager
☐	Operations	[redacted] Manager
☐	Construction	[redacted] Supervisor
☐	Engineering	[redacted] Project Engineer
☐	Asset Management	[redacted] Senior Engineer
☐	Construction Services	[redacted] Project Construction Manager
☐	Construction Services	[redacted] Construction Representative
☐	Test	[redacted] Test Engineer
☐	Protection/Controls Eng.	[redacted]
☐	Electrical Design	[redacted] Engineering Designer
☐	Field Communications	[redacted] Senior Engineer
	Other:	

*Check the box of the individual who coordinated/led the constructability review
**List names from any other departments who attended the constructability review, add additional rows to the table if necessary

Observations/Findings/Scope Review/Risks Identified:

- New switchgear will have a grounding breaker and the roof will be equipped with fall protection brackets.
- LTC automation for the existing 1X transformer will be included with this project.
- Existing Schweitzer 2032 HMI system in the existing switchgear will be replaced with a Schweitzer 3530 RTAC system.
- Any new cable trench will be H20 rated, as is all the existing cable trench.

The Construction Services Supervisor, Engineer lead, or Project Manager must sign below.

[redacted]
Signature

3/16/20
Date

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Operations Project Authorization Form

Approved at September 02, 2020 EPAC
Link to Meeting Minutes

Date Prepared: 05/30/2018, 09/23/2021 (Rev. 1)	**Project Title: [redacted] – Add Xfmr & Swgr**
Company: Eversource CT	**Project Number: CS00273**
Organization: Asset Management	**Class(es) of Plant: D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformers**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Increase Reliability**
Estimated in service date: 6/30/2021	**Capital Investment part of original Oper. Plan: Yes**
Eng./Constr. Resources Budgeted? Yes	**O&M Expenses part of original Oper. Plan: N/A**
Authorization Type: Full Funding	**Facility Type (check all that apply):**
Total Request: $10,507K	**☐ PTF ☐ non-PTF ☒ Distribution**

Financial Requirements:

Project Authorization
ERM: _____

FP&A: _____

Executive Summary

[redacted] in [redacted], [redacted]

The original scope included the addition of a [redacted]

The original Project Authorization Form (PAF) was approved for $5,852K in PowerPlan on 08/16/2018. This Revised PAF is requesting an additional $4,655 for a new project total of $10,507K; the detailed breakdown for the request is listed below. The main driver for the additional funding request is the scope change to include [redacted].

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[redacted] The COVID-19 protocols also extended the length of the project as crews needed to revise their work practices to work within the guidelines provided. The project is in the final testing and commissioning stage.

The entire project as originally planned has been completed including the [redacted] The main drivers for the increase are the time required for testing (+$813K) which in turn increased both the indirect charges (+$2,355K) and the AFUDC (+$633K). Additionally, substation construction ($+424K) has remained engaged to support the [redacted] Material costs increased by $215K, Engineering increased by $176K and Project Management increased by $39K. Additional justification for the increases is provide below.

- Engineering $176K - Engineering, Design and Project Support is $176K more than the original estimate due to project complexities, many of which were associated with [redacted] which increased the project duration, and thus the engineering and project support resources required. The existing [redacted]. These decisions made sense from an engineering perspective. However, the cost implications of the decisions were most likely not fully understood since this is the first time for [redacted]
- Material $215K - Materials include both the [redacted]
- Construction $424K - Additional effort by both internal and external construction to accommodate the addition work for the 1X conversion as well as the both the [redacted]
- Testing $813K - The complexities of the effort required to test the [redacted] which was not fully understood when the cost estimate was developed.

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- Project Management: $39K - Additional time and effort to manage the extended construction duration as well as to understand and quantify the initial scope and budget while documenting the changes needed to get the project in service.

- Indirects: $2,355K - Overheads and indirect charges associated with the additional time and effort by to complete the scope increased based on the direct cost increase.

- AFUDC: $633K - Based on the additional project cost & duration.

COVID protocols also extended the duration of the project as there have been restrictions on the number of personnel that can be working within an enclosed area, contractor access while Eversource crews are working, as well as periodic cleaning and sanitation required. The in-service date was extended from 12/31/2019 to 6/30/2021 which has also impacted the budget.

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Project Costs Summary

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2021 to Go	2022	2023	2024	2025	Total
1. ROW / Easements / Land Acquisition								
2. Environmental Approvals / Permits								
3. Outreach								
4. Siting Approvals / Permits								
5. Engineering / Design	$78	$254						$254
6. Materials (Eversource purchased)	$2,820	$3,035						$3,035
7. Construction (incl matl's by contractors)	$1,299	$1,723						$1,723
8. Testing / Commissioning	$109	$922						$922
9. Project Mgmt Team		$39						$39
10. Removals								
11. Other								
12. Risks								
SUBTOTAL DIRECTS W/ RISKS	$4,306	$5,973						$5,973
13. Indirects/Overhead	$1,442	$3,797						$3,797
14. AFUDC	$104	$737						$737
PROJECT TOTAL – BASELINE BUDGET	$5,852	$10,507						$10,507
15. Contingency								
TOTAL CAPITAL REQUEST								
16. Reimbursables/Customer Contribution								
PROJECT TOTAL (LESS REIMBURSABLES)	$5,852	$10,507						$10,507
O&M								
TOTAL REQUEST	$5,852	$10,507						$10,507

Note: Explain unique payment provisions, if applicable: *Provide a detailed breakdown of Other costs here.*

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Breakout Costs

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2021 to Go	2022	2023	2024	2025	Total
ST Labor	$1,377	$1,721	$	$	$	$	$	$1,721
OT Labor	$0	$352	$	$	$	$	$	$352
Outside Services Labor	$109	$865	$	$	$	$	$	$865
Materials*	$2,820	$3,035	$	$	$	$	$	$3,035
Removals	$	$	$	$	$	$	$	$
Other	$	$	$	$	$	$	$	$
Indirects	$1,442	$3,797	$	$	$	$	$	$3,797
AFUDC	$104	$737	$	$	$	$	$	$737
TOTAL CAPITAL REQUEST - W/O REIMBURSABLES	**$5,852**	**$10,507**	**$0**	**$**	**$**	**$**	**$**	**$10,507**

*All materials including Eversource purchased and outside service purchased. Note that outside service purchased material included in construction in project cost summary above.

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Future Financial Impacts:

Provide below the estimated future costs that will result from the project: N/A
Note: Dollar values are in thousands

Future Costs	Year 20__	Year 20__	Year 20__	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.

Provide below the estimated future financial benefits that will result from the project: N/A
Note: Dollar values are in thousands

Future Benefits	Year 20__	Year 20__	Year 20__	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?____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? If yes, please provide details: N/A

Are there other environmental cleanup costs associated with this project? If yes, please provide details:
Yes, there was $54K in Environmental Outside Services for spoils management and hazardous waste disposal to manage and dispose soils from the excavations.

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Technical Justification:

Project Need Statement

[redacted]. See attached Figure 1 for the nomenclature diagram. [redacted]

Following original project authorization, [redacted]

These decisions made sense from an engineering perspective. However, the cost implications of the decisions were most likely not fully understood since this is the first time for conversion of an existing switchgear to the [redacted].

The [redacted]

Project Objectives

The main objective of this project is to improve reliability by [redacted]. The proposed changes would [redacted]

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Project Scope

The scope of the project is to:

[redacted]

- [redacted]
  - [redacted]
- [redacted] The wall will be lined with sound deadening pads to help with reducing the sound levels to not exceed allowable state mandated values.
  - A sound study was completed to evaluate the impact on property line sound pressure levels as a result of the addition of a second transformer. The sound study concluded property line sound pressure levels [redacted] will be below the maximum sound pressure levels allowed by state regulations. No property line sound pressure level measurements are needed.

[redacted]ransformers and switchgear, so no

The [redacted]

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[redacted]

Background / Justification

[redacted] Please refer to the substation capacity bubble chart in the attached Figure 2.

The chart indicates that the [redacted]

[redacted]

Due to past experiences with the surrounding residences on noise issues with the [redacted] there is a risk that abutters will complain about noise levels regardless of compliance with state mandated noise levels. As a result, sound deadening panels will be installed on the required fire wall to mitigate the risk regarding sound levels affecting the surrounding residences. A sound study will be performed at a minimum before the new transformer is installed.

A review of the proposed [redacted]

System Planning conducted a high-level analysis of the addition of the [redacted] This analysis identified a [redacted] will be considered at a later date. Until then, [redacted].

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[redacted]

The existing [redacted]. It was decided to apply the [redacted]. The scope changed when it was decided to also [redacted] hese decisions made sense from an engineering perspective. However, the cost implications of the decisions were most likely not fully understood since this is the first time for conversion of an [redacted]

The addition of the [redacted] in each enclosure requires [redacted]

Business Process and / or Technical Improvements:

Benefit to customers will be:

- Improved reliability and compliance with SYS PLAN 010 during contingency situations for the [redacted]
- The addition of a [redacted]
  - [redacted]
- [redacted]
- Adding a [redacted]
  - [redacted]

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- [redacted]

Alternatives Considered with Cost Estimates

One alternative is to do nothing; however, this is not recommended because it does nothing to improve the [redacted]

An alternative is to just [redacted] would cost more due to mobilizing construction crews twice and in requesting work zone clearances. The estimated cost to install only the second transformer is $2,940K using internal resources and $3,476K using external resources.

Therefore, the chosen alternative is to install the [redacted]

Project Schedule

Milestone/Phase Name	Estimated Date
Project Approval & PM Assigned - Completed	Q2 - 2018
Engineering/Design - Completed	Q1 - 2020
Procurement - Completed	Q2 - 2020
Construction	Q2 – 2021
Testing/Commissioning	Q2 – 2021
In-Service Date	June 30, 2021
Revised PAF Approval	Q3 - 2021
Project Closeout	Q3 – 2021

Regulatory Approvals

The Connecticut Siting Council will need to approve the project. Since no fence modifications are required, no objection is anticipated. Exempt Modification was submitted and accepted.

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Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Internal engineering resources not available to perform the work.	2018	Medium	If internal resources will not be available, external resources will be obtained well in advance to ensure availability and least possible cost.
Internal construction resources not available to perform the work.	2019	Medium	If internal resources will not be available, external resources will be obtained well in advance to ensure availability and least possible cost.
Materials Shortage or long lead times	2018	Medium	The major material, transformer and switchgear, will be ordered well in advance to ensure delivery in early 2019.
[redacted]	2019	Medium	[redacted]
Delays due to neighboring abutter complaints	2019	Low - Medium	History has shown that the abutters of this substation are sensitive to noise levels. Efforts will be made to minimize area disturbances.
COVID 19 Restrictions	2020-21	High	COVID Restrictions limited the number of personnel that could be working in a single location. Periodic cleaning as well of absences due to COVID illness or quarantining will extend the project duration

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Contingency

No contingency is included in the project total.

References

- SYS PLAN 010
- IEC 61850 Simulator Lab_ Distribution-Scope

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

- Figure 1 - Nomenclature diagram indicating equipment placement
- Figure 2 - Bubble chart indicating transformers that have [redacted]
- Attachment A - Backup Cost Estimate

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Figure 1 - Nomenclature diagram indicating equipment placement

REDACTED

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Figure 2 - Bubble chart indicating transformers that have

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Project Checklist – Transmission and Substation

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] Xfmr & Swgr	**Project Number: CS00273**	
Facility Type: ☐ BPS ☐ BES ☐ PTF ☐ non-PTF ☒ CIP ☒ Distribution		
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	
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?	[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	Yes	
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?	No	

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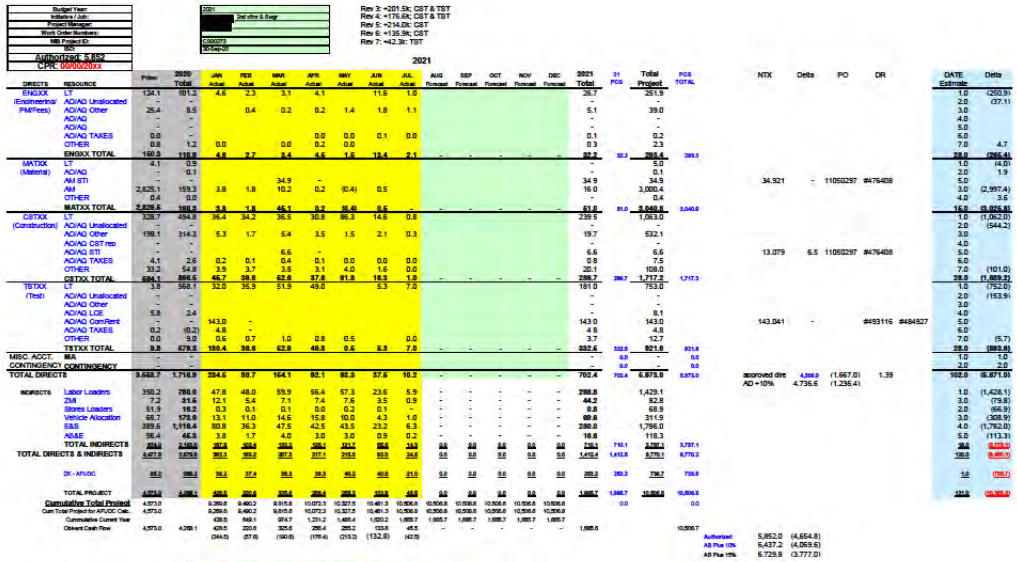
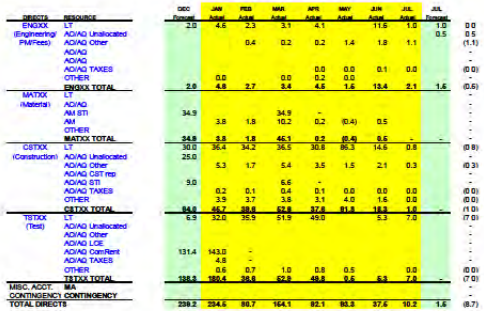
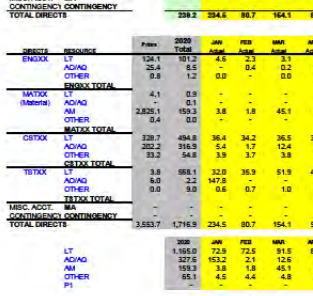
Project Checklist - Transmission & Substation Capital Project		
Project Name: [redacted] Xfmr & Swgr		**Project Number: CS00273**
P&C ENGINEERING		
OP-22 - Are PMUs and DDR required?	No	
If BPS, is an NPCC Directory #4 presentation required?	No	
Are ISO-NE OP-24 Appendix B updates necessary?	No	
TRANSMISSION LINE ENGINEERING		
Are there any changes that affect the baseline EMF?	No	
Are there any changes that affect the baseline EMI?	No	
SITING		
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	
SITING & CONSTRUCTION SERVICES (OUTREACH)		
What is the level of outreach expected?	High	
INITIATOR		
Has a field constructability review been completed?	No	
INVESTMENT RECOVERY		
Does the project require development of an Investment Recovery plan?	No	
COST ESTIMATING		
What team/firm prepared the cost estimate?	Other (specify below)	
Name of the person who prepared the estimate:	Engineering	
Was the estimate reviewed by Eversource Estimating?	No	

Cost Estimate Backup Details

See Attachment A for the cost backup details.







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Operations Project Authorization Form

Approved on March 16, 2022 EPAC

Link to Meeting Minutes

Project Title: [redacted] – 2nd Transformer, SWGR, & Circuit Breaker Addition	**Project Number: 404953, CS00284**
Date Prepared: 03/30/2022	**Company: Eversource CT**
Organization: System Planning	**Class(es) of Plant: T SS, D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformers, Stations – Circuit Breakers**
Managing Organization: Engineering	**Schedule ID#: 40495301 & CS002841**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: June 2023 (D); December 2023 (T)	**Emergency Related Request? No**
Eng./Constr. Resources Budgeted? Yes	**Facility Type (check all that apply):** ☒ **PTF non -regional** ☐ **non-PTF** ☒ **Distribution** ☐ **N/A (General Plant)**
Total Capital Request: $24,388K (D - $17,570.9K, T - $6,816.8K)	**Authorization Type: Full Funding**

[1] Executive Summary

This project is seeking full funding approval of $24,388K ($5,666K for project ID# 40495301, $17,571K for project ID# CS002841, $575K for 80090791 and $576K for 80090988) to support material procurement, construction, and test services for upgrades to the [redacted].

[redacted]

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[redacted]

Initial funding of $100K for 404953 and $100K for CS00284 was approved in PowerPlan on August 8, 2019. Partial funding of $1,000K was approved for 404953 in PowerPlan on February 22, 2021 and $1,277K was approved for CS00284 in PowerPlan on March 17, 2021. The project was presented to and approved by the Solution Design Committee (SDC) on July 8, 2020. Currently, $349K for 404953 and $861K for CS00284 has been spent to complete preliminary design, associated planning grade estimates, a constructability review, a baseline sound study of existing equipment, Single Contingency Load Loss (SCLL)/outage review and full funding PAF development.

A summary of the cost breakdown is provided in the table below.

Project Number/Work Order #	Class of Plant	Scope	Amount
404953/40495301	T SS – [redacted]	Install [redacted]	$5,666,000
CS00284/CS002841	D SS – [redacted]	Install a [redacted]	$17,571,000
404953/80090791	T SS – [redacted]	Transmission line relaying	$575,000
404953/80090988	T SS – [redacted]	Transmission line relaying	$576,000
Total			**$24,388,000**

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[2] PROJECT COSTS SUMMARY

Project Total Cost Summary

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	Total
1. ROW / Easements / Land Acquisition	$	$	$	$	$	$
2. Environmental Approvals / Permits	$	$5	$	$	$	$5
3. Outreach	$	$0	$	$13	$	$13
4. Siting Approvals / Permits	$	$5	$	$4	$	$9
5. Engineering / Design	$1,093	$108	$627	$207	$	$943
6. Materials (Eversource purchased)	$	$33	$3,972	$906	$	$4,911
7. Construction	$	$109	$2,483	$2,552	$	$5,144
8. Testing / Commissioning	$	$46	$286	$341	$	$673
9. Project Mgmt Team	$191	$181	$145	$153	$	$479
10. Removals	$	$	$90	$83	$	$173
11. Other	$	$19	$	$	$	$19
12. Risks	$	$	$1,085	$515	$	$1,600
SUBTOTAL DIRECTS W/ RISKS	**$1,284**	**$505**	**$8,688**	**$4,775**	**$**	**$13,969**
13. Indirects/Overhead	$912	$616	$4,545	$3,423	$	$8,585
14. AFUDC	$80	$89	$514	$534	$	$1,136
PROJECT TOTAL – BASELINE BUDGET	**$2,277**	**$1,210**	**$13,747**	**$8,732**	**$**	**$23,689**
15. Contingency	$	$	$433	$265	$	$698
TOTAL CAPITAL REQUEST	**$2,277**	**$1,210**	**$14,180**	**$8,998**	**$**	**$24,388**
16. Reimbursables/Customer Contribution	$	$	$	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$2,277**	**$1,210**	**$14,180**	**$8,998**	**$**	**$24,388**
O&M	$	$	$	$	$	$
TOTAL REQUEST	**$2,277**	**$1,210**	**$14,180**	**$8,998**	**$**	**$24,388**

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Distribution Cost Summary (CS00284)

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	Total
1. ROW / Easements / Land Acquisition	$				$	
2. Environmental Approvals / Permits	$	$			$	$
3. Outreach	$	$			$	$
4. Siting Approvals / Permits	$				$	
5. Engineering / Design	$762	$51	$317	$6	$	$373
6. Materials (Eversource purchased)	$	$20	$3,970	$13	$	$4,003
7. Construction	$	$106	$2,276	$1,392	$	$3,774
8. Testing / Commissioning	$	$46	$204		$	$250
9. Project Mgmt Team	$2	$92	$63	$53	$	$207
10. Removals	$		$90		$	$90
11. Other	$	$9			$	$9
12. Risks	$		$890	$255	$	$1,145
SUBTOTAL DIRECTS W/ RISKS	$764	$324	$7,810	$1,719	$	$9,852
13. Indirects/Overhead	$474	$471	$3,956	$1,881	$	$6,308
14. AFUDC	$38	$67	$438	$412	$	$917
PROJECT TOTAL – BASELINE BUDGET	$1,277	$861	$12,204	$4,012	$	$17,077
15. Contingency	$		$412	$82	$	$494
TOTAL CAPITAL REQUEST	$1,277	$861	$12,616	$4,094	$	$17,571
16. Reimbursables/Customer Contribution	$				$	
PROJECT TOTAL (LESS REIMBURSABLES)	$1,277	$861	$12,616	$4,094	$	$17,571
O&M	$				$	
TOTAL REQUEST	$1,277	$861	$12,616	$4,094	$	$17,571

Risk	Allocation
1. Potential Underground Obstructions	$250,000
2. Severe Weather, Delays, OT	$200,000
3. Design Development	$50,000
4. External Crews Needed for Installation	$525,000
5. Upgrade Grounding and Lightning	$50,000
6. Post Study Upgrades	$70,000
Total	$1,145,000

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Transmission Cost Summary (404953)

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	Total
1. ROW / Easements / Land Acquisition	$				$	
2. Environmental Approvals / Permits	$	$4			$	$4
3. Outreach	$	$0			$	$0
4. Siting Approvals / Permits	$	$4			$	$4
5. Engineering / Design	$331	$58	$311	$2	$	$371
6. Materials (Eversource purchased)	$	$13	$2	$867	$	$882
7. Construction	$	$3	$207	$1,094	$	$1,304
8. Testing / Commissioning	$	$0	$82	$166	$	$248
9. Project Mgmt Team	$189	$90	$79	$55	$	$224
10. Removals	$			$37	$	$37
11. Other	$	$9			$	$9
12. Risks	$		$195	$190	$	$385
SUBTOTAL DIRECTS W/ RISKS	$520	$182	$875	$2,411	$	$3,468
13. Indirects/Overhead	$438	$145	$584	$1,097	$	$1,825
14. AFUDC	$42	$22	$75	$105	$	$203
PROJECT TOTAL – BASELINE BUDGET	$1,000	$349	$1,534	$3,612	$	$5,495
15. Contingency	$		$21	$150	$	$170
TOTAL CAPITAL REQUEST	$1,000	$349	$1,555	$3,762	$	$5,666
16. Reimbursables/Customer Contribution	$				$	
PROJECT TOTAL (LESS REIMBURSABLES)	$1,000	$349	$1,555	$3,762	$	$5,666
O&M	$				$	
TOTAL REQUEST	$1,000	$349	$1,555	$3,762	$	$5,666

Risk	Allocation
1. Potential Underground Obstructions	$40,000
2. Severe Weather, Delays, OT	$100,000
3. Design Development	$30,000
4. External Crews Needed for Installation	$15,000
5. Upgrade Grounding and Lightning	$200,000
Total	$385,000

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Transmission Cost Summary ([redacted] Remote End - 80090791)

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	Total
1. ROW / Easements / Land Acquisition	$	$			$	
2. Environmental Approvals / Permits	$	$			$	
3. Outreach	$	$		$7	$	$7
4. Siting Approvals / Permits	$	$		$2	$	$2
5. Engineering / Design	$	$		$100	$	$100
6. Materials (Eversource purchased)	$	$		$13	$	$13
7. Construction	$	$		$33	$	$33
8. Testing / Commissioning	$	$		$88	$	$88
9. Project Mgmt Team	$	$	$1	$22	$	$24
10. Removals	$	$		$23	$	$23
11. Other	$	$			$	
12. Risks	$	$		$35	$	$35
SUBTOTAL DIRECTS W/ RISKS	**$**	**$**	$1	$323	**$**	$324
13. Indirects/Overhead	$	$	$3	$223	$	$225
14. AFUDC	$	$	$0	$8	$	$8
PROJECT TOTAL – BASELINE BUDGET	**$**	**$**	$4	$554	**$**	$558
15. Contingency	$	$	$0	$17	$	$17
TOTAL CAPITAL REQUEST	**$**	**$**	$4	$570	**$**	$575
16. Reimbursables/Customer Contribution	$	$			$	
PROJECT TOTAL (LESS REIMBURSABLES)	**$**	**$**	$4	$570	**$**	$575
O&M	$	$			$	
TOTAL REQUEST	**$**	**$**	$4	$570	**$**	$575

Risk	Allocation
1. Additional Communication Panels Needed	$25,000
2. Severe Weather, Delays, OT	$5,000
3. Design Development	$5,000
Total	$35,000

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Transmission Cost Summary ([redacted] Remote End - 80090988)

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	Total
1. ROW / Easements / Land Acquisition	$	$			$	
2. Environmental Approvals / Permits	$	$			$	
3. Outreach	$	$		$7	$	$7
4. Siting Approvals / Permits	$	$		$2	$	$2
5. Engineering / Design	$	$		$100	$	$100
6. Materials (Eversource purchased)	$	$		$13	$	$13
7. Construction	$	$		$33	$	$33
8. Testing / Commissioning	$	$		$88	$	$88
9. Project Mgmt Team	$	$	$2	$22	$	$24
10. Removals	$	$		$23	$	$23
11. Other	$	$			$	
12. Risks	$	$		$35	$	$35
SUBTOTAL DIRECTS W/ RISKS	**$**	**$**	$2	$323	**$**	$325
13. Indirects/Overhead	$	$	$3	$223	$	$226
14. AFUDC	$	$	$0	$8	$	$8
PROJECT TOTAL – BASELINE BUDGET	**$**	**$**	$5	$554	**$**	$559
15. Contingency	$	$	$0	$17	$	$17
TOTAL CAPITAL REQUEST	**$**	**$**	$6	$571	**$**	$576
16. Reimbursables/Customer Contribution	$	$			$	
PROJECT TOTAL (LESS REIMBURSABLES)	**$**	**$**	$6	$571	**$**	$576
O&M	$	$			$	
TOTAL REQUEST	**$**	**$**	$6	$571	**$**	$576

Risk	Allocation
1. Additional Communication Panels Needed	$25,000
2. Severe Weather, Delays, OT	$5,000
3. Design Development	$5,000
Total	$35,000

Explain unique payment provisions, if applicable:

A Material Order Authorization form has been submitted and approved to proceed with major material purchasing prior to full funding approval in the amount of $3,597,258.

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

Not applicable

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[3] TECHNICAL JUSTIFICATION

Project Need, Objective and Justification

Project Need Statement

Distribution Needs:

This project will address local load serving reliability at the S [redacted]

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Transmission Needs:

[redacted]

Project Objectives

[redacted]

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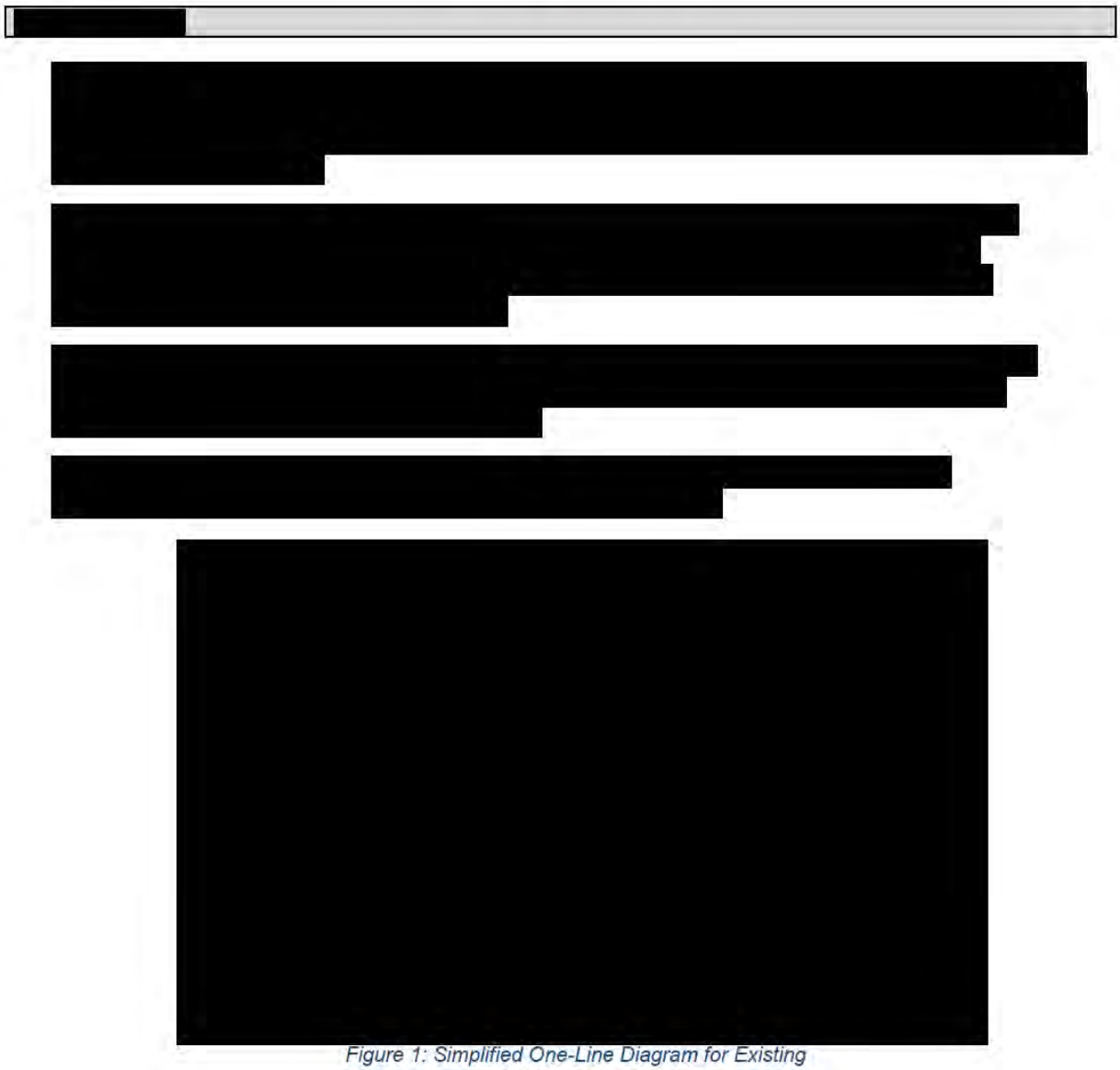

Figure 1: Simplified One-Line Diagram for Existing Arrangement

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Figure 2: Simplified One-Line Diagram for Final Arrangement



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II. Required Studies:

- The following studies are on-going with the engineering vendor; they will be completed prior to IFC completion
- DC Load Study and Battery Capacity Analysis
- AC Load Study
- Voltage Drop Calculations
- Station Lighting Level Study
- Grounding Study
- Lightning Protection Study
- Structural and Foundation Calculations
- Sound Study, pre-project sound study has been completed

III. Other Site Considerations:

1. Real Estate/Siting & Permitting Considerations (i.e., acquisitions, offset encroachment, ROW impacts):
    a. Site modifications requiring permitting review includes the addition of lightning masts and lighting modifications to the station layout.
    b. An Exempt Modification has been submitted to and approved by the Connecticut Siting Council (CSC)
2. Environmental:
    a. Soil contamination analysis was performed and reported in the GZA Environmental Assessment Report dated October 7, 2021. In summary: Soil samples were taken and elevated arsenic levels were detected; site soil that is unable to be reused will be properly disposed of at an off-site location.
    b. Wetlands impact: There are no disruptions of wetlands as part of this project.
    c. Audible Noise Level Changes/Considerations:
        i. The new power transformer at the site is to be designed to meet applicable requirements without need for external mitigation measures. It is not expected that the new transformer will exceed audible noise levels set by the state of Connecticut and a sound wall is not expected to be needed; however, there is risk allocated to post study upgrades.
3. Transmission Line Considerations: Line outages will be necessary for moving the 115kV

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capacitor coupled voltage transformer (CCVT) connection points.

4. Distribution Feeder Circuit Considerations: Distribution bus outage will be required for connection of the bus tie switch and conduit. Outages on distribution feeders may also be required when tying new feeders into existing distribution duct banks. The Project team has not yet determined if a mobile is needed at this time. Initial discussions with the SOC has indicated a mobile is not required.
5. This project scope does not include any IEC 61850 communications protocol.

WORK ORDER: 40495301 – Carmel Hill Transmission



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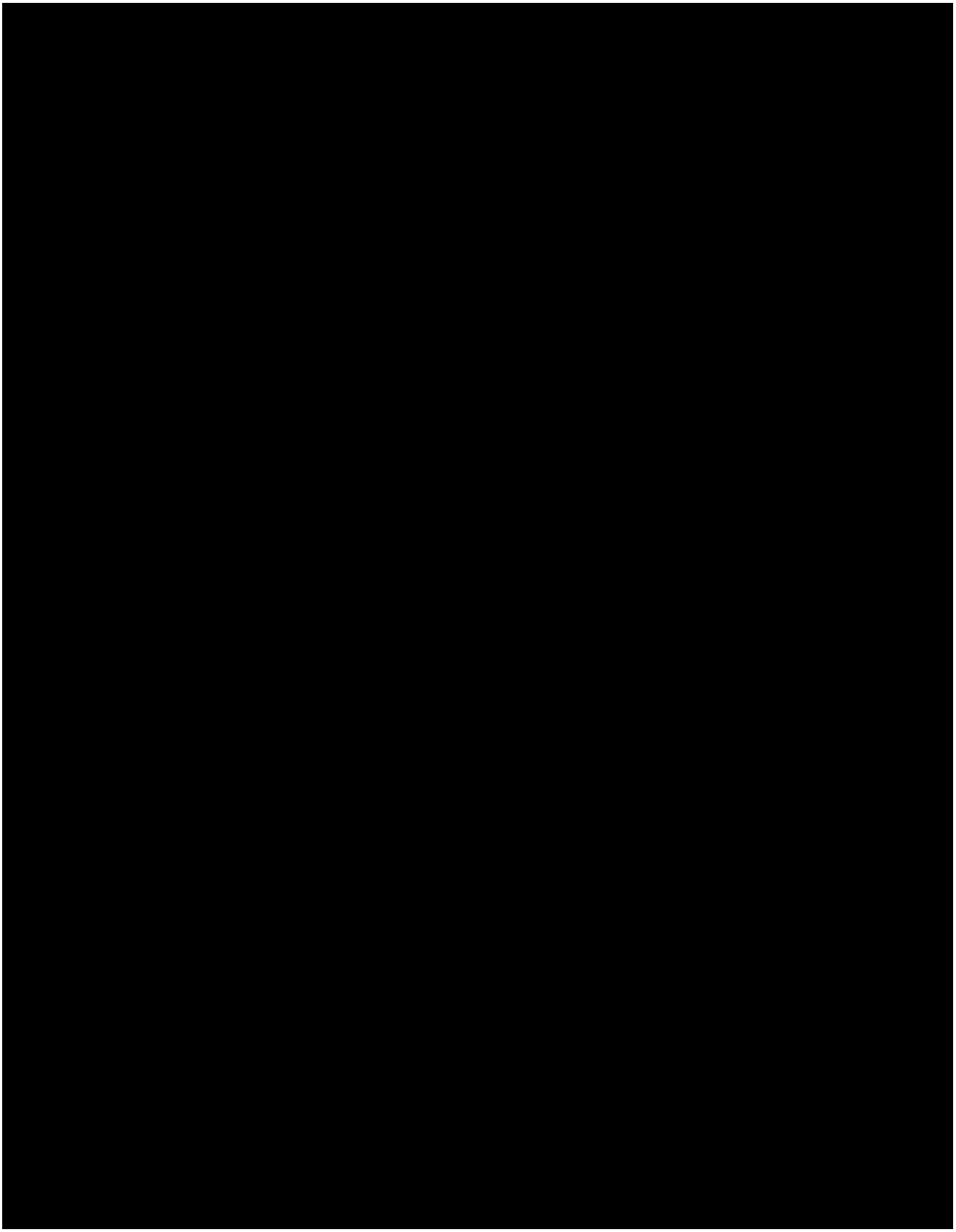

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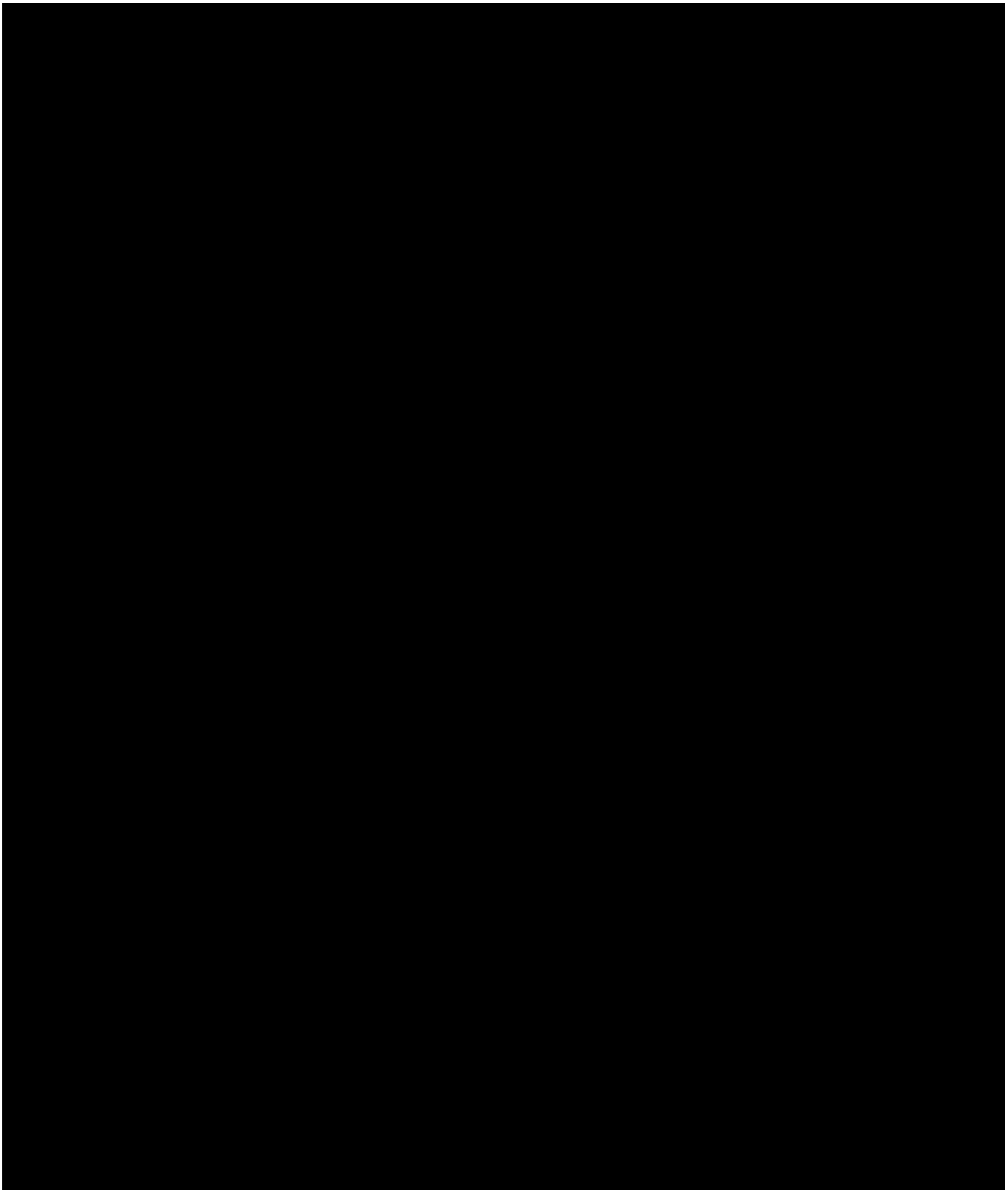

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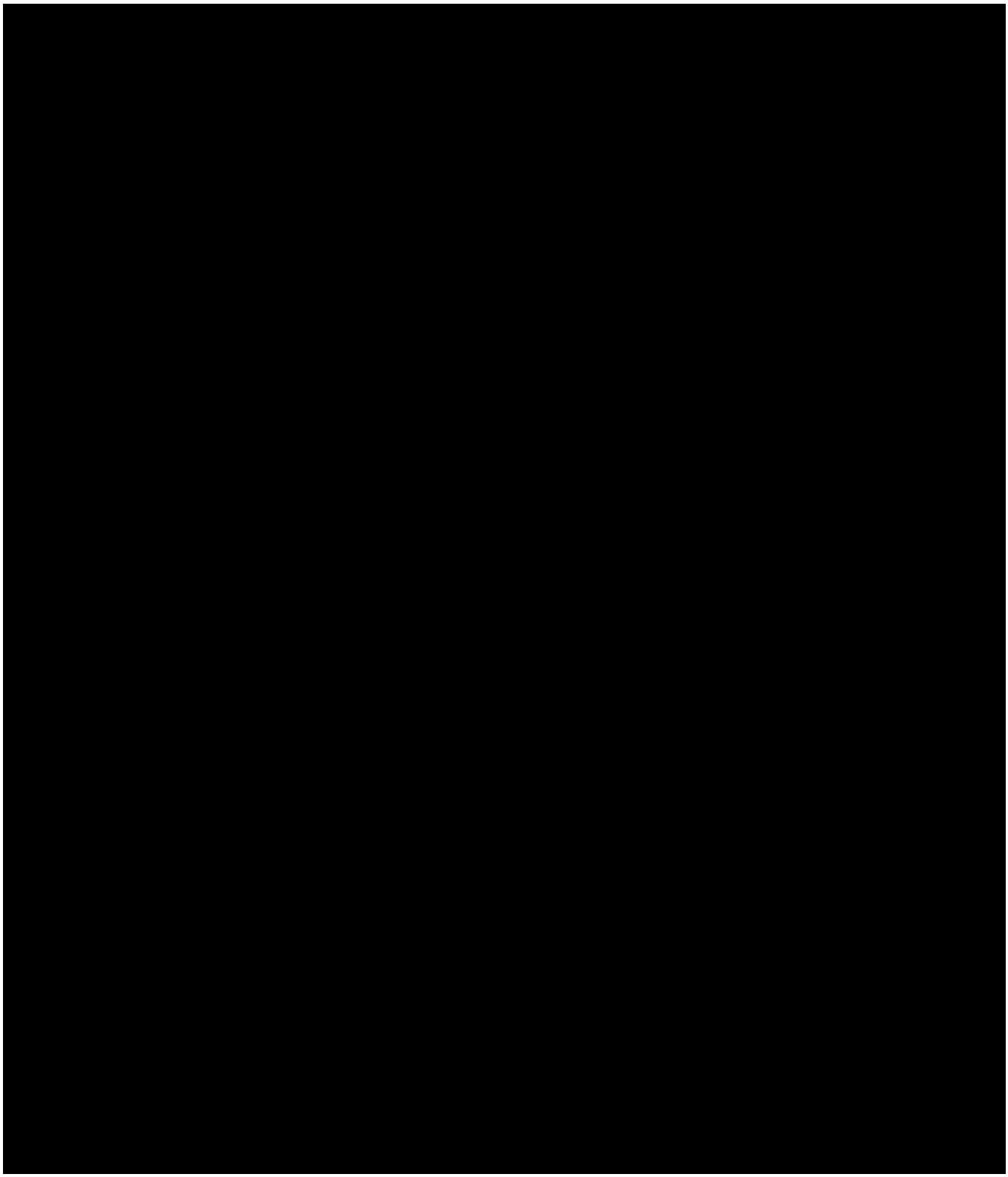

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Substation Equipment

Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*
[redacted]	[redacted]	[redacted]	[redacted]
		Remove existing Wave Trap	
		Remove existing Wave Trap	

A constructability review was performed on December 8, 2021. See Attachment C for the completed form.

Background

[redacted]

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[redacted]

[redacted].

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[4] ALTERNATIVES CONSIDERED

This project was presented to and approved by the Solution Design Committee (SDC) on July 8, 2020.

The costs in the Alternatives section below for the [redacted] Transformer Addition project reflect estimates presented at SDC. Since then, an updated estimate has been developed for the Preferred option which has experienced an increase in costs of approximately 85%. The other alternatives would have experienced a similar order of magnitude increase as did the Preferred solution.

Alternative #1 – Installation of [redacted] (This is the preferred Solution)

[redacted]

This alternative consists of the installation of [redacted]

[redacted]

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[redacted]

[redacted].

All work for this alternative is expected to take place within the existing substation fence; physical space would be available within the yard fence for future expansion. A Notice of Exemption to the Connecticut Siting Council will be needed. There are no current Asset Management projects that would conflict with this project. To minimize outages, a majority of the construction will take place with transmission services in-service until connections to the transmission system are necessary.

This is the preferred option because it meets the Distribution System Planning Guide criteria. It also provides more protection than a single-tie circuit breaker since this solution will prevent a momentary outage seen by the customer in the event a stuck breaker occurs.

Planning grade (-25/+25%) cost estimate for the Transmission portion of this alternative is $5.65M.

Planning grade (-25/+25%) cost estimate for the Distribution portion of this alternative is $17.48M

Alternative #2– Installation of a [redacted] (This is not the preferred Solution)

[redacted]

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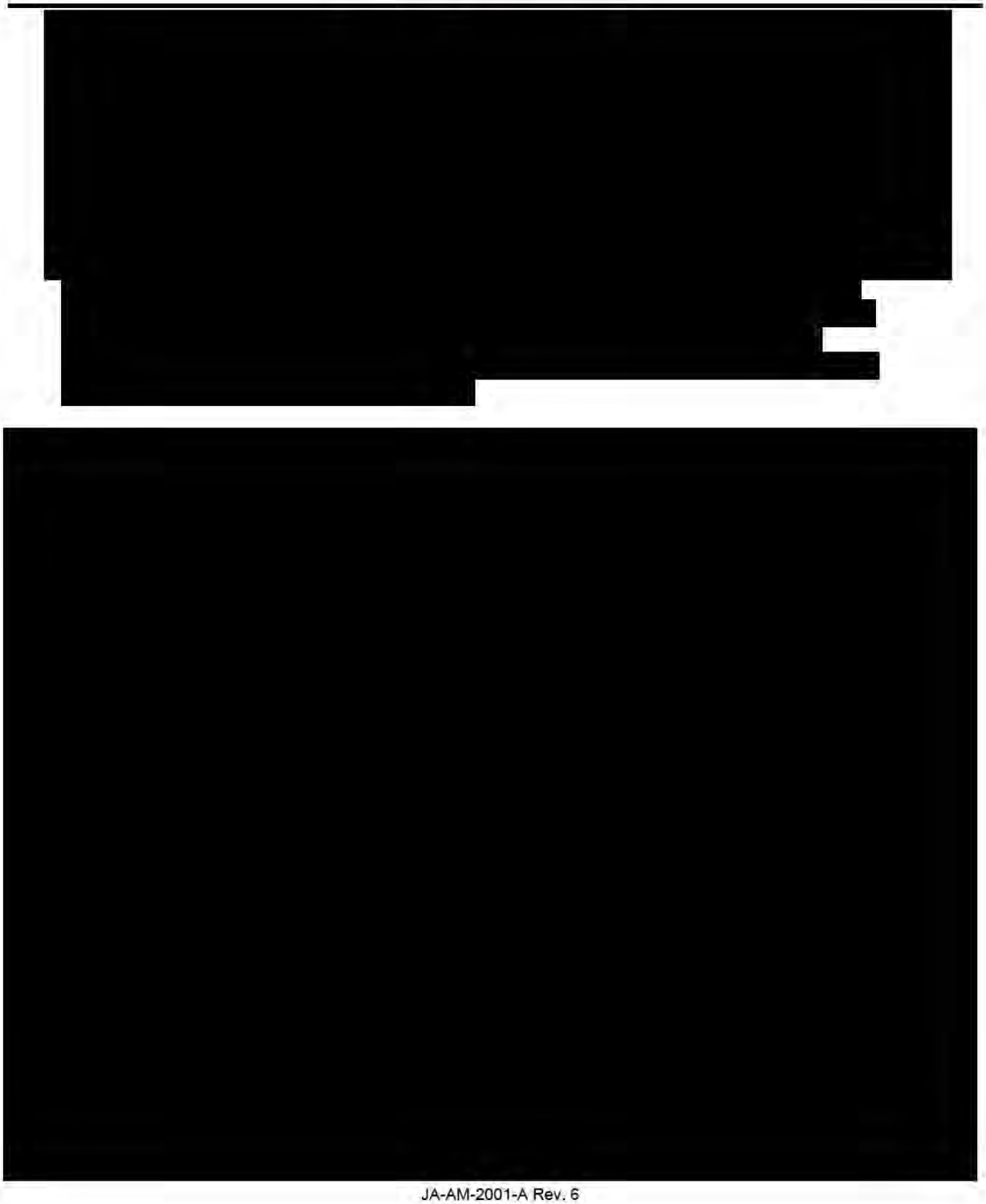

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[redacted]

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Alternative #3 – [redacted] **(This is not the preferred Solution)**

[redacted]

All work for this alternative is expected to take place within the existing substation fence. Future expansion of the substation would require additional fence expansion as needed; there is no extra space accounted for as part of this project. A Notice of Exemption to the Connecticut Siting Council will be needed. There are no current Asset Management projects that would conflict with this project. To minimize outages, a majority of the construction will take place with transmission services in-service until connections to the transmission system are necessary.

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This alternative is not the preferred solution because the transmission portion cost is over double the preferred alternative. This particular configuration will require the use of underground cable to complete the ring bus connection without the need to expand the fence line; using underground cable is not a standard method when constructing a ring bus.

Conceptual grade (-25/+50%) cost estimate at the time of the SDC presentation for the Transmission portion of this alternative was $8.2M.
Planning grade (-25/+25%) cost estimate at the time of the SDC presentation for the Distribution portion of this alternative was $9.7M.

Alternative #4 – [redacted] (This is not the preferred Solution)

[redacted]

Based on the existing control house drawings, there is sufficient space for new

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[redacted]

This configuration will require a fence expansion to make room for a new line terminal structure and allow room for the three high-side circuit breakers; the existing bus will need to be demolished and new bus work installed. The expansion does not account for extra space for future expansion. The expansion will be to the west of the station and add an additional 7,120 square feet. A Petition for a Declaratory Ruling to the Connecticut Siting Council will be required due to the fence expansion. There are no current Asset Management projects that would conflict with this project. To minimize outages, a majority of the construction will take place with transmission services in-service until connections to the transmission system are necessary.

Compared to the preferred solution, this one provides better line protection due to the [redacted]

Conceptual grade (-25/+50%) cost estimate at the time of the SDC presentation for the Transmission portion of this alternative was
$6.4M.
Planning grade (-25/+25%) cost estimate at the time of the SDC presentation for the Distribution portion of this alternative was $9.7M.

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[5] PROJECT SCHEDULE

Milestone	Scheduled Completion Date
1. Project Need by Date	12/31/2023
2. Date of IFR Approval	07/10/2019
3. Complete Conceptual design of Alternative(s)	06/01/2020
4. Initiator complete SSF form	07/01/2020
5. SDC Presentation Date(s)	07/08/2020
6. Conversion of Tx development costs, 183 to 107 (applicable to projects that require SSF approval but do not require ISO alternative selection)	N/A
7. Partial Funding approval in PowerPlan	February – March 2021
8. Preliminary Design Complete	01/03/2022
9. Preliminary Design Constructability review complete	12/08/2021
10. Full funding estimate complete	02/28/2022
11. Full funding estimate review	03/11/2022
12. Initiator complete PAF form	03/11/2022
13. EPAC Funding Dates (Full)	03/16/2022
14. Detail Design Complete	06/13/2022
15. Final Constructability Review Complete	TBD upon detail engineering completion
16. Targeted Milestone Dates:	
· Siting Approval (if applicable)	08/09/2021
· Env. Approvals (if applicable)	N/A
· Outage & Energization Plan Issued	TBD
· All Material on Site	10/04/2022
· Outage Permit(s) Approved	09/12/2022
17. IFC Design Complete	04/22/2022 (Civil) 07/19/2022 (Electrical)
18. Start of Civil Construction	04/25/2022
19. Project ISD	06/01/2023 (D); 12/31/2023 (T)
20. Relay Settings Issued (*Required for Full Funding requests)	08/14/2022
21: ISO Related Milestones (for applicable projects)	
· ISO Preferred Alternative Selected	N/A
· Conversion of Tx development costs, 183 to 107 (following ISO preferred alternative selection)	N/A
· PAC Presentation	N/A
· TCA Submittal	N/A
· PPA Approval	01/22/2021

See Attachments B1 and B2 for the P6 schedules.

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[6] Regulatory Approvals

An Exempt Modification has been submitted to and approved by the Connecticut Siting Council. An amendment to the Exempt Modification will need to be filed due to the need of a retaining wall at the Substation.

A PPA has been submitted and approved from ISO-NE; approval date was 1/22/2021.

[7] Risk and Risk Mitigation Plans

Contingency:

A contingency amount of $698.2K has been included in the total project estimate to account for any unknowns. The table below shows the individual contingency contributions per work order number.

Project Number/Work Order #	Contingency Amount
404953/40495301	$170,300
CS00284/CS002841	$494,000
404953/80090791	$16,900
404953/80090988	$17,000
Total	**$698,200**

Risk Mitigation:

Risk	Mitigation
1. Severe Weather, Delays, OT	Construction delays caused by weather and storm duty are possible; try to be flexible with construction schedule. Risk is allocated in the project budget for delays.
2. Design Development	The design and review process will be done in detail as the project finals design is being completed. Risk is allocated to the project budget for any changes in detailed design.
3. Additional Communication Panel	Additional communication panels may be required at remote terminals; this risk is highly unexpected though. Risk has been allocated in the project budget is an additional panel is needed
4. Additional Pathways for Wiring	Conduit fill has been evaluated; however new wires may not fit as expected and new pathways will need to be developed. Risk is allocated in the project budget for additional pathways.
5. UG Obstructions	UG obstructions may be observed during Civil excavations and will be taken care of at that time. Have alternative paths for conduit. Risk is allocated in the project budget for unexpected UG obstructions
6. External Crews Needed for Installation	At this time, internal construction crews will be completing the installation. If this changes, risk is allocated in the project budget

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Risk	Mitigation
7. Upgrade Grounding and Lightning	Grounding study has been completed and no adverse results have been found; however, the grounding grid may need updating once excavating occurs. Risk has been allocated for ground grid upgrades.
8. Post Study Upgrades	Pre-project studies show no signs of adverse effects post project. Risk is allocated in the project budget for post project upgrades.

Single Contingency Load Loss (SCLL) will exist during construction; however, it has been determined that a mobile transformer is not required during. Outages will be planned around the time of year when the station may be off-loaded to adjacent circuits.

[8] REFERENCES

References
1. Distribution System Planning Guide
2. [redacted] Expansion IFR, approved 7/25/2019
3. [redacted] Addition of 115-kV Circuit Breaker 62.5MVA Transformer and Switchgear -SSF, approved 07/08/2020
4. [redacted] – Partial Funding – PAF2, approved 12/22/2020

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

Attachment	Included in Submittal?
A. Cost Estimate (A.1, A.2, A.3, A.4, A,5)	*YES*
B. P6 Schedule (B1, B2)	*YES*
C. Constructability Review	*YES*
D. Nomenclature Diagram 26801-91001-REV AM2 Additions	*YES*
E. Nomenclature Diagram 26801-91001-REV AN1 Additions	*YES*
F. Station Layout Removals 26801-3302-REV AM AN	*YES*
G. Station Layout Additions 26801-3302-REV AM AN	*YES*

EVERSOURCE
Project Authorization Form

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] Transformer and SWGR		**Project Number: 404953, CS00284**	
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):	01/22/2021		
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?	TBD		
Is there an impact to the existing ground grid?	Yes		
Is a Transient Over Voltage (TOV) analysis required?	No		

EVERSOURCE
Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] Transformer and SWGR	**Project Number: 404953, CS00284**
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	
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	
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?	No
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

ESTIMATE SUMMARY

Project Title: [redacted]
Project Manager [redacted]
Project Number 404953
WO & Task #: 40495301
Estimate revision #: 01b
Estimate Type - Station work

Estimate #: C-21-844T
Date of Estimate 03/24/2022
Estimate done by PAG
In Service date (ISD):06/01/2023

Template Revision # GL-66e

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases														
2	Environmental Approvals / Permits	$4,400	0.1%	0.1%	$4,400										
3	Outreach	$100	0.0%	0.0%	$100										
4	Siting Approvals / Permits	$4,400	0.1%	0.1%	$4,400										
5	Engineering / Design	$370,600	10.7%	6.5%	$57,700	$310,600	$2,300								
6	Materials (Eversource purchased)	$881,700	25.4%	15.6%	$13,500	$1,600	$866,600								
7	Construction (incl matl's by contractors)	$1,303,600	37 6%	23.0%	$2 600	$207 000	$1 094 000								
8	Testing / Commissioning	$247,800	7.1%	4.4%	$300	$81,600	$165,900								
9	PMT Project Mgmt Team	$224.100	6.5%	4.0%	$89.700	$79.200	$55.200								
10	Removals	$36 600	1.1%	0.6%			$36 600								
11	Other	$9,300	0.3%	0.2%	$9,300										
12	Risks	$385,000	11.1%	6.8%		$195,000	$190,000								
125	**Project Directs Total w/Risks**	**$3,467,600**	100 0%	61.2%	**$182,000**	**$875,000**	**$2,410,600**								
13	Indirects/Overhead	$1 825 000		32.2%	$144 900	$583 500	$1 096 600								
14	AFUDC	$202,900		3.6%	$21,900	$75,500	$105,500								
125	**Project Total - Baseline Budget**	**$5,495,500**		97.0%	**$348,800**	**$1,534,000**	**$3,612,700**								
15	Contingency	$170,300		3.0%		$20,800	$149,500								
	Project Total - Funding Approval Level	**$5,665,800**		100.0%	**$348,800**	**$1,554,800**	**$3,762,200**								
16	Reimbursables/Customer Contribution														
	Project Total (less reimbursables)	**$5,665,800**			**$348,800**	**$1,554,800**	**$3,762,200**								
	Cost per key qty (if appl)	-	$'s / Eqiv. SF Substation expansion												
	Amount of Escalation included above	$82.600					$82.600								
6	Total materials - Eversource	$881 700			$13 500	$1 600	$866 600								
	Total materials - Contractor	$120,460			-$40		$120,500								
	Total materials	$1 002 160			$13 460	$1 600	$987 100								

NOTE: Risk / Contingency is 10 9% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range -25% 25%
$4,249,000 **$7,082,000**

Alt Estimate Summary for PP4 Calc (escalation separate)

Estimate #: C-21-844T
Date of Estimate:03/24/2022

Project Number: 404953
WO & Task #: 40495301

		TOTAL w/ escal broken out
ROW / Easements / Land purchas	$	-
Environmental Approvals / Permi	$	4,400
Outreach	$	100
Siting Approvals / Permits	$	4,400
Engineering / Design	$	370,500
Materials (Eversource purchased	$	868,700
Construction (incl matl's by cont	$	1,273,400
Testing / Commissioning	$	243,000
PMT Project Mgmt Team	$	222.500
Removals	$	35 600
Other	$	9,300
Risks	$	385,000
		$3,416,900
Indirects/Overhead	$	1 793 100
AFUDC	$	202,900
	$	-
		$5,412,900
	$	-
Contingency	$	170,300
		$5,583,200
	$	-
	$	-
		$5,583,200
	$	82,600
Escal total		**$5,665,800**
Check total		

COMMENTS

Project Scope:
Key qty's and UOM (tie to inputs on est sheets) - Eqiv. SF Substation expansion

115kV Transformer, breaker, and switchgear installation [redacted] 115 expansion, Woodbury Ct.
Install [redacted] SF-6 Circuit breakers.
Install [redacted] 115kV Wave Traps
Replace [redacted] 3 phase manually operated disconnects
Installation of bus to accept new equipment.
Install cable jumpers between bussing and new equipment.
Relocate [redacted] CCVT tap/connection points
Install Conduit and trenwa from circuit breakers to control house.
repair/connect grounding to existing ground grid
Install [redacted] SEL-351 relays for breaker failure.
Install [redacted] SEL line relays for system 1 and system 2 protection.
Install [redacted] electro-mechanical breaker failure lock-out relays

Cont. Cover page 2.

Assumptions/Clarifications:
Indirect rates based on: 1T - CT - Station work

ISD of 6/1/2023 from schedule provided.
PP4 Dates from project schedule, dated 2/4/2022.
All work to take place within the existing footprint of the substation, no expansion of fenceline is expected.
50% rock excavation based on SOW and existing grading issues and surface rock in area of excavation.
All construction to be internal, non internal support.
Engineering to be external with internal review.
P&C panels and pathway installation is in estimate C-21-844D Distribution.
Not IEC61850 standard installation.
Prior costs as of 3/24/2022.

RISKS

Potential UG Obstructions	$ 40 000
Severe Weather Delays OT	$ 100 000
Design development	$ 30 000
Additional pathways for P&C wiring	$ 15 000
External crews for installation	$ 200 000

UNESCALATED LINE ITEM DOLLARS

Project Number 404953
Date of Estimate 03/24/2022
Estimate revision # 01b

Escalation Rate — E Rate $ 33

		Prior Mhrs	Prior DOLLARS	2023 Mhrs	2023 DOLLARS	2024 Mhrs	2024 DOLLARS	2025 Mhrs	2025 DOLLARS	TOTAL Mhrs	TOTAL DOLLARS
CSTXX-CONSTRUCTION	R										
Electrical Construction	LT				$45,918		$231,860			3,970	$277,780
General Construction	LT		$2,573								$2,573
SCADA / Automation	LT										
Telecom - Field	LT										
Construction Regs (Internal)	LT				$25,440		$25,440			960	$50,880
Support Switch/Tag	LT				$21,594		$21,594			796	$43,188
Other (specify)	LT										
Other (specify)	LT										
Other (specify)	LT										
LT Total			$2,573		$97,452		$278,400			5,726	$380,427
Employee Expenses	AE 9%				$4,373		$13,600				$18,283
Construction Purchased Material	AM 1%				$1,591		$8,947				$10,538
Outside Construction Vendor	AO				$145,200		$652,797			4,171	$797,997
Sales tax on Const. Vendor											
Vehicles (now in Indirects section)	AV										
Inspection vendor (Outside Vendor)	AO										
Construction Reg (Outside vendor)	AO										
Rents and Leases	BR										
CSTXX Subtotal			$2,573		$268,556		$953,960				$1,185,125
Escalation			$9,334								$9,334
CSTXX Total			$11,907		$268,556		$953,960			5,967	$1,174,459
ENRXX-TO ENGINEERING/DESIGN											
Project Services/Drafting	LT				$2,460		$2,130			200	$10,800
T- Line Engineering/Design	LT										
D- Street Engineering/Design	LT										
Civil Engineering/Design	LT				$6,360					120	$6,360
Substation (T) Engineering/Design	LT		$50,744		$12,720					240	$63,464
Substation (D) Engineering/Design	LT										
Protection & Controls Engineering	LT				$4,240					80	$4,240
Survey Engineering	LT										
SCADA / Automation Engineering	LT				$18,960					320	$18,960
Telecom Engineering	LT				$4,240					80	$4,240
Other - specify	LT										
Other - specify	LT										
LT Total			$50,744		$53,000		$2,130			1040	$105,864
Employee Expenses	AE 9%				$2,650		$106				$2,756
Contractor Engineering - T-Line	AO										
Contractor Engineering - D-Street	AO										
Contractor Engineering - T - Station	AO		$8,913		$97,350					640	$104,145
Contractor Engineering - D-Station	AO				$134,640					680	$134,640
Contractor Engineering - P&C	AO				$23,054					180	$23,054
Contractor Engineering - Survey	AO										
Contractor Engineering - SCADA / Automation	AO										
Contractor Engineering - Telecom	AO										
Contractor Engineering - Other	AO										
Contractor Engineering - Forest	AO										
Contractor Engineering - Specify	AO										
Vehicles (now in Indirects section)	AV										
ENRXX Subtotal			$67,657		$310,004		$2,239				$379,597
Escalation											
ENRXX Total			$67,657		$310,004		$2,239			2230	$379,597
LNRXX-TO LAND											
Real Estate	LT										
Employee Expenses	AE 9%										
Purchase Land	AM										
Vehicles (now in Indirects section)	AV										
Fees and Payments	BF										
LNRXX Subtotal											
Escalation											
LNRXX Total											
MATXX-TO MATERIAL											
Eversource	AM		$13,460		$606,601						$822,121
Outside Services	AM				$110,700						$110,700
	AM										
Freight											
Sales Tax Eversource/outside services	3.9% 3.9%				$36,200						$36,200
Other											
MATXX Subtotal			$13,460		$663,581						$877,021
Escalation											
MATXX Total			$13,460		$663,581						$877,021
PMXX-PROJECT MANAGER & SUPPORT											
Project Management (PM)	LT		$32,496		$33,800		$39,800			1,200	$100,306
Project Planning/Cost (EP)	LT										
Contracts/Purchasing (CP)	LT				$2,120					40	$2,120
System Planning	LT				$2,544					48	$2,544
Environmental	LT		$1,278								$1,278
SCS - None	LT		$51								$51
Legal	LT										
Estimating	LT				$2,544					48	$2,544
Siting - None	LT		$4,438								$4,438
Asset Management	LT										
Other -	LT										
Other -	LT										
Other -	LT										
Other -	LT										
LT Total			$38,222		$41,126		$39,800			1418	$119,378
Employee Expenses	AE 9%				$2,056		$1,590				$3,753
Project Support Vendor - PM	AO		$57,236		$36,000		$15,000			560	$111,236
Project Support Vendor - P	AO										
Project Support Vendor - CP	AO										
Project Support Vendor - Contract Planning	AO										
Project Support Vendor - Environmental	AO		$3,100								$3,100
Project Support Vendor - SCS - None	AO										
Project Support Vendor - Legal	AO										
Project Support Vendor - Estimating	AO										
Project Support Vendor - Siting - None	AO										
Project Support Vendor - Asset Management	AO										
Project Support Vendor - Other	AO										
Project Support Vendor - Other	AO										
Project Support Vendor - Other	AO										
Project Support Vendor - Other	AO										
Vehicles (now in Indirects section)	AV										
Property or CWIP tax large proj allowance	BR										
Builder All risk insurance excluding deductibles(if project is over 400m)	BR										
Fees and Payments - Environental	BF										
Fees and Payments - Siting	BF										
Fees and Payments - Other	BF										
PMXX Subtotal			$95,556		$79,184		$55,616				$231,356
Escalation											
PMXX Total			$95,556		$79,184		$55,616			1,778	$231,356
RMXX-TO REMOVAL											
Engineering/Design	LT										
Internal Construction	LT						$30,940			472	$30,940
LT Total							$30,940				$30,940
Employee Expenses	AE 18%						$4,641				$4,641
Outside Services	AO										
Contractor Labor	AO										
Vehicles (now in Indirects section)	AV										
Rents and Leases	BR										
RMXX Subtotal							$35,581				$35,581
Escalation											
RMXX Total							$35,581			472	$35,581
TSTXX-TO TEST											
Test / Field Engr Labor (In House)	LT		$333		$48,440		$97,036			2,370	$145,799
Lead Commissioning Eng (LCE) (internal)	LT				$24,720		$48,440			1,200	$74,160
Employee Expenses	AE 18%				$7,416		$14,647				$22,096
Test / Field Engr Labor (contractor)	AO										
Lead Commissioning Engr (LCE) (contractor)	AO										
Vehicles (now in Indirects section)	AV										
TSTXX Subtotal			$333		$81,576		$161,113				$243,054
Escalation											
TSTXX Total			$333		$81,576		$161,113			3,570	$243,054
SUBTOTAL PROJECT DIRECT COST			$191,914		$879,070		$2,170,949			18,836	$5,031,980
Risk											
Risk					$185,000		$180,000	$ -	$ -		$365,000
				$ -	$ -	$ -	$ -	$ -	$ -		
Risk Total					$185,000		$180,000				$365,000
TOTAL PROJECT DIRECT COST (w/risk)		-	$191,914	6996	$974,070	11440	$2,350,949			18,836	$5,416,980
INDIRECTS											
Non-Productive Time Allocation (DNP)	15.1%		$14,573		$39,458		$74,023				$127,995
Payroll Benefits Allocation (DPB) Incl NPT	44.0%		$724		$91,811		$230,734				$312,769
Gen SVC CO Overhead (DSB) Incl NPT	80.0%		$73,360		$86,635		$33,171				$193,166
G&E Allocations (DSB,ZSL,ZSS)	60.0%		$54,596		$347,540		$600,231				$1,001,969
AG&E Allocations (ZSA)	6.8%		$1,832		$6,076		$34,666				$54,574
Gross Earnings Allocation (ZST)	8.0%						$64,893				$64,893
Utility Stock											
MDBC (ZMB)											
Vehicles (ZVE)	7.5%		$705		$19,150		$36,999				$56,854
Indirects Subtotal			$144,930		$591,721		$1,054,812				$1,793,363
TOTAL PROJECT COST - Direct & Indirect (excl AFUDC)			$336,834		$1,465,791		$3,405,670				$8,210,343
AFUDC											
AFUDC (ZU)			$21,937	7.00%	$75,462	7.00%	$105,463	7.00%	7.00%	1	$202,862
In Service Dollars			-		-		-				
Cumulative ISS											
AFUDC Subtotal			$21,937		$75,462		$105,463				$202,862
TOTAL PROJECT COST - Baseline Budget			$348,771		$1,553,043		$3,511,133				$8,413,205
Contingency											
Contingency					$20,811		$149,513				$170,325
Other			$ -		$ -		$ -	$ -	$ -		
Contingency SubTotal					$20,811		$149,513				$170,325
TOTAL PROJECT COST - Approved Funding			$348,771		$1,564,774		$3,370,691				$8,583,293
Reimbursables / Customer Contributio											
Reimbursables / Customer Contribution (enter as negative)			$ -		$ -		$ -	$ -	$ -		

ESTIMATE SUMMARY

Project Title: [redacted]
Project Number: CS00284
WO & Task #: CS002841
Estimate revision #: 01c
Estimate Type - Station work

Estimate #: C-21-844D
Estimate done by: PAG
In Service date (ISD):06/01/2023

Template Revision # 01.66c

All Estimate Summary for PAG Est / Escalation Inputs.xlsx

Project Number: CS00284
WO & Task #: CS002841

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases														
2	Environmental Approvals / Permits	$200	0 0%	0.0%	$200										
3	Outreach														
4	Siting Approvals / Permits	$100	0 0%	0.0%	$100										
5	Engineering / Design	$373,000	3 8%	2.1%	$50,700	$316,800	$5,500								
6	Materials (Eversource purchased)	$4 003 200	40 6%	22.8%	$19 700	$3 970 400	$13 100								
7	Construction (incl matl's by contractors)	$3,774,000	38 3%	21.5%	$106,200	$2,275,800	$1,392,000								
8	Testing / Commissioning	$249,500	2 5%	1.4%	$45,600	$203,900									
9	PMT Project Mgmt Team	$207,200	2.1%	1.2%	$91,600	$62,700	$52,900								
10	Removals	$89 900	0 9%	0.5%		$89 900									
11	Other	$9,300	0.1%	0.1%	$9,300										
12	Risks	$1,145,000	11 6%	6.5%		$890,000	$255,000								
125															
	Project Directs Total w/Risks	**$9,851,400**	100 0%	56.1%	**$323,400**	**$7,809,500**	**$1,718,500**								
13	Indirects/Overhead	$6,308,100		35.9%	$471,100	$3,955,700	$1,881,300								
14	AFUDC	$917,400		5.2%	$66,600	$438,400	$412,400								
125															
	Project Total - Baseline Budget	**$17,076,900**		97.2%	**$861,100**	**$12,203,600**	**$4,012,200**								
15	Contingency	$494,000		2.8%		$412,000	$82,000								
	Project Total - Funding Approval Level	**$17,570,900**		100.0%	**$861,100**	**$12,615,600**	**$4,094,200**								
16	Reimbursables/Customer Contribution														
--															
	Project Total (less reimbursables)	**$17,570,900**			**$861,100**	**$12,615,600**	**$4,094,200**								
	Cost per key qty (if appl)	1,597	$'s / Eqiv. SF Substation expansion												
	Amount of Escalation included above	$97 400					$97 400								
6	Total materials - Eversource	$4 003 200			$19 700	$3 970 400	$13 100								
	Total materials - Contractor	$298,541			$41	$298,500									
	Total materials	$4 301 741			$19 741	$4 268 900	$13 100								

NOTE: Risk / Contingency is 10.3% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	**-25%**	**25%**
	$13,178,000	**$21,964,000**

	TOTAL w/ escal broken out
ROW / Easements / Land purchas	$ -
Environmental Approvals / Permi	$ 200
Outreach	$ -
Siting Approvals / Permits	$ 100
Engineering / Design	$ 372,800
Materials (Eversource purchased	$ 4,002,900
Construction (incl matl's by cont	$ 3,733,600
Testing / Commissioning	$ 249,600
PMT Project Mgmt Team	$ 205,700
Removals	$ 89 900
Other	$ 9,300
Risks	$ 1,145,000
	$9,809,100
Indirects/Overhead	$ 6,253,300
AFUDC	$ 917,400
	$ -
	$16,979,800
	$ -
Contingency	$ 494,000
	$17,473,800
	$ -
	$ -
	$17,473,800
	$ 97,400
Escal total	**$17,571,200**
Check total	5300

COMMENTS:

Project Scope:

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

11,000 Eqiv. SF Substation expansion

115kV Transformer, breaker, and switchgear installation [redacted] expansion, Woodbury Ct.
Replace [redacted] 3 phase motorized disconnects
Replace [redacted] Mobile transformer connection point
Remove associated bussing on 1X and install new associated bus for both 2X and 3X.
Install [redacted] 3 phase circuit switchers
Install [redacted] 115kV ~23kV 62.5 MVA Transformer.
Install [redacted] 15kV, one on 2X and one 3X
Install [redacted] 3 phase disconnect for distribution tie
Install [redacted] set of slip over CT's on 1X.
Installation of (1) Primary and (1) backup relay for slip on CT's on 1X
Install [redacted] PT on 2X
Install Distribution 23kV Switchgear enclosure 42' X 27'
Install (150 ft) Conduit and (165 ft)trenwa to control house
Install [redacted] lightning protection masts.

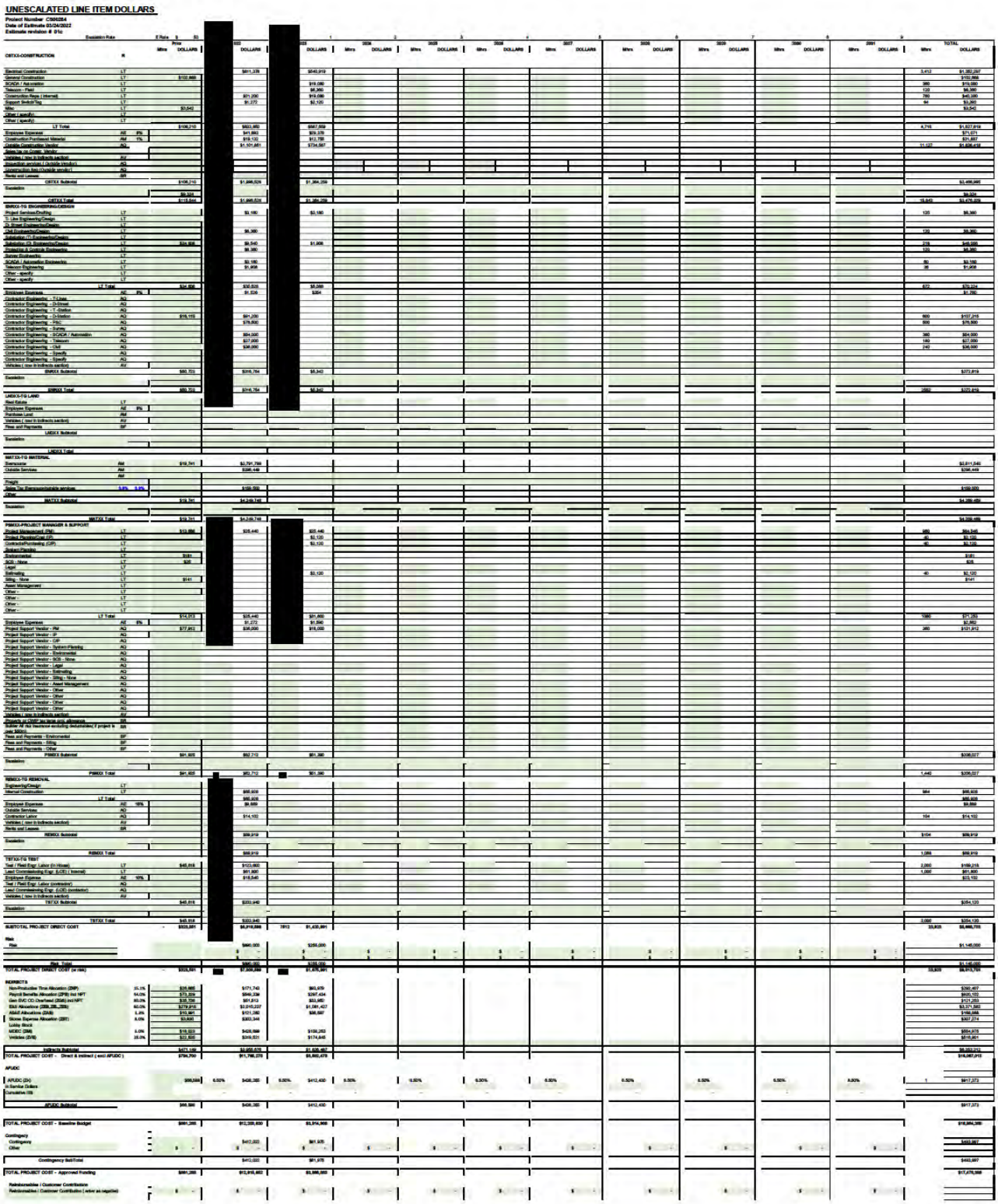
Assumptions/Clarifications:

Indirect rates based on: 11 - CT Stating work

Relays for P&C are located in Transmission Estimate C-21-844T
Remote end relay work are in separate Estimates.
ISD of 6/1/2023 from schedule provided.
All work to take place within the existing footprint of the substation, no expansion of fenceline is expected.
50% rock excavation based on SOW and existing grading issues and surface rock in area of excavation
Electrical construction to be internal.
Engineering to be external, with internal review.
Existing cabinets, pathways and wireways is for new relays is adequate.
Not IEC61850 standard installation.
Prior costs as of 3/24/2022 included in estimate.

RISKS

Potential UG Obstructions	$ 250,000
Severe Weather, Delays, OT	$ 200,000
Design development	$ 50,000
External construction work crews	$ 525,000
Upgrade grounding and lightning	$ 50,000
Post study upgrades	$ 70,000



UNESCALATED LINE ITEM DOLLARS

Project Number: CS00254
Date of Estimate: 03/24/2022
Estimate revision # 0 to

ESTIMATE SUMMARY

Project Title: Substation [redacted]
Project Mgr1 and [redacted]
Project Number: 404953
WO & Task #: 80090988
Estimate revision #: 00
Estimate Type - Station work

Estimate #: C-21-844
Date of Estimate 02/17/2022
Estimate done by: PAG
In Service date (ISD):06/01/2023

Template Revision # 01.664

All Estimate Summary for Pre-Con Execution Approval

Project Number: 404953
WO & Task #: 40495301

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases														
2	Environmental Approvals / Permits														
3	Outreach	$6,600	2.0%	1.1%			$6,600								
4	Siting Approvals / Permits	$2,200	0.7%	0.4%			$2,200								
5	Engineering / Design	$99,600	30.7%	17.3%			$99,600								
6	Materials (Eversource purchased)	$12 900	4.0%	2.2%			$12 900								
7	Construction (incl matls by contractors)	$33,200	10 2%	5.8%			$33,200								
8	Testing / Commissioning	$87 800	27 0%	15.2%			$87 800								
9	PMT Project Mgmt Team	$24,200	7.4%	4.2%		$1,800	$22,400								
10	Removals	$23,400	7.2%	4.1%			$23,400								
11	Other														
12	Risks	$35,000	10 8%	6.1%			$35,000								
125															
	Project Directs Total w/Risks	**$324,900**	100 0%	56.4%		**$1,800**	**$323,100**								
13	Indirects/Overhead	$226,200		39.3%		$3,400	$222,800								
14	AFUDC	$8 100		1.4%		$200	$7 900								
125															
	Project Total - Baseline Budget	**$559,200**		97.0%		**$5,400**	**$553,800**								
15	Contingency	$17 000		3.0%		$200	$16 800								
	Project Total - Funding Approval Level	**$576,200**		100.0%		**$5,600**	**$570,600**								
16	Reimbursables/Customer Contribution														
17															
	Project Total (less reimbursables)	**$576,200**				**$5,600**	**$570,600**								
	Cost per key qty (if appl)	-	$'s / Ckt. Ft												
	Amount of Escalation included above	$14 700					$14 700								
6	Total materials - Eversource	$12 900					$12 900								
	Total materials - Contractor														
	Total materials	$12,900					$12,900								

NOTE: Risk / Contingency is 9 9% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

	TOTAL w/ escal broken out
ROW / Easements / Land purchas	$ -
Environmental Approvals / Permi	$ -
Outreach	$ 6,400
Siting Approvals / Permits	$ 2,100
Engineering / Design	$ 96,700
Materials (Eversource purchased	$ 12,700
Construction (incl matl's by cont	$ 32,200
Testing / Commissioning	$ 85 200
PMT Project Mgmt Team	$ 23,600
Removals	$ 22,700
Other	$ -
Risks	$ 35,000
	$316,600
Indirects/Overhead	$ 219,700
AFUDC	$ 8 100
	$ -
	$544,400
	$ -
Contingency	$ 17 000
	$561,400
	$ -
	$ -
	$561,400
	$ 14,700
Escal total	**$576,100**
Check total	-$100

Estimate Range

-25%	25%
$432,000	**$720,000**

COMMENTS

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

- Ckt. Ft

[redacted] **expansion remote end line relay work and settings changes [redacted], New Milford, CT.**
Remove [redacted] SEL-321 line relay
Remove [redacted] TC-10B PLC device
Remove [redacted] TCF-10B PLC devices
Remove [redacted] Wave Trap
Remove [redacted] line tuning unit
Install [redacted] SEL-311C line relay and [redacted] auxillary back up
Install associated test switches.
Testing and commisioning.
update as-built drawings and schematics.

Assumptions/Clarifications:
Indirect rates based on: 1T - CT - Station work

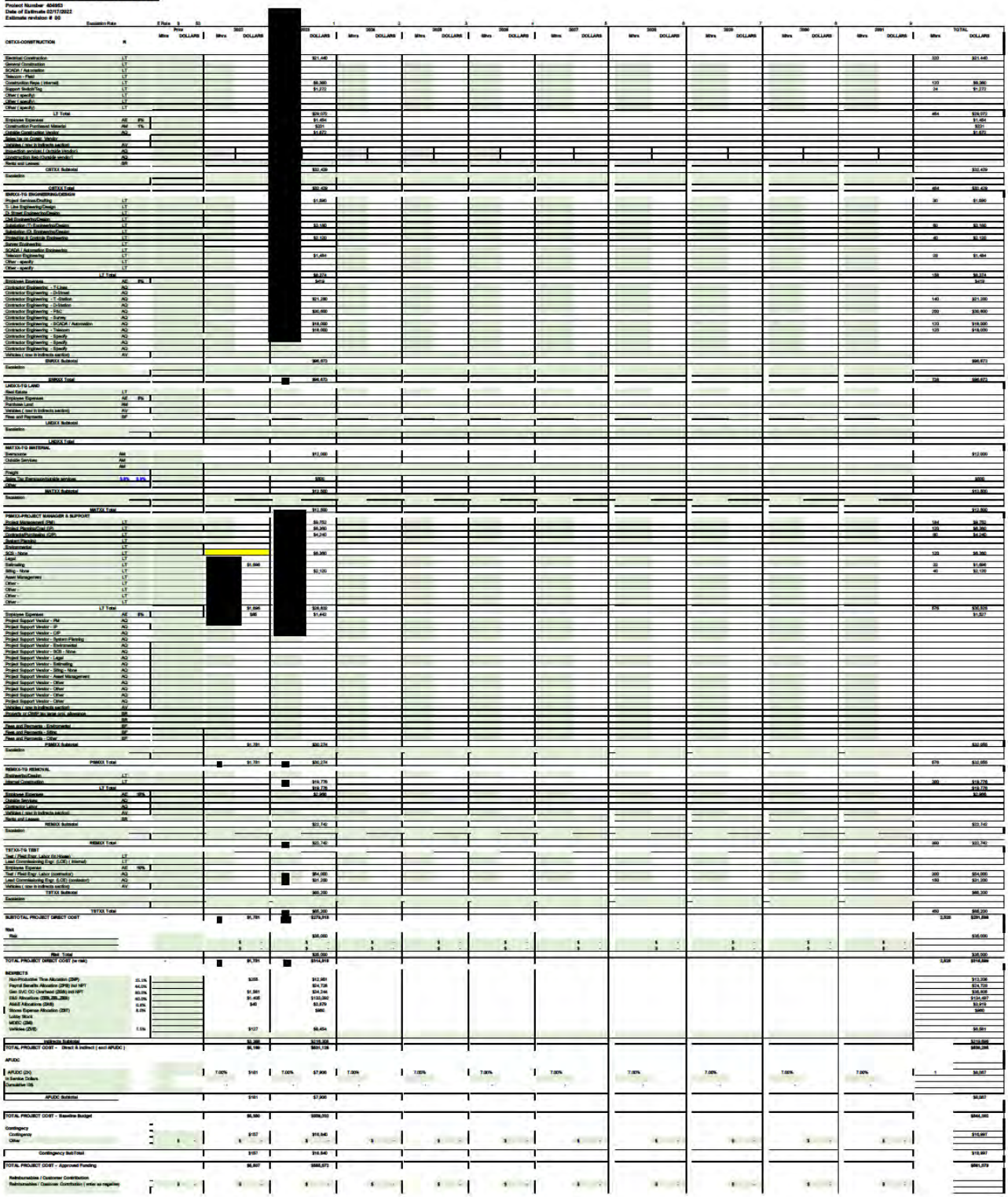
ISD of 6/1/2023 from schedule provided.
All work to take place within the existing footprint of the substation, no expansion of fenceline is expected.
All Construction to be internal.
Engineering to be external.
Existing communication panels have adequate space for new equipment

RISKS

additional communication panel required	$ 25,000
Severe Weather Delays OT	$ 5,000
Design development	$ 5,000

UNESCALATED LINE ITEM DOLLARS

Project Number 404953
Date of Estimate 02/17/2022
Estimate revision # 00



ESTIMATE SUMMARY

Project Title: Substation Dis[redacted]
Project Number: 404953
WO & Task #: 80090791
Estimate revision #: 00
Estimate Type - Station work

Estimate #: C-21-844
Date of Estimate 02/17/2022
Estimate done by: PAG
In Service date (ISD):06/01/2023

Template Revision # 01.664

All Estimate Summary for PY Cost Escalation removed

Project Number: 404953
WO & Task #: 40495301

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases														
2	Environmental Approvals / Permits														
3	Outreach	$6,600	2.0%	1.1%			$6,600								
4	Siting Approvals / Permits	$2,200	0.7%	0.4%			$2,200								
5	Engineering / Design	$99,600	30.7%	17.3%			$99,600								
6	Materials (Eversource purchased)	$12 900	4.0%	2.2%			$12 900								
7	Construction (incl mat'ls by contractors)	$33,200	10 2%	5.8%			$33,200								
8	Testing / Commissioning	$87 800	27.1%	15.3%			$87 800								
9	PMT Project Mgmt Team	$23,700	7.3%	4.1%		$1,300	$22,400								
10	Removals	$23,400	7.2%	4.1%			$23,400								
11	Other														
12	Risks	$35,000	10 8%	6.1%			$35,000								
125															
	Project Directs Total w/Risks	**$324,400**	100 0%	56.5%		**$1,300**	**$323,100**								
13	Indirects/Overhead	$225,300		39.2%		$2,500	$222,800								
14	AFUDC	$8 000		1.4%		$100	$7 900								
125															
	Project Total - Baseline Budget	**$557,700**		97.1%		**$3,900**	**$553,800**								
15	Contingency	$16 900		2.9%		$100	$16 800								
	Project Total - Funding Approval Level	**$574,600**		100.0%		**$4,000**	**$570,600**								
16	Reimbursables/Customer Contribution														
...															
	Project Total (less reimbursables)	**$574,600**				**$4,000**	**$570,600**								
	Cost per key qty (if appl)	-	$'s / Ckt. Ft												
	Amount of Escalation included above	$14 700					$14 700								
6	Total materials - Eversource	$12 900					$12 900								
	Total materials - Contractor														
	Total materials	$12,900					$12,900								

NOTE: Risk / Contingency is 9 9% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

	TOTAL w/ escal broken out
ROW / Easements / Land purchas	$ -
Environmental Approvals / Permi	$ -
Outreach	$ 6,400
Siting Approvals / Permits	$ 2,100
Engineering / Design	$ 96,700
Materials (Eversource purchased	$ 12,700
Construction (incl mat'l's by cont	$ 32,200
Testing / Commissioning	$ 85 200
PMT Project Mgmt Team	$ 23,100
Removals	$ 22,700
Other	$ -
Risks	$ 35,000
	$316,100
Indirects/Overhead	$ 218,800
AFUDC	$ 8 000
	$ -
	$542,900
	$ -
Contingency	$ 16 900
	$559,800
	$ -
	$ -
	$559,800
	$ 14,700
Escal total	**$574,500**
Check total	-$100

Estimate Range

-25%	25%
$431,000	**$718,000**

COMMENTS

Project Scope:

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

- Ckt. Ft

[redacted] **expansion remote end line relay work and settings changes [redacted], Watertown, CT.**
Remove [redacted] EL-321 line relay
Remove [redacted] TC-10B PLC device
Remove [redacted] TCF-10B PLC devices
Remove [redacted] Wave Trap
Remove [redacted] line tuning unit
Install [redacted] SEL-311C line relay and [redacted] auxillary back up
Install associated test switches.
Testing and commisioning.
update as-built drawings and schematics.

Assumptions/Clarifications:

Indirect rates based on: 1T - CT Station work

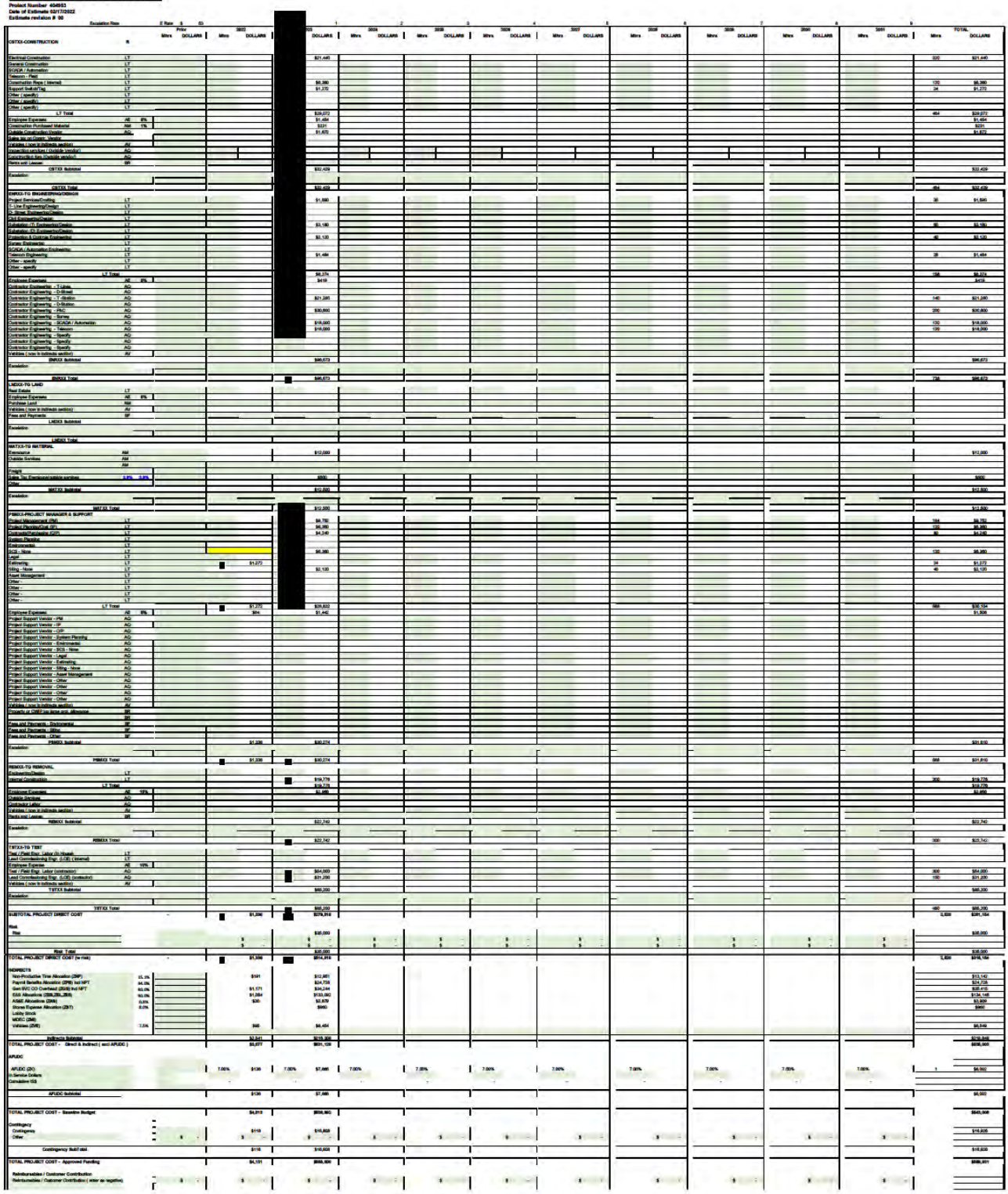
ISD of 6/1/2023 from schedule provided.
All work to take place within the existing footprint of the substation, no expansion of fenceline is expected.
All Construction to be internal.
Engineering to be external.
Existing communication panels have adequate space for new equipment

RISKS

additional communication panel required	$ 25,000
Severe Weather Delays OT	$ 5,000
Design development	$ 5,000

UNESCALATED LINE ITEM DOLLARS

Project Number 404953
Date of Estimate 02/17/2022
Estimate revision # 00



ESTIMATE SUMMARY

Project Title:
Project Mgr/Lead:

Template Revision 2.1.1a

SUMMARY OF ESTIMATES

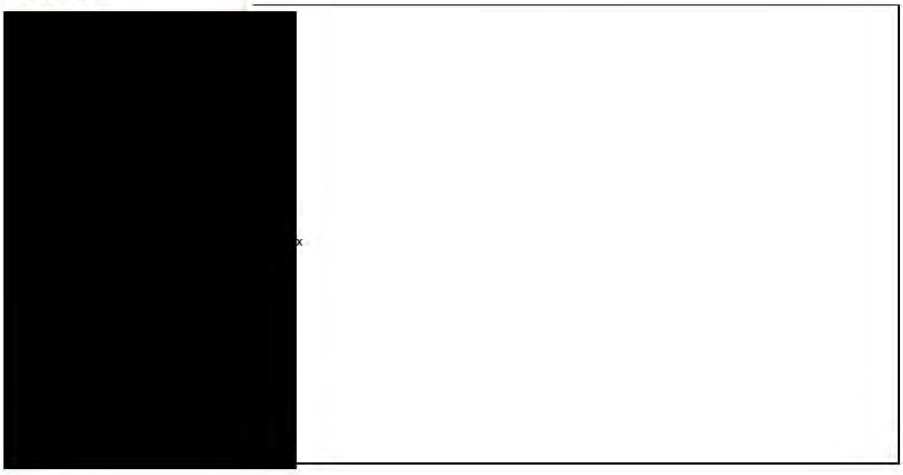
Select Estimate Type

WP	Description	TOTAL	% of Directs	% of Total	Planning C-21-844A	Planning C-21-844B	Planning C-21-844D	Planning C-21-844T
1	ROW / Easements / Land purchases							
2	Environmental Approvals / Permits	$4,600	0.0%	0.0%			$200	$4,400
3	Outreach	$13,300	0.1%	0.1%	$6,600	$6,600		$100
4	Siting Approvals / Permits	$8,900	0.1%	0.0%	$2,200	$2,200	$100	$4,400
5	Engineering / Design	$942,800	6.7%	3.9%	$99,600	$99,600	$373,000	$370,600
6	Materials (Eversource purchased)	$4,910,700	35.2%	20.1%	$12,900	$12,900	$4,003,200	$881,700
7	Construction (incl matl's by contractors)	$5,144,000	36.8%	21.1%	$33,200	$33,200	$3,774,000	$1,303,600
8	Testing / Commissioning	$672,900	4.8%	2.8%	$87,800	$87,800	$249,500	$247,800
9	PMT Project Mgmt Team	$479,200	3.4%	2.0%	$23,700	$24,200	$207,200	$224,100
10	Removals	$173,300	1.2%	0.7%	$23,400	$23,400	$89,900	$36,600
11	Other	$18,600	0.1%	0.1%			$9,300	$9,300
12	Risks	$1,600,000	11.5%	6.6%	$35,000	$35,000	$1,145,000	$385,000
	Project Directs Total w/Risks	**$13,968,300**	100.0%	57.3%	$324,400	$324,900	$9,851,400	$3,467,600
13	Indirects/Overhead	$8,584,600		35.2%	$225,300	$226,200	$6,308,100	$1,825,000
14	AFUDC	$1,136,400		4.7%	$8,000	$8,100	$917,400	$202,900
	Project Total - Baseline Budget	**$23,689,300**		97.1%	$557,700	$559,200	$17,076,900	$5,495,500
15	Contingency	$698,200		2.9%	$16,900	$17,000	$494,000	$170,300
	Project Total - Funding Approval Level	**$24,387,500**		100.0%	$574,600	$576,200	$17,570,900	$5,665,800
16	Reimbursables/Customer Contribution							
	Project Total (less reimbursables)	**$24,387,500**			$574,600	$576,200	$17,570,900	$5,665,800
	Cost per key qty (if appl)						$1,597	
	Amount of Escalation included above	$209,400			$14,700	$14,700	$97,400	$82,600
6	Total materials - Eversource	$4,910,700			$12,900	$12,900	$4,003,200	$881,700
	Total materials - Contractor	$419,001					$298,541	$120,460
	Total materials	$5,329,701			$12,900	$12,900	$4,301,741	$1,002,160

NOTE: Risk / Contingency is 10.4% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range Range (-) Range (+)

Project Scope:

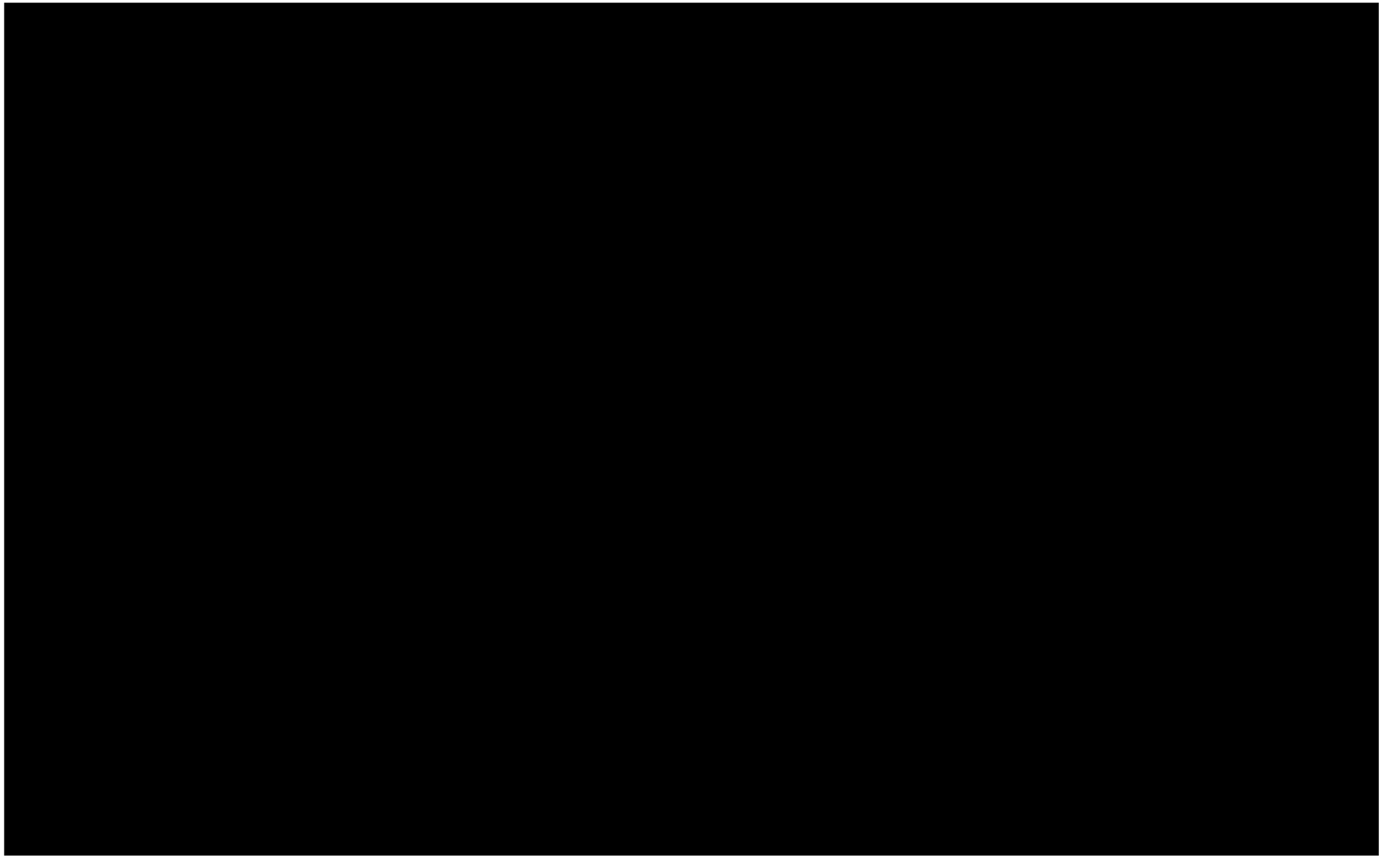






[redacted]









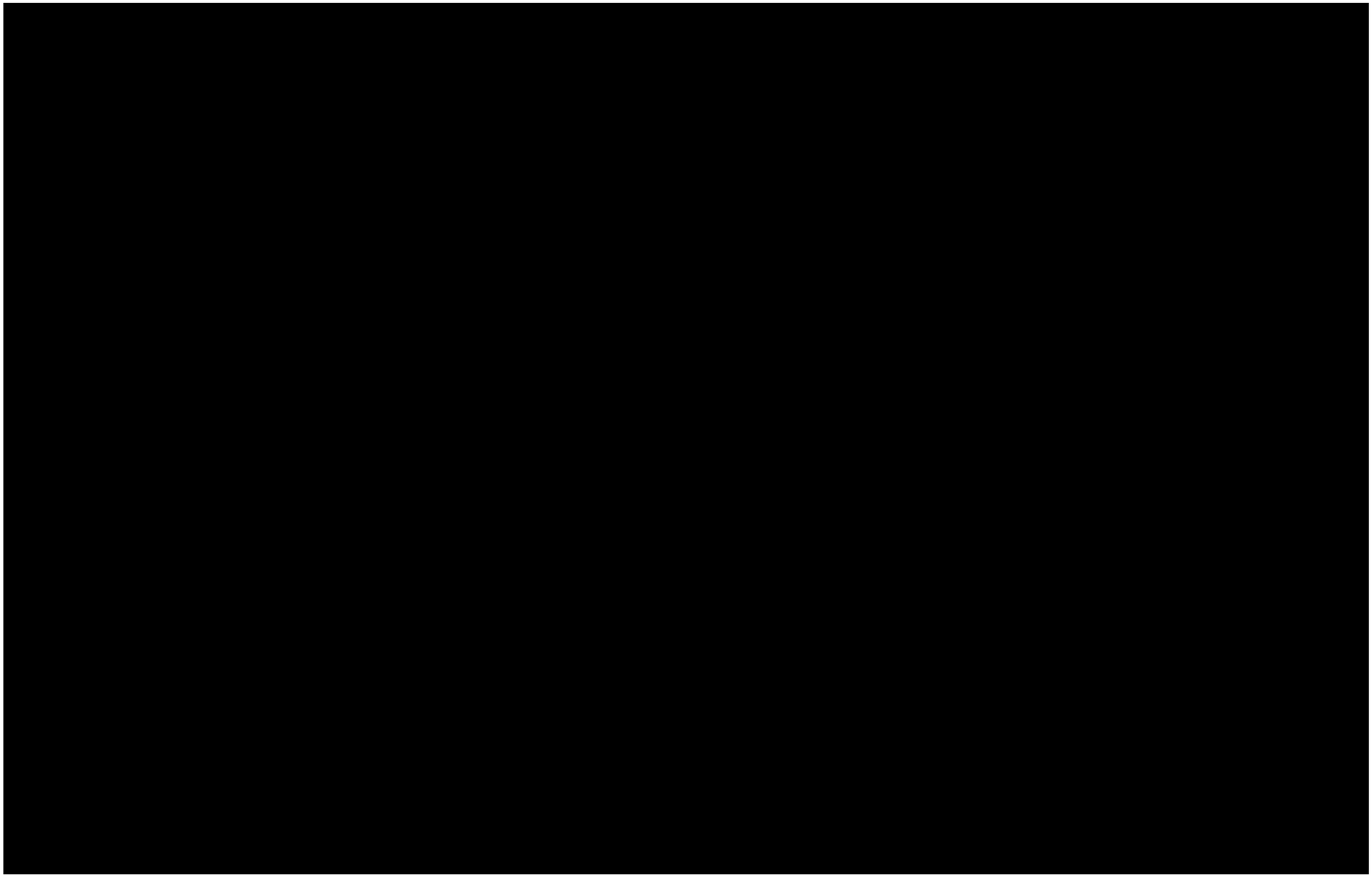




[redacted]



[redacted]







[redacted]











[redacted]









[redacted]



[redacted]









REDACTED

EVERSOURCE

Constructability Review Form: **Substation**

Project Title: [redacted] **2TXf and Switchgear Project**	☐	Prior Constructability Review Performed?
	☐	Program Related Site Specific Review?
Project Numbers(s): CS00284 / 404953	**Project Constructability Phase:** ☐ Conceptual Engineering Design ☒ Preliminary Engineering Design ☐ Detailed Engineering Design	
Date(s) of Constructability Review: **12/08/2021** 12/08/2021		

Project Scope Statement:

Distribution:

[redacted]

Type of equipment	Manufacturer Information	Location	Quantity	Scope of work
Circuit switcher	Switzer & Conrad (S&C), series 2000	Between the new 11S-2X and 11S-2X1-4	1 set (all three phase)	New installation
Circuit switcher	Switzer & Conrad (S&C), series 2000	Between 11S-3X and 11S-3X1-4 and	1 set (all three phase)	New installation
115/23kV, 62.5 MVA transformer	TBD*	11S-2X	1	New installation
11S-2X Switchgear	PowerCon/AZZ	Switchgear with relays	1	New Installation

Transmission:

A[redacted]

REDACTED

EVERSOURCE

Constructability Review Form: **Substation**

Type of equipment	Manufacturer Information	Location	Quantity	Scope of work
Wave Trap, 2000A	GE, LTO 0.265-3000-40-2	[redacted]		New installation
Wave Trap, 2000A	GE, LTO 0.265-3000-40-2			New installation
Wave Trap	N/A			Retired/Decommissioned
Wave Trap	N/A			Retired/Decommissioned
115kV series, circuit breaker	ABB, 3000A, 40			New installation
Manually Operated Disconnect Switches	Southern States, 2000A, EV-2-115-2000			Retired/Decommissioned
CCVTs	Trench Electric, TEMF-123			Tap/connection relocation. CCVTs remained in the same location/position.
CCVTs	Trench Electric, TEMF-123			Tap/connection relocation. CCVTs remained in the same location/position.
Protection Relays and Equipment	Various			See next section for detailed Protection & Control Scope of Work

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

Department Review/Walkdown Attendees*:

Required [X]	Attended [X]	Department	Name	Required [X]	Attended [X]	Department	Name
☒	☒	Project Management	[redacted]	☒	☒	S/S Engineering	[redacted]
☐	☐	Asset Management		☐	☐	P&C Engineering	
☐	☐	Constr. Management		☒	☒	Civil Engineering	
☐	☐	S/S Technical / LCE		☐	☐	Telecom	
☒	☒	S/S Operations**		☐	☐	Environmental	
☐	☐	Field Engineering		☐	☐	Real Estate	
☐	☐	Line Engineering		☐	☐	T&D ROW	
☐	☐	Vegetation Management		☐	☐	Survey Engineering	
☒	☒	Siting		☐	☐	Cost Estimating	
☐	☐	Safety		☐	☐	Outreach (SCS)	
☐	☐	SCADA		☐	☐	Material Procurement	

*** Sign-off in the table above for the Detailed Engineering Design Constructability Review indicates that all Action Items/Concerns from prior Constructability Reviews have been mitigated/resolved as documented in this form. Not every department is required to attend walkdowns for every project but should be consulted for project impact considerations**

** Internal Eversource Substation Operations must be included in review even if external construction resources are planned

Project Manager certifies that this review was performed to completeness, that all applicable departments were informed of the project and have had opportunity to provide input to this review:

[redacted] _12/08/2021_____Name /

Signature *Date*

Documents available for use on Constructability Review					
[X]	Deliverable	[X]	Deliverable	[X]	Deliverable
☒	Initial Scope -Birdseye site plan -General Arrangement	☒	Preliminary Drawings -Civil Site Drawing -Electrical Drawing -Section Drawings	☐	Prints in hand for marking up -Panel Front/Read View -Control Enclosure Layout -Floor / Wall Plans
☐	Detailed Scope Document	☐	Previous Notes	☐	Identify Required Contractors
☐	Proposed Schedule	☐	Major Material List	☐	Replace / Reuse of equipment

EVERSOURCE
Constructability Review Form: **Substation**

☒	Construction Sequence/Timeline	☐	Major Equipment Items	☐	Pre-Walkdown Comments / Observations

Action Items and Resolutions:

Item No.	Const. Review Action Item/Concern	Design Resolution/Mitigation:
1	Update drawing 33003 to show strain bus between 1238 and 1813.	
2	Structures 1238 and 1813 to be evaluated	
3		
4		
5		

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
A	**General**		
1	**Any safety hazards specific to the facility? i.e. Low Bus, Deterioration, etc.**	☒	
2	**Prior known Site Specific Conditions - Common or Obvious station Issues**	☒	
3	**Scope Adequately Developed** Consider Physical Installation, P&C Scope, Civil Scope, Engineering studies, Design standard adherence	☒	
4	**Materials Identified/Ordered** Long Lead Equipment? Specialty material considerations? Review BOM lead times and project need dates Bids for Specialty Major Materials - Identify Specialty Equipment & Materials potentials - temporary/replacement Any Materials needed to facilitate construction access?	☐	Long lead material acquisition issues for switchgear, transformer, disconnect, cable trench
5	**Any impacts that would drive T-Line Eng Scope?**	☒	
6	**Any other known projects that could overlap or impact outage work?**	☒	
B	**Construction**		

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
1	**Site Plan / Access:** -Confirm maintenance access for proposed new or replaced equipment -Review station expansion areas (if needed) for structures, old foundations, etc. -Verify clear footprint for yard equipment / Property Plan -General access to site, can areas outside substation be utilized? -Substation Entry Plan (driveway and drive path modifications) -Site Development Plan (grading and drainage) with Cut/Fill -Existing Rock Conditions? Potential Impacts (rock quantity)? -Any Sanitary Civil Requirements? (Septic tanks, etc) -Assess condition of existing yard equipment foundations and viability for reuse (if proposed)	☒	
2	**Any Substation Access and site/yard access Limitations?** -Review turning radius for delivery trucks (if critical) -Identify Office Trailer / Container / Dumpster Space + source of utilities for construction trailer(s) if needed -Weather impacts to Site (Snow Placement) -Identify Material Laydown and Security -Construction permit for trailers outside substation fence?	☐	Remove hill and install retaining wall
3	**Outage Planning & Construction Sequence** -Working Clearances - Review electrical clearances for equipment during construction – Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -As-Built drawing review (contacts and contributions) -Outage boundaries -Phased approach needs for additional mobilizations -Detail Design package align with schedule and outage sequence? -Lead Commissioning Engineer (LCE), Substation Operations, and Outage Planner - Review or give input to planned construction sequence to insure it is reasonable and scheduled outages associated with the sequence -Review or give input to planned construction sequence to insure it is reasonable -Verify outage sequence supports the planned construction sequence	☐	Install strain bus between terminal structures to allow transmission bus outages for terminal rebuild
4	**Need for mobile generator and where connected (if needed)**	☒	

REDACTED

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
5	**Need for mobile battery and where connected (if needed)**	☐	
6	**Energization Plan** What outages are required, Detailed look at contributions to equipment, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized Mobile transformer, Additional outage requirements, Working clearance, Railroad Catenaries, Distribution overhead/underground/networks, Fiber outage, SCADA outage, Relay permissions	☐	Work must be planned for low load periods to allow complete station off load
7	**Identify Required Oversite Needed - Estimated level of CR and LCE support needed**	☐	
8	**OT work required or Notable Permit Conditions (special hours)?**	☐	OT required to meet in service dates
9	**Seasonal or weather conditions impacts?**	☐	Yes
10	**Identify Required Depts for Construction? (who is constructor ?)**	☐	Internal is performing work
11	**Specialty Contractors Required?**	☐	Civil contractor
12	**Unique Equipment Considerations, Gas insulated substation, Gas insulated line, Gas insulated bus, Pass Breaker, Statcom, Sync Condenser**	☒	
13	**Underground Obstructions** -Drawing review concerns? -Is preconstruction or test excavation needed? -Is reuse of underground control cables / Conduits /replace Non-Shielded Cable feasible (if applicable) -Are spare conduits available? Are they useable? -Review if any areas will need to be plated for increased load bearing for equipment access (i.e. large Xfmr, etc.)	☐	Possible rock included as a risk
14	**Any other items missing in scope or could be underfunded?**	☒	
15	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	☒	
C	**Environmental**		
1	Soil Pre-Characterization or Grab Sampling Completed/Planned	☒	
2	Has Desktop investigation and EAD Review form been completed.	☒	
3	Dewatering requirements	☒	
4	Risk or presence of PCB's/Asbestos/Lead/SF6	☒	

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
5	Permit requirements (Wetlands, Rare Species, etc)	☒	
6	Stormwater Considerations	☐	Grading plan to address issues
7	Transformer Spill Containment Recommended?	☒	
8	Expanding Footprint / New Buildings or future Expansion Plans? (Enviro Impact)	☒	
D	**Siting, S&CS, and T&D Real Estate**		
1	Expanding Footprint / New Buildings or future Expansion Plans?	☒	
2	Installation is within Eversource Rights? - Rights and Restrictions Review	☒	
3	Proposed Equipment on same property? - Any Encroachments	☒	
4	Identify existing lighting and determine if additional lighting is needed?	☐	Increased station lighting
5	Review for roadway, gate access, trailers, equip height, noise, weekend/night work, or any potential public disturbance related to work	☒	
6	Visual mitigation screening considerations (feasibility or location)	☒	
7	Neighbor/Abutter impacts (noise, visual, sensitive abutters)	☒	
E	**Engineering**		
1	**Scope of Work** Identify if high level scope sufficiently detailed? Any remote station impacts? Does title match the project deliverable/intent?	☐	Scope ok but there are remote station impacts to Frost bridge and Rocky River included in engineering
2	**Ratings & Dimensions** for Major Equipment. Any concerns upon field review? Equipment Rating One Line (and/or equipment thermal ratings tables) - Review for any errors in field	☒	
3	**Materials** Any concerns with BOM/Major Materials Review? Where will new vs removed equipment go? Review for OH and UG Items	☒	
4	**Control House** - Review: Unmapped equipment interferences, Control/Battery Enclosure Layout, HVAC System (if equipment added), space for new or modified equipment, AC / DC station service and loading, Panel Space, Expansion, one-line and/or riser type panelboard drawings, other..	☒	

EVERSOURCE
Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
5	Identification of Unique Requirements, i.e. (access bridges, station service, etc.)	☒	
6	**BPS Separation Requirements** Is this BPS Substation? Y/N (part of PAF) Changes to pre-existing BPS standards?	☒	
7	IEC 61850 Substation Automation and Communication Requirements - Any Impacts/Retrofit needed?	☒	
8	Any Upgrades to ES Standards - Is retrofit needed to bring up to ES standards? Can that be done?	☒	
9	**Wall, Fence, Gate, and Foundation Considerations** -Any permanent / temporary alterations or relocations required? -Take measurements for Foundation quantities, dimensions and concrete volumes -CIP Review/Ballistic needs. Any Physical Security Requirement Consideration? -Any impacts to construction plan?	☒	
10	**Below Grade / Enclosure Raceway** - If possible, evaluate existing raceway and review spacing requirements. Review for any subsurface investigation needs or potential below grade obstructions. GPR/test pits needed? Geotechnical Investigation - is soil boring or resistivity investigation needed?	☐	BG concerns addressed by engineering vendor
11	**Grounding Plan (Ground Grid)** - Will footprint impact layout or other equipment? Identify locations to improve grounding. Impacts to foundations and ground grid plans. Observations on wetlands or ability to perform tests	☐	New grounding grid being installed with new equipment
12	Any Lighting Plan & Fixture Schedule Considerations?	☒	
13	Any Steel Structural Plan Considerations?	☒	
14	Sound Study Needed? Pre-Project Sound Measurements Needed? Sound Walls?	☐	Included in engineering
15	Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project	☒	
16	Nomenclature / Switching One-Line Diagram -Any obvious deviations from diagrams provided?	☒	
17	Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions	☒	
F	**Protection & Controls**		

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Constructability Review Form: **Substation**

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
1	Panel Graphic additions and/or Modifications	☒	
2	Space on existing panels for new equipment? (front & rear of panel fronts)	☐	Confirmed
3	Panel fronts conform to drawings	☐	Confirmed
4	Access to bring new panels into control enclosure	☐	Confirmed – New panels to be procured
5	Nameplate list and location of nameplates	☐	Confirmed – Nameplate DR will be issued
6	Verifies that relays and meters that will be an interconnected project work are as shown on the drawings.	☐	Confirmed
7	Verify auxiliary panels have breaker available or space for new breakers (if needed)	☐	Confirmed
G	**Telecom Engineering**		
1	Review telecom equipment in existing control enclosure	☐	Completed
2	Review path to get telecom circuits into the station and determine whether new underground duct bank is needed.	☐	Confirmed
3	Review current or proposed Telecom equipment power connections and validate with P&C any need for system 1 and system 2 separation.	☐	Confirmed – The new relays will be on direct fiber
4	Review current Telecom fiber diversity and validate with P&C any fiber diversity requirements.	☐	Confirmed
5	Confirm whether correct interface equipment is available (i.e.) for fiber termination or multiplexor termination	☐	Confirmed
6	Confirm whether existing communications cabinets are enough to support additional telecommunications equipment installed	☐	Confirmed – There is enough space to install new SEL ICON MUX
7	Review space for any required additional communications cabinets which may be required to support additional telecommunications equipment installed	☒	
8	Review third party Telecommunications at substation and confirm whether additional capacity or Ground Potential Rise protection is required	☒	

Photos

(Ex. Equipment control cabinet, Breakers, MODs, CCVTs, PTs, Transformers)

REDACTED

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Constructability Review Form: **Substation**





[redacted]

[redacted]

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Operations Project Authorization Form

Approved on March 29, 2022 EPAC

Link to Meeting Minutes

Project Title: [redacted] **Transformer Replacements**	**Project Number: CS00516**
Date Prepared: 03/24/2022	**Company: Eversource CT**
Organization: System Planning	**Class(es) of Plant: D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformers**
Managing Organization: Engineering	**Schedule ID#: 80121158**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: 12/31/2022 (3X), 5/31/2023 (2X)	**Emergency Related Request? Yes**
Eng./Constr. Resources Budgeted? Yes	**Facility Type (check all that apply):** ☐ **PTF** ☐ **non-PTF** ☒ **Distribution** ☐ **N/A (General Plant)**
Total Capital Request: $2,954K	**Authorization Type: Partial Funding**

[1] Executive Summary

This project is seeking partial funding of $2,954K to support detailed engineering design documents and receipt of materials authorized via material exemption for the [redacted] Initial funding of $250K was approved in PowerPlan on September 15, 2021. Due to the delay in the delivery of the [redacted] originally planned for Spring 2022 was delayed until Fall 2022. To date, the initial funding has been used to develop detailed civil and P&C packages, preliminary electrical packages, conceptual level scopes for project alternatives and associated cost estimates for presentation to the Solution Design Committee (SDC), and some material procurement per Material Exemption. The alternatives and complete preferred project scope was presented to and approved by the SDC on December 8, 2021.

[redacted]

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[redacted]

The partial funding of $2,954K will be used for the following:

- IFC packages for 3X transfromer replacement
- Detailed packages for 2X transformer and relay replacement
- Receipt of material for 3X transformer / realy repalcement approved via material exemption.
    - Transformer is due to arrive early May
    - Switch combo is due in Mayl
- Environmental efforts, including soil boring to characterize soil on site (there are know oil leaks with potential polychlorinated biphenyls (PCBs))
- Estimates and efforts for EPAC full funding approval

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[2] PROJECT COSTS SUMMARY

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to go	2023	2024	Total
1. ROW / Easements / Land purchases		$5	$2			$7
2. Environmental Approvals / Permits		$5	$2			$7
3. Outreach		$10	$5			$15
4. Siting Approvals / Permits		$5	$4			$9
5. Engineering / Design		$146	$109			$255
6. Materials (Eversource purchased)		$24	$1,710			$1,734
7. Construction (incl matl's by contractors)			$27			$27
8. Testing / Commissioning			$			$
9. PMT Project Mgmt. Team		$20	$22			$42
10. Removals			$0			$0
11. Other						
12. Risks						
Project Directs Total w/Risks	**$250**	**$215**	**$1,881**			**$,3096**
13. Indirects/Overhead		$166	$667			$833
14. AFUDC		$5	$20			$25
Project Total - Baseline Budget	**$250**	**$386**	**$2,568**			**$2,954**
15. Contingency						
Project Total - Funding Approval Level	**$250**	**$386**	**$2,568**			**$2,954**
16. Reimbursables/Customer Contribution						
Project Total (less reimbursables)	**$250**	**$386**	**$2,568**			**$2,954**
Total O&M						
TOTAL REQUEST	**$250**	**$386**	**$2,568**			**$2,954**

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Detail other costs, project risk items and their allocations:

Risk	Allocation
1. N/A	$
2.	$
3.	$
4.	$
5.	$
Total	$0

Explain unique payment provisions, if applicable:

Two material exemption forms have been approved for the project. The first authorized $90,000 for the switch combo and neutral reactor. The second was approved for $80,000 for physical material, structural steel, conduits, anchor bolts, control cables, grounding wire and protective relaying. The transformer was purchased via Eversource blanket purchase order with Hitachi for large transformers.

Identify and detail any unique O&M impacts resulting from this project: None

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[3] TECHNICAL JUSTIFICATION

Project Need, Objective and Justification

[redacted]

Overload Ratings:

[redacted]

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Existing Station Capabilities:

Total Station	Station Firm	Load
[redacted]		

2022-2026 Projected Load:

2022	2023	2024	2025	2026
[redacted]				

Project Objectives

[redacted]

Project Scope

The scope of this project is for the engineering design and construction to complete the [redacted]

[redacted]

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[redacted]

- Sound study to identify any additional modifications required. This study has been completed and sound levels with new transformer are lower than existing units.

Substation Equipment

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

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Background

[redacted]

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[4] ALTERNATIVES CONSIDERED

This project was presented to and the preferred alternative approved by the SDC on December 8, 2021.

Alternative 1 - Replace the [redacted] (Preferred)

[redacted]

Cost Estimate – $12.4M – Conceptual Grade -25% / +50% ($150K risk allocation to remove contaminated soil)

Advantages – [redacted]

Disadvantages – None

Alternative 2 - Further Testing, Load Transfer, and Replace Peaceable 12N Transformers

[redacted]

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[redacted]

Cost Estimate – $28.5M (Repair 22N-3X - $3.83M + Peaceable 12N - $22-24M + load transfer $600K)

Advantages – None

Disadvantages – [redacted] This option is also the higher cost.

Alternative 3 - NWA (Non-wires Alternative)

Does not qualify due to poor health indexes for both transformers.

Alternatives 4 - Do Nothing

Not recommended to do nothing with the [redacted]

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[5] PROJECT SCHEDULE

Milestone	Scheduled Completion Date
Project Need by Date	5/31/23
Date of IFR Approval	9/15/21
Complete Conceptual design of Alternative(s)	9/24/21
Initiator complete SSF form	1/3/22
SDC Presentation Date(s)	1/26/22
Conversion of Tx development costs, 183 to 107 (applicable to projects that require SSF approval but do not require ISO alternative selection)	N/A
Partial Funding Approval at EPAC	3/29/22
Preliminary Design Complete	4/29/22
Preliminary Design Constructability review complete	5/13/22
Full funding estimate complete	5/20/22
Full funding estimate review	5/27/22
Initiator complete PAF form	6/3/22
EPAC Funding Dates (Full)	6/22/22
Detail Design Complete	7/15/22
Final Constructability Review Complete	7/29/22
Targeted Milestone Dates:	
· Siting Approval (if applicable)	N/A
· Env. Approvals (if applicable)	N/A
· Outage & Energization Plan Issued	2/24/22
· All Material on Site	7/30/22 (3X Trans) / 12/31/22 (2X)
· Outage Permit(s) Approved	4/15/22
IFC Design Complete	7/1/22 (3X Trans) / 8/12/22 (2X)
Start of Construction	9/6/22 (3X Trans) / 1/3/23 (2X)
Project ISD	12/31/22 (3X Trans) / 5/31/23 (2X)
Relay Settings Issued (*Required for Full Funding requests)	3/31/22
ISO Related Milestones (for applicable projects)	
· ISO Preferred Alternative Selected	N/A
· Conversion of Tx development costs, 183 to 107 · (following ISO preferred alternative selection)	N/A
· PAC Presentation	N/A
· TCA Submittal	N/A

See Attachment B for the P6 schedule. NOTE: P6 schedule is being updated to reflect the new transformer and relay install dates.

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[6] REGULATORY APPROVALS

Regulatory approvals will not be required due to the replacement of the Ridgefield transformers and protective relays.

[7] RISK AND RISK MITIGATION PLANS

Project risks with their associated mitigation strategies include the following: During transformer replacement, a mobile transformer will be installed to carry station load while the transformer replacements are being performed.

Contingency:

Contingency is not being requested for this partial funding request.

Risk Mitigation:

Risk	Mitigation
1. TBD	
2.	
3.	
4.	
5.	

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[8] REFERENCES

References
1.
2.
3.
4.
5.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. P6 Schedule	*YES*
C. Constructability Review	*N/A*
D. System and Station One-Lines	*YES*

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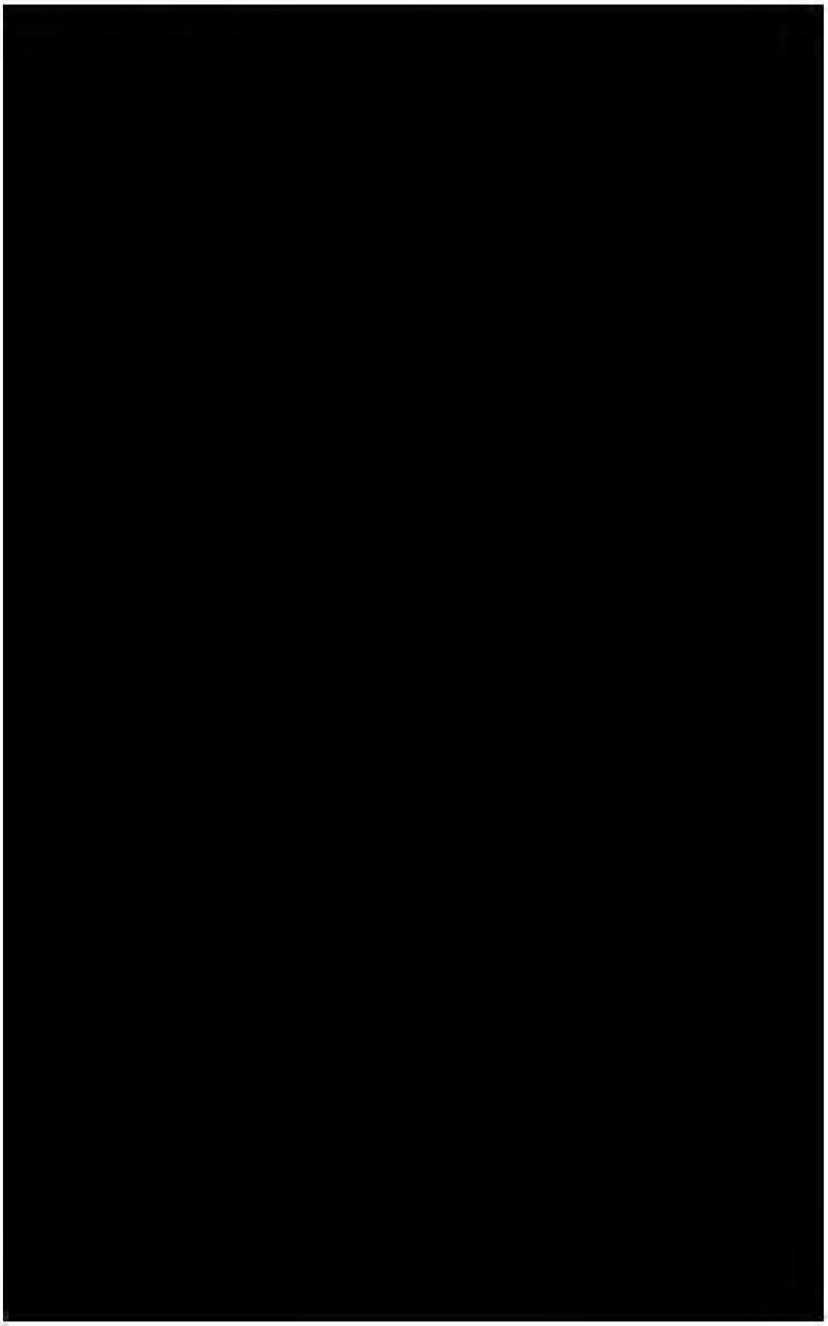
Attachment D – Station One-Line



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Project Authorization Form

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] **Transformer Replacements**		**Project Number: CS00516**	
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):		Enter Date	
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?		Yes	
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?		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?		Yes	
Is there an impact to the existing ground grid?		Yes	
Is a Transient Over Voltage (TOV) analysis required?		No	

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Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name:	**Project Number:**
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	
Is a Siting filing required? *(If yes, list in regulatory approvals section)*	No
PERMITTING	
Is there any permitting required? *(If yes, list in regulatory approvals section)*	No
PROJECT SERVICES (OUTREACH) and ROW WORK COORDINATION	
What is the level of outreach expected?	Medium
Is any part of this project in an Environmental Justice Community?	No
Has ROW Coordination reviewed this project?	Yes
Is this project coordinating with other existing scheduled work?	No
INITIATOR	
Has a field constructability review been completed?	No
INVESTMENT RECOVERY	
Does the project require development of an Investment Recovery plan?	No
COST ESTIMATING	
What team/firm prepared the cost estimate?	Other (specify below)
Name of the person who prepared the estimate:	[redacted]
Was the estimate reviewed by Eversource Estimating?	No

ESTIMATE SUMMARY

Project Title [redacted] - Reol 3X Relays PT's and SS Transformers
Project Manager

Project Number:
WO & Task #:
Estimate revision #: 01
Estimate Type - Station work

Estimate #:
Date of Estimate 09/16/2021
Estimate done by [redacted]
In Service date (ISD) 05/31/2022

Template Revision # 01.640

(An estimate Summary for Pre-Cert / escalation separate)

Project Number:
WO & Task #:

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	TOTAL w/ escal broken out
1	ROW / Easements / Land purchases	$7 000	0.3%	0.2%	$5 000		$2 000									ROW / Easements / Land purchas $ 7,000
2	Environmental Approvals / Permits	$7,100	0.3%	0.2%	$5,000		$2,100									Environmental Approvals / Permi $ 7,000
3	Outreach	$15,200	0.7%	0.5%	$10,000		$5,200									Outreach $ 15,000
4	Siting Approvals / Permits	$9,100	0.4%	0.3%	$5,000		$4,100									Siting Approvals / Permits $ 9,000
5	Engineering / Design	$109,300	5.3%	3.8%	$100		$109,200									Engineering / Design $ 106,200
6	Materials (Eversource purchased)	$1 734 900	83.7%	60.9%	$24 000		$1 710 900									Materials / Eversource purchased $ 1,734,600
7	Construction (incl mat'ls by contractors)	$148,500	7.2%	5.2%			$148,500									Construction (incl mat'l's by cont $ 144,100
8	Testing / Commissioning															Testing / Commissioning $ -
9	PMT Project Mgmt Team	$41.700	2.0%	1.5%	$20.000		$21.700									PMT Project Mgmt Team $ 41.100
10	Removals	$200	0.0%	0.0%			$200									Removals $ -
11	Other															Other $ -
12	Risks															Risks $ -
125																
	Project Directs Total w/Risks	**$2,073,000**	100.0%	72.8%	**$69,100**		**$2,003,900**									**$2,064,000**
13	Indirects/Overhead	$752 200		26.4%			$752 200									Indirects/Overhead $ 730 400
14	AFUDC	$21.800		0.8%			$21.800									AFUDC $ 21.900
125																$ -
	Project Total - Baseline Budget	**$2,847,000**		100.0%	**$69,100**		**$2,777,900**									**$2,816,300**
15	Contingency															$ -
	Project Total - Funding Approval Level	**$2,847,000**		100.0%	**$69,100**		**$2,777,900**									Contineancy $ - **$2,816,300**
16	Reimbursables/Customer Contribution															$ -
~																$ -
	Project Total (less reimbursables)	**$2,847,000**			**$69,100**		**$2,777,900**									$ - **$2,816,300**
	Cost per key qty (if appl)	- $'s / EA														
	Amount of Escalation included above	$30 900					$30 900									$ 30 900
6	Total materials - Eversource	$1.734.900			$24.000		$1.710.900									
	Total materials - Contractor															
	Total materials	$1 734 900			$24 000		$1 710 900									Escal total **$2.847.200**
	NOTE: Risk / Contingency is 0% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)															Check total $200

Estimate Range

-25%	25%
$2,135,000	**$3,559,000**

COMMENTS

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

[redacted]

Assumptions/Clarifications:
Indirect rates based on: 11 - CT Station work

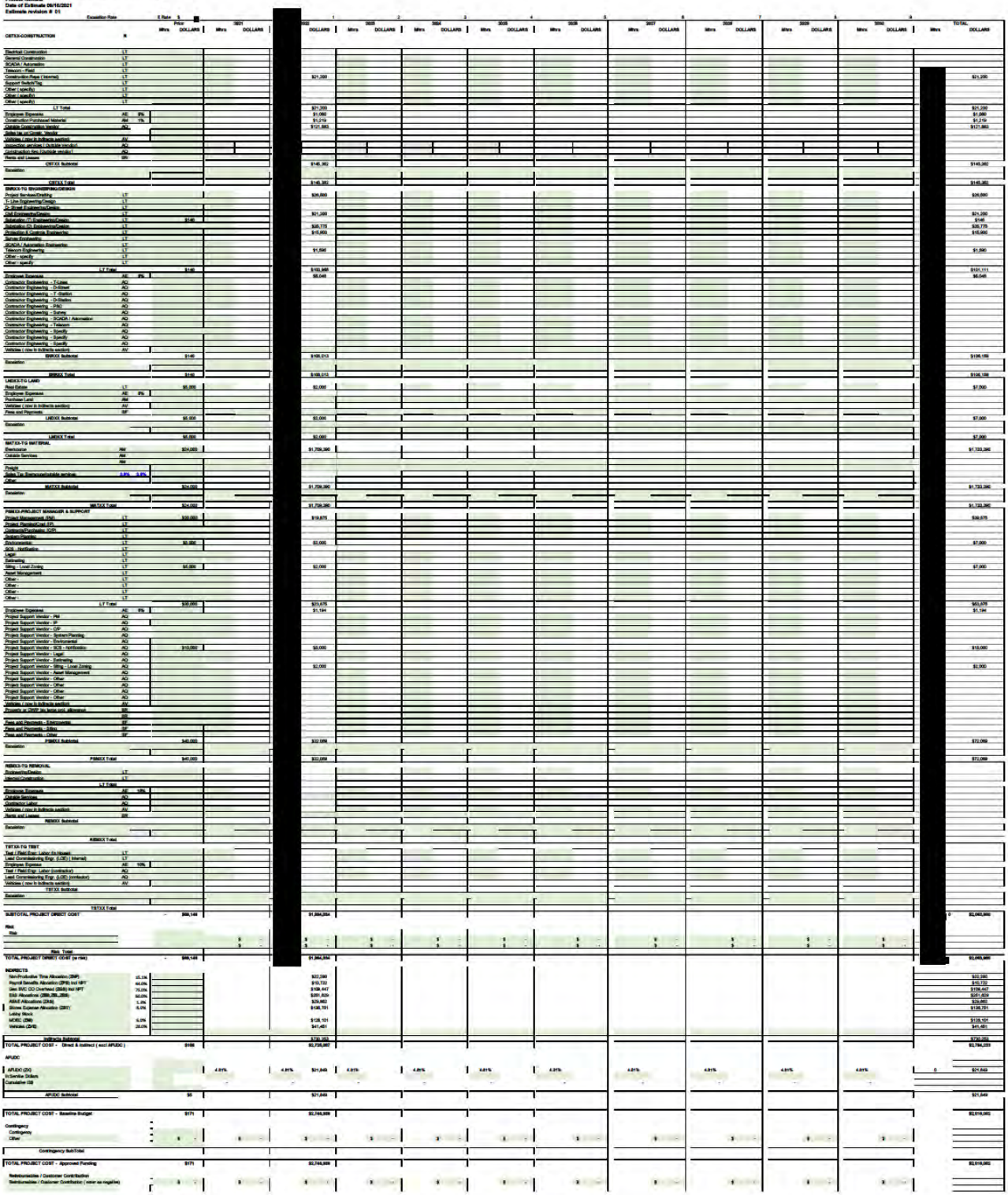
Engineering and Design completede with in-house resources.
Construction and Test completed with contractors.

RISKS

Potential UG Obstructions	$ -
Severe Weather Delays OT	$ -
Design development	$ 10 000

UNESCALATED LINE ITEM DOLLARS

Project Number
Date of Estimate 09/16/2021
Estimate revision # 01



Distribution WMA Substation Capital Projects | **FULL SCHEDULE** | PRINT 17-Mar-22 11:19 **DATA DATE 14-Mar-22**

Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
80121158 [redacted] 3X Transformer; Circ Switcher Replacement (CS00516)														
80121158.01 INITIALIZATION AND SCOPE DEVELOPEMENT														
[redacted]	80121158			START	Completed	PPS	SCHEDULE START MILESTONE		03-Aug-21 A		0			A3550, PI1200
80121158.01.01 Initial Funding														
[redacted]	80121158			PI1200	Completed	[redacted]	Project Initiator Develop Intitial Funding Request		10-Aug-21 A	23-Aug-21 A	0	[redacted]	START	PI1000
	80121158			PI1000	Completed		Submit Initial Funding Request			24-Aug-21 A	0		PI1200	PI1300
	80121158			PI1400	Completed		Assign Project Manager Request Resources for Project Team		18-Aug-21 A	31-Aug-21 A	0		PI1610	CE1400, CE1000, CE1100, PI1500, PI1600, CE1600
	80121158		EPAC-I	PI1300	Completed		Initial Funding Request Approved @ EPAC		30-Aug-21 A	13-Sep-21 A	0		PI1000	TRANS-1170, PI1610
	80121158			PI1500	Completed		Assign Scheduler		20-Sep-21 A	24-Sep-21 A	0		PI1400	CE1710, CE1600
	80121158			PI1600	Completed		Assign Cost Analyst		20-Sep-21 A	27-Sep-21 A	0		PI1400	CE1600, CE1710
	80121158		PPA-IF	PI1610	Completed		Initial Funding PowerPlan Approval Create WO#		20-Sep-21 A	01-Oct-21 A	0		PI1300	PI1400
80121158.01.02 SDC Approval														
[redacted]	80121158		ES-CONCPT	CE1100	Completed	[redacted]	ES Develop Electrical Substation Conceptual Engineering Design in Accordance with Deliverables Checklist		20-Sep-21 A	24-Sep-21 A	0	[redacted]	PI1400	CE1710, CE1700, CIRCSW-3380, CIRCSW-560, DSSE-260, REACT-520
	80121158		ES-CONCPT	CE1000	Completed		ES Engineering Develop Civil Substation Conceptual Engineering Design in Accordance with Deliverables Checklist		20-Sep-21 A	24-Sep-21 A	0		PI1400	CE1710, CE1700, CIRCSW-560, DSSE-260, A3390
	80121158		ES-CONCPT	CE1400	Completed		ES Engineering Develop P&C Conceptual Engineering Design in Accordance with Deliverables Checklist		20-Sep-21 A	24-Sep-21 A	0		PI1400	CE1710, CE1700, CIRCSW-560, DSSE-260
	80121158			CE1600	Completed		Conduct Project Team Kickoff Meeting Verify SDC Need		30-Sep-21 A	30-Sep-21 A	0		PI1600, PI1400, PI1500	CE1710
	80121158			CE1710	Completed		Conduct Conceptual Constructability Walk Down		04-Oct-21 A	04-Oct-21 A	0		CE1400, CE1100, CE1000, PI1500, PI1600, CE1600	CGE1000, CE1700
	80121158			CE1700	Completed		Review Conceptual Siting, Real Estate,SCS, & Permitting (If Required)		25-Oct-21 A	25-Oct-21 A	0		CE1400, CE1100, CE1000, CE1710	CGE1000
	80121158			CGE1000	Completed		Develop Conceptual Grade Estimate (-25%+50%)		25-Oct-21 A	18-Nov-21 A	0		CE1710, CE1700	SSF1000
	80121158			SSF1000	Completed		Develop Soultions Selection Form (SSF)		08-Oct-21 A	29-Nov-21 A	0		CGE1000	SDC1000
	80121158		SDC	SDC1000	Completed		Solution Design Committee(SDC) Approval		03-Jan-22 A	26-Jan-22 A	0		SSF1000	PE1600
80121158.01.09 Project Initiation														
80121158.01.09.3 EPAC Full Funding														
[redacted]	80121158			PF1020	Completed	[redacted]	File Material Exemption Mod to order prior to Partial Funding		11-Oct-21 A	18-Oct-21 A	0	[redacted]		CIRCSW-540, DSSE-500, RELAYP-510
	80121158			DE1900	Completed		Conduct FINAL Detail Constructability Walk Down		23-Nov-21 A	23-Nov-21 A	0		DSSE-400, DSSE-260, DSSE-200	DE2000
	80121158			DE1800	Completed		Review Detail Siting & Permitting (If Required)		10-Dec-21 A	10-Dec-21 A	0		DSSE-200, PF1010	DE1700
	80121158			DE1700	Completed		Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)		14-Dec-21 A	17-Dec-21 A	0		DE1800	DE2000
	80121158		Construct	DE2000	Completed		Project Constructability Review Complete		20-Dec-21 A	23-Dec-21 A	0		DE1700, DE1900	DE1600
	80121158		EST-FULL	DE1600	Completed		Create Planning Grade Estimate (+/-25% Full Funding)		27-Jan-22 A	04-Feb-22 A	0		DE2000	PAFF2000
	80121158			PAFF2000	In Progress		Submit Full Funding PAF for Internal Review	311	14-Mar-22 A	18-Mar-22	5		DE1600	PAFF2100
	80121158		PAF Submit	PAFF2100	Not Started		Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC for Review	311	21-Mar-22	29-Mar-22	7		PAFF2000	PAFF2200
	80121158			PAFF2200	Not Started		Incorporate EPAC Full Funding PAF Review Comments	311	30-Mar-22	05-Apr-22	5		PAFF2100	FF1000
	80121158		EPAC-F	FF1000	Not Started		EPAC Full Funding Approval	311	06-Apr-22	06-Apr-22	1		PAFF2200	FF1010, A3430, A3510

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Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
Vargas	80121158		PPA-FF	FF1010	Not Started	[redacted]	Full Funding PowerPlan Approval	311	07-Apr-22	20-Apr-22	10	Eversource Project Approval Committee	FF1000	
80121158.01.12 T-Minus Milestones														
80121158.01.12.1 T-Minus Milestones "A" Group														
[redacted]	80121158	T-30.01	ENG-SCOPE	AT3001	Completed	[redacted]	A-T-30.01 - Eng. Project Scoping Document Issued (Scope Lockdown)			20-Oct-21 A	0		PE1720	AT00
	80121158	T-18.11	ENG-DTL	AT1811	Completed		Electrical Detail Design/Engineering Completed			08-Dec-21 A	0		DSSE-205	AT00
	80121158	T-08.13		AT0813	Completed		A-T-08.13 SITING PETITION AND APPLICATION FILED			24-Jan-22 A	0		A1240	AT00
	80121158	T-13.01		AT1301	Completed		A-T-13.01 COMMISSIONING PLAN COMPLETE			31-Jan-22 A	0		LCE500	AT00
	80121158	T-24.04		AT2404	Completed		DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINEER)			07-Feb-22 A	0		LCE200	AT00
	80121158	T-08.05.P&C	P&C-IFC	AT0805P	Not Started		P&C IFC - P&C w/BOM	171		14-Mar-22	0		DSSE-220	BT00, CT00
	80121158	T-08.05.Elect	AG-IFC	AT0805E	Not Started		Elect IFC - Electrical (AG) w/Final BOM	166		18-Mar-22	0		DSSE-240	BT00, CT00
	80121158	T-08.05.Civil	BG-IFC	AT0805C	Not Started		IFC - Civil (BG) w/BOM	23		18-Mar-22	0		DSSE-120	AT00
	80121158	T-04.09		AT0409	Not Started		A-T-04.09 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Non-transformer equipment)	-58		25-Mar-22*	0		A1250	AT00
	80121158	T-13.01		AT13xx	Not Started		A-T-13.xx ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer INSTALLATION)	16		25-Mar-22	0		A1280	AT00
	80121158	T-02.03		AT0203	Not Started		A-T-02.03 CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	9		01-Apr-22	0		A1170	AT00
	80121158	T-04.01		AT0401	Not Started		A-T-04.01 ALL CIVIL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	3		08-Apr-22	0		TRANS-570, DSSE-560	AT00, BT00
	80121158	T-04.04		AT0404	Not Started		A-T-04.04 ALL FINAL RELAY PROTECTIVE SETTING ISSUED	2		08-Apr-22	0		DSSE-440	AT00
	80121158	T-00	SOC	AT00	Not Started		A-T-00 - Civil- START OF CONSTRUCTION - WO# 80121160	0	11-Apr-22*		0		AT13xx, AT0203, AT1202, AT0409, AT0401, AT1301, AT0813, AT0801, AT1201, AT2404, AT0805C, AT0404, AT1811, AT2605, AT3001, AT0301	TOA-Const, BT00, A1120, A1140, A1150, A1130, CSM, CT00
	80121158	T-12.01		AT1201	Not Started		SCADA Date (Tab) Sheets/Signal List Sent to LCC	-5		15-Apr-22	0		DSSE-990	AT00
	80121158	T-26.05	ENG-PRELIM	AT2605	Not Started		P&C Preliminary Design / Engineering Completed	-13		27-Apr-22	0		A3380	AT00
	80121158	T-18.05		AT1805	Not Started		A-T-18.05 - NX9 Preliminary Ratings to LCC for New Equipment (transformers are considered 'NEW EQUIPMENT')	-67		09-May-22*	0		NX9A-NC149, NX9A-NC89	BT00, CT00
	80121158	T-12.02		AT1202	Not Started		P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED	-33		13-May-22	0		DSSE-460, DSSE-930, DSSE-920, DSSE-470	AT00
	80121158	T-03.01		AT0301	Not Started		A-T-03.01 NX9 THERMAL RATINGS TO LCC AND CONVEX	-57		16-May-22*	0		NX9A-NC49, NX9A-NC47, NX9A-EM34, NX9A-NC19T	AT00
	80121158	T-18.05		AT1805T	Not Started		A-T-18.05T - NX9 Preliminary Ratings to LCC for Temp Transformer	-287		08-Feb-23*	0		NX9A-NC149T	BT00
80121158.01.12.2 T-Minus Milestones "B" Group for Transformer Test														
[redacted]	80121158	T-18.01		BT1801	Not Started	[redacted]	B-T-18.01 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer TEST ENERGIZATION)	-58		25-Mar-22*	0		A1290	BT00, CT00
	80121158	T-04.01		BT0401	Not Started		B-T-04.01 ALL ELECTRICAL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	128		25-Apr-22	0		TRANS-570, REACT-550, CIRCSW-580	BT00
	80121158	T-03.01		BT0301	Not Started		B-T-03.01 NX9 THERMAL RATINGS TO LCC AND CONVEX Temp Transformer	-43		03-May-22*	0		NX9A-EM34T	BT00, CT00

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Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158	T-00		BT00	Not Started	[redacted]	B-T-00 - Electrical START OF CONSTRUCTION - WO#80121160	0	01-Sep-22*		0		TOA-Const, AT00, BT1801, AT1805, AT0805P, AT0805E, BT0301, AT0401, BT0401, AT1805T	TOA-Test
80121158.01.12.03 Relay Panel T-Minus Milestones														
[redacted]	80121158	T-04.01		CT0401	Not Started	[redacted]	C-T-04.01 ALL RELAY PANEL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	180		14-Mar-22	0		RELAYP-1010	CT00
	80121158	T-00		CT00	Not Started		C-T-00 - Electrical (Relay Panel) START OF CONSTRUCTION - WO#80121160	0	08-Oct-22*		0		AT00, BT1801, AT1805, AT0805P, AT0805E, BT0301, CT0401	
80121158.01.12.09 Removal T-Milestones														
[redacted]	80121158	T-08.05.Elect	AG-IFC	BT0805E	Completed	[redacted]	IFC - Electrical (AG) w/BOM			08-Dec-21 A	0		DSSE-REM	RT00
80121158.03 ENVIRONMENTAL APPROVALS AND PERMITS														
80121158.03.00 PREPARE COMPLIANCE MATRICES - REGULATORY & COMMITMENTS														
[redacted]	80121158			A1240	Completed	[redacted]	Determine Requirment for CSC (CT Siting Council submissions/approvals)		24-Jan-22 A	24-Jan-22 A	0	[redacted]	PE1600, DSSE-260, DSSE-120, DSSE-240	AT0813
	80121158			A1230	In Progress		Prepared Compliance Matrices - Regulatory	5	18-Jan-22 A	01-Apr-22	15		PE1600	A1170
	80121158			A1220	In Progress		Prepared Compliance Matrices - Non-Reqgulatory (Commitments)	5	18-Jan-22 A	01-Apr-22	15		PE1600	A1170
80121158.05 ENGINEERING & DESIGN														
80121158.05.1 Distribution Thermal Ratings NX-9 for Temp Transformer														
80121158.05.1.01 Thermal Ratings - Substation - Preliminary Thermal for Temp Transformer														
[redacted]	80121158			NX9A-NC27T	Not Started	[redacted]	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX	-196	25-Jul-22*	29-Jul-22	5		A3380	NX9A-NC37T
	80121158			NX9A-NC37T	Not Started		LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature	-196	01-Aug-22	05-Aug-22	5		NX9A-NC27T	NX9A-NC38T
	80121158			NX9A-NC38T	Not Started		LTRC Submits 1-Line Nomenclature to TRC	-196	08-Aug-22	12-Aug-22	5		NX9A-NC37T	NX9A-NC26T
	80121158			NX9A-NC26T	Not Started		LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings-GO!	-196	15-Dec-22	21-Dec-22	5		NX9A-NC38T	NX9A-NC30T
	80121158			NX9A-NC30T	Not Started		LTRC Requests P&C Checklist	-196	22-Dec-22	29-Dec-22	5		NX9A-NC26T	NX9A-NC28T
	80121158			NX9A-NC28T	Not Started		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	-196	30-Dec-22	06-Jan-23	5		NX9A-NC30T	NX9A-NC34T
	80121158		NX9-NE	NX9A-NC34T	Not Started		LTRC Reviews and Sends Thermal Rating Data for TRC Review	-196	09-Jan-23	13-Jan-23	5		NX9A-NC28T	NX9A-NC33T
	80121158			NX9A-NC33T	Not Started		TRC Reviews and Approves Thermal Rating Data	-196	17-Jan-23	23-Jan-23	5		NX9A-NC34T	NX9A-NC32T
	80121158			NX9A-NC32T	Not Started		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	-196	24-Jan-23	30-Jan-23	5		NX9A-NC33T	NX9A-NC31T
	80121158			NX9A-NC31T	Not Started		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	-196	31-Jan-23	31-Jan-23	1		NX9A-NC32T	NX9A-NC29T
	80121158			NX9A-NC29T	Not Started		TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	-196	01-Feb-23	07-Feb-23	5		NX9A-NC31T	NX9A-NC149T
	80121158			NX9A-NC149T	Not Started		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006	-196	08-Feb-23	08-Feb-23	1		NX9A-NC29T	AT1805T
80121158.05.1.02 Thermal Ratings - Substation - Verify Thermal Data for Temp Transformer														
[redacted]	80121158			NX9A-NC17T	Completed	[redacted]	LTRC Reviews and Makes "GO / NO-GO" Decision		18-Jan-22 A	21-Jan-22 A	0		NX9A-NC20T	NX9A-NC36T
	80121158			NX9A-NC36T	Not Started		LTRC Requests P&C Checklist	-31	21-Mar-22*	25-Mar-22	5		NX9A-NC17T	NX9A-NC18T

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[redacted]	80121158			NX9A-NC18T	Not Started	[redacted]	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	-31	28-Mar-22	01-Apr-22	5	[redacted]	NX9A-NC36T	NX9A-NC24T
	80121158		NX9-NE	NX9A-NC24T	Not Started		LTRC Reviews and Sends Thermal Rating Data for TRC Review	-31	04-Apr-22	08-Apr-22	5		NX9A-NC18T	NX9A-EM22T
	80121158			NX9A-EM22T	Not Started		TRC Reviews and Approves Thermal Rating Data	-31	11-Apr-22	15-Apr-22	5		NX9A-NC24T	NX9A-NC22T
	80121158			NX9A-NC22T	Not Started		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	-31	18-Apr-22	22-Apr-22	5		NX9A-EM22T	NX9A-NC21T
	80121158			NX9A-NC21T	Not Started		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	-31	25-Apr-22	25-Apr-22	1		NX9A-NC22T	NX9A-NC19T
	80121158			NX9A-NC19T	Not Started		TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	-31	26-Apr-22	02-May-22	5		NX9A-NC21T	AT0301, NX9A-EM34T
	80121158			NX9A-EM34T	Not Started		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006	-31	03-May-22	03-May-22	1		NX9A-NC19T	NX9510T, BT0301
	80121158			NX9A-NC20T	Not Started		PE to Verify Thermal Data Review PE Checklist (M7-EN-3006.2)	236	01-Aug-22*	05-Aug-22	5		DSSE-240, DSSE-220, DSSE-120	NX9A-NC17T
80121158.05.1.03 Thermal Ratings - Substation - NX-9 Pre NX9-DOE for Temp Transformer														
[redacted]	80121158			NX9510T	Not Started	[redacted]	Scheduler - Send Email for 48Hrs Notification before DOE.	19	04-May-22	04-May-22*	1		NX9A-EM34T	CFM
80121158.05.00 Engineering Services Staffing														
80121158.05.00.00 Engineering Services Staffing														
[redacted]	80121158			CIRCSW-338(	Completed	[redacted]	CRCSWTCH-SME Provides Circuit Switcher Go-bys to Engineering		01-Oct-21 A	01-Oct-21 A	0		CE1100	A3380, DSSE-200
80121158.05.01 Civil Engineering														
[redacted]	80121158			DSSE-100	Completed	[redacted]	Design Package to Civil		01-Oct-21 A	13-Oct-21 A	0		TRANS-1150	DSSE-110, PE1700
	80121158		ES-DTL	DSSE-110	Completed		Civil Package to Design		25-Oct-21 A	16-Dec-21 A	0		DSSE-100	DSSE-120, DSSE-500
	80121158		ES-IFC	DSSE-120	In Progress		Civil Package IFC	-41	27-Dec-21 A	18-Mar-22	5		DSSE-110	NX9A-NC31, A1280, A1290, A1170, AT0805C, A1250, NX9A-NC20T, A1240
80121158.05.02 Electrical Engineering														
[redacted]	80121158		ES-PRELIM	DSSE-200	Completed	[redacted]	Electrical Prelim Design Package Design to Drafting		22-Oct-21 A	12-Nov-21 A	0		CIRCSW-3380	DE1900, DE1800, DSSE-205, PE1700, DSSE-REM
	80121158		ES-DTL	DSSE-205	Completed		Detail Electrical Design Package Drafting		15-Nov-21 A	08-Dec-21 A	0		DSSE-200	AT1811, A1010, LCE100, DSSE-240, DSSE-230
	80121158		ES-DTL	DSSE-REM	Completed		Removal Electrical Design Package		15-Nov-21 A	08-Dec-21 A	0		DSSE-200	DSSE-240, BT0805E
	80121158			DSSE-230	Completed		Electrical Engineering - BOM Complete		06-Dec-21 A	10-Dec-21 A	0		DSSE-205	DSSE-240
	80121158		ES-IFC	DSSE-240	In Progress		Electrical Engineering - Electrical Package IFC (Physical & Electrical)	-41	27-Dec-21 A	18-Mar-22	5		DSSE-230, CIRCSW-1125, DSSE-205, DSSE-REM	NX9A-NC31, A1290, AT0805E, A1170, DSSE-480, DSSE-990, A1250, A1280, NX9A-NC20T, A1240
	80121158			DSSE-920	Not Started		Operating Instructions - SSED Review Draft Convex OI	-25	09-May-22	13-May-22	5		DSSE-450, DSSE-440	AT1202
	80121158			DSSE-460	Not Started		Operating Instructions - SSED Review Draft Distribution OI	-25	09-May-22	13-May-22	5		DSSE-450, DSSE-440	AT1202
80121158.05.02.1 Transformer- Vendor Drawings with Schematics														
[redacted]	80121158			TRANS-1150	Completed	[redacted]	TRANS-ES Reviews & Comments Transformer Drawings & Schematics		04-Oct-21 A	12-Oct-21 A	0		TRANS-1140	DSSE-400, DSSE-100
	80121158			TRANS-1160	Not Started		TRANS-Vendor Submits As-Built Material Transformer Drawings & Schematics	-29	25-Mar-22	07-Apr-22	10		TRANS-1070	TRANS-570
80121158.05.03 Distribution Thermal Ratings NX-9 (Transformer Replacement Is Considered New Equipment)														
80121158.05.03.01 Thermal Ratings - Substation - Preliminary Thermal														
[redacted]	80121158			NX9A-NC159	Completed	[redacted]	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature		13-Dec-21 A	17-Dec-21 A	0		NX9A-NC69	NX9A-NC169

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Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158			NX9A-NC59	Completed	[redacted]	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings		10-Jan-22 A	14-Jan-22 A	0	[redacted]	NX9A-NC169	NX9A-NC99
	80121158			NX9A-NC99	Completed		LTRC Requests P&C Checklist		18-Jan-22 A	24-Jan-22 A	0		NX9A-NC59	NX9A-NC79
	80121158			NX9A-NC169	Not Started		LTRC Submits 1-Line Nomenclature to TRC	324	28-Mar-22*	01-Apr-22	5		NX9A-NC159	NX9A-NC59
	80121158			NX9A-NC79	Not Started		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	-47	01-Apr-22*	07-Apr-22	5		NX9A-NC99	NX9A-NC139
	80121158		NX9-NE	NX9A-NC139	Not Started		LTRC Reviews and Sends Thermal Rating Data for TRC Review	-47	08-Apr-22	14-Apr-22	5		NX9A-NC79	NX9A-NC129
	80121158			NX9A-NC129	Not Started		TRC Reviews and Approves Thermal Rating Data	-47	15-Apr-22	21-Apr-22	5		NX9A-NC139	NX9A-NC119
	80121158			NX9A-NC119	Not Started		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	-47	22-Apr-22	28-Apr-22	5		NX9A-NC129	NX9A-NC109
	80121158			NX9A-NC109	Not Started		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	-47	29-Apr-22	29-Apr-22	1		NX9A-NC119	NX9A-NC89
	80121158			NX9A-NC89	Not Started		TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	-47	02-May-22	06-May-22	5		NX9A-NC109	AT1805, NX9A-NC149
	80121158			NX9A-NC149	Not Started		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, EquipDOE, Revs DOE per M7-EN-3006	-47	09-May-22	09-May-22	1		NX9A-NC89	AT1805
	80121158			NX9A-NC69	Not Started		PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX	241	25-Jul-22*	29-Jul-22	5		DSSE-410	NX9A-NC159
80121158.05.03.02 Thermal Ratings - Substation - Verify Thermal Data														
	80121158			NX9A-NC33	Completed		LTRC Reviews and Makes "GO / NO-GO" Decision		18-Jan-22 A	21-Jan-22 A	0		NX9A-NC31	NX9A-NC35
	80121158			NX9A-NC35	Not Started		LTRC Requests P&C Checklist	-32	21-Mar-22*	25-Mar-22	5		NX9A-NC33	NX9A-NC37
	80121158			NX9A-NC37	Not Started		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	-32	28-Mar-22	01-Apr-22	5		NX9A-NC35	NX9A-NC39
	80121158		NX9-NE	NX9A-NC39	Not Started		LTRC Reviews and Sends Thermal Rating Data for TRC Review	-32	04-Apr-22	08-Apr-22	5		NX9A-NC37	NX9A-NC41
	80121158			NX9A-NC41	Not Started		TRC Reviews and Approves Thermal Rating Data	-32	11-Apr-22	15-Apr-22	5		NX9A-NC39	NX9A-NC43
	80121158			NX9A-NC43	Not Started		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	-32	18-Apr-22	22-Apr-22	5		NX9A-NC41	NX9A-NC45
	80121158			NX9A-NC45	Not Started		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	-32	25-Apr-22	25-Apr-22	1		NX9A-NC43	NX9A-NC47
	80121158			NX9A-NC47	Not Started		TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	-32	26-Apr-22	02-May-22	5		NX9A-NC45	AT0301, NX9A-NC49
	80121158			NX9A-NC49	Not Started		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006	-41	16-May-22	16-May-22	1		NX9A-NC47	AT0301, NX9500
	80121158			NX9A-NC31	Not Started		PE to Verify Thermal Data Review PE Checklist (M7-EN-3006.2)	236	01-Aug-22*	05-Aug-22	5		DSSE-240, DSSE-220, DSSE-120	NX9A-NC33
80121158.05.03.03 Thermal Ratings - Substation - NX-9 Pre NX9-DOE														
[redacted]	80121158			NX9500	Not Started	[redacted]	Scheduler - Send Email for 48Hrs Notification before DOE.	0	02-Dec-22	02-Dec-22	1		NX9A-NC49	CFM
80121158.05.03.04 Thermal Ratings - Substation - NX-9 Post NX9-DOE/ISD														
[redacted]	80121158			NX9FINAL50	Not Started	[redacted]	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or CFM/ISD)	145	07-Dec-22	09-Dec-22	3		CFM	NX9FINAL60
	80121158			NX9FINAL60	Not Started		[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	145	12-Dec-22	16-Dec-22	5		NX9FINAL50	FINISH
80121158.05.03.05 Thermal Ratings - Non NX-9 Thermal Ratings														
[redacted]	80121158			NX9A-EM44	Not Started	[redacted]	Thermal Rating- Non NX9 - P&C Develops and Provides LTRC with P&C Checklist & Thermal Ratings Data	133	28-Apr-22*	04-May-22	5		A3380	NX9A-EM54
	80121158			NX9A-EM54	Not Started		Thermal Rating- Non NX9 -LTRC Prepares and Sends Thermal Rating Data for TRC Review	133	05-May-22	11-May-22	5		NX9A-EM44	NX9A-EM64

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Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158			NX9A-EM64	Not Started	[redacted]	Thermal Rating- Non NX9 -TRC Reviews and Approves Thermal Rating Data	133	12-May-22	18-May-22	5	[redacted]	NX9A-EM54	NX9A-EM74
	80121158			NX9A-EM74	Not Started		Thermal Rating- Non NX9 -LTRC Files Capability Sheets	133	19-May-22	25-May-22	5		NX9A-EM64	CFM, FINISH
80121158.05.03.1 Substation NX-9 - Equipment Modification														
80121158.05.03.1.01 Substation NX-9														
	80121158			NX9A-EM04	Completed		LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature		13-Dec-21 A	15-Dec-21 A	0		NX9A-EM01	NX9A-EM07
	80121158			NX9A-EM10	Completed		LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings		20-Dec-21 A	23-Dec-21 A	0		NX9A-EM07	NX9A-EM13
	80121158			NX9A-EM13	Completed		LTRC Requests P&C Checklist		18-Jan-22 A	24-Jan-22 A	0		NX9A-EM10	NX9A-EM16
	80121158			NX9A-EM07	Completed		LTRC Submits1-Line Nomenclature to TRC		18-Jan-22 A	24-Jan-22 A	0		NX9A-EM04	NX9A-EM10
	80121158			NX9A-EM16	Not Started		P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	-41	01-Apr-22*	07-Apr-22	5		NX9A-EM13	NX9A-EM19
	80121158		NX-9	NX9A-EM19	Not Started		LTRC Reviews and Sends Thermal Rating Data for TRC Review	-41	08-Apr-22	14-Apr-22	5		NX9A-EM16	NX9A-EM22
	80121158			NX9A-EM22	Not Started		TRC Reviews and Approves Thermal Rating Data	-41	15-Apr-22	21-Apr-22	5		NX9A-EM19	NX9A-EM25
	80121158		** KPI **	NX9A-EM25	Not Started		LTRC Sends Thermal Rating Data for Approval & Submit to NURS	-41	22-Apr-22	28-Apr-22	5		NX9A-EM22	NX9A-EM26
	80121158		** KPI **	NX9A-EM01	Not Started		PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-3006.2 - e-mail link to project team & CONVEX	304	27-Apr-22*	29-Apr-22	3		DSSE-260	NX9A-EM04
	80121158			NX9A-EM26	Not Started		TRC Confirms Engineering Management Approvals of NX-9	-41	29-Apr-22	05-May-22	5		NX9A-EM25	NX9A-EM28
	80121158			NX9A-EM28	Not Started		Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with DOE	-41	06-May-22	06-May-22	1		NX9A-EM26	NX9A-EM31
	80121158		NX-9	NX9A-EM31	Not Started		TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	-41	09-May-22	13-May-22	5		NX9A-EM28	NX9A-EM34
	80121158			NX9A-EM34	Not Started		Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, EquipDOE, Revs DOE per M7-EN-3006	-41	16-May-22	16-May-22	1		NX9A-EM31	NX9A100, AT0301
80121158.05.03.1.02 Substation - NX-9 Pre NX9-DOE														
	80121158			NX9A100	Not Started		Scheduler - Send Email for 48Hrs Notification before DOE. (Tie SS to Beginning of NX9 Outage)	30	18-Jul-22	18-Jul-22	1		NX9A-EM34, A1130	TIE_2
	80121158			TIE_2	Not Started		Tie (FF) to Appropriate activity that puts the equipment in service & Add NX9-DOE code to it). (Dissolve this activity)	30		20-Jul-22	0		NX9A100	NX9FINAL10, TOA-Const
80121158.05.03.1.03 Substation - NX-9 Post NX9-DOE/ISD														
	80121158			NX9FINAL10	Not Started		Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or ISD)	145	07-Dec-22	09-Dec-22	3		TIE_2, CFM	NX9FINAL20, NX9A200
	80121158			NX9A200	Not Started		Scheduler - Has 72 Hrs to Put in Service the NX-9 and Send to TOP Director in NURS after DOE/PM Note of Completion	145	09-Dec-22	09-Dec-22	1		NX9FINAL10	NX9FINAL20
	80121158			NX9FINAL20	Not Started		[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	145	12-Dec-22	16-Dec-22	5		NX9FINAL10, NX9A200	FINISH
80121158.05.04 P&C Engineering														
[redacted]	80121158		ES-PRELIM	DSSE-400	Completed	[redacted]	Prepare & Issue P&C Preliminary Design Package to Draf		22-Oct-21 A	09-Dec-21 A	0	[redacted]	TRANS-1150	DE1900, DSSE-410
	80121158			DSSE-220	Completed		SDS Complete		07-Feb-22 A	11-Feb-22 A	0		A3380	NX9A-NC31, AT0805P, DSSE-990, NX9A-NC20T, LCE400
	80121158			DSSE-410	In Progress		Drafting Prepare & Issue Preliminary Back to P&C	-122	13-Dec-21 A	14-Mar-22	0		DSSE-400	A3380, RELAYP-510, NX9A-NC69
	80121158		CASCADE	DSSE-480	Not Started		P&C INITIATE CASCADE FORMS (appendix A) for Construction	161	21-Mar-22	15-Apr-22	20		DSSE-240	CFM
	80121158		SCADA	DSSE-990	Not Started		P&C INITIATE SCADA Data Sheets	-5	21-Mar-22	15-Apr-22	20		DSSE-220, DSSE-240	AT1201

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Distribution WMA Substation Capital Projects | **FULL SCHEDULE** | PRINT 17-Mar-22 11:19 **DATA DATE 14-Mar-22**

Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158		ES-DTL	A3380	Not Started	[redacted]	Issue P&C Package Detail Design	-136	01-Apr-22*	27-Apr-22	19	[redacted]	DSSE-410, CIRCSW-3380	AT2605, NX9A-EM44, DSSE-220, NX9A-NC27T
	80121158			DSSE-450	Not Started		Operating Instructions - Prepare and Issue Draft Distribution OI to Engineering	-25	11-Apr-22	06-May-22	20		DSSE-440	DSSE-920, DSSE-460, DSSE-930, DSSE-470
	80121158			DSSE-470	Not Started		Operating Instructions - P&C Review Draft Distribution OI	-25	09-May-22	13-May-22	5		DSSE-440, DSSE-450	AT1202
	80121158			DSSE-930	Not Started		Operating Instructions - P&C Review Draft Convex OI	-25	09-May-22	13-May-22	5		DSSE-440, DSSE-450	AT1202
80121158.05.04.1 Relay Settings														
[redacted]	80121158		ES-RSET	DSSE-440	Not Started		Relay Settings - Prepare and Issue Relay Settings IFC	-25	14-Mar-22	08-Apr-22	20			DSSE-930, DSSE-470, DSSE-450, DSSE-920, DSSE-460, AT0404
80121158.06 MATERIAL PROCUREMENT														
80121158.06.1 MATERIAL FOR Relay Panels-BID														
[redacted]	80121158			RELAYP-510	Completed		MATERIAL - P&C - Relay Panels RFP Issued to vendors including Tech Specs		10-Dec-21 A	17-Dec-21 A	0		PF1020, DSSE-410	RELAYP-1030
	80121158			RELAYP-10	Completed		MATERIAL - P&C - Relay Panels Bids Received		20-Dec-21 A	03-Jan-22 A	0		RELAYP-510	RELAYP-1040
	80121158		DR-RM	RELAYP-10	Completed		MATERIAL - P&C - Relay Panels Prepare & Issue DR		04-Jan-22 A	10-Jan-22 A	0		RELAYP-1040	RELAYP-980, RELAYP-1050
	80121158			RELAYP-104(	Completed		MATERIAL - P&C - Relay Panels Bids Evaluated and Recommendation Complete		10-Jan-22 A	14-Jan-22 A	0		RELAYP-1030	RELAYP-1020
	80121158			RELAYP-980	Completed		MATERIAL - P&C - Relay Panels Procurement Issue PO		14-Jan-22 A	28-Jan-22 A	0		RELAYP-1020	RELAYP-1000
	80121158		M-DELIV	RELAYP-101(	Completed		MATERIAL - P&C - Relay Panels Confirm Material Delivery to Site		07-Mar-22 A	07-Mar-22 A	0		RELAYP-1000	CT0401
	80121158			RELAYP-100(	Completed		MATERIAL - P&C - Relay Panels Material Vendor Delivery Leadtime		31-Jan-22 A	07-Mar-22 A	0		RELAYP-980, RELAYP-1070	RELAYP-1010
80121158.06.2 MATERIAL FOR ELECTRICAL REACTOR														
[redacted]	80121158		DR-RM	REACT-520	Completed		MATERIAL - Reactor Electrical - Prepare & Issue DR (see Notebook)		21-Oct-21 A	27-Oct-21 A	0		CE1100	REACT-590, REACT-1020
	80121158		DR-AGMAT	REACT-590	Completed		Electrical (AG) Material Reactor Ordered			27-Oct-21 A	0		REACT-520	
	80121158			REACT-1020	Completed		MATERIAL - Electrical - PO Issued and Release for Mfg Drawings		28-Oct-21 A	05-Nov-21 A	0		REACT-520	REACT-1030, REACT-1040
	80121158		DR-RM	REACT-1040	Completed		MATERIAL - Reactor Electrical - Drawings Reviewed & Approved by ES Release for Manufacturing		08-Nov-21 A	16-Dec-21 A	0		REACT-1020	REACT-1030
	80121158		M-DELIV	REACT-550	Not Started		MATERIAL - Electrical - Reactor Confirm Material Delivery to Site	128	25-Apr-22	25-Apr-22	1		REACT-1030	BT0401
	80121158			REACT-1030	In Progress		MATERIAL - Electrical - Reactor Material Vendor Delivery Leadtime	128	03-Jan-22 A	25-Apr-22	43		REACT-1020, REACT-1040	REACT-550
80121158.06.3 MATERIAL FOR CIVIL MISC														
[redacted]	80121158		DR-RM	DSSE-500	Completed		MATERIAL - CIVIL - Prepare & Issue DR		16-Dec-21 A	05-Jan-22 A	0		PF1020, DSSE-110	DSSE-600, DSSE-1040
	80121158		DR-BGMAT	DSSE-600	Completed		Civil (BG) Material Ordered			05-Jan-22 A	0		DSSE-500	DSSE-1040
	80121158			DSSE-1040	Completed		MATERIAL - CIVIL - Procurement Issue PO		06-Jan-22 A	10-Jan-22 A	0		DSSE-500, DSSE-600	DSSE-1050
	80121158			DSSE-1050	Completed		MATERIAL - CIVIL - Material Vendor Delivery Leadtime		11-Jan-22 A	07-Mar-22 A	0		DSSE-1040	DSSE-560
	80121158		M-DELIV	DSSE-560	Completed		MATERIAL - CIVIL - Confirm Material Delivery to Site		08-Mar-22 A	08-Mar-22 A	0		DSSE-1050	AT0401
80121158.06.4 MATERIAL FOR TRANSFORMER														
[redacted]	80121158			TRANS-1190	Completed		TRANS-MATERIAL - Transformer - Prepare & Issue LOA to HICO		16-Apr-21 A	16-Apr-21 A	0			TRANS-1070
	80121158		DR-MM	TRANS-530	Completed		TRANS-MATERIAL - Transformer - Prepare & Issue DR-(Using Agawam Spare)		20-Sep-21 A	20-Sep-21 A	0			TRANS-1180, TRANS-1060
	80121158			TRANS-1060	Completed		TRANS-MATERIAL - Transformer - Procurement Issue PO #111074783 Agawam Spare		20-Sep-21 A	20-Sep-21 A	0		TRANS-530	TRANS-1070
	80121158		DR-AGMM	TRANS-1180	Completed		TRANS-Transformer Material Ordered			20-Sep-21 A	0		TRANS-530	

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Distribution WMA Substation Capital Projects | **FULL SCHEDULE** | PRINT 17-Mar-22 11:19 **DATA DATE 14-Mar-22**

Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158			TRANS-1070	In Progress	[redacted]	TRANS-MATERIAL - Transformer - Material Vendor Delivery Leadtime	-41	04-May-21 A	07-Apr-22	25	[redacted]	TRANS-1060, TRANS-1190	TRANS-570, TRANS-1160
	80121158		M-DELIV	TRANS-570	Not Started		TRANS-MATERIAL - Transformer - Confirm Material Delivery to Site	-40	08-Apr-22	08-Apr-22*	0		TRANS-1070, TRANS-1160	AT0401, BT0401
80121158.06.5 MATERIAL FOR CIRCUIT SWITCHER														
[redacted]	80121158			CIRCSW-560	Completed		CIRCSWTCH-MATERIAL - Circuit Switcher-ES Prepares and Issues RFP for Vendor Quote		06-Oct-21 A	11-Oct-21 A	0		CE1400, CE1100, CE1000	CIRCSW-550
	80121158			CIRCSW-550	Completed		CIRCSWTCH-MATERIAL - Circuit Switcher- Vendor Quote Rec'd and Reviewed		11-Oct-21 A	27-Oct-21 A	0	ne	CIRCSW-560	CIRCSW-540
	80121158		DR-RM	CIRCSW-540	Completed		CIRCSWTCH-MATERIAL - Circuit Switcher- Prepare & Issue DR		27-Oct-21 A	05-Nov-21 A	0		PF1020, CIRCSW-550	CIRCSW-1190, CIRCSW-1080
	80121158		DR-AGMM	CIRCSW-11	Completed		CIRCSWTCH-Circuit Switcher Material Ordered			05-Nov-21 A	0		CIRCSW-540	CIRCSW-1080
	80121158			CIRCSW-108(	Completed		CIRCSWTCH-MATERIAL - Circuit Switcher - Procurement Issue PO		06-Nov-21 A	09-Nov-21 A	0		CIRCSW-540, CIRCSW-1190	CIRCSW-1090, CIRCSW-1123
	80121158		M-DELIV	CIRCSW-580	Not Started		CIRCSWTCH-MATERIAL - Circuit Switcher -Confirm Material Delivery to Site	36	04-Apr-22	04-Apr-22*	1		CIRCSW-1090	BT0401
	80121158			CIRCSW-109(	In Progress		CIRCSWTCH-MATERIAL - Circuit Switcher - Material Vendor Delivery Leadtime	36	10-Nov-21 A	04-Apr-22	22		CIRCSW-1080	CIRCSW-580
80121158.07 CONSTRUCTION														
80121158.07.01 CONSTRUCTION SERVICES SELECTION-CIVIL														
[redacted]	80121158			A3550	Completed		STAFFING DECISION -CONSTRUCTION: EVERSOURCE OR OUTSOURCE BID/COC		08-Oct-21 A	22-Oct-21 A	0		START	A3390
80121158.07.01.01 CONSTRUCTION SERVICES - CONTRACTOR OF CHOICE														
[redacted]	80121158			A3390	Completed		CONST.SERVICES - COC - Eversource Provides Spec / RFQ to COC		21-Oct-21 A	02-Feb-22 A	0		A3550, CE1000	A3400
	80121158			A3400	Completed		CONST.SERVICES - COC - COC Evaluates Spec and Provides Quote		03-Feb-22 A	11-Feb-22 A	0		A3390	A3410
	80121158			A3410	In Progress		CONST.SERVICES - COC - Eversource Reviews Quote Clarifies with COC	103	14-Feb-22 A	25-Mar-22	10		A3400	A3420
	80121158			A3420	Not Started		CONST.SERVICES - COC - Eversource Routes DR for Approval	99	01-Apr-22*	07-Apr-22	5		A3410	A3790
	80121158			A3790	Not Started		CONST.SERVICES - COC - Eversource Awards Contract - PO Issued	99	08-Apr-22	14-Apr-22	5		A3420	A1120
80121158.07.03 Construction - Civil														
[redacted]	80121158			A1130	Not Started		Construction - Electrical - Relay	98	11-Apr-22	15-Apr-22	5		AT00	CFM, NX9A100
	80121158			A1120	Not Started		Construction - Disconnect 3X XFRMR	0	06-Sep-22*	09-Sep-22	4		AT00, A3790	A3620, CFM
80121158.07.04 Construction - Electrical														
[redacted]	80121158		OUT	TOA-Const	Not Started		OUTAGE / General Construction Work	36	12-Apr-22	20-Jul-22	86		AT00, CSM, TIE_2	BT00, A1070, A1080
80121158.07.05 Construction - P&C														
[redacted]	80121158			A1140	Not Started		Construction - P&C Implement Relay Settings	161	11-Apr-22	15-Apr-22	5		AT00	CFM
80121158.07.06 Construction - Communication														
[redacted]	80121158			A1150	Not Started		Construction - Field Communications	161	11-Apr-22	15-Apr-22	5		AT00	CFM
80121158.07.92 Construction - CONST.REP TASKS														
[redacted]	80121158			A1280	Not Started		Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER INSTALLATION (13 weeks before	10	21-Mar-22	25-Mar-22	5		DSSE-120, DSSE-240	AT13xx
	80121158			A1290	Not Started		Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER TEST ENERGIZATION (18 weeks before outage)	-41	21-Mar-22	25-Mar-22	5		DSSE-240, DSSE-120	BT1801
	80121158			A1250	Not Started		Construction Rep SUBMIT OUTAGE REQUESTS for NON-transformer equipment (4 weeks before outage)	-41	21-Mar-22	25-Mar-22	5		DSSE-240, DSSE-120	AT0409

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Distribution WMA Substation Capital Projects | **FULL SCHEDULE** | PRINT 17-Mar-22 11:19 **DATA DATE 14-Mar-22**

Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158			A1260	Not Started	[redacted]	Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)	113	07-Dec-22	20-Dec-22	10	[redacted]	CFM	A1030
80121158.07.94 CONSTRUCTION RESOURCE TRACKING														
[redacted]	80121158			A1070	Not Started		RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT	164	12-Apr-22	12-Apr-22	1		TOA-Const	CFM
	80121158			A1080	Not Started		RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN	95	20-Jul-22	20-Jul-22	1		TOA-Const	CFM
	80121158			ConRep-S	Not Started		RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	0	11-Apr-22	06-Dec-22	166		CSM	CFM
	80121158			CONSTelec	Not Started		RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	0	11-Apr-22	06-Dec-22	166		CSM	CFM
80121158.07.96 CONSTRUCTION MILESTONES														
[redacted]	80121158		CRH	CSM	Not Started		Construction Start Milestone	36	11-Apr-22		0		AT00	ConRep-S, TOA-Const, CONSTelec
	80121158			CFM	Not Started		Construction Finish Milestone	0		06-Dec-22	0		NX9A-EM74, NX9500, A1140, CONSTelec, DSSE-480, A1080, A1150, A1130, ConRep-S, TOA-Test, A1070, A1120, LCE620, NX9510T	NX9FINAL50, A1020, A1030, A1040, A1110, DSSE-1100, A1270, ISD, A1260, NX9FINAL10, LCE800, LCE900
	80121158		ISD	ISD	Not Started		EQUIPMENT IN SERVICE DATE (requires FOOB constraint)	22		06-Dec-22*	0		LCE610, LCE700, CFM, RCFM	
80121158.07.97 TEST OUTAGES														
[redacted]	80121158			TOA-Test	Not Started		TRANS-OUTAGE / Test Transformer	0	01-Sep-22	06-Dec-22	65		BT00	CFM
80121158.09 TEST AND COMMISSION														
80121158.09.01 TEST - SERVICES STAFFING DECISION														
[redacted]	80121158			A1010	Completed		STAFFING DECISION: EVERSOURCE OR OUTSOURCE BID/COC		14-Jan-22 A	14-Jan-22 A	0		DSSE-205	A3470
80121158.09.02 LCE PLANNING														
[redacted]	80121158		V-COMPLN	LCE400	Not Started		Develop Test and Commissioning Plan	318	14-Mar-22	11-Apr-22	21		DSSE-220	LCE500
80121158.10 PROJECT CLOSE OUT														
[redacted]	80121158		ES-FLDASB	A3620	Not Started		Prepare & Submit Civil Field Mark Ups (Tie after Last Civil Construction Activity)	69	12-Sep-22	11-Oct-22	21		A1120	A3730
	80121158			DSSE-1100	Not Started		Complete TD-707 Turnover Document / Forward to SOC & Mailing List	117	07-Dec-22	13-Dec-22	5		CFM	A1040
	80121158		PM	A3660	Not Started		PM to Document Civil As-Built Drawings Complete	69	10-Jan-23	10-Jan-23	1		A3740	A3670
	80121158		ES-FLDASB	A3640	Not Started		Prepare & Submit Electrical Field Mark Ups	0	21-Dec-22	23-Jan-23	21		LCE900	A3750
	80121158		ES-FLDASB	A3650	Not Started		Prepare & Submit P&C Field Mark Ups	0	21-Dec-22	23-Jan-23	21		LCE900	A3770
	80121158		ES-FLSASB	A3670	Not Started		FE Files Civil Design Drawings at Station	69	11-Jan-23	23-Feb-23	30		A3660	A1040
	80121158		PM	A3680	Not Started		PM to Document Electrical As-Built Drawings Complete (Electrical, P&C)	0	19-Apr-23	19-Apr-23	1		A3780, A3760	A3710, A3690
	80121158		ES-FLSASB	A3690	Not Started		FE Files Substation Design Drawings at Station	0	20-Apr-23	01-Jun-23	30		A3680	A1040
	80121158		ES-FLSASB	A3710	Not Started		FE Files P&C Design Drawings at Station	0	20-Apr-23	01-Jun-23	30		A3680	A1040
80121158.10.01 Civil As-Builts														
[redacted]	80121158		ES-ASB	A3730	Not Started		Eversource Engineering Verifies Civil Mark Ups and Updates As-Built Drawing Package	69	12-Oct-22	30-Dec-22	55		A3620	A3740
	80121158		ES-ASB	A3740	Not Started		ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	69	03-Jan-23	09-Jan-23	5		A3730	A3660
80121158.10.02 Electrical As-Builts														
[redacted]	80121158		ES-ASB	A3750	Not Started		Eversource Engineering Verifies Electrical Mark Ups and Updates As-Built Drawing Package	0	24-Jan-23	11-Apr-23	55		A3640, LCE800	A3760

TASK filter: *****SAVE NO N/R.

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Distribution WMA Substation Capital Projects | **FULL SCHEDULE** | PRINT 17-Mar-22 11:19 **DATA DATE 14-Mar-22**

Project Lead	Project ID	T-Milestones	Activity Flag	Activity ID	Activity Status	Activity Scheduler	Activity Name	Total Float	Start	Finish	Remaining Duration	Resources	Predecessors	Successors
[redacted]	80121158		ES-ASB	A3760	Not Started	[redacted]	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	0	12-Apr-23	18-Apr-23	5	[redacted]	A3750	A3680
80121158.10.03 P&C As-Builts														
[redacted]	80121158		ES-ASB	A3770	Not Started		Eversource Engineering Verifies P&C Mark Ups and Updates As-Built Drawing Package	0	24-Jan-23	11-Apr-23	55		A3650	A3780
	80121158		ES-ASB	A3780	Not Started		P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	0	12-Apr-23	18-Apr-23	5		A3770	A3680
80121158.10.04 Test Closout														
[redacted]	80121158			LCE800	Not Started		LCE Ensures Marked up Prints Ready for Pick-up	30	07-Dec-22	07-Dec-22	1		CFM	A3750
	80121158			LCE900	Not Started		LCE Review Test Data and Issue Commissioning Report	0	07-Dec-22	20-Dec-22	10		CFM	A3650, A3640
80121158.10.05 SITE RESTORATION CLOSEOUT														
[redacted]	80121158			A1110	Not Started		Restore / Remediate Site	143	07-Dec-22	20-Dec-22	10		CFM	FINISH
80121158.10.06 MATERIAL, EQUIPMENT, COST, AND ASSET MANAGE EOUT														
[redacted]	80121158			A1020	Not Started		Cost Analyst Prepares FINAL Units of Property	123	07-Dec-22	20-Jan-23	30		CFM	FINISH
	80121158			A1030	Not Started		Asset Management Complete Asset Update(s) in CASCADE	113	21-Dec-22	03-Feb-23	30		A1260, CFM	FINISH
80121158.10.07 PROJECT MANAGEMENT CLOSEOUT														
[redacted]	80121158			A1270	Not Started		Prepare TD-707 Document	122	07-Dec-22	20-Jan-23	30		CFM	FINISH
	80121158			A1040	Not Started		PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	0	02-Jun-23	14-Jul-23	30		CFM, A3690, A3670, A3710, DSSE-1100	FINISH
	80121158			FINISH	Not Started		Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	0		17-Jul-23	0		NX9A-EM74, NX9FINAL60, A1020, A1040, A1110, A1270, A1030, NX9FINAL20	
80121158.13 OVERHEAD / INDIRECTS														
80121158.13.01 PROJECT MANAGEMENT														
[redacted]	80121158			R1170	Not Started		Prepare Removal CAN (Construction Authorization Notice)	334	14-Mar-22	18-Mar-22	5			RT0203
	80121158			A1170	Not Started		Prepare CAN (Construction Authorization Notice)	5	21-Mar-22	01-Apr-22	10		A1220, DSSE-240, DSSE-120, A1230	AT0203

TASK filter: *****SAVE NO N/R.

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Operations Project Authorization Form

Approved on July 20, 2022 EPAC

Link to Meeting Minutes

Project Title: [redacted] **Transformer Replacements**	**Project Number: CS00516**
Date Prepared: 07/11/2022	**Company: Eversource CT**
Organization: System Planning	**Class(es) of Plant: D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformers**
Managing Organization: Engineering	**Schedule ID#: 80121158 (3X), 80121160 (2X)**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: 5/31/2023	**Emergency Related Request? Yes**
Eng./Constr. Resources Budgeted? Yes	**Facility Type (check all that apply):** ☐ **PTF** ☐ **non-PTF** ☒ **Distribution** ☐ **N/A (General Plant)**
Total Capital Request: $11,465K	**Authorization Type: Full Funding**

[1] Executive Summary

This is an emergency full funding request for $11,465K to support material procurement, construction, and test services for the [redacted] substation in Ridgefield, CT. This project will replace the [redacted]-2X and [redacted]-3X transformers for both asset condition and loading concerns. The Eversource Distribution System Planning Guide (reference 4), states that a substation LCC must be increased, or station offloaded if the limit is exceeded. The substation load carrying capacity (LCC) will be increased from 59MVA to 81MVA with the replacements.

Initial funding of $250K was approved for this porject in PowerPlan on September 15, 2021. Partial funding of $2,954K was approved in PowerPlan on May 26, 2022 to support detailed engineering design documents and receipt of materials authorized via material exemption for [redacted] substation. As of June 24, 2022, $907K has been spent to develop preliminary civil, P&C packages and electrical packages, conceptual level scopes for project alternatives and associated cost estimates for presentation to the Solution Design Committee (SDC), and some material procurement per Material Exemption. The project alternatives and complete preferred project scope were presented to and approved by the SDC on December 8, 2021.

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On June 30, 2021, the 49-year-old 22N-3X transformer (manufactured in 1972) tripped and locked out. Oil results from a sample taken on 7/1/22 showed a ~50% increase in acetylene from 8ppm – 13ppm which suggested an internal fault occurred. Testing could not confirm the internal fault so the unit was placed back in service on August 16, 2021 and has been holding in, but due to the age and high gas levels , it should be replaced. In addition to replacing the failed [redacted]-3X transformer this project will replace the 22N-2X transformer due to both asset condition and the station load. The 22N-2X is similar age (49 years old) and condition as the 22N-3X that failed in 2021. Prior to the failure of the 22N-3X transformer, [redacted] station peaked at 61MVA which is 103% of its LCC. This project is also replacing the obsolete transformer protection relays for the 22N-2X transformers and circuit switchers.

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[2] PROJECT COSTS SUMMARY

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to go	2023	2024	Total
1. ROW / Easements / Land purchases						
2. Environmental Approvals / Permits						
3. Outreach			$5	$8		$12
4. Siting Approvals / Permits			$24	$41		$64
5. Engineering / Design	$2,900	$907	$174	$127		$1,208
6. Materials (Eversource purchased)			$1,349	$2,060		$3,408
7. Construction (incl matl's by contractors)			$471	$1,341		$1,812
8. Testing / Commissioning			$234	$241		$474
9. PMT Project Mgmt Team			$95	$95		$190
10. Removals			$28	$68		$96
11. Other						
12. Risks			$400	$400		$800
Project Directs Total w/Risks	**$2,900**	**$907**	**$2,778**	**$4,380**		**$8,065**
13. Indirects/Overhead			$999	$1,603		$2,601
14. AFUDC			$182	$269		$451
Project Total - Baseline Budget	**$2,900**	**$907**	**$3959**	**$6,252**		**$11,118**
15. Contingency			$130	$217		$347
Project Total - Funding Approval Level	**$2,900**	**$907**	**$4,089**	**$6,469**		**$11,465**
16. Reimbursables/Customer Contribution						
Project Total (less reimbursables)	**$2,900**	**$907**	**$4,089**	**$6,469**		**$11,465**
Total O&M						
TOTAL REQUEST	**$2,900**	**$907**	**$4,089**	**$6,469**		**$11,465**

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Detail other costs, project risk items and their allocations:

Risk	Allocation
1. Potential UG Obstructions	$80,000
2. Severe Weather, Delays, OT	$12,000
3. Design development	$124,000
4. Complications of mobile installation	$100,000
5. PCB Contaminated soil disposal and replace with new soil - Environmental	$160,000
6. Price Inflation Risk	$90,000
7. Material Delays	$130,000
Total	$800,000

Explain unique payment provisions, if applicable:

Two material exemption forms have been approved for the project on 10/20/2021 and 12/9/2021. The first authorized $90K for the switch combo and neutral reactor. The second was approved for $80K for physical material, structural steel, conduits, anchor bolts, control cables, grounding wire and protective relaying. The transformers were purchased via Eversource blanket purchase order with Hitachi for large transformers. The 3X transformer is currently onsite and the 2X transformer is scheduled for delivery in January 2023.

Identify and detail any unique O&M impacts resulting from this project: None

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[3] TECHNICAL JUSTIFICATION

Project Need, Objective and Justification

[redacted] substation in Ridgefield, CT serves 11,081 customers and is a 115kV to 13.8kV two (2) transformer substation. See Attachment D for the One-Line diagram. The current nameplate rating for the 22N-2X (49 years old) and 22N-3X (50 years old) is 47MVA and both are recommended to be replaced with new 62.5 MVA transformers (new standard design from HICO). The main driver of this project is the health index of both transformers and an event that occurred in June 2021 on the 22N-3X. On June 30, 2021, the 22N-3X transformer tripped and locked out. Oil results taken on 6/30/22 discovered that there was an increase in acetylene confirmed by both Myrkos and Doble test results. Results from additional sample taken on 7/1/22 show ~50% increase in acetylene from 8ppm – 13ppm. This increase suggested that an internal event did occur and warranted testing. Eversource contracted North American Substation Services (NASS) to do a full internal inspection on the unit and could not confirm an internal fault occurred. While a root cause has not been identified, this does not mean that there is not an issue internal to the windings that has yet to present itself again which would result in a similar trip. It was discussed to possibly detank, inspect and even rewind the transformer; however, the cost and risk of this type of solution outweighs any benefit for a transformer that is 50 years old. The unit was placed back in service on August 16, 2021 and has been operating normally, but due to the condition and unknown failure cause, it should be replaced.

In addition to replacing the failed [redacted]-3X transformer, this project proposes to replace the 22N-2X due to the similar poor health index and the station being overloaded. The [redacted]-3X has a Power Transformer Expert System (PTX) short term health index of 0.68 and the 22N-2X of 0.59. The PTX is a thoroughly researched and widely used Electric Power Research Institute (EPRI) tool that utilizes nameplate and transformer oil data to calculate transformer health. A health index > 0.50 indicates loss of useful insulation life and shows potential replacement candidates. Currently, the [redacted] scores are the highest in the CT fleet. The PTX tool pulls data from Cascade/TOA4, which is provided by Eversource field teams during routine or emergent inspections. It does not include tripping events in its calculations; however, as oil data trends in the abnormal direction the health indices will increase.

Prior to the failure, [redacted] station peaked at 61MVA in 2021 which is 103% of its Load Carrying Capacity (LCC). The station's LCC is limited by the firm rating, 53MVA, plus the available transfer capacity, 6MVA. Replacing both [redacted] transformers with 62.5MVA 115/13.8KV transformers will increase the station's LCC from 59MVA to 81MVA and facilitate offloading the adjacent station Peaceable 12N. Peaceable 12N peaked at 33.7MVA in 2021 which is 89% of its LCC limit. Projects are initiated after exceeding 90% of the station limit which Peaceable 12N is forecasted to exceed in 2022.

Overload Ratings:

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Transformer	Nameplate	Rating (LTE)
22N-2X	28/37/47 MVA	53.4 MVA
22N-3X	28/37/47 MVA	53.4 MVA

Existing Station Capabilities:

Total Station Capacity (N)	Station Firm Capacity (LTE)	Load Transfers	Total LCC
93 MVA	53.4	6	59 MVA

2022-2026 Projected Load:

2022	2023	2024	2025	2026
61.3 MVA	61.6 MVA	61.9 MVA	62.3 MVA	62.6 MVA

After both the 22N-2X and 22N-3X are replaced with the standard 62.5MVA, normal rating, the new LCC with be at 76%.

Project Objectives

Replace the 22N-3X and 22N-2X transformers to improve reliability and increase the station capacity. The station currently feeds a load above 103% of its normal capacity rating during N-1 contingency. To maintain a reliable standard of service, it is necessary to replace the existing 47MVA transformers with the Eversource 62.5MVA standard transformer. The project will also accomplish the following:

- Replace electromechanical replays with new standard transformer protection.
- Replacement of the existing 22N-3X1-4 motor operated disconnect (MOD) switch and 22N-3X1-2 circuit switcher with a new circuit switcher/MOD combo unit designated 22-3X1-4.
- Replacement of the existing 22N-2X1-4 motor operated disconnect switch and 22N-2X1-2 circuit switcher with a new circuit switcher/MOD combo unit designated 22-2X1-4.
- Installation of a dedicated neutral reactor to each transformer.
- Replacement the 22N-2X and 22N-3X low side potential transformers (PTs) and station service transformer.

Project Scope

The scope of this project is for the engineering design and construction to complete the [redacted] transformer replacements.

The scope to replace both 49 and 50-year-old 28 / 37.3 / 46.7 MVA 115kV/13.8kV [redacted] transformers in the current footprint with no expansion needed includes the following:

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- Installation of a mobile transformer 70MX and temporary fencing during transformer replacements.
- Remove existing transformer and switch/MOD foundations.
- Remove existing conduits between transformers and control house to accommodate new foundations.
- Install new foundations for transformers and switch/MOD combos.
- Removal and disposal of existing transformers. Cost for oil disposal and rigging, less sale of transformers for salvage is included in the estimate.
- Replacement of the failed [redacted]-3X 28/37.3/46.7 MVA power transformer with a new 37/50/62.5 MVA unit on a new foundation.
- Replacement of the existing 22N-3X1-4 motor operated disconnect switch and 22N-3X1-2 circuit switcher with a new circuit switcher/MOD combo unit designated 22-3X1-4.
- Replacement of the [redacted]-2X 28/37.3/46.7 MVA power transformer with a new 37/50/62.5 MVA unit on a new foundation.
- Replacement of the existing 22N-2X1-4 motor operated disconnect switch and 22N-2X1-2 circuit switcher with a new circuit switcher/MOD combo unit designated 22-2X1-4.
- Installation of new conduits between the transformers and the control house.
- Installation of new 115kV bus supports.
- Installation of a dedicated neutral reactor to each transformer.
- Replace 22N-2X electromechanical relays.
- Replace the 22N-2X and 22N-3X low side PTs and station service transformers.
- Replace 200AH battery with higher capacity 300AH in control house. The upgraded size is needed to accommodate the replacement of obsolete electromechanical relays, that are susceptible to failure, with microprocessor relays. Additionally, DSCADA capability was added to the 22N-2X and 22N-3X.
- Sound study to identify any additional modifications required. This study has been completed and sound levels with new transformer are lower than existing units.

A constructability review was performed on November 23, 2021 (see Attachment C).

Substation Equipment

Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*

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[redacted]			HICO
			HICO
		[redacted]	Circuit switcher MOD combo unit
			Circuit switcher MOD combo unit

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Background

On June 30, 2021, the 22N-3X transformer tripped and locked out. Oil results taken on 6/30/22 discovered that there was an increase in acetylene confirmed by both Myrkos and Doble test results. Results from additional sample taken on 7/1/22 show ~50% increase in acetylene from 8ppm – 13ppm. This increase suggested that an internal event did occur and warranted testing. Eversource contracted North American Substation Services (NASS) to do a full internal inspection on the unit and could not confirm an internal fault occurred. While a root cause has not been identified, this does not mean that there is not an issue internal to the windings that has yet to present itself again which would result in a similar trip. It was discussed to possibly detank, inspect and even rewind the transformer; however, the cost and risk of this type of solution outweighs any benefit for a transformer that is 50 years old. The unit was placed back in service on August 16, 2021 and has been operating normally, but due to the condition and high gas levels, it should be replaced.
. In addition to replacing the failed [redacted]-3X transformer this project will replace the 22N-2X transformer due to both asset condition and the station load. The 22N-2X is similar age and condition as the 22N-3X that failed in 2021. Prior to the failure of the 22N-3X transformer, [redacted] station peaked at 61MVA which is 103% of its LCC. This project is also replacing the obsolete transformer protection relays for both the 22N-3X and 22N-2X transformers and circuit switchers.

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[4] ALTERNATIVES CONSIDERED

This project was presented to SDC on December 8, 2021 and the preferred alternative was approved.

Alternative 1 - Replace the 22N-2X and 22N-3X (Preferred)

The preferred solution will require replacement of the existing 22N-2X and 22N-3X transformers with the Eversource 62.5MVA standard transformer. A constructability walkdown with Station Operations, Substation Engineering, P&C Engineering, Civil Engineering, and Siting, and Environmental was held November 23, 2021. At the walkdown the overall project scope of work was prepared and a cost estimating approach was developed.

The following project scope and risks have been assessed and built into the planning grade estimate. The new transformers will only fit in the substation if the existing circuit switchers (C/S) and high side MODs are replaced with new CS/MOD combo units. A sound study has been completed and the property line sound pressure level will be reduced due to the transformers' replacement. There are no current environment concerns associated with the old foundations. The old foundations will be removed, new foundations will be installed. Removal of the old foundations and installation of new foundations are covered in the planning grade estimate. The existing transformer relays will be replaced with new microprocessor-based relays. The existing control house can accommodate all needed upgrades. The new microprocessor-based relays are not expected to increase the DC load compare to the old relays. The existing low side bus and switchgear can handle the increased transformer capability. New current transformers (CTs) will not be required for the low side transformer switchgear breakers. A battery capacity analysis has been completed and it has been determined a large battery size is needed.

Cost Estimate – $11.465M – Planning Grade -25% / +25% **Advantages** – Increase station capacity by approximately 20-25MVA. Replacement of the 22N-3X can be completed before summer 2023. Electromechanical relays will be upgraded to microprocessor relays. Ability to offload Peaceable 12N substation and defer the replacement of the Peaceable 12N transformer replacements for 5-10 years. The 12N transformers health indexes are presently not at a concerning level.

Disadvantages – None

Alternative 2 - Further Testing, Load Transfer, and Replace Peaceable 12N Transformers

To further investigate the cause of the 22N-3X failure it would need to be detanked, inspected, and the transformer rewound. This would provide no capacity gain so there would also need to be load transfers of 12MVA. All possible transfers have been evaluated and the options are limited. [redacted] is located next to the Eversource boundary to the west and the closest

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station, Peaceable 12N, is approaching its limit. The only transfer available without causing an overload is 3.5MVA to Triangle 11A57 for about $600K picking up the 22N6-71S zone. Not gaining capacity at [redacted] will result in replacing Peaceable 12N transformers and switchgear. This project could be deferred with option 1 for 5-10 years. After the Peaceable 12N project is completed a larger offload from [redacted] can be accomplished.

Cost Estimate – $28.5M (Repair 22N-3X - $3.83M + Peaceable 12N - $22-24M + load transfer $600K) conceptual estimate.

Advantages – None

Disadvantages – The repair process would take 12-15 months and during this time the [redacted] station would be on a mobile position and field ties would be in abnormal condition during peak loading conditions. Distribution design is exploring adding feeder positions to [redacted]. If the transformer is repaired instead of replaced, the full benefit of the additional feeder positions would not be realized. The electromechanical relay upgrade to microprocessor isn't included in the estimate. The Peaceable 12N station upgrade is very costly, and the cost cannot be deferred with this option. Replacement of the Peaceable 12N transformers will be challenging due to the lack of space and station arrangement. The [redacted]-2X is similar vintage and condition as the 22N-3X and this option does not include the replacement of this transformer. The replacement of the 22N-3X is a much longer solution and more cost effective than repairing. This option is also the higher cost.

Alternative 3 - NWA (Non-wires Alternative)

Does not qualify due to poor health indexes for both transformers.

Alternatives 4 - Do Nothing

Not recommended to do nothing with the [redacted]-3X due to it having failed once. Not recommended to do nothing with the [redacted] 2X due to it having the same age, vintage, and poor health index rating. Also, the station exceeded its LCC limit in 2021 and there is limited ability to transfer load as stated above in Alternative 2.

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[5] PROJECT SCHEDULE

Milestone	Scheduled Completion Date
Project Need by Date	5/31/23
Date of IFR Approval	9/15/21
Complete Conceptual design of Alternative(s)	9/24/21
Initiator complete SSF form	11/29/21
SDC Presentation Date(s)	12/8/21
Conversion of Tx development costs, 183 to 107 (applicable to projects that require SSF approval but do not require ISO alternative selection)	N/A
Partial Funding Approval at EPAC	3/29/22
Preliminary Design Complete	4/29/22
Preliminary Design Constructability review complete	5/13/22
Full funding estimate complete	6/24/22
Full funding estimate review	7/5/22
Initiator complete PAF form	7/7/22
EPAC Funding Dates (Full-funding)	7/20/22
Detail Design Complete	6/30/22 (3X) / 8/1/22 (2X)
Final Constructability Review Complete	11/23/21
Targeted Milestone Dates:	
· Siting Approval (if applicable)	N/A
· Env. Approvals (if applicable)	N/A
· Outage & Energization Plan Issued	3/2/22
· All Material on Site	7/30/22 (3X Trans) / 12/31/22 (2X)
· Outage Permit(s) Approved	4/15/22
IFC Design Complete	7/29/22 (3X Trans) / 9/30/22 (2X)
Start of Construction	9/6/22 (3X Trans) / 1/3/23 (2X)
Project ISD	12/15/22 (3X Trans) / 5/31/23 (2X)
Relay Settings Issued (*Required for Full Funding requests)	3/31/22
ISO Related Milestones (for applicable projects)	
· ISO Preferred Alternative Selected	N/A
· Conversion of Tx development costs, 183 to 107 · (following ISO preferred alternative selection)	N/A
· PAC Presentation	N/A
· TCA Submittal	N/A

See Attachments B1 and B2 for the P6 schedules.

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[6] REGULATORY APPROVALS

Regulatory approvals will not be required due to the replacement of the Ridgefield transformers and protective relays.

[7] RISK AND RISK MITIGATION PLANS

Contingency:

A contingency amount of $357K has been included in the total project estimate to account for any unknows.

Risk Mitigation:

Risk	Mitigation
1. Potential UG Obstructions	Will require review during construction if obstructions observed by civil contractor. Test pits and new conduits for the 2X & 3X transformers if needed. Risk allocation is also included in the estimate.
2. Severe Weather, Delays, OT	Review scheduling and forecasts; may require extended labor and overtime. Risk allocation is included to cover extended labor and overtime.
3. Design development	Engage internal and vendor resources to modify design to meet schedules. Risk allocation is also included in the estimate.
4. Complications of mobile installation	During transformer replacement, a mobile transformer will be installed to carry station load. May require redistribution of loads on the energized transformer. Risk allocation is also included in the estimate.
5. PCB Contaminated soil disposal offsite and replacement with new soil - Environmental	Provide disposal services as required. May require removal of contaminated soil and provide new soil as replacement. Risk allocation is also included in the estimate.
6. Price Inflation Risk	Keep Major equipment delivery on time. Risk allocation is also included in the estimate.
7. Material Delays	Order materials as early as possible to arrive one (1) to two (2) months ahead of planned usage. Risk allocation is also included in the estimate.

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[8] REFERENCES

References
1. CS00516 Transformer Replacements IFR, dated 9/1/2021
2. CS00516 Transformer Replacements SSF, dated 11/24/2021
3. CS00516 Transformer Replacements Partial Funding PAF, dated 3/24/2022
4. The Eversource Distribution System Planning Guide
5.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B1. P6 Schedule – 3X	*YES*
B2. P6 Schedule – 2X	*YES*
C. Constructability Review	YES
D. System and Station One-Lines	*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] **Transformer Replacements**		**Project Number: CS00516**	
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):	06/14/2022		
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?	Yes		
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?	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?	Yes		
Is there an impact to the existing ground grid?	Yes		
Is a Transient Over Voltage (TOV) analysis required?	No		

REDACTED

EVERSOURCE
Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] Transformer Replacements	**Project Number: CS00516**
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	
Is a Siting filing required? *(If yes, list in regulatory approvals section)*	No
PERMITTING	
Is there any permitting required? *(If yes, list in regulatory approvals section)*	No
PROJECT SERVICES (OUTREACH) and ROW WORK COORDINATION	
What is the level of outreach expected?	Medium
Is any part of this project in an Environmental Justice Community?	No
Has ROW Coordination reviewed this project?	Yes
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?	No
COST ESTIMATING	
What team/firm prepared the cost estimate?	Other (specify below)
Name of the person who prepared the estimate:	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes - Full Review

ESTIMATE SUMMARY

Project Title [redacted] - Replace 2X & 3X Transformers
Project Mgr/Lead [redacted]
Project Number: CS00516
WO & Task #: 80121160 & 80121158
Estimate revision #: 01
Estimate Type - Station work

Estimate #: C-22-312
Date of Estimate:06/24/2022
Estimate done by [redacted]
In Service date (ISD):12/31/2023

Template Revision # 01.70b1

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases														
2	Environmental Approvals / Permits														
3	Outreach	$12,200	0.2%	0.1%		$4,500	$7,700								
4	Siting Approvals / Permits	$64,300	0.8%	0.6%		$23,700	$40,600								
5	Engineering / Design	$1,208,300	15.0%	10.5%	$907,300	$173,800	$127,200								
6	Materials (Eversource purchased)	$3,408,400	42.3%	29.7%		$1 348 800	$2 059 600								
7	Construction (incl mat'l's by contractors)	$1,811,800	22.5%	15.8%		$470 600	$1 341 200								
8	Testing / Commissioning	$474,200	5.9%	4.1%		$233,600	$240,600								
9	PMT Project Mgmt Team	$189,700	2.4%	1.7%		$94.700	$95.000								
10	Removals	$96,300	1.2%	0.8%		$28 300	$68 000								
11	Other														
12	Risks	$800,000	9.9%	7.0%		$400,000	$400,000								
12S															
	Project Directs Total w/Risks	**$8,065,200**	100.0%	70.3%	**$907,300**	**$2,778,000**	**$4,379,900**								
13	Indirects/Overhead	$2,601,500		22.7%		$998 900	$1 602 600								
14	AFUDC	$451,100		3.9%		$181,700	$269,400								
13S															
	Project Total - Baseline Budget	**$11,117,800**		97.0%	**$907,300**	**$3,958,600**	**$6,251,900**								
15	Contingency	$347,100		3.0%		$130,000	$217,100								
	Project Total - Funding Approval Level	**$11,464,900**		100.0%	**$907,300**	**$4,088,600**	**$6,469,000**								
16	Reimbursables/Customer Contribution														
~															
	Project Total (less reimbursables)	**$11,464,900**			**$907,300**	**$4,088,600**	**$6,469,000**								
	Cost per key qty (if appl)	5,732,450 $'s / EA 115/13.8kV 37.5/48/62.5 MVA Delta-Wye													
	Amount of Escalation included above	$133,200					$133,200								
6	Total materials - Eversource	$3,408,400				$1,348,800	$2,059,600								
	Total materials - Contractor														
	Total materials	$3,408,400				$1,348,800	$2,059,600								

NOTE: Risk / Contingency is 11.1% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	**-25%**	**25%**
	$8,599,000	**$14,331,000**

COMMENTS:

Project Scope:

Key qty's and UOM (tie to inputs on est sheets): 2 EA 115/13.8kV 37.5/48/62.5 MVA Delta-Wye

Substation engineering scope of work for the Replacement of two existing **115kV/13.8kV (47MVA)** power transformers to **62.5MVA**. In addition to replacing the failed [redacted] 3X transformer this project will replace the 22N-2X due to both asset condition and the station load. The 22N-2X is similar age and condition as the 22S-2X that failed last summer. Replacing both [redacted] transformers with 62.5MVA 115/13.8kV transformers will increase the station s LCC from 59MVA to 81MVA and facilitate offloading the adjacent station transformer 12N. Included with this alternative are the following:

Equipment removals include the following:
Two (02), 115kV motor operated Disconnects (MODs) i.e., 2X1-4 and 3X1-4 with associated foundations.
Two (02), 115kV Candle stick Circuit switchers i.e., 2X1-2 and 3X1-2 with associated foundations.
Two (02), 115/13.8kV Transformers with associated foundations and rerouting of conduits.

Equipment additions include the following:
Two (02), 115kV Combination unit Circuit switchers.
Two (02) three phase bus support structures supporting rigid bus connection to circuit switcher.
Install new foundation and control conduits for both 115kV Circuit Switchers – Disconnect Switch Combination Unit.
Two (02), 115/13.8kV HICO Transformers with associated foundations, rerouting of conduits with no new containments.
Two (2), 13.8kV, 600A, 0.4ohm Neutral Grounding Reactors.
Additional conduits re-routed to the new transformers location.
Extension of control conduits to new transformer control cabinet.
Replacement of the existing 2X only transformer electromechanical relays with new microprocessor-based relays. For 3X transformer electromechanical & DSCADA relays were repalced previously under **CS00581**. further, add DSCADA LTC capability to 2X transformer.
Replace existing Six (06) 25kVA SSVTs and associated PTs for both 2X & 3X transformers.
Install higher capacity battery (320AH) in control house tro bring the existign 200Ah battery to **SUB 18** and to supply added DSCADA communication load.
Replace current EPAQ9100 RTU with SEL-3530 RTAC.
for both 2X and 3X, Over-current, Differential & Lock-out relays. Electroswitch LOR, PML 8650 Meter; PM2000 Meter;
Test Switches type FT-19R, as required; Test Switches type FT-1, as required.

Assumptions/Clarifications:

Indirect rates based on: 11 - CT_Station work

Engineering, Construction, testing and commissioning to be outsourced.
Risks for soil contamination is anticipated.
Transformer foundation soil pre-characterization will be performed.
EOC vendor's Civil, Electrical and P&C Engineering teams would be involved during the course of this project.
Eversource Material estimates are based on previous work and vendor quotes.
Risk allocation is included to account for unforeseen conditions during civil construction and complications of installing the mobile.
contingency is included for unforeseen conditions and situations.
All new equipment will be installed within the confines of the existing fenced yard.
No additional allowances have been added for aggressive outage recall times.

RISKS

Potential UG Obstructions	$ 80 000
Severe Weather. Delays. OT	$ 120 000
Design development	$ 120 000
Complications of mobile installation	$ 100 000
PCB Contaminated soil dispose off and repalcement with new soil -	$ 160 000
Price Inflation Risk	$ 90 000
Material Delays	$ 130 000

Project Estimate Summary (07 PHI Cost [estimator version])

Estimate #: C-22-312
Date of Estimate:06/24/2022

Project Number: CS00516
WO & Task #: 80121160 & 80121158

		TOTAL w/ escal broken out	
ROW / Easements / Land purchas	$	-	
Environmental Approvals / Permi	$	-	
Outreach	$	12,000	
Siting Approvals / Permits	$	63,100	
Engineering / Design	$	1,204,700	
Materials (Eversource purchased	$	3,377,800	move contractor ma
Construction (incl mat'l's by cont	$	1,772,700	$ -
Testing / Commissioning	$	467,200	
PMT Project Mgmt Team	$	187.000	
Removals	$	94 300	
Other	$	-	
Risks	$	800,000	
		$7,978,800	
Indirects/Overhead	$	2 554 800	
AFUDC	$	451,100	
	$	-	
		$10,984,700	
	$	-	
Contingency	$	347,100	
		$11,331,800	
	$	-	
	$	-	
	$	-	
		$11,331,800	
	$	133,200	
Escal total		**$11,465,000**	
Check total		5100	

UNESCALATED LINE ITEM DOLLARS

Project Number CS00516
Date of Estimate 06/24/2022
Estimate revision # 01

Escalation Rate | E Rate $ | Prior | 2022 | 2023 | 1 | 2024 | 2 | TOTAL

	R	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS
CSTXX-CONSTRUCTION											
Electrical Construction	LT										
General Construction	LT										
SCADA / Automation	LT										
Telecom - Field	LT										
Construction Reps (internal)	LT										
Support Switch/Tag	LT										
Other (specify)	LT										
	LT										
Other (specify)	LT										
LT Total											
Employee Expenses	AE										
Construction Purchased Material	AM										
Outside Construction Vendor	AQ										
Sales tax on Constr. Vendor											
Vehicles (now in indirects section)	AV										
Inspection services (Outside Vendor)	AQ										
Construction Rea l(Outside vendor)	AQ										
Rents and Leases	BR										
CSTXX Subtotal											
Escalation											
CSTXX Total											
ENRXX-TG ENGINEERING/DESIGN											
Project Services/Drafting	LT										
T- Line Engineering/Design	LT										
D- Street Engineering/Design	LT										
Civil Engineering/Design	LT										
Substation (T) Engineering/Design	LT										
Substation (D) Engineering/Design	LT										
Protection & Controls Engineering	LT										
Survey Engineering	LT										
SCADA / Automation Engineering	LT										
Telecom Engineering	LT										
Prior Authorized (Partial Funding)	LT										
Other - specify	LT										
LT Total											
Employee Expenses	AE										
Contractor Engineering - T-Lines	AQ										
Contractor Engineering - D-Street	AQ										
Contractor Engineering - T -Station	AQ										
Contractor Engineering - D-Station	AQ										
Contractor Engineering - P&C	AQ										
Contractor Engineering - Survey	AQ										
Contractor Engineering - SCADA / Automation	AQ										
Contractor Engineering - Telecom	AQ										
Contractor Engineering - Civil	AQ										
Contractor Engineering - Specify	AQ										
Contractor Engineering - Specify	AQ										
Vehicles (now in indirects section)	AV										
ENRXX Subtotal											
Escalation											
ENRXX Total											
LNDXX-TG LAND											
Real Estate	LT										
Employee Expenses	AE										
Purchase Land	AM										
Vehicles (now in indirects section)	AV										
Fees and Payments	BF										
LNDXX Subtotal											
Escalation											
LNDXX Total											
MATXX-TG MATERIAL											
Eversource	AM										
Outside Services	AM										
	AM										
Freight											
Sales Tax Eversouce/outside services	3.9%										
Other											
MATXX Subtotal											
Escalation											
MATXX Total											
PSMXX-PROJECT MANAGER & SUPPORT											
Project Management (PM)	LT										
Project Planning/Cost (PP)	LT										
Contracts/Purchasing (C/P)	LT										
System Planning	LT										
Environmental	LT										
SCS - Notification	LT										
Legal	LT										
Estimating	LT										
Siting - Exempt Modification	LT										
Asset Management	LT										
Other - Material Coroidinators	LT										
Other -	LT										
Other -	LT										
Other -	LT										
LT Total											
Employee Expenses	AE										
Project Support Vendor - PM	AQ										
Project Support Vendor - IP	AQ										
Project Support Vendor - C/P	AQ										
Project Support Vendor - System Planning	AQ										
Project Support Vendor - Environmental	AQ										
Project Support Vendor - SCS - Notification	AQ										
Project Support Vendor - Legal	AQ										
Project Support Vendor - Estimating	AQ										
Project Support Vendor - Siting - Exempt Modification	AQ										
Project Support Vendor - Asset Management	AQ										
Project Support Vendor - Other	AQ										
Project Support Vendor - Other	AQ										
Project Support Vendor - Other	AQ										
Project Support Vendor - Other	AQ										
Vehicles (now in indirects section)	AV										
Property or CWIP tax large proj. allowance	BR										
Builder All risk insurance excluding deductables(if project is over $50m)	BR										
Fees and Payments - Enviromental	BF										
Fees and Payments - Siting	BF										
Fees and Payments - Other	BF										
PSMXX Subtotal											
Escalation											
PSMXX Total											
REMXX-TG REMOVAL											
Engineering/Design	LT										
Internal Construction	LT										
LT Total											
Employee Expenses	AE										
Outside Services	AQ										
Contractor Labor	AQ										
Vehicles (now in indirects section)	AV										
Rents and Leases	BR										
REMXX Subtotal											
Escalation											
REMXX Total											
TSTXX-TG TEST											
Test / Field Engr. Labor (In House)	LT										
Lead Commissioning Engr. (LCE) (internal)	LT										
Employee Expense	AE										
Test / Field Engr. Labor (contractor)	AQ										
Lead Commissioning Engr. (LCE) (contactor)	AQ										
Vehicles (now in indirects section)	AV										
TSTXX Subtotal											
Escalation											
TSTXX Total											
SUBTOTAL PROJECT DIRECT COST											
Risk											
Risk											
Risk Total											
TOTAL PROJECT DIRECT COST (w risk)											
INDIRECTS											
Non-Productive Time Allocation (**ZNP**)											
Payroll Benefits Allocation (**ZPR**) incl NPT											
Gen SVC CO Overhead (**ZGS**) incl NPT											
E&S Allocations (**ZEB,ZES, ZES**)											
AS&E A llocations (**ZAS**)											
Stores Expense Allocation (**ZST**)											
Lobby Stock											
MDEC (**ZME**)											
Vehicles (**ZVE**)											
Indirects Subtotal											
TOTAL PROJECT COST - Direct & Indirect (excl AFUDC)											
AFUDC											
AFUDC (ZK)											
In Service Dollars											
Cumulative IS$											
AFUDC Subtotal											
TOTAL PROJECT COST - Baseline Budget											
Contingency											
Contingency											
Other											
Contingency SubTotal											
TOTAL PROJECT COST - Approved Funding											
Reimbursables / Customer Contribution											
Reimbursables / Customer Contribution (enter as negative)											

8/1/2022 6:20 PM

[redacted] 3X Transformer; Circ Switcher Replacement (CS00516) | Print PM update | 12-Jul-22 16:29

#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
1			**3X Transformer; Circ Switcher Replacement (CS00516)**		0	16-Apr-21 A	26-Jul-23		263					
2	80121158	PT1000	Project Timeline - WBS Summary Activity	In Progress	0	16-Apr-21 A	26-Jul-23	47.08%	263				TBD-TPM.S	ENG.SCI
3	**PROJECT PLANNING & FUNDING**				117	03-Aug-21 A	08-Feb-23		146					
4	80121158	PPF1000	Project Planning & Funding - WBS Summary Activity	In Progress	117	03-Aug-21 A	08-Feb-23	61.58%	146				TBD-TPM.S	ENG.SCI
5	**T-Minus Milestones**				168	11-Jul-22	08-Feb-23		213					
6	**Civil T-Minus Milestones**				0	11-Jul-22	06-Sep-22		57					
7	80121158	AT00	T-00 Civil- START OF CONSTRUCTION - WO# 80121160	Not Started	0	06-Sep-22*		0%	0		AT0203, AT0409, AT0401, AT	BT00, A1	TBD-TPM.F	CONS
8	80121158	AT0401	ALL CIVIL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	Not Started	29		11-Jul-22	0%	0		TRANS-570, DSSE-560	AT00, BTI		CONS
9	80121158	AT0805C	IFC - Civil (BG) w/BOM	Not Started	38		29-Jul-22	0%	0		DSSE-120	AT00, 12!	TBD-TPM.(	ENG.ST.:
10	**Electrical T-Milestones**				-156	11-Jul-22	08-Feb-23		213					
11	80121158	AT0203	CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	Not Started	24		12-Aug-22	0%	0		A1170	AT00, BTI		PM
12	80121158	AT0301	T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX	Not Started	-154		22-Aug-22*	0%	0		NX9A-NC49, NX9A-NC47, NX	BT00	TBD-TPM.F	CONS
13	80121158	AT0805E	Elect IFC - Electrical (AG) w/Final BOM	Not Started	-18		29-Jul-22	0%	0		DSSE-240	BT00, CT		ENG.ST.:
14	80121158	AT1201	SCADA Date (Tab) Sheets/Signal List Sent to LCC	Not Started	57		11-Jul-22	0%	0		DSSE-990	BT00		ENG.ST.I
15	80121158	AT1805	T-18 NX9 Preliminary Ratings to LCC for New Equipment (transformers are cc	Not Started	-159		09-Aug-22*	0%	0		NX9A-NC149, NX9A-NC89	BT00, CT	TBD-TPM.F	CONS
16	80121158	AT1805T	T-18 NX9 Preliminary Ratings to LCC for Temp Transformer	Not Started	-282		08-Feb-23*	0%	0		NX9A-NC149T	BT00	TBD-TPM.F	CONS
17	80121158	BT00	T-00 Electrical START OF CONSTRUCTION - WO#80121160 - Transformer Te	Not Started	0	06-Sep-22*		0%	0		AT00, BT1801, AT1805, AT0(	TOA-Test	TBD-TPM.F	CONS
18	80121158	BT0301	T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX Temp Transformer	Not Started	-147		15-Aug-22*	0%	0		NX9A-EM34T	BT00	TBD-TPM.F	CONS
19	80121158	BT0401	ALL ELECTRICAL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEV	Not Started	0		08-Aug-22	0%	0		TRANS-570, REACT-550, CIF	BT00		CONS
20	**P&C T-Minus Milestones**				348	11-Jul-22	12-Aug-22		33					
21	80121158	AT0805P	P&C IFC - P&C w/BOM	Not Started	1		11-Jul-22*	0%	0		DSSE-220, AT0404, AT2605	BT00, CT	TBD-TPM.(	ENG.ST.I
22	80121158	AT1202	P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED	Not Started	348		12-Aug-22	0%	0		DSSE-460, DSSE-930, DSSE			ENG.ST.I
23	**Project Funding**				216	05-Jul-22 A	14-Sep-22		47					
24	**Full Funding**				216	05-Jul-22 A	14-Sep-22		47					
25	**PAF - FF**				0	05-Jul-22 A	19-Jul-22		7					
26	801211!	PAFF2000	Submit Full Funding PAF for Internal Review	In Progress	0	05-Jul-22 A	15-Jul-22	0%	5		DE1600	PAFF2100		ENG.AM
27	801211!	PAFF2100	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC I	Not Started	0	18-Jul-22	18-Jul-22	0%	1		PAFF2000	PAFF2200		ENG.AM
28	801211!	PAFF2200	Incorporate EPAC Full Funding PAF Review Comments	Not Started	0	19-Jul-22	19-Jul-22	0%	1		PAFF2100	FF1000		ENG.AM
29	**EPAC - FF**				0	20-Jul-22	20-Jul-22		0					
30	801211!	FF1000	EPAC Full Funding Approval	Not Started	0		20-Jul-22*	0%	0		PAFF2200	FF1010, /		IP
31	**Power Plan - FF**				216	17-Aug-22	14-Sep-22		20					
32	801211!	FF1010	Full Funding PowerPlan Approval	Not Started	216	17-Aug-22*	14-Sep-22	0%	20		FF1000			IP
33	**Electrical Conceptual & Preliminary Engineering Design**				324	11-Jul-22	06-Sep-22		57					
34	**Removal T-Milestones**				324	11-Jul-22	06-Sep-22		57					
35	80121158	BT0805E	REMOVAL -IFC - Electrical (AG) w/BOM	Not Started	18		11-Jul-22*	0%	0		DSSE-REM	RT00	TBD-TPM.E	ENG.ST.:
36	80121158	RT00	REMOVAL -RT-00 - Removal - Construction Start - WO# 80121160	Not Started	324	06-Sep-22*		0%	0		RT0409, RT0203, RT0401, R	RCSM	TBD-TPM.F	CONS
37	80121158	RT0203	REMOVAL -R-T-02.03 Go / No-Go [CAN] Construction Authorization Notice Fo	Not Started	356		21-Jul-22*	0%	0		R1170	RT00		PM
38	80121158	RT0301	REMOVAL -R-T-03.01 NX-9 Ratings to LCC & ISO for Existing Equipment (EN	Not Started	357		14-Jul-22*	0%	0			RT00	TBD-TPM.F	CONS
39	80121158	RT0401	REMOVAL -R-T-04.01 Final Material Receipt Review Completed *ES Purchas	Not Started	0		29-Jul-22*	0%	0			RT00		CONS
40	**Project Management**				15	01-Aug-22	12-Aug-22		10					
41	**Compliance Authorization Notification**				15	01-Aug-22	12-Aug-22		10					
42	80121158	A1170	Prepare CAN (Construction Authorization Notice)	Not Started	15	01-Aug-22*	12-Aug-22	0%	10		A1220, DSSE-240, DSSE-12	AT0203		PM
43	**SITING APPROVALS / PERMITS / PROJECT SERVICES**				15	18-Jan-22 A	12-Aug-22		25					
44	80121158	SIT1000	Siting Approvals / Permits / Project Services - WBS Summary Activity	In Progress	15	18-Jan-22 A	12-Aug-22	26.47%	25				TBD-TPM.S	ENG.SCI
45	**Compliance Matrices - Regulatory Committments**				15	18-Jan-22 A	12-Aug-22		25					
46	80121158	A1230	Prepared Compliance Matrices - Regulatory	In Progress	15	18-Jan-22 A	12-Aug-22	26.47%	25		PE1600	A1170		PM
47	**Compliance Matrices - Non Regulatory Committments**				15	18-Jan-22 A	12-Aug-22		25					
48	80121158	A1220	Prepared Compliance Matrices - Non-Reqgulatory (Commitments)	In Progress	15	18-Jan-22 A	12-Aug-22	26.47%	25		PE1600	A1170		PM
49	**ENGINEERING DETAILED / IFC DESIGN**				117	01-Oct-21 A	08-Feb-23		146					
50	80121158	ENG1000	Engineering Detailed / IFC Design - WBS Summary Activity	In Progress	117	01-Oct-21 A	08-Feb-23	56.68%	146				TBD-TPM.S	ENG.SCI

TASK filter: 1. Non-Completed Activities.

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[redacted] 3X Transformer; Circ Switcher Replacement (CS00516) | Print PM update | 12-Jul-22 16:29

#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
51			**Civil Engineering**		15	27-Dec-21 A	29-Jul-22		15					
52			**Civil Engineering IFC Design**		15	27-Dec-21 A	29-Jul-22		15					
53	80121158	DSSE-120	Civil Package IFC	In Progress	15	27-Dec-21 A	29-Jul-22	0%	15		DSSE-110	NX9A-NC	V	ENG.ST:
54			**Electrical Engineering**		117	27-Dec-21 A	08-Feb-23		146					
55			**Electrical Engineering NX-9**		117	21-Mar-22 A	08-Feb-23		146					
56			**Distribution Thermal Ratings NX-9 (Transformer Replacement Is Considered New Equipment)**		145	21-Mar-22 A	28-Dec-22		118					
57			**Thermal Ratings - Substation - Preliminary Thermal**		241	06-Jun-22 A	09-Aug-22		22					
58	8012	X9A-NC109	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-111	01-Aug-22	01-Aug-22	0%	1		NX9A-NC119	NX9A-NC	TBD-TPM	ENG.SCI
59	8012	X9A-NC119	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-111	25-Jul-22	29-Jul-22	0%	5		NX9A-NC129	NX9A-NC	L.LECLAMJ	ENG.ST:
60	8012	X9A-NC129	TRC Reviews and Approves Thermal Rating Data	Not Started	-111	18-Jul-22*	22-Jul-22	0%	5		NX9A-NC139	NX9A-NC	H.HANNISI	ENG.AM
61	8012	X9A-NC139	LTRC Reviews and Sends Thermal Rating Data for TRC Review	In Progress	-111	06-Jun-22 A	15-Jul-22	0%	5		NX9A-NC79	NX9A-NC	L.LECLAMJ	ENG.ST:
62	8012	X9A-NC149	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, Ec	Not Started	-111	09-Aug-22	09-Aug-22	0%	1		NX9A-NC89	AT1805	TBD-TPM	ENG.SCI
63	8012	\X9A-NC69	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-30(	Not Started	248	25-Jul-22*	29-Jul-22	0%	5		DSSE-410	NX9A-NC	TBD-TPM	ENG.ST:
64	8012	\X9A-NC89	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-111	02-Aug-22	08-Aug-22	0%	5		NX9A-NC109	AT1805, I	H.HANNISI	ENG.AM
65			**Thermal Ratings - Substation - Verify Thermal Data**		232	21-Mar-22 A	22-Aug-22		31					
66	8012	\X9A-NC31	PE to Verify Thermal Data Review PE Checklist (M7-EN-3006.2)	Not Started	243	01-Aug-22*	05-Aug-22	0%	5		DSSE-240, DSSE-220, DSSE	NX9A-NC	TBD-TPM	ENG.ST:
67	8012	\X9A-NC35	LTRC Requests P&C Checklist	In Progress	259	21-Mar-22 A	14-Jul-22	20%	4		NX9A-NC33	NX9A-NC	L.LECLAMJ	ENG.ST:
68	8012	\X9A-NC39	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	-103	15-Jul-22*	21-Jul-22	0%	5		NX9A-NC37	NX9A-NC	L.LECLAMJ	ENG.ST:
69	8012	\X9A-NC41	TRC Reviews and Approves Thermal Rating Data	Not Started	-103	22-Jul-22	28-Jul-22	0%	5		NX9A-NC39	NX9A-NC	H.HANNISI	ENG.AM
70	8012	\X9A-NC43	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-103	29-Jul-22	04-Aug-22	0%	5		NX9A-NC41	NX9A-NC	L.LECLAMJ	ENG.ST:
71	8012	\X9A-NC45	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-103	05-Aug-22	05-Aug-22	0%	1		NX9A-NC43	NX9A-NC	TBD-TPM	ENG.SCI
72	8012	\X9A-NC47	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-103	08-Aug-22	12-Aug-22	0%	5		NX9A-NC45	AT0301, I	H.HANNISI	ENG.AM
73	8012	\X9A-NC49	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, Equ	Not Started	-108	22-Aug-22	22-Aug-22	0%	1		NX9A-NC47	AT0301, I	TBD-TPM	ENG.SCI
74			**Thermal Ratings - Substation - NX-9 Pre NX9-DOE**		0	13-Dec-22	13-Dec-22		1					
75	8012	NX9500	Scheduler - Send Email for 48Hrs Notification before DOE.	Not Started	0	13-Dec-22	13-Dec-22	0%	1		NX9A-NC49	CFM	TBD-TPM	ENG.SCI
76			**Thermal Ratings - Substation - NX-9 Post NX9-DOE/ISD**		145	16-Dec-22	28-Dec-22		8					
77	8012	X9FINAL50	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or	Not Started	145	16-Dec-22	20-Dec-22	0%	3		CFM	NX9FINAI	TBD-TPM	PM
78	8012	X9FINAL60	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	Not Started	145	21-Dec-22	28-Dec-22	0%	5		NX9FINAL50	FINISH	H.HANNISI	ENG.AM
79			**Thermal Ratings - Non NX-9 Thermal Ratings**		95	11-Jul-22	29-Jul-22		15					
80	8012	\X9A-EM54	Thermal Rating- Non NX9 -LTRC Prepares and Sends Thermal Rating Data fc	Not Started	95	11-Jul-22*	15-Jul-22	0%	5		NX9A-EM44	NX9A-EM	L.LECLAMJ	ENG.ST:
81	8012	\X9A-EM64	Thermal Rating- Non NX9 -TRC Reviews and Approves Thermal Rating Data	Not Started	95	18-Jul-22	22-Jul-22	0%	5		NX9A-EM54	NX9A-EM	H.HANNISI	ENG.AM
82	8012	\X9A-EM74	Thermal Rating- Non NX9 -LTRC Files Capability Sheets	Not Started	95	25-Jul-22	29-Jul-22	0%	5		NX9A-EM64	CFM, FIN	L.LECLAMJ	ENG.ST:
83			**Substation NX-9 - Equipment Modification**		145	11-Jul-22	28-Dec-22		118					
84			**Substation NX-9**		232	11-Jul-22	22-Aug-22		31					
85	80	\X9A-EM01	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-30(	Not Started	260	11-Jul-22*	13-Jul-22	0%	3		DSSE-260	NX9A-EM	TBD-TPM	ENG.ST:
86	80	\X9A-EM19	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	-108	15-Jul-22*	21-Jul-22	0%	5		NX9A-EM16	NX9A-EM	L.LECLAMJ	ENG.ST:
87	80	\X9A-EM22	TRC Reviews and Approves Thermal Rating Data	Not Started	-108	22-Jul-22	28-Jul-22	0%	5		NX9A-EM19	NX9A-EM	H.HANNISI	ENG.AM
88	80	\X9A-EM25	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-108	29-Jul-22	04-Aug-22	0%	5		NX9A-EM22	NX9A-EM	L.LECLAMJ	ENG.ST:
89	80	\X9A-EM26	TRC Confirms Engineering Management Approvals of NX-9	Not Started	-108	05-Aug-22	11-Aug-22	0%	5		NX9A-EM25	NX9A-EM	L.LECLAMJ	ENG.ST:
90	80	\X9A-EM28	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-108	12-Aug-22	12-Aug-22	0%	1		NX9A-EM26	NX9A-EM	TBD-TPM	PROJ
91	80	\X9A-EM31	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-108	15-Aug-22	19-Aug-22	0%	5		NX9A-EM28	NX9A-EM	H.HANNISI	ENG.AM
92	80	\X9A-EM34	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, Equ	Not Started	-108	22-Aug-22	22-Aug-22	0%	1		NX9A-EM31	NX9A100	TBD-TPM	PROJ
93			**Substation - NX-9 Pre NX9-DOE**		145	13-Dec-22	15-Dec-22		3					
94	80	NX9A100	Scheduler - Send Email for 48Hrs Notification before DOE. (Tie SS to Beginni	Not Started	145	13-Dec-22	13-Dec-22	0%	1		NX9A-EM34, A1130	TIE_2	TBD-TPM	PROJ
95	80	TIE_2	Tie (FF) to Appropriate activity that puts the equipment in service & Add NX9-I	Not Started	145		15-Dec-22	0%	0		NX9A100	NX9FINAI		PROJ
96			**Substation - NX-9 Post NX9-DOE/ISD**		145	16-Dec-22	28-Dec-22		8					
97	80	NX9A200	Scheduler - Has 72 Hrs to Put in Service the NX-9 and Send to TOP Director i	Not Started	145	20-Dec-22	20-Dec-22	0%	1		NX9FINAL10	NX9FINAI	TBD-TPM	PROJ
98	80	X9FINAL10	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or	Not Started	145	16-Dec-22	20-Dec-22	0%	3		TIE_2, CFM	NX9FINAI	TBD-TPM	PM
99	80	X9FINAL20	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	Not Started	145	21-Dec-22	28-Dec-22	0%	5		NX9FINAL10, NX9A200	FINISH	H.HANNISI	ENG.AM
100			**Distribution Thermal Ratings NX-9 for Temp Transformer**		117	21-Mar-22 A	08-Feb-23		146					
101			**Thermal Ratings - Substation - Preliminary Thermal for Temp Transformer**		-193	25-Jul-22	08-Feb-23		136					
102	8012	9A-NC149T	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, Ec	Not Started	-193	08-Feb-23	08-Feb-23	0%	1		NX9A-NC29T	AT1805T	TBD-TPM	ENG.SCI

TASK filter: 1. Non-Completed Activities.

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
103	8012	X9A-NC26T	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings-GO!	Not Started	-193	15-Dec-22	21-Dec-22	0%	5	[redacted]	NX9A-NC38T	NX9A-NC	L.LECLAMJ	ENG.ST:
104	8012	X9A-NC27T	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-30(	Not Started	-193	25-Jul-22*	29-Jul-22	0%	5		A3380	NX9A-NC	TBD-TPM	ENG.ST:
105	8012	X9A-NC28T	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	Not Started	-193	30-Dec-22	06-Jan-23	0%	5		NX9A-NC30T	NX9A-NC	TBD-TPM	ENG.ST.I
106	8012	X9A-NC29T	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-193	01-Feb-23	07-Feb-23	0%	5		NX9A-NC31T	NX9A-NC	H.HANNISI	ENG.AM
107	8012	X9A-NC30T	LTRC Requests P&C Checklist	Not Started	-193	22-Dec-22	29-Dec-22	0%	5		NX9A-NC26T	NX9A-NC	TBD-TPM	ENG.ST:
108	8012	X9A-NC31T	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-193	31-Jan-23	31-Jan-23	0%	1		NX9A-NC32T	NX9A-NC	TBD-TPM	ENG.SCI
109	8012	X9A-NC32T	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-193	24-Jan-23	30-Jan-23	0%	5		NX9A-NC33T	NX9A-NC	L.LECLAMJ	ENG.ST:
110	8012	X9A-NC33T	TRC Reviews and Approves Thermal Rating Data	Not Started	-193	17-Jan-23	23-Jan-23	0%	5		NX9A-NC34T	NX9A-NC	H.HANNISI	ENG.AM
111	8012	X9A-NC34T	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	-193	09-Jan-23	13-Jan-23	0%	5		NX9A-NC28T	NX9A-NC	L.LECLAMJ	ENG.ST:
112	8012	X9A-NC37T	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature	Not Started	-193	01-Aug-22	05-Aug-22	0%	5		NX9A-NC27T	NX9A-NC	L.LECLAMJ	ENG.ST:
113	8012	X9A-NC38T	LTRC Submits 1-Line Nomenclature to TRC	Not Started	-193	08-Aug-22	12-Aug-22	0%	5		NX9A-NC37T	NX9A-NC	TBD-TPM	ENG.ST:
114	**Thermal Ratings - Substation - Verify Thermal Data for Temp Transformer**				237	21-Mar-22 A	15-Aug-22		26					
115	8012	(9A-EM22T	TRC Reviews and Approves Thermal Rating Data	Not Started	-103	22-Jul-22	28-Jul-22	0%	5		NX9A-NC24T	NX9A-NC	H.HANNISI	ENG.AM
116	8012	(9A-EM34T	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, Equ	Not Started	-103	15-Aug-22	15-Aug-22	0%	1		NX9A-NC19T	NX9510T	TBD-TPM	ENG.SCI
117	8012	X9A-NC19T	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-103	08-Aug-22	12-Aug-22	0%	5		NX9A-NC21T	AT0301, I	H.HANNISI	ENG.AM
118	8012	X9A-NC20T	PE to Verify Thermal Data Review PE Checklist (M7-EN-3006.2)	Not Started	243	01-Aug-22*	05-Aug-22	0%	5		DSSE-240, DSSE-220, DSSE	NX9A-NC	TBD-TPM	ENG.ST:
119	8012	X9A-NC21T	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-103	05-Aug-22	05-Aug-22	0%	1		NX9A-NC22T	NX9A-NC	TBD-TPM	ENG.SCI
120	8012	X9A-NC22T	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-103	29-Jul-22	04-Aug-22	0%	5		NX9A-EM22T	NX9A-NC	L.LECLAMJ	ENG.ST:
121	8012	X9A-NC24T	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	-103	15-Jul-22*	21-Jul-22	0%	5		NX9A-NC18T	NX9A-EM	L.LECLAMJ	ENG.ST:
122	8012	X9A-NC36T	LTRC Requests P&C Checklist	In Progress	248	21-Mar-22 A	29-Jul-22	0%	15		NX9A-NC17T	NX9A-NC	L.LECLAMJ	ENG.ST:
123	**Thermal Ratings - Substation - NX-9 Pre NX9-DOE for Temp Transformer**				-53	16-Aug-22	16-Aug-22		1					
124	8012	NX9510T	Scheduler - Send Email for 48Hrs Notification before DOE.	Not Started	-53	16-Aug-22	16-Aug-22*	0%	1		NX9A-EM34T	CFM	TBD-TPM	ENG.SCI
125	**Electrical Engineering IFC Design**				238	27-Dec-21 A	12-Aug-22		25					
126	80121158	DSSE-240	Electrical Engineering - Electrical Package IFC (Physical & Electrical for 3X Tra	In Progress	-14	27-Dec-21 A	29-Jul-22	0%	15		DSSE-230, CIRCSW-1125, D	NX9A-NC	V	ENG.ST:
127	80121158	DSSE-460	Operating Instructions - SSED Review Draft Distribution OI	Not Started	238	08-Aug-22	12-Aug-22	0%	5		DSSE-450, DSSE-440	AT1202	V	ENG.ST:
128	80121158	DSSE-920	Operating Instructions - SSED Review Draft Convex OI	Not Started	238	08-Aug-22	12-Aug-22	0%	5		DSSE-450, DSSE-440	AT1202	V	ENG.ST:
129	**P&C Engineering**				238	11-Jul-22	12-Aug-22		25					
130	**P&C Engineering Detailed Design**				238	11-Jul-22	12-Aug-22		25					
131	80121158	DSSE-450	Operating Instructions - Prepare and Issue Draft Distribution OI to Engineering	Not Started	238	11-Jul-22	05-Aug-22	0%	20		DSSE-440	DSSE-92I		ENG.ST.I
132	80121158	DSSE-470	Operating Instructions - P&C Review Draft Distribution OI	Not Started	238	08-Aug-22	12-Aug-22	0%	5		DSSE-440, DSSE-450	AT1202	V	ENG.ST.I
133	80121158	DSSE-930	Operating Instructions - P&C Review Draft Convex OI	Not Started	238	08-Aug-22	12-Aug-22	0%	5		DSSE-440, DSSE-450	AT1202	V	ENG.ST.I
134	**PROCUREMENT MATERIAL - BALANCE OF MATERIAL**				14	16-Apr-21 A	11-Jul-22		1					
135	80121158	PBOM1000	Procurement Material - Balance of Material - WBS Summary Activity	In Progress	14	16-Apr-21 A	11-Jul-22	99.59%	1				TBD-TPM.S	ENG.SCI
136	**Electrical Balance of Material**				18	11-Jul-22	11-Jul-22		1					
137	**MATERIAL FOR TRANSFORMER**				-346	11-Jul-22	11-Jul-22		0					
138	80121158	TRANS-570	TRANS-MATERIAL - Transformer - Confirm Material Delivery to Site	Not Started	-346	11-Jul-22	11-Jul-22*	0%	0		TRANS-1070, TRANS-1160	AT0401, I		PURC
139	**MATERIAL FOR ELECTRICAL REACTOR**				18	11-Jul-22	11-Jul-22		1					
140	80121158	REACT-550	MATERIAL - Electrical - Reactor Confirm Material Delivery to Site	Not Started	18	11-Jul-22	11-Jul-22*	0%	1		REACT-1030	BT0401		PURC
141	**PROCUREMENT OF SERVICE CONTRACTS**				30	01-Oct-21 A	22-Jul-22		10					
142	80121158	PSC1000	Procurement of Service Contracts- WBS Summary Activity	In Progress	30	01-Oct-21 A	22-Jul-22	94.65%	10				TBD-TPM.S	ENG.SCI
143	**Constructor of Choice - Direct Award or Bid**				30	11-Jul-22	22-Jul-22		10					
144	80121158	A3420	CONST.SERVICES - COC - Eversource Routes DR for Approval	Not Started	30	11-Jul-22	15-Jul-22	0%	5		A3410	A3790		PURC
145	80121158	A3790	CONST.SERVICES - COC - Eversource Awards Contract - PO Issued	Not Started	30	18-Jul-22	22-Jul-22	0%	5		A3420	A1120		PURC
146	**CONSTRUCTION**				143	02-Mar-22 A	31-Dec-22		120					
147	80121158	CFM	Construction Finish Milestone	Not Started	0		15-Dec-22	0%	0		NX9A-EM74, NX9500, A114(	NX9FINAI		CONS
148	80121158	CON1000	Construction - WBS Summary Activity	In Progress	143	02-Mar-22 A	31-Dec-22	4%	120				TBD-TPM.S	ENG.SCI
149	80121158	CSM	Construction Start Milestone	Not Started	278	06-Sep-22*		0%	0		AT00	ConRep-S		CONS
150	80121158	ISD	EQUIPMENT IN SERVICE DATE (requires FOOB constraint)	Not Started	0		31-Dec-22*	0%	0		LCE610, LCE700, CFM, RCF			PM
151	**Outages**				0	06-Sep-22	15-Dec-22		70					
152	80121158	TOA-Test	TRANS-OUTAGE / Test Transformer	Not Started	5	06-Sep-22	08-Dec-22	0%	65		BT00	CFM		TEST

TASK filter: 1. Non-Completed Activities.

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
153	TOA - 22-00759				0	06-Sep-22	09-Sep-22		4					
154	80121158	)A-Const10	Switch Out - TOA 22-00759 - Isolate 22N-3X for removal, remove contribution	Not Started	0	06-Sep-22*		0%	0		TRANS-1150	TOA-Con:		
155	80121158	)A-Const20	Switch in - TOA 22-00759	Not Started	0		09-Sep-22*	0%	0		TOA-Const30	CFM		
156	80121158	)A-Const30	OUTAGE / General Construction Work TOA 22-00759	Not Started	0	06-Sep-22	09-Sep-22	0%	4		TOA-Const10	TOA-Con:		CONS
157	TOA - 22-00760				0	09-Sep-22	12-Dec-22		64					
158	80121158	)A-Const40	OUTAGE / General Construction Work TOA 22-00760	Not Started	0	09-Sep-22	12-Dec-22	0%	81		TOA-Const50	TOA-Con:		CONS
159	80121158	)A-Const50	Switch Out - TOA 22-00760 Replace 22N-3X	Not Started	0	09-Sep-22*		0%	0		TRANS-1150	TOA-Con:		
160	80121158	)A-Const60	Switch in - TOA 22-00760	Not Started	0		12-Dec-22*	0%	0		TOA-Const40	CFM		
161	TOA - 22-00761				0	12-Dec-22	15-Dec-22		4					
162	80121158	)A-Const70	Switch Out - TOA 22-00761 - Reconnect high and low side bus, install contrib	Not Started	0	12-Dec-22*		0%	0		TRANS-1150	TOA-Con:		
163	80121158	)A-Const80	Switch in - TOA 22-00761	Not Started	0		15-Dec-22*	0%	0		TOA-Const90	CFM		
164	80121158	)A-Const90	OUTAGE / General Construction Work TOA 22-00761	Not Started	0	12-Dec-22	15-Dec-22	0%	4		TOA-Const70	TOA-Con:		CONS
165	Construction Support LOEs				0	11-Jul-22	15-Dec-22		110					
166	80121158	A1070	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT	Not Started	84	15-Aug-22	15-Aug-22	0%	1		1290	CFM		CONS
167	80121158	A1080	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN	Not Started	107	11-Jul-22	13-Jul-22	0%	3			CFM		CONS
168	80121158	ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	Not Started	0	06-Sep-22	15-Dec-22	0%	70		CSM	CFM		CONS
169	80121158	CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	Not Started	0	06-Sep-22	15-Dec-22	0%	70		CSM	CFM		CONS
170	Site Development				143	06-Sep-22	30-Dec-22		80					
171	80121158	A1110	Restore / Remediate Site	Not Started	143	16-Dec-22	30-Dec-22	0%	10		CFM	FINISH		CONS
172	80121158	A1120	Construction - Disconnect 3X XFRMR	Not Started	0	06-Sep-22*	09-Sep-22	0%	4		AT00, A3790	A3620, C		CONS
173	P&C Construction				0	12-Dec-22	15-Dec-22		4					
174	80121158	A1140	Construction - P&C Implement Relay Settings	Not Started	0	12-Dec-22*	15-Dec-22	0%	4		AT00	CFM		CONS
175	Telecomm Construction				0	12-Dec-22	15-Dec-22		4					
176	80121158	A1150	Construction - Field Communications	Not Started	0	12-Dec-22*	15-Dec-22	0%	4		AT00	CFM		CONS
177	TEST & COMMISSIONING				228	29-Jul-22	26-Aug-22		21					
178	80121158	TC1000	Test & Commissioning - WBS Summary Activity	Not Started	228	29-Jul-22	26-Aug-22	0%	21				TBD-TPM.S	ENG.SCI
179	Test & Commissioning				228	29-Jul-22	26-Aug-22		21					
180	Testing Activities				228	29-Jul-22	26-Aug-22		21					
181	80121158	LCE400	Develop Test and Commissioning Plan	Not Started	228	29-Jul-22*	26-Aug-22	0%	21		DSSE-220	LCE500		TEST
182	PROJECT CLOSE OUT				0	12-Sep-22	26-Jul-23		219					
183	80121158	PCO1000	Project Close Out - WBS Summary Activity	Not Started	0	12-Sep-22	26-Jul-23	0%	219				TBD-TPM.S	ENG.SCI
184	Civil Close Out				76	12-Sep-22	23-Feb-23		112					
185	80121158	A3620	Prepare & Submit Civil Field Mark Ups (Tie after Last Civil Construction Activity	Not Started	76	12-Sep-22	11-Oct-22	0%	21		A1120	A3730		ENG.EN(
186	80121158	A3660	PM to Document Civil As-Built Drawings Complete	Not Started	76	10-Jan-23	10-Jan-23	0%	1		A3740	A3670		PM
187	80121158	A3670	FE Files Civil Design Drawings at Station	Not Started	76	11-Jan-23	23-Feb-23	0%	30		A3660	A1040		ENG.EN(
188	80121158	A3730	Eversource Engineering Verifies Civil Mark Ups and Updates As-Built Drawing	Not Started	76	12-Oct-22	30-Dec-22	0%	55		A3620	A3740		ENG.ST.:
189	80121158	A3740	ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files ar	Not Started	76	03-Jan-23	09-Jan-23	0%	5		A3730	A3660		ENG.ST.:
190	Electrical Close Out				0	03-Jan-23	12-Jun-23		112					
191	80121158	A3640	Prepare & Submit Electrical Field Mark Ups	Not Started	0	03-Jan-23	01-Feb-23	0%	21		LCE900	A3750		ENG.EN(
192	80121158	A3680	PM to Document Electrical As-Built Drawings Complete (Electrical, P&C)	Not Started	0	28-Apr-23	28-Apr-23	0%	1		A3780, A3760	A3710, A:		PM
193	80121158	A3690	FE Files Substation Design Drawings at Station	Not Started	0	01-May-23	12-Jun-23	0%	30		A3680	A1040		ENG.EN(
194	80121158	A3750	Eversource Engineering Verifies Electrical Mark Ups and Updates As-Built Dra	Not Started	0	02-Feb-23	20-Apr-23	0%	55		A3640, LCE800	A3760		ENG.ST.:
195	80121158	A3760	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issu	Not Started	0	21-Apr-23	27-Apr-23	0%	5		A3750	A3680		ENG.ST.:
196	P&C Close Out				0	03-Jan-23	12-Jun-23		112					
197	80121158	A3650	Prepare & Submit P&C Field Mark Ups	Not Started	0	03-Jan-23	01-Feb-23	0%	21		LCE900	A3770		ENG.EN(
198	80121158	A3710	FE Files P&C Design Drawings at Station	Not Started	0	01-May-23	12-Jun-23	0%	30		A3680	A1040		ENG.EN(
199	80121158	A3770	Eversource Engineering Verifies P&C Mark Ups and Updates As-Built Drawing	Not Started	0	02-Feb-23	20-Apr-23	0%	55		A3650	A3780		ENG.ST.I
200	80121158	A3780	P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue D	Not Started	0	21-Apr-23	27-Apr-23	0%	5		A3770	A3680		ENG.ST.I
201	LCE Closeout				21	16-Dec-22	30-Dec-22		10					
202	80121158	LCE800	LCE Ensures Marked up Prints Ready for Pick-up	Not Started	30	16-Dec-22	16-Dec-22	0%	1		CFM	A3750		ENG.ST.:

TASK filter: 1. Non-Completed Activities.

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
203	80121158	LCE900	LCE Review Test Data and Issue Commissioning Report	Not Started	0	16-Dec-22	30-Dec-22	0%	10	[redacted]	CFM	A3650, A:		ENG.ST:
204	**Work Order / Financial Close Out**				113	16-Dec-22	14-Feb-23		40					
205	80121158	A1020	Cost Analyst Prepares FINAL Units of Property	Not Started	123	16-Dec-22	31-Jan-23	0%	30		CFM	FINISH		COST
206	80121158	A1030	Asset Management Complete Asset Update(s) in CASCADE	Not Started	113	03-Jan-23	14-Feb-23	0%	30		A1260, CFM	FINISH		ENG.AM
207	80121158	A1260	Construction Rep Finalize CASCADE Forms (within 14 days following ISD)	Not Started	113	16-Dec-22	30-Dec-22	0%	10		CFM	A1030		CONS
208	**Project Management Close Out**				0	16-Dec-22	26-Jul-23		153					
209	80121158	A1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	Not Started	0	13-Jun-23	25-Jul-23	0%	30		CFM, A3690, A3670, A3710,	FINISH		PM
210	80121158	A1270	Prepare TD-707 Document	Not Started	122	16-Dec-22	31-Jan-23	0%	30		CFM	FINISH		PM
211	80121158	DSSE-1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List	Not Started	117	16-Dec-22	22-Dec-22	0%	5		CFM	A1040		CONS
212	80121158	FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	Not Started	0		26-Jul-23	0%	0		NX9A-EM74, NX9FINAL60, A			PM

TASK filter: 1. Non-Completed Activities.

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
1	[redacted] - Replace 2X XMFR (CS00516)				0	17-May-21 A	17-Nov-23		342					
2	80121160	PT1000	Project Timeline - WBS Summary Activity	In Progress	0	17-May-21 A	17-Nov-23	37.02%	342				TBD-TPM.S	ENG.SCI
3	PROJECT PLANNING & FUNDING				222	13-Sep-21 A	03-Jan-23		120					
4	80121160	PPF1000	Project Planning & Funding - WBS Summary Activity	In Progress	222	13-Sep-21 A	03-Jan-23	62.62%	120				TBD-TPM.S	ENG.SCI
5	T-Minus Milestones				0	21-Oct-21 A	03-Jan-23		115					
6	Civil T-Minus Milestones				0	15-Jul-22	03-Jan-23		115					
7	80121160	AT00	A-T-00 - CIVIL START OF CONSTRUCTION - WO#	Not Started	0	03-Jan-23*		0%	0		AT0801, AT0813, AT1811, AT	1120	TBD-TPM.F	CONS
8	80121160	AT0203	Go / No Go CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	Not Started	26		07-Dec-22	0%	0		1170	AT00	V.C	PM
9	80121160	AT0401	ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	Not Started	3		30-Dec-22	0%	0		CE560	AT00	TBD-TPM.M	CONS
10	80121160	AT0801	ALL PERMITS RECEIVED	Not Started	73		21-Oct-22	0%	0		1210, 1200, 1190, 1180, 361	AT00	TBD-TPM.F	PM
11	80121160	AT0805C	Civil IFC - Civil (BG) w/BOM	Not Started	94		30-Sep-22	0%	0		CE1310	AT00	TBD-TPM.C	ENG.ST.:
12	80121160	AT0813	SITING PETITION AND APPLICATION FILED	Not Started	0		16-Nov-22*	0%	0		1240	AT00	MAE.Siting	PM
13	80121160	AT0814	ALL CONSTRUCTION CONTRACTS IN PLACE	Not Started	41		22-Nov-22	0%	0		3460, 3420	AT00	TBD-TPM.F	CONS
14	80121160	AT1811	Detail Design/Engineering Completed	Not Started	104		01-Aug-22	0%	0		CE1210	AT00	TBD-TPM.C	ENG.ST.:
15	80121160	AT2605	Preliminary Design / Engineering Completed	Not Started	115		15-Jul-22	0%	0		DE2020	AT00	TBD-TPM.C	ENG.ST.:
16	Electrical T-Milestones				0	21-Oct-21 A	03-Jan-23		115					
17	80121160	BT00	B-T-00 - ELECTRICAL START OF CONSTRUCTION - WO#	Not Started	0	03-Jan-23*		0%	0		BT0401, BT0814, BT3001, B	TOA-Test	TBD-TPM.F	CONS
18	80121160	BT0203	CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	Not Started	12		07-Dec-22	0%	0		1170	BT00	V.C	PM
19	80121160	BT0301	B-T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX	Not Started	-2		14-Dec-22*	0%	0		NX9A-EM34, NX9A-NC47, NX	BT00	TBD-TPM.F	CONS
20	80121160	BT0401	ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	Not Started	-25		30-Dec-22	0%	0		CIRCSW-1240, TRANS-570,	BT00	TBD-TPM.M	CONS
21	80121160	BT0409	B-T-04 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Non	Not Started	10		07-Oct-22*	0%	0		1250	BT00	TBD-TPM.F	CONS
22	80121160	BT0805E	Elect IFC - Electrical (AG) w/Final BOM	Not Started	10		30-Sep-22	0%	0		EE1310	BT00, 12	TBD-TPM.E	ENG.ST.:
23	80121160	BT0814	ALL CONSTRUCTION CONTRACTS IN PLACE	Not Started	-15		22-Nov-22	0%	0		3460, 3420	BT00	TBD-TPM.F	CONS
24	80121160	BT1301	COMMISSIONING PLAN COMPLETE	Not Started	-37		09-Nov-22	0%	0		LCE500	BT00	TBD-TPM.F	PM
25	80121160	BT1805	B-T-18 NX9 Preliminary Ratings to LCC for New Equipment (transformers are	Not Started	-37		05-Oct-22*	0%	0		NX9A-NC23	BT00	TBD-TPM.F	CONS
26	80121160	BT1811	Detail Design/Engineering Completed	Not Started	20		01-Aug-22	0%	0		EE1210	BT00	TBD-TPM.E	ENG.ST.:
27	80121160	BT2404	DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINEER)	Not Started	-18		05-Aug-22	0%	0		LCE200	BT00	TBD-TPM.F	PM
28	80121160	BT2605	Preliminary Design / Engineering Completed	Not Started	-9		15-Jul-22	0%	0		DE2040	BT00	TBD-TPM.E	ENG.ST.:
29	80121160	BT3001	Eng. Project Scoping Document Issued (Scope Lockdown)	Completed			21-Oct-21 A	100%	0		PE1720	BT00	TBD-TPM.F	ENG.ST.:
30	P&C T-Minus Milestones				0	15-Jul-22	03-Jan-23		115					
31	80121160	CT00	C-T-00 - START OF CONSTRUCTION - WO#	Not Started	0	03-Jan-23*		0%	0		CT0401, CT2605, CT1811, C	TOA-Test	TBD-TPM.F	CONS
32	80121160	CT0203	Go / No Go CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	Not Started	26		07-Dec-22	0%	0		1170	CT00	V.C	PM
33	80121160	CT0401	ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	Not Started	3		30-Dec-22	0%	0		PC1010	CT00	TBD-TPM.M	CONS
34	80121160	CT0404	ALL FINAL RELAY PROTECTIVE SETTING ISSUED	Not Started	118		06-Sep-22	0%	0		PC1400	CT00	TBD-TPM.F	ENG.ST.I
35	80121160	CT0805P	P&C IFC - P&C w/BOM	Not Started	147		08-Aug-22	0%	0		PC1330	CT00	TBD-TPM.C	ENG.ST.I
36	80121160	CT0814	ALL CONSTRUCTION CONTRACTS IN PLACE	Not Started	41		22-Nov-22	0%	0		3460, 3420	CT00	TBD-TPM.F	CONS
37	80121160	CT1202	P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED	Not Started	87		07-Oct-22	0%	0		EE460, EE920	CT00	TBD-TPM.E	ENG.ST.I
38	80121160	CT1811	Detail Design/Engineering Completed	Not Started	104		01-Aug-22	0%	0		PC1110	CT00	TBD-TPM.F	ENG.ST.I
39	80121160	CT2605	Preliminary Design / Engineering Completed	Not Started	115		15-Jul-22	0%	0		DE2100	CT00	TBD-TPM.F	ENG.ST.I
40	Project Funding				252	13-Sep-21 A	16-Nov-22		90					
41	Initial Funding					13-Sep-21 A	13-Sep-21 A		0					
42	80121160	PI1000	Submit Initial Funding Request	Completed			13-Sep-21 A	100%	0	[redacted]	PI1200	PI1300	TBD-TPM.F	ENG.AM
43	80121160	PI1200	Project Initiator Develop Intitial Funding Request	Completed		13-Sep-21 A	13-Sep-21 A	100%	0		START	PI1000	TBD-TPM.E	ENG.AM
44	80121160	PI1300	Initial Funding Request Approved @ EPAC	Completed		13-Sep-21 A	13-Sep-21 A	100%	0		PI1000	PI1610, T	EPAC	IP
45	80121160	PI1610	Initial Funding PowerPlan Approval Create WO#	Completed		13-Sep-21 A	13-Sep-21 A	100%	0		PI1300	PI1400, T	TBD-TPM.F	IP
46	Solution Design Committee					30-Sep-21 A	26-Jan-22 A		0					
47	80121160	CE1600	Conduct Project Team Kickoff Meeting Verify SDC Need	Completed		30-Sep-21 A	30-Sep-21 A	100%	0		CE1400, CE1100, CE1000, F	CE1710	TBD-TPM.F	PM
48	80121160	CE1700	Review Conceptual Siting, Real Estate,SCS, & Permitting (If Required)	Completed		25-Oct-21 A	25-Oct-21 A	100%	0		CE1710, PI1400	CGE1000	TBD-TPM.F	PM
49	80121160	CE1710	Conduct Conceptual Constructability Walk Down	Completed		04-Oct-21 A	04-Oct-21 A	100%	0		PI1500, PI1600, CE1600, PI	CGE1000	TBD-TPM.F	PM
50	80121160	CGE1000	Develop Conceptual Grade Estimate (-25%+50%)	Completed		25-Oct-21 A	18-Nov-21 A	100%	0		CE1710, CE1700	SSF1000	TBD-TPM.F	ENG.AM

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
51	80121160	SDC1000	Solution Design Committee(SDC) Approval	Completed		03-Jan-22 A	26-Jan-22 A	100%	0	[redacted]	SSF1000	PE1600,	TBD-TPM.F	VEND.PM
52	80121160	SSF1000	Develop Soultions Selection Form (SSF)	Completed		08-Oct-21 A	29-Nov-21 A	100%	0		CGE1000	SDC1000	TBD-TPM.F	PM
53	**Full Funding**				252	23-Nov-21 A	16-Nov-22		90					
54	**PAF - FF**				252	23-Nov-21 A	16-Nov-22		90					
55	801211(	DE1600	Create Planning Grade Estimate (+/-25% Full Funding)	Completed		05-Jul-22 A	05-Jul-22 A	100%	0		DE2000, DE1900	FF1000, I	TBD-TPM.E	ENG.AM
56	801211(	DE1700	Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)	Completed		13-Apr-22 A	13-Apr-22 A	100%	0		DE1800	DE1900	TBD-TPM.F	ENG.AM
57	801211(	DE1800	Review Detail Siting & Permitting (If Required)	Not Started	252	16-Nov-22*	16-Nov-22	0%	1		PF1010	DE1700	MAE.Siting	ENG.ST.:
58	801211(	DE1900	Conduct Detail Constructability Walk Down	Not Started	332	18-Jul-22	22-Jul-22	0%	5		DE2020, DE2040, DE2100, I	DE2000,	TBD-TPM.F	PM
59	801211(	DE2000	Project Constructability Review Complete	Completed		23-Nov-21 A	23-Nov-21 A	100%	0		DE1900	DE1600	TBD-TPM.F	PROJ
60	801211(	PAFF2000	Submit Full Funding PAF for Internal Review	In Progress	-2	11-Jul-22 A	15-Jul-22	0%	5		DE1600	PAFF2100	TBD-TPM.F	ENG.AM
61	801211(	PAFF2100	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC f	Not Started	0	14-Jul-22	19-Jul-22*	0%	4		PAFF2000	PAFF211(	TBD-TPM.F	ENG.AM
62	**EPAC - FF**				-28	20-Jul-22	21-Jul-22		1					
63	801211(	FF1000	EPAC Full Funding Approval	Not Started	-28		21-Jul-22	0%	0		DE1600, PAFF2200	CIRCSW-	EPAC	IP
64	801211(	PAFF2110	EPAC Full Funding Meeting	Not Started	-28		20-Jul-22*	0%	0		PAFF2100	PAFF2200	EPAC	IP
65	801211(	PAFF2200	Incorporate EPAC Full Funding PAF Review Comments	Not Started	-28	21-Jul-22	21-Jul-22	0%	1		PAFF2110	FF1000	TBD-TPM.F	ENG.AM
66	**Power Plan - FF**				320	22-Jul-22	22-Jul-22		1					
67	801211(	FF1010	Full Funding PowerPlan Approval	Not Started	320	22-Jul-22	22-Jul-22	0%	1		FF1000	TRANS-5:	EPAC	IP
68	**Civil Conceptual & Preliminary Engineering Design**				-17	20-Sep-21 A	15-Jul-22		5					
69	**Civil Conceptual Design**					20-Sep-21 A	24-Sep-21 A		0					
70	80121160	CE1000	ES Engineering Develop Civil Substation Conceptual Engineering Design in A	Completed		20-Sep-21 A	24-Sep-21 A	100%	0		PI1400	CE1600,	TBD-TPM.(	ENG.ST.:
71	**Civil Preliminary Design**				-17	25-May-22 A	15-Jul-22		5					
72	80121160	DE2020	ES Engineering Review Civil Substation Preliminary Design	In Progress	-17	25-May-22 A	15-Jul-22	77.27%	5		TRANS-1160, CE1000	DE1900, ,	TBD-TPM.(	ENG.ST.:
73	**Electrical Conceptual & Preliminary Engineering Design**				-92	20-Sep-21 A	15-Jul-22		5					
74	**Electrical Conceptual Design**					20-Sep-21 A	24-Sep-21 A		0					
75	80121160	CE1100	ES Develop Electrical Substation Conceptual Engineering Design in Accordar	Completed		20-Sep-21 A	24-Sep-21 A	100%	0		PI1400	CE1600,	TBD-TPM.E	ENG.ST.:
76	**Electrical Preliminary Design**				-92	11-Jul-22	15-Jul-22		5					
77	80121160	DE2040	ES Engineering Review Electrical Substation Preliminary Design	Not Started	-92	11-Jul-22*	15-Jul-22	0%	5		TRANS-1160, CIRCSW-3380	DE1900,	TBD-TPM.[	ENG.ST.:
78	**P&C Conceptual & Preliminary Engineering Design**				-92	20-Sep-21 A	15-Jul-22		5					
79	**P&C Conceptual Design**					20-Sep-21 A	24-Sep-21 A		0					
80	80121160	CE1400	ES Engineering Develop P&C Conceptual Engineering Design in Accordance	Completed		20-Sep-21 A	24-Sep-21 A	100%	0		PI1400	CE1600,	TBD-TPM.F	ENG.ST.I
81	**P&C Preliminary Design**				-92	08-Jul-22 A	15-Jul-22		5					
82	80121160	DE2100	ES Engineering Peer Review P&C Preliminary Design	In Progress	-92	08-Jul-22 A	15-Jul-22	16.67%	5		TRANS-1160, CIRCSW-3380	DE1900,	TBD-TPM.[	ENG.ST.I
83	**Project Management**				8	13-Sep-21 A	07-Dec-22		10					
84	**Scope Development**					13-Sep-21 A	13-Sep-21 A		0					
85	80121160	PI1400	Assign Project Manager Request Resources for Project Team	Completed		13-Sep-21 A	13-Sep-21 A	100%	0		PI1610	CE1400,	TBD-TPM.F	PM
86	80121160	PI1500	Assign Scheduler	Completed		13-Sep-21 A	13-Sep-21 A	100%	0		PI1400	CE1710,	TBD-TPM.F	PM
87	80121160	PI1600	Assign Cost Analyst	Completed		13-Sep-21 A	13-Sep-21 A	100%	0		PI1400	CE1600,	TBD-TPM.F	PM
88	80121160	START	SCHEDULE START MILESTONE	Completed		13-Sep-21 A		100%	0			3550, PI1	TBD-TPM.F	PM
89	**Compliance Authorization Notification**				8	23-Nov-22	07-Dec-22		10					
90	80121160	1170	Prepare CAN (Construction Authorization Notice)	Not Started	8	23-Nov-22	07-Dec-22	0%	10		3450, 3500, 3420, 3460, 12:	CT0203, I	TBD-TPM.F	PM
91	**SITING APPROVALS / PERMITS / PROJECT SERVICES**				47	18-Jan-22 A	21-Oct-22		35					
92	80121160	3560	Permitting - PM Send Scope to Siting Team	Completed		20-Apr-22 A	26-Apr-22 A	100%	0		PE1600, CE1000	3570	TBD-TPM.F	PM
93	80121160	3570	Permitting - Siting Team Review Scope to Determine Siting Requirements (e.(	Completed		27-Mar-22 A	10-Apr-22 A	100%	0		3560	3590	TBD-TPM.F	SITE
94	80121160	SIT1000	Siting Approvals / Permits / Project Services - WBS Summary Activity	In Progress	47	18-Jan-22 A	21-Oct-22	85.94%	35				TBD-TPM.S	ENG.SCI
95	**State Approvals and Permits**					24-Jan-22 A	24-Jan-22 A		0					
96	**Siting Council / Board**					24-Jan-22 A	24-Jan-22 A		0					
97	80121160	1240	Determine Requirment for CSC (CT Siting Council submissions/approvals)	Completed		24-Jan-22 A	24-Jan-22 A	100%	0		PE1600, PF1000	AT0813	TBD-TPM.F	PM
98	**Local Approvals And Permits**				47	01-Sep-22	21-Oct-22		35					
99	**Building Department**				47	09-Sep-22	22-Sep-22		10					
100	80121160	3600	Permitting - Meet with Building Inspector	Not Started	47	09-Sep-22	22-Sep-22	0%	10		3590	3610	TBD-TPM.F	SITE
101	**Special Use**				47	23-Sep-22	21-Oct-22		20					

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
102	80121160	3610	Permitting - Obtain Special Use Permit	Not Started	47	23-Sep-22	21-Oct-22	0%	20	[redacted]	3600	AT0801	TBD-TPM.F	SITE
103	**Zoning / Planning Board**				47	01-Sep-22	08-Sep-22		5					
104	80121160	3590	Permitting - If transformer changes substation footprint, conduct zoning revie	Not Started	47	01-Sep-22*	08-Sep-22	0%	5		3570	3600	TBD-TPM.F	SITE
105	**Compliance Matrices - Regulatory Committments**					18-Jan-22 A	24-Jan-22 A		0					
106	80121160	1230	Prepared Compliance Matrices - Regulatory	Completed		18-Jan-22 A	24-Jan-22 A	100%	0		PE1600	1170	V.E.EN	PM
107	**Compliance Matrices - Non Regulatory Committments**					18-Jan-22 A	24-Jan-22 A		0					
108	80121160	1220	Prepared Compliance Matrices - Non-Reqgulatory (Commitments)	Completed		18-Jan-22 A	24-Jan-22 A	100%	0		PE1600	1170	V.E.EN	PM
109	**ENGINEERING DETAILED / IFC DESIGN**				112	17-May-21 A	08-Jun-23		225					
110	80121160	ENG1000	Engineering Detailed / IFC Design - WBS Summary Activity	In Progress	112	17-May-21 A	08-Jun-23	46.68%	225				TBD-TPM.S	ENG.SCI
111	**Civil Engineering**				-10	18-Jul-22	30-Sep-22		54					
112	**Civil Engineering Detailed Design**				-17	18-Jul-22	01-Aug-22		11					
113	80121160	CE1210	ES Engineering Review Civil Substation Detail Design	Not Started	-17	18-Jul-22	01-Aug-22	0%	11		TRANS-1160, DE2020	AT1811, (	TBD-TPM.(	ENG.ST:
114	**Civil Engineering IFC Design**				-10	02-Aug-22	30-Sep-22		43					
115	80121160	CE1310	ES Engineering Review Civil Substation IFC	Not Started	-10	02-Aug-22	30-Sep-22	0%	43		CE1210	AT0805C	TBD-TPM.(	ENG.ST:
116	**Electrical Engineering**				112	17-May-21 A	08-Jun-23		225					
117	80121160	CSD1000	PE Initiate CASCADE Forms (Appendix A) for Construction Package	Completed		18-Jul-22 A	22-Jul-22 A	100%	0		EE1310	1130	P.PE	ENG.ST:
118	80121160	EE460	Operating Instructions - SSED Review Draft Distribution OI	Not Started	-92	03-Oct-22	07-Oct-22*	0%	5		EE1310	CT1202	V	ENG.ST.I
119	80121160	EE920	Operating Instructions - SSED Review Draft Convex OI	Not Started	56	03-Oct-22	07-Oct-22	0%	5		EE1310	CT1202	V	ENG.ST.I
120	80121160	RANS-1150	TRANS-ES Reviews & Comments Transformer Drawings & Schematics	Completed		04-Oct-21 A	12-Oct-21 A	100%	0		TRANS-1140	TRANS-1	V	ENG.ST:
121	80121160	RANS-1160	TRANS-Vendor Submits Firm Transformer Drawings & Schematics	Completed		17-May-21 A	28-May-21	100%	0		TRANS-1150	DE2020,	V	ENG.ST:
122	**Electrical Engineering Detailed Design**				-92	01-Oct-21 A	01-Aug-22		11					
123	80121160	CSW-3380	CRCSWTCH-SME Provides Circuit Switcher Go-bys to Engineering/Engineeri	Completed		01-Oct-21 A	01-Oct-21 A	100%	0		CE1100	DE2040,	TBD-TPM.S	ENG.ST:
124	80121160	EE1210	ES Engineering Review Electrical Substation Detail Design	Not Started	-92	18-Jul-22	01-Aug-22*	0%	11		TRANS-1160, DE2040	BT1811, (	TBD-TPM.E	ENG.ST:
125	**Electrical Engineering NX-9**				112	18-Jul-22	08-Jun-23		225					
126	80121160	NX9A-EM44	Thermal Rating- Non NX9 - P&C Develops and Provides LTRC with P&C Che	Not Started	199	18-Jul-22	22-Jul-22	0%	5		DE2100	NX9A-EM	TBD-TPM	ENG.ST.I
127	80121160	NX9A-EM54	Thermal Rating- Non NX9 -LTRC Prepares and Sends Thermal Rating Data fc	Not Started	199	25-Jul-22	29-Jul-22	0%	5		NX9A-EM44	NX9A-EM	L.LECLAMJ	ENG.ST:
128	80121160	NX9A-EM64	Thermal Rating- Non NX9 -TRC Reviews and Approves Thermal Rating Data	Not Started	199	01-Aug-22	05-Aug-22	0%	5		NX9A-EM54	NX9A-EM	H.HANNISI	ENG.ST:
129	80121160	NX9A-EM74	Thermal Rating- Non NX9 -LTRC Files Capability Sheets	Not Started	199	08-Aug-22	12-Aug-22	0%	5		NX9A-EM64	CFM, FIN	L.LECLAMJ	ENG.ST:
130	**Substation NX-9 for Equipment Modification(Replacement CS or Xfmr)**				112	18-Jul-22	08-Jun-23		225					
131	**Substation NX-9 - Equipment Modification**				45	18-Jul-22	05-Oct-22		57					
132	8012	NX9A-EM01	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-30(	Not Started	45	18-Jul-22	22-Jul-22	0%	5		DE2100, DE2040	NX9A-EM	TBD-TPM	ENG.ST:
133	8012	NX9A-EM04	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature	Not Started	45	25-Jul-22	29-Jul-22	0%	5		NX9A-EM01	NX9A-EM	L.LECLAMJ	ENG.ST:
134	8012	NX9A-EM07	LTRC Submits1-Line Nomenclature to TRC	Not Started	45	01-Aug-22	05-Aug-22	0%	5		NX9A-EM04	NX9A-EM	L.LECLAMJ	ENG.ST:
135	8012	NX9A-EM10	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings	Not Started	45	08-Aug-22	12-Aug-22	0%	5		NX9A-EM07	NX9A-EM	L.LECLAMJ	ENG.ST:
136	8012	NX9A-EM13	LTRC Requests P&C Checklist	Not Started	45	15-Aug-22	19-Aug-22	0%	5		NX9A-EM10	NX9A-EM	TBD-TPM	ENG.ST:
137	8012	NX9A-EM16	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	Not Started	45	22-Aug-22	26-Aug-22	0%	5		NX9A-EM13	NX9A-EM	TBD-TPM	ENG.ST.I
138	8012	NX9A-EM19	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	45	29-Aug-22	02-Sep-22	0%	5		NX9A-EM16	NX9A-EM	L.LECLAMJ	ENG.ST:
139	8012	NX9A-EM22	TRC Reviews and Approves Thermal Rating Data	Not Started	45	06-Sep-22	12-Sep-22	0%	5		NX9A-EM19	NX9A-EM	H.HANNISI	ENG.AM
140	8012	NX9A-EM25	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	45	13-Sep-22	19-Sep-22	0%	5		NX9A-EM22	NX9A-EM	L.LECLAMJ	ENG.ST:
141	8012	NX9A-EM26	TRC Confirms Engineering Management Approvals of NX-9	Not Started	45	20-Sep-22	26-Sep-22	0%	5		NX9A-EM25	NX9A-EM	L.LECLAMJ	ENG.AM
142	8012	NX9A-EM28	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	45	27-Sep-22	27-Sep-22	0%	1		NX9A-EM26	NX9A-EM	TBD-TPM	PROJ
143	8012	NX9A-EM31	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	45	28-Sep-22	04-Oct-22	0%	5		NX9A-EM28	NX9A-EM	H.HANNISI	ENG.AM
144	8012	NX9A-EM34	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, Equ	Not Started	45	05-Oct-22	05-Oct-22	0%	1		NX9A-EM31	NX9A100	TBD-TPM	PROJ
145	**Substation - NX-9 Pre NX9-DOE**				102	03-Jan-23	03-Jan-23		1					
146	8012	NX9A100	Scheduler - Send Email for 48Hrs Notification before DOE. (Tie SS to Beginni	Not Started	102	03-Jan-23	03-Jan-23	0%	1		NX9A-EM34, TOA-Const	NX9FINAI	TBD-TPM	PROJ
147	**Substation - NX-9 Post NX9-DOE/ISD**				112	30-May-23	08-Jun-23		8					
148	8012	NX9A200	Scheduler - Has 72 Hrs to Put in Service the NX-9 and Send to TOP Director i	Not Started	112	01-Jun-23	01-Jun-23	0%	1		NX9FINAL10	NX9FINAI	TBD-TPM	PROJ
149	8012	X9FINAL10	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or	Not Started	112	30-May-23	01-Jun-23	0%	3		CFM, NX9A100	NX9FINAI	TBD-TPM	PM
150	8012	X9FINAL20	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	Not Started	112	02-Jun-23	08-Jun-23	0%	5		NX9FINAL10, NX9A200	FINISH	H.HANNISI	ENG.AM
151	**Substation NX9 for New Construction(New Equipment CS or Xfmr)**				112	18-Jul-22	08-Jun-23		225					
152	**Substation - Preliminary Thermal Data - New Construction**				-26	18-Jul-22	05-Oct-22		57					

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
153	8012	NX9A-NC01	PE Updates 1-Line Nomenclature Dwgs & Complete PE Checklist M7-EN-300	Not Started	-26	18-Jul-22	22-Jul-22	0%	5	[redacted]	DE2100, DE2040	NX9A-NC	TBD-TPM	ENG.ST:
154	8012	NX9A-NC03	LTRC Reviews and Makes "GO / NO-GO" Decision for 1-Line Nomenclature	Not Started	-26	25-Jul-22	29-Jul-22	0%	5		NX9A-NC01	NX9A-NC	L.LECLAMJ	ENG.ST:
155	8012	NX9A-NC05	LTRC Submits 1-Line Nomenclature to TRC	Not Started	-26	01-Aug-22	05-Aug-22	0%	5		NX9A-NC03	NX9A-NC	TBD-TPM	ENG.ST:
156	8012	NX9A-NC07	LTRC Reviews and Makes "GO / NO-GO" Decision for Thermal Ratings	Not Started	-26	08-Aug-22	12-Aug-22	0%	5		NX9A-NC05	NX9A-NC	L.LECLAMJ	ENG.ST:
157	8012	NX9A-NC09	LTRC Requests P&C Checklist	Not Started	-26	15-Aug-22	19-Aug-22	0%	5		NX9A-NC07	NX9A-NC	TBD-TPM	ENG.ST:
158	8012	NX9A-NC11	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	Not Started	-26	22-Aug-22	26-Aug-22	0%	5		NX9A-NC09	NX9A-NC	TBD-TPM	ENG.ST:
159	8012	NX9A-NC13	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	-26	29-Aug-22	02-Sep-22	0%	5		NX9A-NC11	NX9A-NC	L.LECLAMJ	ENG.ST:
160	8012	NX9A-NC15	TRC Reviews and Approves Thermal Rating Data	Not Started	-26	06-Sep-22	12-Sep-22	0%	5		NX9A-NC13	NX9A-NC	H.HANNISI	ENG.AM
161	8012	NX9A-NC17	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-26	13-Sep-22	19-Sep-22	0%	5		NX9A-NC15	NX9A-NC	L.LECLAMJ	ENG.ST:
162	8012	NX9A-NC18	TRC Confirms Engineering Management Approvals of NX-9	Not Started	-26	20-Sep-22	26-Sep-22	0%	5		NX9A-NC17	NX9A-NC	L.LECLAMJ	ENG.AM
163	8012	NX9A-NC19	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-26	27-Sep-22	27-Sep-22	0%	1		NX9A-NC18	NX9A-NC	TBD-TPM	PROJ
164	8012	NX9A-NC21	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-26	28-Sep-22	04-Oct-22	0%	5		NX9A-NC19	NX9A-NC	H.HANNISI	ENG.AM
165	8012	NX9A-NC23	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-18, Ec	Not Started	-26	05-Oct-22	05-Oct-22	0%	1		NX9A-NC21	CFM, BT1	TBD-TPM	PROJ
166	**Substation - Verify Thermal Data - New Construction**				-2	06-Oct-22	14-Dec-22		47					
167	8012	NX9A-NC31	PE to Verify Thermal Data Review PE Chectlist (M7-EN-3006.2)	Not Started	-2	06-Oct-22	13-Oct-22	0%	5		EE1310, NX9A-NC23	NX9A-NC	TBD-TPM	ENG.ST:
168	8012	NX9A-NC33	LTRC Reviews and Makes "GO / NO-GO" Decision	Not Started	-2	14-Oct-22	20-Oct-22	0%	5		NX9A-NC31	NX9A-NC	L.LECLAMJ	ENG.ST:
169	8012	NX9A-NC35	LTRC Requests P&C Checklist	Not Started	-2	21-Oct-22	27-Oct-22	0%	5		NX9A-NC33	NX9A-NC	L.LECLAMJ	ENG.ST:
170	8012	NX9A-NC37	P&C Develops and Provides LTRC with P&C Checklist (M7-EN-3006.1)	Not Started	-2	28-Oct-22	03-Nov-22	0%	5		NX9A-NC35	NX9A-NC	TBD-TPM	ENG.ST:
171	8012	NX9A-NC39	LTRC Reviews and Sends Thermal Rating Data for TRC Review	Not Started	-2	04-Nov-22	10-Nov-22	0%	5		NX9A-NC37	NX9A-NC	L.LECLAMJ	ENG.ST:
172	8012	NX9A-NC41	TRC Reviews and Approves Thermal Rating Data	Not Started	-2	14-Nov-22	18-Nov-22	0%	5		NX9A-NC39	NX9A-NC	H.HANNISI	ENG.AM
173	8012	NX9A-NC43	LTRC Sends Thermal Rating Data for Approval & Submit to NURS	Not Started	-2	21-Nov-22	28-Nov-22	0%	5		NX9A-NC41	NX9A-NC	L.LECLAMJ	ENG.ST:
174	8012	NX9A-NC44	TRC Confirms Engineering Management Approvals of NX-9	Not Started	-2	29-Nov-22	05-Dec-22	0%	5		NX9A-NC43	NX9A-NC	L.LECLAMJ	ENG.AM
175	8012	NX9A-NC45	Scheduler @ NURS email "Submitted for PP Review" - Updates NURS with D	Not Started	-2	06-Dec-22	06-Dec-22	0%	1		NX9A-NC44	NX9A-NC	TBD-TPM	PROJ
176	8012	NX9A-NC47	TRC Review and Submit NX-9 Data to LCC + ISO-NE for S/S Thermal Rating	Not Started	-2	07-Dec-22	13-Dec-22	0%	5		NX9A-NC45	NX9A-NC	H.HANNISI	ENG.AM
177	8012	NX9A-NC49	Scheduler @ NURS email "Submitted for DOE Monitoring" - Updates T-3, Equ	Not Started	-2	14-Dec-22	14-Dec-22	0%	1		NX9A-NC47	CFM, BT(	TBD-TPM	PROJ
178	**Substation - NX-9 Pre NX9-DOE**				102	03-Jan-23	03-Jan-23		1					
179	8012	NX9500	Scheduler - Send Email for 48Hrs Notification before DOE. (Tie SS to Beginni	Not Started	102	03-Jan-23	03-Jan-23	0%	1		TOA-Const, NX9A-NC47, NX9	CFM, NX9	TBD-TPM	PROJ
180	**Substation - NX-9 Post NX9-DOE/ISD**				112	30-May-23	08-Jun-23		8					
181	8012	NX9A600	Scheduler - Has 72 Hrs to Put in Service the NX-9 and Send to TOP Director i	Not Started	112	01-Jun-23	01-Jun-23	0%	1		NX9FINAL50	NX9FINAI	TBD-TPM	PROJ
182	8012	X9FINAL50	Review + Affirm Accuracy of NX-9 for ISO Submission (Tie after Equip DOE or	Not Started	112	30-May-23	01-Jun-23	0%	3		CFM, NX9500	NX9FINAI	TBD-TPM	PM
183	8012	X9FINAL60	[If Required] Receive + Issue Final Affirmed NX-9 Data to NURS	Not Started	112	02-Jun-23	08-Jun-23	0%	5		NX9FINAL50, NX9A600	FINISH	H.HANNISI	ENG.AM
184	**Electrical Engineering IFC Design**				-92	02-Aug-22	30-Sep-22		43					
185	80121160	EE1310	ES Engineering Review Electrical Substation IFC	Not Started	-92	02-Aug-22	30-Sep-22	0%	43		CIRCSW-1125, EE1210, DFF	CSD1000	TBD-TPM.E	ENG.ST:
186	**P&C Engineering**				144	06-Oct-21 A	25-Oct-22		70					
187	80121160	CSD1030	PE Initiate CASCADE Forms (Appendix A) for Construction Package	Not Started	144	19-Oct-22*	25-Oct-22	0%	5		PC1110, PC1330	1140	TBD-TPM.F	ENG.ST.I
188	80121160	OP1010	P&C Validation of PAF's Initial Assessment Go/No-Go	Not Started	205	20-Jul-22	21-Jul-22	0%	2		PAFF2100	OP1020	TBD-TPM.F	ENG.ST.I
189	**P&C Engineering Detailed Design**				-92	18-Jul-22	08-Aug-22		16					
190	80121160	PC1110	ES Engineering Review P&C Detail Design	Not Started	-92	18-Jul-22	01-Aug-22	0%	11		DE2100, TRANS-1160, EE13	CT1811, (	TBD-TPM.F	ENG.ST.I
191	80121160	PC1330	ES Engineering Issues SDS	Not Started	-92	02-Aug-22	08-Aug-22	0%	5		PC1110	CSD1030	TBD-TPM.F	ENG.ST.I
192	**P&C Relay Settings Development**				79	06-Oct-21 A	06-Sep-22		20					
193	80121160	EE1330	SWG-ES Engin Complete Front & Panel Views to Support Scoping Documen	Completed		06-Oct-21 A	05-Nov-21 A	100%	0		PF1000	PC1110	TBD-TPM.F	ENG.ST.I
194	80121160	PC1400	Complete P&C Relay Settings	Not Started	79	09-Aug-22	06-Sep-22	0%	20		PC1330	CT0404	TBD-TPM.F	ENG.ST.I
195	80121160	PC8520	SWG-ES Engin Complete One-line Dgrm & Relay list to Support Scoping Doc	Completed		06-Oct-21 A	05-Nov-21 A	100%	0		PF1000	PC1110	TBD-TPM.F	ENG.ST.I
196	**P&C Engineering OP-24**				205	22-Jul-22	28-Jul-22		5					
197	80121160	OP1020	P&C Updates OP-24 Appendix B	Not Started	205	22-Jul-22	27-Jul-22	0%	4		OP1010	OP1030	TBD-TPM.F	ENG.ST.I
198	80121160	OP1030	P&C Submits OP-24 Appendix B to ISO-NE	Not Started	205	28-Jul-22	28-Jul-22	0%	1		OP1020	1140	TBD-TPM.F	ENG.ST.I
199	**P&C Engineering IFC Design**				-92	08-Aug-22	30-Sep-22		38					
200	80121160	DFR1000	Verify DFR Calibration is Required	Not Started	-92	09-Aug-22	09-Aug-22	0%	1		PC1330	DFR1010	P.P&C	ENG.ST.I
201	80121160	DFR1010	P&C Prepare Configuration for DFRs	Not Started	-92	10-Aug-22	16-Aug-22	0%	5		PC1330, DFR1000	DFR1020	P.P&C	ENG.ST.I
202	80121160	DFR1020	Peer Review and Comment DFR Configuration	Not Started	-92	17-Aug-22	23-Aug-22	0%	5		DFR1010	DFR1030	P.P&C	ENG.ST.I
203	80121160	DFR1030	P&C Issue Configuration For DFR	Not Started	-92	24-Aug-22	26-Aug-22	0%	3		DFR1020	DFR1050	P.P&C	ENG.ST.I

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204	80121160	DFR1040	Verify CASCADE Forms Exists for S/S DFR, if not then Initiate Form	Not Started	-81	09-Aug-22	11-Aug-22	0%	3	[redacted]	PC1330	DFR1050	P.P&C	ENG.ST.I
205	80121160	DFR1050	DFR Config Complete	Not Started	-92	29-Aug-22	29-Aug-22	0%	1		DFR1030, DFR1040	DFR1070	P.P&C	ENG.ST.I
206	80121160	DFR1060	DFR Pts Identified	Not Started	-77		08-Aug-22	0%	0		PC1330	DFR1070	P.P&C	ENG.ST.I
207	80121160	DFR1070	P&C IFC Complete	Not Started	-92	30-Aug-22	30-Sep-22	0%	23		DFR1060, DFR1050, DFR10	1140, EE	P.P&C	ENG.ST.I
208	**PROCUREMENT LONG LEAD MATERIAL**				222	25-Oct-21 A	30-Dec-22		120					
209	80121160	PLLM1000	Procurement Long Lead Material - WBS Summary Activity	In Progress	222	25-Oct-21 A	30-Dec-22	66.39%	120				TBD-TPM.S	ENG.SCI
210	**Civil Long Lead Material**				0	02-Aug-22	30-Dec-22		104					
211	80121160	CE1040	MATERIAL - CIVIL - Procurement Issue PO	Not Started	3	09-Aug-22	18-Aug-22	0%	10		CE500, CE600	CE1050	TBD-TPM.M	PURC
212	80121160	CE1050	MATERIAL - CIVIL - Material Vendor Delivery Leadtime	Not Started	3	19-Aug-22	29-Dec-22	0%	133		CE1040	CE560	TBD-TPM.M	PURC
213	80121160	CE500	MATERIAL - CIVIL - Prepare & Issue DR	Not Started	3	02-Aug-22	08-Aug-22	0%	5		FF1000, PC1110, EE1210, C	CE600, C	V	ENG.ST.I
214	80121160	CE560	MATERIAL - CIVIL - Confirm Material Delivery to Site	Not Started	3	30-Dec-22	30-Dec-22	0%	1		CE1050	AT0401	TBD-TPM.M	PURC
215	80121160	CE600	Civil (BG) Material Ordered	Not Started	3		08-Aug-22	0%	0		CE500	CE1040	TBD-TPM.M	ENG.ST.I
216	**Electrical Long Lead Material**				222	25-Oct-21 A	30-Dec-22		120					
217	80121160	EE1020	MATERIAL - Electrical - Procurement Issue PO	Not Started	-25	09-Aug-22	18-Aug-22	0%	10		EE520	EE1030	TBD-TPM.M	PURC
218	80121160	EE1030	MATERIAL - Electrical - Material Vendor Delivery Leadtime	Not Started	-25	19-Aug-22	29-Dec-22	0%	133		EE1020	EE550	TBD-TPM.M	PURC
219	80121160	EE520	MATERIAL - Electrical - Prepare & Issue DR	Not Started	-17	02-Aug-22	08-Aug-22	0%	5		FF1000, PC1110, EE1210, C	EE590, E	V	ENG.ST.I
220	80121160	EE550	MATERIAL - Electrical - Confirm Material Delivery to Site	Not Started	-25	30-Dec-22	30-Dec-22	0%	1		EE1030	BT0401	TBD-TPM.M	PURC
221	80121160	EE590	Electrical (AG) Material Ordered	Not Started	0		08-Aug-22	0%	0		EE520	BT0401	TBD-TPM.M	ENG.ST.I
222	**MATERIAL FOR CIRCUIT SWITCHERS**				222	31-May-22 A	30-Dec-22		120					
223	80121160	RCSW-1240	CIRCSWTCH-MATERIAL - CIRCUIT SWITCHER - Confirm Material Delivery to	Not Started	-25	30-Dec-22	30-Dec-22	0%	1		CIRCSW-1260	BT0401	TBD-TPM.M	PURC
224	80121160	RCSW-1260	CIRCSWTCH-MATERIAL - CIRCUIT SWITCHER - Material Vendor Delivery Le	In Progress	-25	31-May-22 A	29-Dec-22	5.49%	172		CIRCSW-1320, CIRCSW-127	CIRCSW-	TBD-TPM.M	PURC
225	80121160	RCSW-1270	CIRCSWTCH-CIRCUIT SWITCHER Material Ordered	Not Started	288		23-Sep-22	0%	0		CIRCSW-1310, FF1000, CIR	CIRCSW-	TBD-TPM.M	ENG.ST.I
226	80121160	RCSW-1280	CIRCSWTCH-ES Engineering Develops & Issues Circuit Switcher Spec to Ma	Not Started	288	22-Jul-22	18-Aug-22	0%	20		FF1000	CIRCSW-	TBD-TPM.F	ENG.ST.I
227	80121160	RCSW-1290	CIRCSWTCH-Circuit Switcher Manufacturer Reviews Spec & Provides Quote	Not Started	288	19-Aug-22	09-Sep-22	0%	15		CIRCSW-1280	CIRCSW-	TBD-TPM.M	ENG.ST.I
228	80121160	RCSW-1300	CIRCSWTCH-ES Engineering & Procurement Review & Evaluate Circuit Swit	Not Started	288	12-Sep-22	23-Sep-22	0%	10		CIRCSW-1290	CIRCSW-	TBD-TPM.F	ENG.ST.I
229	80121160	RCSW-1310	CIRCSWTCH-MATERIAL -CIRCUIT SWITCHER - Prepare & Issue DR	Not Started	325	20-Jul-22	26-Jul-22	0%	5		FF1000	CIRCSW-	TBD-TPM.M	ENG.ST.I
230	80121160	RCSW-1320	CIRCSWTCH-MATERIAL - CIRCUIT SWITCHER - Procurement Issue PO	Not Started	325	27-Jul-22	02-Aug-22	0%	5		CIRCSW-1310, FF1000	CIRCSW-	TBD-TPM.M	PURC
231	**MATERIAL FOR TRANSFORMER**				222	25-Oct-21 A	30-Dec-22		120					
232	80121160	RANS-1060	TRANS-MATERIAL - Transformer - Procurement Issue PO	Not Started	466	30-Jul-22	08-Aug-22	0%	10		TRANS-530	CSM	TBD-TPM.M	PURC
233	80121160	RANS-1070	TRANS-MATERIAL - Transformer - Material Vendor Delivery Leadtime	In Progress	-25	09-Feb-22 A	15-Dec-22	35.51%	158		TRANS-1190	TRANS-5	TBD-TPM.M	PURC
234	80121160	RANS-1170	TRANS-Transformer - Prepare & Issue LNTP for Vendor Dwgs. & Schematics	Completed		25-Oct-21 A	25-Oct-21 A	100%	0		PI1300	TRANS-1	P.PE	ENG.ST.I
235	80121160	RANS-1180	TRANS-Transformer Material Ordered	Not Started	327		29-Jul-22	0%	0		TRANS-530		TBD-TPM.M	ENG.ST.I
236	80121160	RANS-1190	TRANS-MATERIAL - Transformer - Prepare & Issue LOA	Completed		02-Feb-22 A	07-Feb-22 A	100%	0		PI1610	TRANS-1(	TBD-TPM.F	PURC
237	80121160	TRANS-530	TRANS-MATERIAL - Transformer - Prepare & Issue DR	Not Started	320	25-Jul-22	29-Jul-22	0%	5		SDC1000, FF1010	TRANS-1(	TBD-TPM.M	ENG.ST.I
238	80121160	TRANS-570	TRANS-MATERIAL - Transformer - Confirm Material Delivery to Site	Not Started	-25	16-Dec-22	30-Dec-22	0%	15		TRANS-1070	BT0401	TBD-TPM.M	PURC
239	**P&C Long Lead Material**				0	02-Aug-22	30-Dec-22		104					
240	80121160	PC1000	MATERIAL - P&C - Material Vendor Delivery Leadtime	Not Started	3	19-Aug-22	29-Dec-22	0%	133		PC980	PC1010	TBD-TPM.M	PURC
241	80121160	PC1010	MATERIAL - P&C - Confirm Material Delivery to Site	Not Started	3	30-Dec-22	30-Dec-22	0%	1		PC1000	CT0401	TBD-TPM.M	PURC
242	80121160	PC510	MATERIAL - P&C - Prepare & Issue DR	Not Started	3	02-Aug-22	08-Aug-22	0%	5		FF1000, PC1110, EE1210, C	PC980	V	ENG.ST.I
243	80121160	PC980	MATERIAL - P&C - Procurement Issue PO	Not Started	3	09-Aug-22	18-Aug-22	0%	10		PC510	PC1000	TBD-TPM.M	PURC
244	**PROCUREMENT OF SERVICE CONTRACTS**				-10	18-Oct-21 A	22-Nov-22		85					
245	80121160	PSC1000	Procurement of Service Contracts - WBS Summary Activity	In Progress	-10	18-Oct-21 A	22-Nov-22	68.63%	85				TBD-TPM.S	ENG.SCI
246	**Engineer of Choice - Direct Award or Bid**					18-Oct-21 A	18-Oct-21 A		0					
247	80121160	3370	Decision Required Regarding Engineering Staffing (ES, COC, BID)- In House	Completed		18-Oct-21 A	18-Oct-21 A	100%	0		PF1010		TBD-TPM.F	PM
248	**Constructor of Choice - Direct Award or Bid**				-10	18-Oct-21 A	22-Nov-22		35					
249	80121160	3390	CONST.SERVICES - COC - Eversource Provides Spec / RFQ to COC	Not Started	-10	03-Oct-22	07-Oct-22	0%	5		FF1000, 3550, CE1310, EE1	3400	TBD-TPM.F	PURC
250	80121160	3400	CONST.SERVICES - COC - COC Evaluates Spec and Provides Quote	Not Started	-10	11-Oct-22	24-Oct-22	0%	10		3390	3410	V.C	CONS
251	80121160	3410	CONST.SERVICES - COC - Eversource Reviews Quote from COC	Not Started	-10	25-Oct-22	07-Nov-22	0%	10		3400	3420	TBD-TPM.F	PM
252	80121160	3420	CONST.SERVICES - COC - Eversource Awards Contract - PO Issued	Not Started	-10	08-Nov-22	22-Nov-22	0%	10		3410	CT0814,	TBD-TPM.F	PURC
253	80121160	3550	STAFFING DECISION -CONSTRUCTION: EVERSOURCE OR OUTSOURCE I	Completed		18-Oct-21 A	22-Oct-21 A	100%	0		START	3430, 33	TBD-TPM.F	PM

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
254	**Lead Commissioing Engineer Service - Direct Award or Bid**				-14	02-Aug-22	05-Aug-22		4	[redacted]				
255	80121160	LCE100	PM to Request Lead Commissioning Engineer GO/NO-GO (Preliminary or De	Not Started	-14	02-Aug-22	03-Aug-22	0%	2		EE1210	LCE200	TBD-TPM.F	PM
256	80121160	LCE200	Assign Lead Commissioning Engineer	Not Started	-14	04-Aug-22	05-Aug-22	0%	2		LCE100	LCE310,	TBD-TPM.(	ENG.ST.:
257	**Testing Service - Direct Award or Bid**				-28	18-Oct-21 A	09-Sep-22		35					
258	80121160	1010	STAFFING DECISION: EVERSOURCE OR OUTSOURCE BID/COC	Completed		18-Oct-21 A	18-Oct-21 A	100%	0		START	3470, 35'	V	PM
259	80121160	3470	TEST SERVICES - COC - Eversource Provides Spec / RFQ to COC	Not Started	-28	22-Jul-22	28-Jul-22	0%	5		FF1000, 1010	3480	TBD-TPM.T	PURC
260	80121160	3480	TEST SERVICES - COC - COC Evaluates Spec and Provides Quote	Not Started	-28	29-Jul-22	11-Aug-22	0%	10		3470	3490	V.C	PURC
261	80121160	3490	TEST SERVICES - COC - Eversource Reviews Quote from COC	Not Started	-28	12-Aug-22	25-Aug-22	0%	10		3480	3500	TBD-TPM.T	PURC
262	80121160	3500	TEST SERVICES - COC - Eversource Awards Contract - PO Issued	Not Started	-28	26-Aug-22	09-Sep-22	0%	10		3490	1170, LCI	TBD-TPM.T	PURC
263	**CONSTRUCTION**				110	01-Aug-22	12-Jun-23		217					
264	80121160	CON1000	Construction - WBS Summary Activity	Not Started	110	01-Aug-22	12-Jun-23	0%	217				TBD-TPM.S	ENG.SCI
265	**Outages**				110	01-Aug-22	12-Jun-23		217					
266	80121160	1250	Construction Rep SUBMIT OUTAGE REQUESTS for NON-Swithgear equipme	Not Started	5	03-Oct-22	07-Oct-22	0%	5		BT0805E	BT0409	V.C	CONS
267	80121160	1260	Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)	Not Started	80	30-May-23	12-Jun-23	0%	10		CFM	1030	V.C	CONS
268	80121160	1290	Construction Rep SUBMIT OUTAGE REQUESTS for Swithgear TEST ENERG	Not Started	84	01-Aug-22*	12-Aug-22	0%	10		AT0805C	A1070	V.C	CONS
269	80121160	CFM	Construction Finish Milestone	Not Started	4		26-May-23	0%	0		NX9A-EM74, 1140, CONSTel	1020, 10:	V.C	CONS
270	80121160	CSM	Construction Start Milestone	Not Started	274	03-Jan-23		0%	0		CT00, BT00, TRANS-1060	ConRep-S	TBD-TPM.F	CONS
271	80121160	ISD	EQUIPMENT IN SERVICE DATE (requires FOOB constraint)	Not Started	0		31-May-23*	0%	0		CFM, LCE700, LCE610	LCE800	V.C	PM
272	80121160	TOA-Const	OUTAGE / General Construction Work	Not Started	0	03-Jan-23	22-Apr-23	0%	95		CT00, BT00	1070, 10	V.C	CONS
273	80121160	TOA-Test	OUTAGE / Test Swithgear	Not Started	19	03-Jan-23	03-May-23	0%	85		CT00, BT00	CFM	TBD-TPM.S	TEST
274	**Construction Support LOEs**				2	03-Jan-23	26-May-23		102					
275	80121160	1070	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT	Not Started	0	03-Jan-23*	03-Jan-23	0%	1		TOA-Const	CFM	V.C	CONS
276	80121160	1080	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN	Not Started	0	26-May-23*	26-May-23	0%	1		TOA-Const	CFM	V.C	CONS
277	80121160	ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	Not Started	2	03-Jan-23	26-May-23	0%	102		CSM	CFM	V.C	CONS
278	80121160	CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	Not Started	2	03-Jan-23	26-May-23	0%	102		CSM	CFM	V.C	CONS
279	**Site Development**				2	03-Jan-23	26-May-23		102					
280	80121160	1120	Construction - Civil	Not Started	2	03-Jan-23*	26-May-23	0%	102		AT00	CFM, CV'	V.C	CONS
281	**Substation Construction**				2	03-Jan-23	26-May-23		102					
282	80121160	1130	Construction - Electrical	Not Started	2	03-Jan-23*	26-May-23	0%	102		BT00, CSD1000	CFM	V.C	CONS
283	**P&C Construction**				99	03-Jan-23	09-Jan-23		5					
284	80121160	1140	Construction - P&C Implement Relay Settings	Not Started	99	03-Jan-23	09-Jan-23	0%	5		CT00, CSD1030, OP1030, D	CFM	V.C	CONS
285	**Telecomm Construction**				99	03-Jan-23	09-Jan-23		5					
286	80121160	1150	Construction - Field Communications	Not Started	99	03-Jan-23	09-Jan-23	0%	5		CT00	CFM	V.C	CONS
287	**TEST & COMMISSIONING**				108	10-Sep-22	24-Dec-22		72					
288	80121160	TC1000	Test & Commissioning - WBS Summary Activity	Not Started	108	10-Sep-22	24-Dec-22	0%	72				TBD-TPM.S	ENG.SCI
289	**Test & Commissioning**				108	10-Sep-22	24-Dec-22		72					
290	80121160	LCE400	Develop Test and Commissioning Plan	Not Started	-26	12-Sep-22	11-Oct-22	0%	21		LCE310, LCE320	LCE500	TBD-TPM.T	TEST
291	80121160	LCE500	LCE Review and Approve Vendor's Test and Commissioning Plan	Not Started	-26	12-Oct-22	09-Nov-22	0%	21		LCE400	BT1301, I	TBD-TPM.(	ENG.ST.:
292	**Testing Activities**				108	10-Sep-22	24-Dec-22		72					
293	80121160	LCE310	Mobilize LCE Prior to Construction	Not Started	-39	10-Sep-22	11-Sep-22	0%	2		LCE200, 3540, 3500	LCE400	TBD-TPM.(	ENG.ST.:
294	80121160	LCE320	Mobilize Testing Vendor Prior to Construction	Not Started	-39	10-Sep-22	11-Sep-22	0%	2		LCE200, 3540, 3500	LCE400	TBD-TPM.T	TEST
295	80121160	LCE610	LCE Oversee Execution of Test and Commissioning Plan	Not Started	108	10-Nov-22	23-Dec-22	0%	30		LCE500	ISD	TBD-TPM.(	ENG.ST.:
296	80121160	LCE620	Execute Test and Commissioning Plan	Not Started	107	10-Nov-22	23-Dec-22	0%	30		LCE500	CFM, LCE	TBD-TPM.T	TEST
297	80121160	LCE700	LCE Ensure Test Group Prepare Electrical Field Mark Ups	Not Started	158	24-Dec-22	24-Dec-22	0%	1		LCE620	ISD	TBD-TPM.(	ENG.ST.:
298	**PROJECT CLOSE OUT**				0	30-May-23	17-Nov-23		120					
299	80121160	PCO1000	Project Close Out - WBS Summary Activity	Not Started	0	30-May-23	17-Nov-23	0%	120				TBD-TPM.S	ENG.SCI
300	**Civil Close Out**				8	30-May-23	06-Nov-23		112					
301	80121160	1110	Restore / Remediate Site	Not Started	110	30-May-23	12-Jun-23	0%	10		CFM	FINISH	V.C	CONS
302	80121160	CV1000	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)	Not Started	8	06-Jun-23	05-Jul-23	0%	21		1120, TD1100	CV1200	TBD-TPM.S	ENG.EN(

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#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibility	DEPT - DEPARTMI
303	80121160	CV1200	ES Engineering Verifies Civil Mark Ups and Updates As-Built Drawing Packag	Not Started	8	06-Jul-23	16-Aug-23	0%	30	[redacted]	CV1000	CV1300	TBD-TPM.(	ENG.ST:
304	80121160	CV1300	Eversource Engineering Verifies Quality of Submitted Civil Drawings	Not Started	8	17-Aug-23	14-Sep-23	0%	20		CV1200	CV1400	TBD-TPM.(	ENG.ST:
305	80121160	CV1400	ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files ar	Not Started	8	15-Sep-23	21-Sep-23	0%	5		CV1300	PM1000	TBD-TPM.(	ENG.ST:
306	80121160	CV1500	FE Files Civil Design Drawings at Station	Not Started	8	25-Sep-23	06-Nov-23	0%	30		PM1000	FINISH	TBD-TPM.S	ENG.EN(
307	80121160	PM1000	PM to Document Civil As-Built Drawings Complete	Not Started	8	22-Sep-23	22-Sep-23	0%	1		CV1400	CV1500	TBD-TPM.F	PM
308	**Electrical Close Out**				0	16-Jun-23	03-Oct-23		76					
309	80121160	EV1000	Prepare Electrical Field Mark Ups	Not Started	0	16-Jun-23	17-Jul-23	0%	21		LCE900, TD1100	EV1200	TBD-TPM.L	ENG.EN(
310	80121160	EV1200	ES Engineering Verifies Electrical Mark Ups and Updates As-Built Drawing Pa	Not Started	0	18-Jul-23	28-Aug-23	0%	30		EV1000	EV1300	TBD-TPM.E	ENG.ST:
311	80121160	EV1300	Eversource Engineering Verifies Quality of Submitted Electrical Drawings	Not Started	0	29-Aug-23	26-Sep-23	0%	20		EV1200	EV1400	TBD-TPM.E	ENG.ST:
312	80121160	EV1400	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issu	Not Started	0	27-Sep-23	03-Oct-23	0%	5		EV1300	PM1100	TBD-TPM.E	ENG.ST:
313	**P&C Close Out**				0	16-Jun-23	17-Nov-23		107					
314	80121160	PC1200	ES Engineering Verifies P&C Mark Ups and Updates As-Built Drawing Packag	Not Started	0	18-Jul-23	28-Aug-23	0%	30		PC8000	PC1300	TBD-TPM.F	ENG.ST.I
315	80121160	PC1300	Eversource Engineering Verifies Quality of Submitted P&C Drawings	Not Started	0	29-Aug-23	26-Sep-23	0%	20		PC1200	PC1411	TBD-TPM.F	ENG.ST.I
316	80121160	PC1411	P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue D	Not Started	0	27-Sep-23	03-Oct-23	0%	5		PC1300	PM1100	TBD-TPM.F	ENG.ST.I
317	80121160	PC8000	Prepare P&C Field Mark Ups	Not Started	0	16-Jun-23	17-Jul-23	0%	21		LCE900, TD1100	PC1200	TBD-TPM.F	ENG.EN(
318	80121160	PC8500	FE Files P&C Design Drawings at Station	Not Started	0	05-Oct-23	17-Nov-23	0%	30		PM1100	FINISH	TBD-TPM.F	ENG.EN(
319	**LCE Closeout**				0	01-Jun-23	15-Jun-23		11					
320	80121160	LCE800	LCE Ensures Marked up Prints Ready for Pick-up	Not Started	0	01-Jun-23	01-Jun-23	0%	1		ISD	LCE900	TBD-TPM.(	ENG.ST:
321	80121160	LCE900	LCE Review Test Data and Issue Commissioning Report	Not Started	0	02-Jun-23	15-Jun-23	0%	10		LCE800	EV1000,	TBD-TPM.(	ENG.ST:
322	**Work Order / Financial Close Out**				80	30-May-23	25-Jul-23		40					
323	80121160	1020	Cost Analyst Prepares FINAL Units of Property	Not Started	90	30-May-23	11-Jul-23	0%	30		CFM	FINISH	TBD-TPM.(	COST
324	80121160	1030	Asset Management Complete Asset Update(s) in CASCADE	Not Started	80	13-Jun-23	25-Jul-23	0%	30		1260, CFM	FINISH	TBD-TPM.E	ENG.AM
325	**Project Management Close Out**				0	30-May-23	17-Nov-23		120					
326	80121160	1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	Not Started	89	30-May-23	11-Jul-23	0%	30		CFM	FINISH	TBD-TPM.F	PM
327	80121160	1270	Prepare TD-707 Document	Not Started	90	30-May-23	11-Jul-23	0%	30		CFM	FINISH	TBD-TPM.F	PM
328	80121160	EV1500	FE Files Substation Design Drawings at Station	Not Started	0	05-Oct-23	17-Nov-23	0%	30		PM1100	FINISH	TBD-TPM.S	ENG.EN(
329	80121160	FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	Not Started	0		17-Nov-23	0%	0		NX9A-EM74, 1020, 1040, 11		TBD-TPM.F	PM
330	80121160	PM1100	PM to Document Electrical As-Built Drawings Complete (Electrical & P&C)	Not Started	0	04-Oct-23	04-Oct-23	0%	1		EV1400, PC1411	EV1500,	TBD-TPM.F	PM
331	80121160	TD1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List	Not Started	8	30-May-23	05-Jun-23	0%	5		CFM	EV1000,	V.C	CONS
332	**NOT REQUIRED ACTIVITIES**					20-Sep-21 A	12-Jul-22 A		0					
333	80121160	1180	N/R (as per WV) Determine Requirment for and Prepare Permitting Docments	Completed		22-Oct-21 A	22-Oct-21 A	100%	0		PE1600, PF1000	AT0801	TBD-TPM.F	PM
334	80121160	1190	N/R (as per WV) Determine Requirment for and Prepare Permitting Docments	Completed		22-Oct-21 A	22-Oct-21 A	100%	0		PE1600, PF1000	AT0801	TBD-TPM.F	PM
335	80121160	1200	N/R (as per WV) Determine Requirment for and Prepare Permitting Docments	Completed		22-Oct-21 A	22-Oct-21 A	100%	0		PE1600, PF1000	AT0801	TBD-TPM.F	PM
336	80121160	1210	N/R (as per WV) Determine Requirment for and Prepare Permitting Docments	Completed		22-Oct-21 A	22-Oct-21 A	100%	0		PE1600, PF1000	AT0801	TBD-TPM.F	PM
337	80121160	3430	(N/R as per WV) CONST.SERVICES - BID - Eversource provide Spec / RFP	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		FF1000, 3550, CE1310, EE1	3440	TBD-TPM.F	PURC
338	80121160	3440	(N/R as per WV) CONST.SERVICES - BID - Contractors Evaluate RFP and Pr	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		3430	3450	V.C	CONS
339	80121160	3450	(N/R as per WV) CONST.SERVICES - BID - Eversource reviews contractor prc	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		3440	1170, 34(	TBD-TPM.F	PM
340	80121160	3460	(N/R as per WV) CONST.SERVICES - BID - Contract is Awarded - PO Issued	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		3450	CT0814,	TBD-TPM.F	PURC
341	80121160	3510	(N/R as per WV) TEST SERVICES - BID - Eversource provide Spec / RFP	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		FF1000, 1010	3520	TBD-TPM.T	PURC
342	80121160	3520	(N/R as per WV) TEST SERVICES - BID - Contractors Evaluate RFP and Pro	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		3510	3530	V.C	PURC
343	80121160	3530	(N/R as per WV) TEST SERVICES - BID - Eversource reviews contractor prop	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		3520	3540	TBD-TPM.T	PURC
344	80121160	3540	(N/R as per WV) TEST SERVICES - BID - Eversource awards contract - PO Is	Completed		12-Jul-22 A	12-Jul-22 A	100%	0		3530	LCE310,	TBD-TPM.T	PURC
345	80121160	RCSW-1123	N/R (as per WV)CIRCSWTCH-Vendor Submits Drawings & Schematics - Circu	Completed		25-Oct-21 A	25-Oct-21 A	100%	0		CIRCSW-1320	CIRCSW-	V	ENG.ST:
346	80121160	RCSW-1124	N/R (as per WV) CIRCSWTCH-ES Reviews & Comments Drawings & Schema	Completed		25-Oct-21 A	25-Oct-21 A	100%	0		CIRCSW-1123	CIRCSW-	V	ENG.ST:
347	80121160	RCSW-1125	N/R (as per WV) CIRCSWTCH-Vendor Submits Firm Drawings & Schematics -	Completed		25-Oct-21 A	25-Oct-21 A	100%	0		CIRCSW-1124	EE1310,	V	ENG.ST:
348	80121160	PAFP1000	N/R (per WV 10/26/21) Submit Partial Funding PAF for Internal Review	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		TCGE1010	PAFP1100	P.PE	ENG.AM
349	80121160	PAFP1100	N/R (per WV 10/26/21) Incorporate Internal Review Comments & Submit Par	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PAFP1000	PAFP1110	P.PE	ENG.AM
350	80121160	PAFP1110	N/R (per WV 10/26/21) EPAC Partial Funding Meeting	Completed			26-Oct-21 A	100%	0		PAFP1100	PAFP1200	EPAC	IP
351	80121160	PAFP1200	N/R (per WV 10/26/21) Incorporate EPAC Partial Funding PAF Review Comm	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PAFP1110	PF1000	P.PE	ENG.AM
352	80121160	PBOM1000	N/R Procurement Material - Balance of Material - WBS Summary Activity	Completed		20-Sep-21 A	12-Jul-22 A	100%	0				TBD-TPM.S	ENG.SCI

TASK filter: All Activities

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[redacted] - Replace 2X XMFR (CS00516) | Print PM update | 12-Jul-22 16:15

#	Project ID	Activity ID	Activity Name	Activity Status	Total Float	Start	Finish	Activity % Complete	Remaining Duration	Resources	Predecessors	Successors	RESP - Responsibilit	DEPT - DEPARTMI
353	80121160	PE1600	N/R (per WV 10/26/21) Review Preliminary Siting & Permitting (If Required)	Completed		26-Oct-21 A	26-Oct-21 A	100%	0	[redacted]	SDC1000	3560, PE	MAE.Siting	ENG.ST.:
354	80121160	PE1700	N/R (per WV 10/26/21) Conduct Preliminary Constructability Walk Down	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PE1600	TCGE101	TBD-TPM.F	PM
355	80121160	PE1710	N/R (per WV 10/26/21) Create Engineering Scope Document	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PE1600	PE1720	TBD-TPM.E	ENG.ST.:
356	80121160	PE1720	N/R (per WV 10/26/21) Engineering Scope Document Complete	Completed			26-Oct-21 A	100%	0		PE1710	BT3001, `	TBD-TPM.E	ENG.ST.:
357	80121160	PERM1000	N/R Environmental Approvals & Permits - WBS Summary Activity	Completed		20-Sep-21 A	12-Jul-22 A	100%	0				TBD-TPM.S	ENG.SCI
358	80121160	PF1000	N/R (per WV 10/26/21) EPAC Partial Funding Approval	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PAFP1200	EE1330,	EPAC	IP
359	80121160	PF1010	N/R (per WV 10/26/21) Partial Funding PowerPlan Approval	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PF1000	DE1800,	TBD-TPM.C	IP
360	80121160	ROW1000	N/R ROW & Easements - WBS Summary Activity	Completed		20-Sep-21 A	12-Jul-22 A	100%	0				TBD-TPM.S	ENG.SCI
361	80121160	TCGE1010	N/R (per WV 10/26/21) Develop At Least Conceptual Grade Estimate (-25%+	Completed		26-Oct-21 A	26-Oct-21 A	100%	0		PE1720, PE1700	PAFP1000	TBD-TPM.E	ENG.BQ.
362	80121160	RANS-1140	N/R (as per WV) TRANS-Vendor Submits Transformer Drawings & Schematic	Completed		20-Sep-21 A	21-Sep-21 A	100%	0		TRANS-1170	TRANS-1	V	ENG.ST.:

TASK filter: All Activities

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EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

Project Title: Ridgefield Transformer Replacement	☐	Prior Constructability Review Performed?
	☐	Program Related Site Specific Review?
Project Numbers(s): CS00516	**Project Constructability Phase:**	
Date(s) of Constructability Review: 11/23/2021	☐ Conceptual Engineering Design	
Click to enter a date	☒ Preliminary Engineering Design	
	☐ Detailed Engineering Design	
Project Scope Statement: Replace the 3X and 2X transformers and relays in [redacted] SS		

Department Review/Walkdown Attendees*:

Required [X]	Attended [X]	Department	Name	Required [X]	Attended [X]	Department	Name
☒	☒	Project Management	[redacted]	☒	☒	S/S Engineering	[redacted]
☐	☐	Asset Management		☒	☒	P&C Engineering	
☒	☒	Constr. Management		☒	☒	Civil Engineering	
☐	☐	S/S Technical / LCE		☒	☐	Telecom	
☒	☐	S/S Operations**		☒	☐	Environmental	
☐	☐	Field Engineering		☐	☐	Real Estate	
☐	☐	Line Engineering		☐	☐	ROW T&D Rights & Survey	
☐	☐	Vegetation Management		☐	☐	Survey Engineering	
☒	☐	Siting		☐	☐	Cost Estimating	
☐	☐	Safety		☒	☒	Project Services (Outreach)	
☐	☐	SCADA		☐	☐	Material Procurement	

*** Sign-off in the table above for the Detailed Engineering Design Constructability Review indicates that all Action Items/Concerns from prior Constructability Reviews have been mitigated/resolved as documented in this form. Not every department is required to attend walkdowns for every project but should be consulted for project impact considerations**

** Internal Eversource Substation Operations must be included in the review even if external construction resources are planned

[Project Manager] certifies that this review was performed to completeness, that all applicable departments were informed of the project and have had opportunity to provide input to this review:

[redacted] / [redacted] 11/23/21

Name / Signature *Date*

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

Documents available for use prior to Constructability Review					
[X]	Document	[X]	Document	[X]	Document
☒	Initial Scope -Birdseye site plan -General Arrangement	☒	Preliminary Drawings -Civil Site Drawing -Electrical Drawing -Section Drawings	☐	Prints in hand for marking up -Panel Front/Read View -Control Enclosure Layout -Floor / Wall Plans
☐	Detailed Scope Document	☒	Proposed Schedule	☐	Construction Sequence/Timeline
☐	Previous Notes / Comments / Observations	☒	Major Material / Equipment List	☐	Replace / Reuse of equipment

Action Items and Resolutions:

Item No.	Const. Review Action Item/Concern	Design Resolution/Mitigation:
1	Construction / Barnhart to review path for X2 transformer to determine if fence bump out required	May effect siting if fence bumpout needed
2	Construction to determine if resources are available to install new relays once transformer out of service.	If resources not available, defer relay replacement to Fall
3		
4		
5		

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
A	**Engineering & Asset Management**		
1	**Scope of Work** - Is scope adequately developed and sufficiently detailed for intended deliverable? - Any complimentary projects or other adjacent obsolete equipment for inclusion? - Any overlapping projects that could impact work/outages? - Consider Physical Installation, P&C Scope, Civil Scope, Engineering studies, Design standard adherence - Any remote station impacts? - Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project	X	1. Scope is well defined. There is room in cabinets for new relays. New transformer is larger, but will fit in conjunction with new switch combo. Need to get outages submitted to determine if any conflicts with proposed work.

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
2	**Materials Identified/Ordered** -Any concerns with BOM/Major Materials? Review BOM lead times and project need dates -Specialty Major Materials: Identify Specialty Equipment & Materials potentials - temporary/replacement - long lead items? -Any Materials needed to facilitate construction access?	☐	1. New transformer due to arrive last week of Feb 2. Switch combo due in early May 3. Material exemption approved for reactor and switch combo, need to submit another material exemption for all other material (relays, conduits, cables, etc).
3	**Control House** - Review Unmapped equipment interferences, Control/Battery Enclosure Layout, HVAC System (if equipment added), space for new or modified equipment, AC / DC station breaker availability and service loading, Panel Space, Expansion, one-line and/or riser type panelboard drawings, other..	X	No interference identified. There is room in cabinets for new relays.
4	**Ratings & Dimensions** for Major Equipment. Any concerns upon field review? Equipment Rating One Line (and/or equipment thermal ratings tables) - Review for any errors in field	X	New transformer is larger, but will fit in conjunction with new switch combo.
5	**Wall, Fence, Gate, and Foundation Considerations** -Any permanent / temporary alterations or relocations required? -Pre-Project Sound Measurements Needed? Sound Walls? -Take measurements for Foundation quantities, dimensions and concrete volumes -CIP Review/Ballistic needs. Any Physical Security Requirement Consideration? -Assess condition of existing yard equipment foundations and viability for reuse (if proposed) -Review station expansion areas (if needed) for structures, old foundations, etc. -Any Steel Structural Plan Considerations? -Any impacts to construction plan?	☐	Need to review path for X2 transformer with Barnhart to determine if fence bump out required
6	**Below Grade / Enclosure Raceway** - If possible, evaluate existing raceway and review spacing requirements. Review for any subsurface investigation needs or potential below grade obstructions. GPR/test pits needed? Geotechnical Investigation - is soil boring or resistivity investigation needed?	X	Environmental has already identified that soil borings should be done for potential PCB contamination.

REDACTED

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
7	**Underground Obstructions** -Drawing review concerns? -Is preconstruction or test excavation needed? -Is reuse of underground control cables / Conduits /replace Non-Shielded Cable feasible (if applicable) -Are spare conduits available? Are they useable? -Review if any areas will need to be plated for increased load bearing for equipment access (i.e., large Xfmr, etc.)	X	Cables to be re-used, but UG conduits need to be relocated to accommodate new equipment layout and foundations.
8	**Grounding Plan (Ground Grid)** - Will footprint impact layout or other equipment? Identify locations to improve grounding. Impacts to foundations and ground grid plans. Observations on wetlands or ability to perform tests	X	Design accounts for low ground resistivity – SS already has ground nets, not just rods.
9	Nomenclature / Switching One-Line Diagram -Any obvious deviations from diagrams provided?	X	
10	BPS Separation Requirements - Is this BPS Substation? Y/N (part of PAF) - Changes to pre-existing BPS standards?	X	N/A
11	IEC 61850 Substation Automation and Communication Requirements - Any Impacts/Retrofit needed?	X	N/A
12	Any Upgrades to ES Standards - Is retrofit needed to bring up to ES standards? Can that be done?	X	N/A
B	**Construction**		
1	**Any safety hazards specific to the facility? i.e., Low Bus, Deterioration, etc.**		Need to determine if fence bump out will be required when bringing in X2 unit to maintain clearance distance on bus.
2	**Prior known Site Specific Conditions** -Common or Obvious station Issues -Missing scope items that could impact costs?	X	
3	**Identify/Consider Required Depts for Construction?** -Who is constructor: Internal vs External Resources -S/S Ops, GO, Test, Field Engineering, etc.	☐	Below ground work/civil will be performed by external contractor. All other work (electrical, testing) by internal crews.

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
	-Specialty Contractors Required? -Required Oversite Needed - Estimated level of CR and LCE support needed		
4	**Site Plan, Access, and Temporary Construction Facilities:** -Confirm maintenance access for proposed new or replaced equipment -Verify clear footprint for yard equipment / Property Plan -General access to site, can areas outside substation be utilized? -Substation Entry Plan (driveway and drive path modifications) - Identification of Unique Requirements, i.e. (access bridges, station service, etc.) -Site Development Plan (grading and drainage) with Cut/Fill -Existing Rock Conditions? Potential Impacts (rock quantity)? -Any police details needed for deliveries, restricted hours, and/or need for extended hour approvals -Any Sanitary Civil Requirements? (Septic tanks, etc.) -Review turning radius for delivery trucks (if critical) -Any Substation Access and site/yard access Limitations? -Office Trailer Needs: Facilities, Utilities, Restroom, Container, Dumpster Space -Weather impacts to Site (Snow Placement) -Identify Material Laydown and Security -Where will new vs removed equipment go? -Construction permit for trailers outside substation fence?	☐	Eversource has access from Prospect Street to SS (ROW along rail trail). Walkdown of road indicates it is in good condition for equipment deliveries. Police most likely required for permitted loads (Transformer, potentially switch combo). There is a laydown area outside of SS that can be utilized.
5	Unique Equipment Considerations: Gas insulated substation, Gas insulated line, Gas insulated bus, Pass Breaker, Statcom, Sync Condenser		Need to check for potential PCB contamination from existing transformers.

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Outage & Energization Plan and Construction Sequence:** *Review electrical working clearances for equipment during construction, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized.* ***Considerations:*** -Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -Distribution Clearances -Clearance Holder Assignments -Drawings vs Field Conditions -Outage boundaries and interconnections -Phased approach needs for additional mobilizations -Verify outage sequence supports the planned construction sequence and timeline. (Lead Commissioning Engineer "LCE", Substation Operations, and Outage Planner input) -Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions -Additional outage requirements: Railroad Catenaries, Fiber outage, SCADA outage, Relay permissions -Seasonal or weather conditions impacts		Will need outages to disconnect the transformer / reconnect to new transformer. Mobile transformer will be used entire time transformer is out of service for replacement (approximately 5 months).
7	**Equipment Testing & Acceptance** -Grounding plans / Resources? Will we need grounds hung? -Hi-pot testing and where will the equipment be set up?	X	
8	Need for mobile generator and where connected (if needed)	X	
9	Need for mobile battery and where connected (if needed)	X	
10	OT work required or Notable Permit Conditions (special hours)?	☐	
11	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	X	

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
C	**Environmental**		
1	Soil Pre-Characterization or Grab Sampling Completed/Planned	☐	Environmental planning on soil borings for potential contamination.
2	**Desktop investigation and EAD Review** -Required Permits -Stormwater Considerations -Dewatering requirements -Wetland and buffer review	X	
3	Risk or presence of PCB's/Asbestos/Lead/SF6	☐	Potential PCB leak from existing transformer
4	Transformer Spill Containment Recommended?	☐	Review by Environmental indicated oil containment not required.
5	Expanding Footprint / New Buildings or future Expansion Plans? (Enviro Impact)	x	
6	Environmental oversight considerations? (Inspection type/Interval)	☐	
7	Environmental mitigations - Any matting or seasonal needs? Review D&M Plan with CR.	x	N/A
D	**Siting, Project Services, and ROW T&D Rights & Survey**		
1	**Any regulatory concerns or approvals needed?** - Any concerns noted that could be mitigated by scope/design alterations? - Likely to require visual screening? What considerations (feasibility or location)? -Zoning Relief and Permits required?	X	No sub-petition or modification expected as long as fence bumpout not required.
2	Other siting considerations?	X	
3	**Neighbor/Abutter impacts:** - Any noise, visual impacts, or sensitive abutters - Any changes to lighting or additional lighting needed?	X	New transformer is expected to be quieter than existing units.
4	Review for roadway, gate access, trailers, equip height, noise, weekend/night work, or any potential public disturbance related to work	X	SS is along rail trail and next to condo complex. Work during winter, with no leaves on trees, will fully expose work to neighbors. Project Service planning numerous notifications.
5	Installation within Eversource Rights - Is Rights and Restrictions Review required?	X	Eversource has access from Prospect Street to SS (ROW along rail trail).

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	Expanding Footprint / New Buildings / Fence line or future Expansion Plans?	X	
7	Proposed Equipment on same property? - Any Encroachments	X	
F	**Protection & Controls**		
1	Panel Graphic additions and/or Modifications	X	
2	Space on existing panels for new equipment? (front & rear of panel fronts)	X	
3	Panel fronts conform to drawings	X	
4	Access to bring new panels into control enclosure	X	
5	Nameplate list and location of nameplates	X	
6	Verifies that relays and meters that will be an interconnected project work are as shown on the drawings.	X	
7	Temporary protection, relays, control cable needed? How long will they be required?	X	
8	Will relay setting changes be needed? Any additional outage requirements for changes?		New relays to be installed
G	**Telecom Engineering**		
1	Review telecom equipment in existing control enclosure	X	
2	Review path to get telecom circuits into the station and paths within the control house. Determine whether new underground duct or overhead tray work is needed.	X	
3	Review current or proposed Telecom equipment power connections and validate with P&C any need for system 1 and system 2 separation.	X	
4	Review current Telecom fiber diversity and validate with P&C any fiber diversity requirements.	X	
5	Review and list any remote station impacts/updates	X	
6	Confirm whether correct interface equipment is available (i.e.) for fiber termination or multiplexor termination	X	

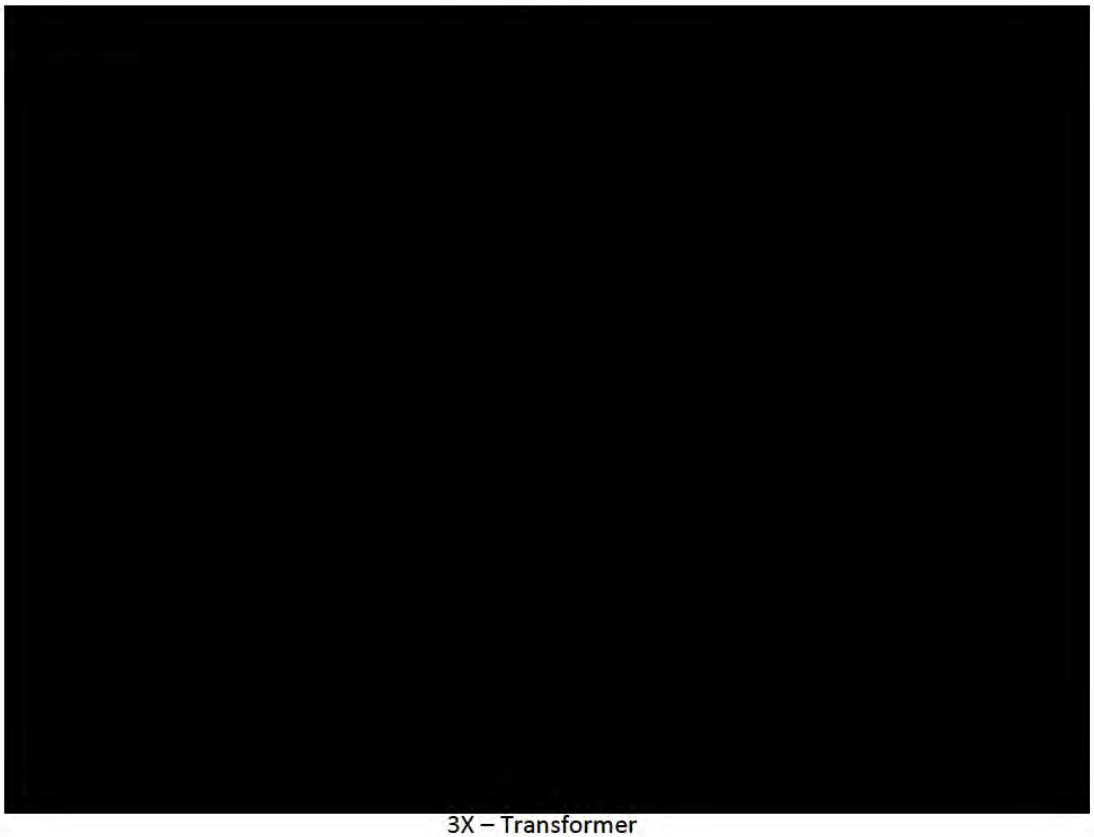
EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
7	Confirm whether existing communications cabinets are enough to support additional telecommunications equipment installed	X	
8	Review space for any required additional communications cabinets which may be required to support additional telecommunications equipment installed	X	
9	Review third party Telecommunications at substation and confirm whether additional capacity or Ground Potential Rise protection is required	X	

Photos



3X – Transformer

REDACTED

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**
Substation Constructability Review

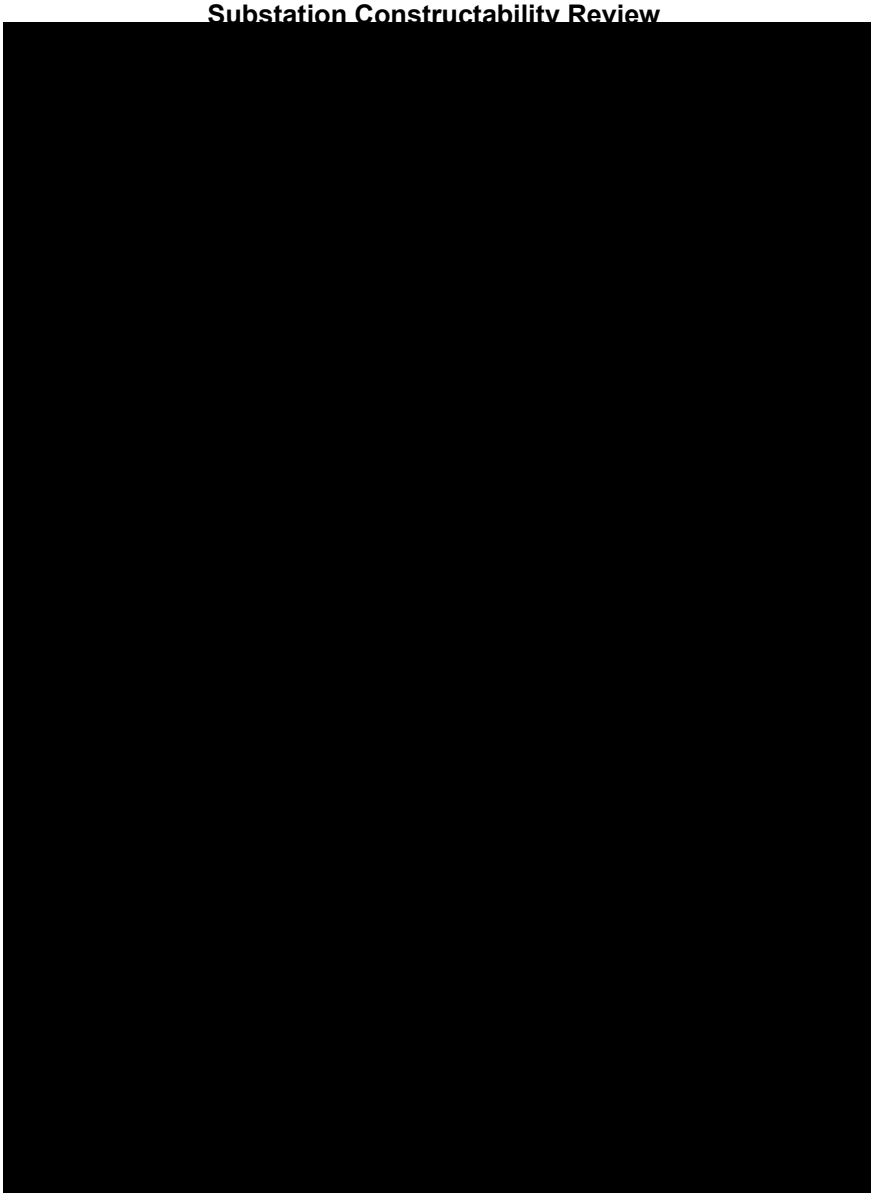


3X Transformer

REDACTED

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource Substation Constructability Review**



Travel path behind switchgear for 2X transformer

REDACTED

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource Substation Constructability Review**



Control House – 2X and 3X relays



REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444
[redacted] - New Bulk Substation

Work Classification

Category:	Substation
Type:	BLG5
Type Desc:	SUBSTATION OVERLOADS-SPEC PROJ
Work Type:	Add Transformer Capacity

Ownership / Management

AWC:	Greenwich
Statewide:	No
Owner:	[redacted]
Manager:	[redacted]

Project Information

Status:	Release for Design Detail	Associated Projects:	103791
SPS #:		Assignment ID:	
AIS Score:		Patrol Find ID:	

Budget Summary - Preferred Option — 3 - 60 MVA transformers

2017

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	[redacted]	Prelim	0	0 %	$16,700,000	$16,700,000
				2017 Total:	**$16,700,000**	**$16,700,000**
				Total Project:	**$16,700,000**	**$16,700,000**

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444 [redacted]

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted]	1	$12,500,000	$0	100 %	$0.00	$0.00	☐
O2	[redacted]	2	$16,700,000	$0	100 %	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	[redacted]	$12,500,000			$0.00	$0.00
2	[redacted]	$16,700,000			$0.00	$0.00

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444
[redacted] - New Bulk Substation

Background / Scope

Issue:
The [redacted]

Project Description:

3/6/14 - This project is being presented for an **ENG revision.** The proposed scope has changed to include [redacted] Also, the cost estimate for the original scope has increased since first proposed three years ago.

The cost estimate for the original scope of [redacted] has increased from $10.0M to $12.5M. The original estimate was a "high level" estimate based on the cost of other new substations that had been completed in 2009 - 2011. The new estimate is much more detailed, is specific to the proposed site for the new substation, and includes equipment costs for transformers and switchgear based on a 2016 delivery date. The proposed cash flow is: 2014-$300k, 2015-$600k, 2016-$8,000k, 2017-$3,600k.

The cost estimate for the proposed scope change to [redacted] is $16.7M. The proposed cash flow is: 2014-$300k, 2015-$600k, 2016-$8,500k, 2017-$7,300k. The justification for adding the third transformer is as follows:

1. [redacted]

2. The [redacted] t will be more cost effective to install the [redacted]

3. [redacted]

4. The cost/MVA to install [redacted] is $150k and the [redacted]. [redacted] s is $124k and the substation rating will be [redacted]

3/23/11 - This project is being presented for ENG approval for $10M to install [redacted] The associated distribution project; 103791 has an estimated cost of $5M to install a new duct system and feeder [redacted] site location. The yearly cash flow for this project is:

2014 - $300k 2015 - $300k 2016 - $8500k 2017 - $2500k

Other Considerations:

Revision / ACT Comments:

If we don't do this project, what will happen?
[redacted]

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444
[redacted] - New Bulk Substation

Environmental

Water Pollution: No Change Soil Contamination: No Change Natural Habitats: No Change

Alternatives considered based on Environmental Impact or Description of Aspects Oil Spill Risks Considered? ☑

There is no alternative solution to establishing the new bulk substation.

Safety Concerns With This Project? ☐

Explain:

External Stakeholders

Customer Impact / Involvement

Cust. Impacted: [redacted]
Approx. Pole Count (NU):
Crit. Cust. Impacted: Town of Greenwich
Approx. Pole Count (Other):
Adjoining Property Owner Consent Required: ☐
Town Hearing Required: ☑
Other Utility Pole Custodian Area: ☐
Easement Required: ☐
State Highway Permit Required: ☐

Relocation / New Service

New Srvc. Contact:
Requestor Type:
Customer Type:
State Highway Project #:
Request Number:
Route #:

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444
[redacted] - New Bulk Substation

Design Alternative 201444-01

General Information

Segment:	1 - Two 60 MVA transformers			Status:	Prelim Design Submitted
Segment Type:	S/S - LOAD	Town:	[redacted]	Budget Year:	2017
Work Type:	Other	Trimming Required:	☐	In Service Date:	05/31/2017
Description:	[redacted]				

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	[redacted]	[redacted]	[redacted]

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444 [redacted] - New Bulk Substation

Design Alternative 201444-01

Estimate

	Preliminary Estimate Summary
Revision Number:	1
Contingency:	0.00 %
SubTotal:	$12,500,000
Contingency Amount:	$0
Estimate:	$12,500,000
Reimbursement:	$0
Net Amount:	**$12,500,000**
Description:	Revised ENG costs and budget expense dollars

Item Description	CU	$ / Per	Qty	Amount
OTHER	13-ALL14	[redacted]	[redacted]	$12,500,000.00
OTHER revised ENG estimate				

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Install	[redacted]	New Street - TBD	[redacted]				
Install	[redacted]	New Street - TBD					

REDACTED

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444 [redacted]

Segment 201444-02

General Information

Segment:	2 - Three 60 MVA transformers			Status:	Prelim Design Approved
Segment Type:	S/S - LOAD	Town:	[redacted]	Budget Year:	2017
Work Type:	Other	Trimming Required:	☐	In Service Date:	12/31/2017
Description:	[redacted]				

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: 201444 [redacted] - New Bulk Substation

Segment 201444-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	0.00 %
SubTotal:	$16,700,000
Contingency Amount:	$0
Estimate:	$16,700,000
Reimbursement:	$0
Net Amount:	**$16,700,000**
Description:	New bulk substation with 3 - 60 MVA transformers.

Item Description	CU	$ / Per	Qty	Amount
OTHER	13-ALL14	[redacted]	[redacted]	$16,700,000.00
OTHER				

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Install	[redacted]	New Street - TBD	[redacted]				

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Operations Project Authorization Form

Approved on April 27, 2023 EPAC

Link to Meeting Minutes

Project Title: [redacted] **Distribution Transformer Replacement/Addition and Station Reconfiguration**	**Project Number: CS00365 (D SS), 405192 (T SS)**
Date Prepared: 04/18/2023	**Company: Eversource CT**
Organization: System Planning	**Class(es) of Plant: D SS** / **T SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformers**
Managing Organization: Transmission / Major Projects	**Schedule ID#:** [redacted]
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: August 2024	**Emergency Related Request? No**
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☒ non-regional PTF ☒ Distribution ☐ N/A (General Plant)
Total Capital Request: **CS00365 - $28.728M** **405192 - $14.727M**	**Authorization Type: Full Funding**

[1] Executive Summary

This Project Authorization Form (PAF) requests full funding of $43.455M (Distribution Substation $28.728M, Transmission Substation $14.727M) to convert [redacted] and add [redacted]; including [redacted]. This solution will address the current and future distribution load growth at [redacted] located in Old Saybrook, CT.

[redacted] Substation with [redacted]) and [redacted] to serve the local area load. The normal and emergency substation ratings are 75MVA and 70MVA, respectively. In 2020 and 2021, both were exceeded per the Eversource Distribution System Planning Guide. The forecasted peak load in 2023 is [redacted], and will exceed the Load Carrying Capacity (LCC) of 70MVA which is limited by the Short-Term Emergency (STE) rating [redacted]. The forecasted load at the substation in 2032 is [redacted] subjecting the existing [redacted] distribution transformers to overloads of [redacted] the normal limit, respectively. The 2032 forecasted load of [redacted] will also be at [redacted] of the LCC rating. See attachment D for the existing substation one-line.

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Currently, [redacted]

[redacted]

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Initial funding of $250K ($125K CS00365; $125K 405192) was approved in PowerPlan on November 3 and 23, 2020, respectively. The project received Partial Funding of $2.7M ($1.4M Distribution (CS00365) and $1.3M Transmission (405192)) approved in PowerPlan on October 18, 2021. To date, budget has been spent for vendor on-boarding, preliminary design completion, constructability walkdowns, and development of the full funding estimate and this Project Authorization Form (PAF). The project solution was approved by the Solution Design Committee (SDC) on May 26, 2021.

The following summary provides a breakdown of the project costs.

Project Number/ Work Order	**Class of Plant**	**Scope**	**Amount**
405192/80040137	T SS	[redacted]	$12.2**69**M
405192/80132124	T SS		$1.518M
405192/80132123	T SS		$0.94**0**M
Subtotal TSS			**$14.727M**
CS00365	D SS		$2**8.728**M
Total			**$43.455M**

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[2] PROJECT COSTS SUMMARY

WO# 80040137 - [redacted]

Line item Category	Prior Authorized		Actuals to Date	2023 to Go	2024	2025	2026	2027	2028	Total
1. ROW / Easements / Land Acquisition	$									
2. Environmental Approvals / Permits	$									
3. Outreach	$39			$8	$21					$29
4. Siting Approvals / Permits	$39		$2	$21	$54					$77
5. Engineering / Design	$658.9		$732	$395	$74					$1,201
6. Materials (Eversource purchased)	$			$554	$1,170					$1,724
7. Construction (incl matl's by contractors)	$		$11	$699	$2,887					$3,597
8. Testing / Commissioning	$			$312	$984					$1,297
9. Project Mgmt. Team	$235.0		$145	$76	$316					$537
10. Removals	$			$7	$27					$34
11. Other	$									
12. Risks	$			$297	$347					$644
SUBTOTAL DIRECTS W/ RISKS	**$971.9**		$890	$2,368	$5,881					$9,138
13. Indirects/Overhead	$356.1		$242	$568	$1,473					$2,284
14. AFUDC	$4.5		$60	$186	$233					$480
PROJECT TOTAL – BASELINE BUDGET	**$1,332.5**		$1,192	$3,122	$7,587					$11,901
15. Contingency	$			$100	$268					$368
TOTAL CAPITAL REQUEST	**$1,332.5**		$1,192	$3,222	$7,855					$12,269
16. Reimbursables/Customer Contribution	$									
PROJECT TOTAL (LESS REIMBURSABLES)	**$1,332.5**		$1,192	$3,222	$7,855					$12,269
O&M	$									
TOTAL REQUEST	**$1,332.5**		$1,192	$3,222	$7,855					$12,269

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WO# 80132124 - [redacted]

Line item Category	Prior Authorized	Actuals to Date	2023 to Go	2024	2025	2026	2027	2028	Total
1. ROW / Easements / Land Acquisition									
2. Environmental Approvals / Permits									
3. Outreach									
4. Siting Approvals / Permits									
5. Engineering / Design									
6. Materials (Eversource purchased)			$13	$29					$43
7. Construction (incl matl's by contractors)			$80	$334					$414
8. Testing / Commissioning			$87	$275					$362
9. Project Mgmt. Team			$20	$66					$87
10. Removals		$3	$23	$93					$119
11. Other									
12. Risks			$41	$38					$79
SUBTOTAL DIRECTS W/ RISKS		$3	$264	$836					$1,103
13. Indirects/Overhead		$13	$68	$244					$325
14. AFUDC		$3	$13	$26					$42
PROJECT TOTAL – BASELINE BUDGET		$19	$345	$1,107					$1,471
15. Contingency			$11	$37					$47
TOTAL CAPITAL REQUEST		$19	$356	$1,143					$1,518
16. Reimbursables/Customer Contribution									
PROJECT TOTAL (LESS REIMBURSABLES)		$19	$356	$1,143					$1,518
O&M									
TOTAL REQUEST		$19	$356	$1,143					$1,518

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WO# 80132123 - [redacted]

Line item Category	Prior Authorized	Actuals to Date	2023 to Go	2024	2025	2026	2027	2028	Total
1. ROW / Easements / Land Acquisition									
2. Environmental Approvals / Permits									
3. Outreach									
4. Siting Approvals / Permits									
5. Engineering / Design									
6. Materials (Eversource purchased)			$7	$15					$22
7. Construction (incl matl's by contractors)			$50	$211					$261
8. Testing / Commissioning			$51	$161					$212
9. Project Mgmt. Team			$13	$41					$55
10. Removals		$3	$15	$60					$78
11. Other									
12. Risks			$24	$24					$49
SUBTOTAL DIRECTS W/ RISKS		$3	$161	$513					$676
13. Indirects/Overhead		$12	$42	$153					$207
14. AFUDC		$3	$8	$16					$28
PROJECT TOTAL – BASELINE BUDGET		$17	$211	$683					$911
15. Contingency			$7	$22					$29
TOTAL CAPITAL REQUEST		$17	$217	$705					$940
16. Reimbursables/Customer Contribution									
PROJECT TOTAL (LESS REIMBURSABLES)		$17	$217	$705					$940
O&M									
TOTAL REQUEST		$17	$217	$705					$940

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WO# CS003651 - [redacted]

Line item Category	Prior Authorized	Actuals to Date	2023 to Go	2024	2025	2026	2027	2028	Total
1. ROW / Easements / Land Acquisition	$								
2. Environmental Approvals / Permits	$84.4	$28							$28
3. Outreach	$		$19	$41	$13				$74
4. Siting Approvals / Permits	$		$51	$107	$35				$193
5. Engineering / Design	$548.1	$900	$258	$141	$45				$1,343
6. Materials (Eversource purchased)	$		$3,353	$4,766	$455				$8,574
7. Construction (incl matl's by contractors)	$	$0	$895	$3,232	$1,774				$5,901
8. Testing / Commissioning	$		$241	$1,517	$789				$2,547
9. Project Mgmt. Team	$187.0	$108	$260	$285	$15				$668
10. Removals	$		$119	$451	$253				$823
11. Other	$								
12. Risks	$		$737	$811					$1,548
SUBTOTAL DIRECTS W/ RISKS	**$819.5**	$1,037	$5,934	$11,350	$3,379				$21,699
13. Indirects/Overhead	$448.6	$535	$1,043	$2,623	$1,157				$5,359
14. AFUDC	$136.8	$72	$334	$433					$838
PROJECT TOTAL – BASELINE BUDGET	**$1,404.9**	$1,644	$7,311	$14,406	$4,536				$27,897
15. Contingency	$		$238	$458	$135				$831
TOTAL CAPITAL REQUEST	**$1,404.9**	$1,644	$7,548	$14,864	$4,671				$28,727
16. Reimbursables/Customer Contribution	$								
PROJECT TOTAL (LESS REIMBURSABLES)	**$1,404.9**	$1,644	$7,548	$14,864	$4,671				$28,727
O&M	$								
TOTAL REQUEST	**$1,404.9**	$1,644	$7,548	$14,864	$4,671				$28,727

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[redacted] **Transmission Estimated Risks**

Risk	Allocation
1. Potential UG Obstructions	$114,000
2. Severe Weather, Delays, OT	$111,000
3. Design development	$54,000
4. Outage Constraints which cause project delays	$85,000
5. Over Time due to Project Acceleration	$98,000
6. Overtime due to Outage Durations	$97,000
7. Delay in material delivery	$85,000
Total	**$ $644,000**

[redacted] **Transmission** [redacted] **Estimated Risks**

Risk	Allocation
1. Potential UG Obstructions	$19,200
2. Severe Weather, Delays, OT	$19,300
3. Design development	$19,900
4. Outage Constraints which cause project delays	$20,300
5. Over Time due to Project Acceleration	$19,200
Total	**$78,700**

[redacted] **Transmission** [redacted] **Estimated Risks**

Risk	Allocation
1. Potential UG Obstructions	$11,800
2. Severe Weather, Delays, OT	$11,200
3. Design development	$10,100
4. Outage Constraints which cause project delays	$8,500
5. Over Time due to Project Acceleration	$7,000
Total	**$48,600**

[redacted] **Distribution Estimated Risks**

Risk	Allocation

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1. Potential UG Obstructions	$266,000
2. Severe Weather, Delays, OT	$253,000
3. Design development	$195,000
4. Outage Constraints which cause project delays	$210,000
5. Over Time due to Project Acceleration	$220,000
6. Overtime due to Outage Durations	$180,000
7. Delay in material delivery	$224,000
Total	**$1,548,000**

Explain unique payment provisions, if applicable:

A material order exception form was created in June 2022 to order equipment for a 2023 construction start. The equipment ordered was [redacted] The total request for material authorization was $3.878M.

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

Not applicable

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[3] TECHNICAL JUSTIFICATION

Project Need, Objective and Justification

Project Need Statement

Distribution system planning has identified the need to increase substation capacity at [redacted] substation to meet current and future load growth. To address this, distribution planning proposes to convert the distribution side to [redacted] and install new [redacted].

The proposed addition [redacted] will also require a reconfiguration on the transmission side as the Transmission System Design and Analysis Guideline (TSDAG) states that for a configuration of [redacted] In addition, Eversource's Distribution System Planning Guide states that the design of the station should be such that a single transmission event will not cause the loss of more than one (1) distribution element.

Project Objectives

The main objectives of this project are to address [redacted] and resolve [redacted] by implementing the following:

[redacted]

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Project Scope

I. Scope of Work

The scope of this project to address [redacted] and resolve [redacted] issues includes the following system upgrades:

[redacted]

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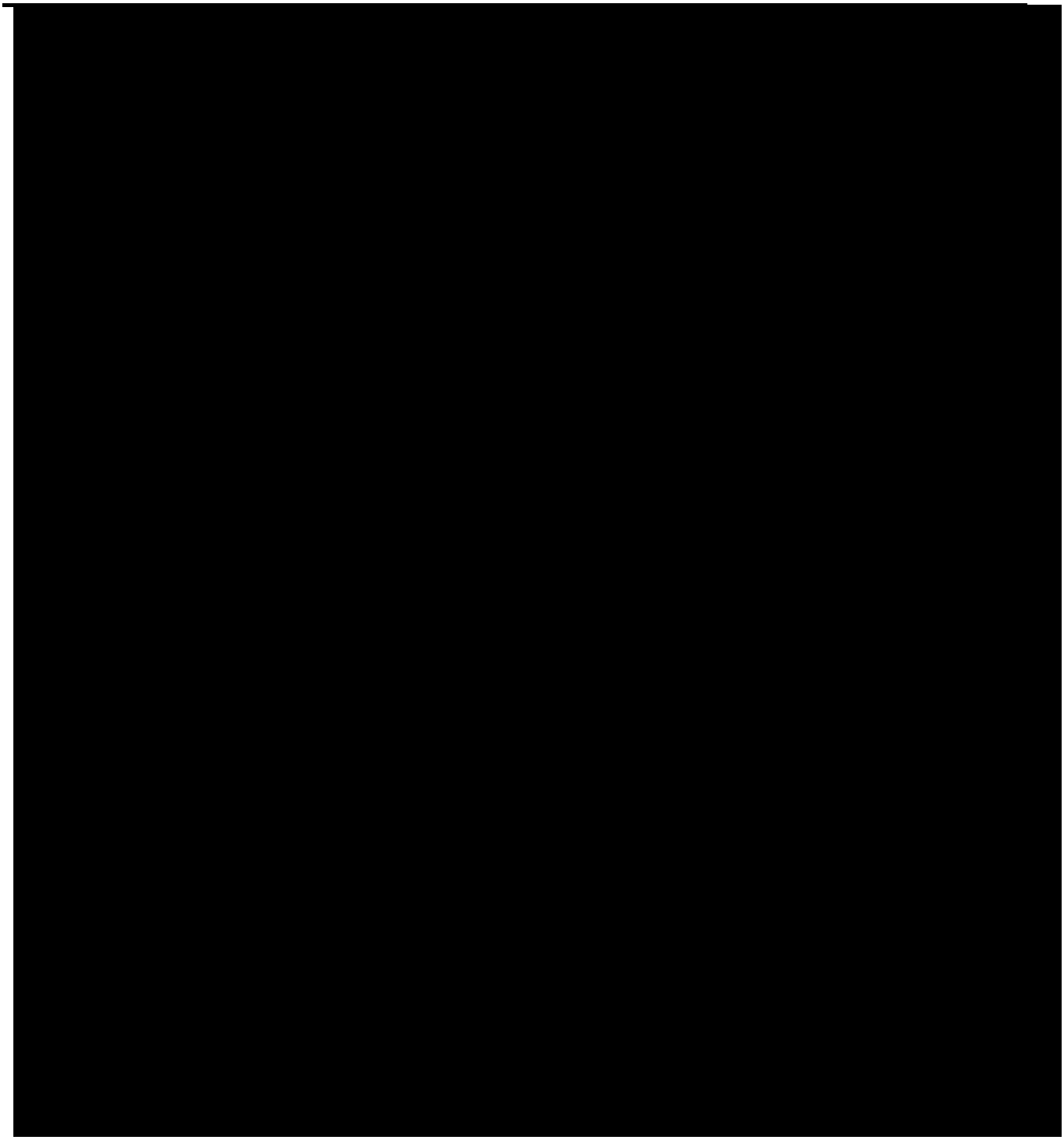

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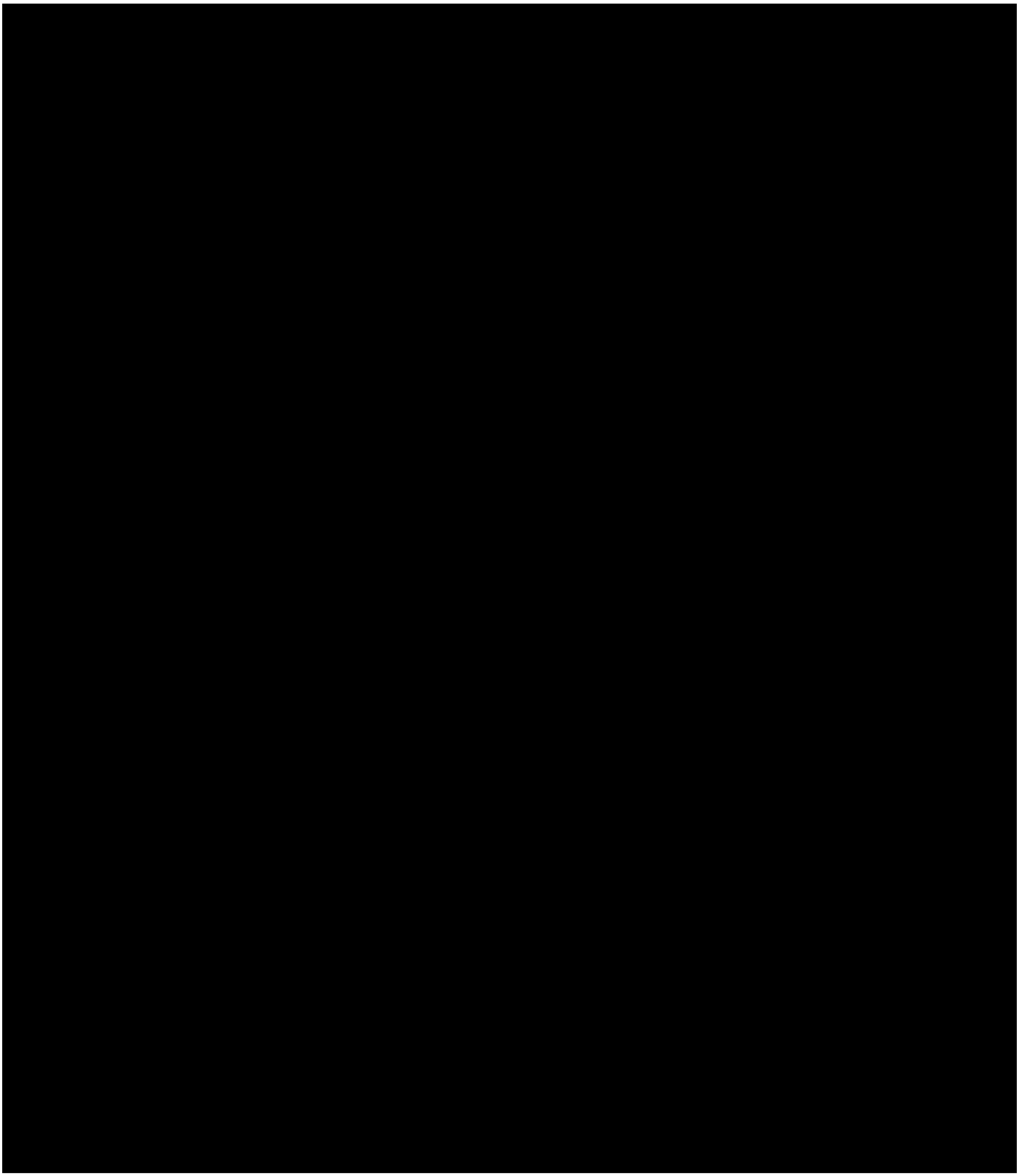

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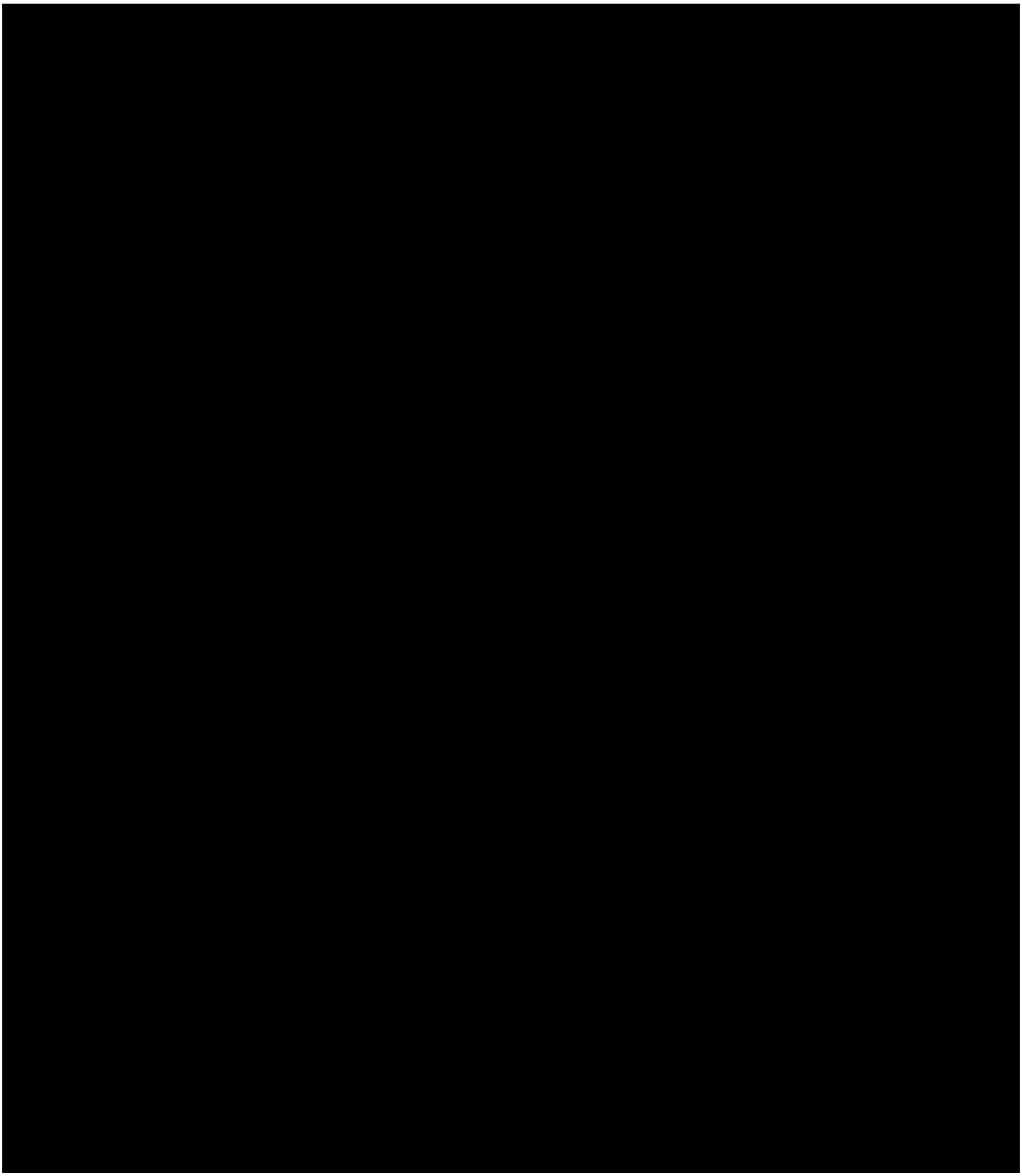

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[redacted]

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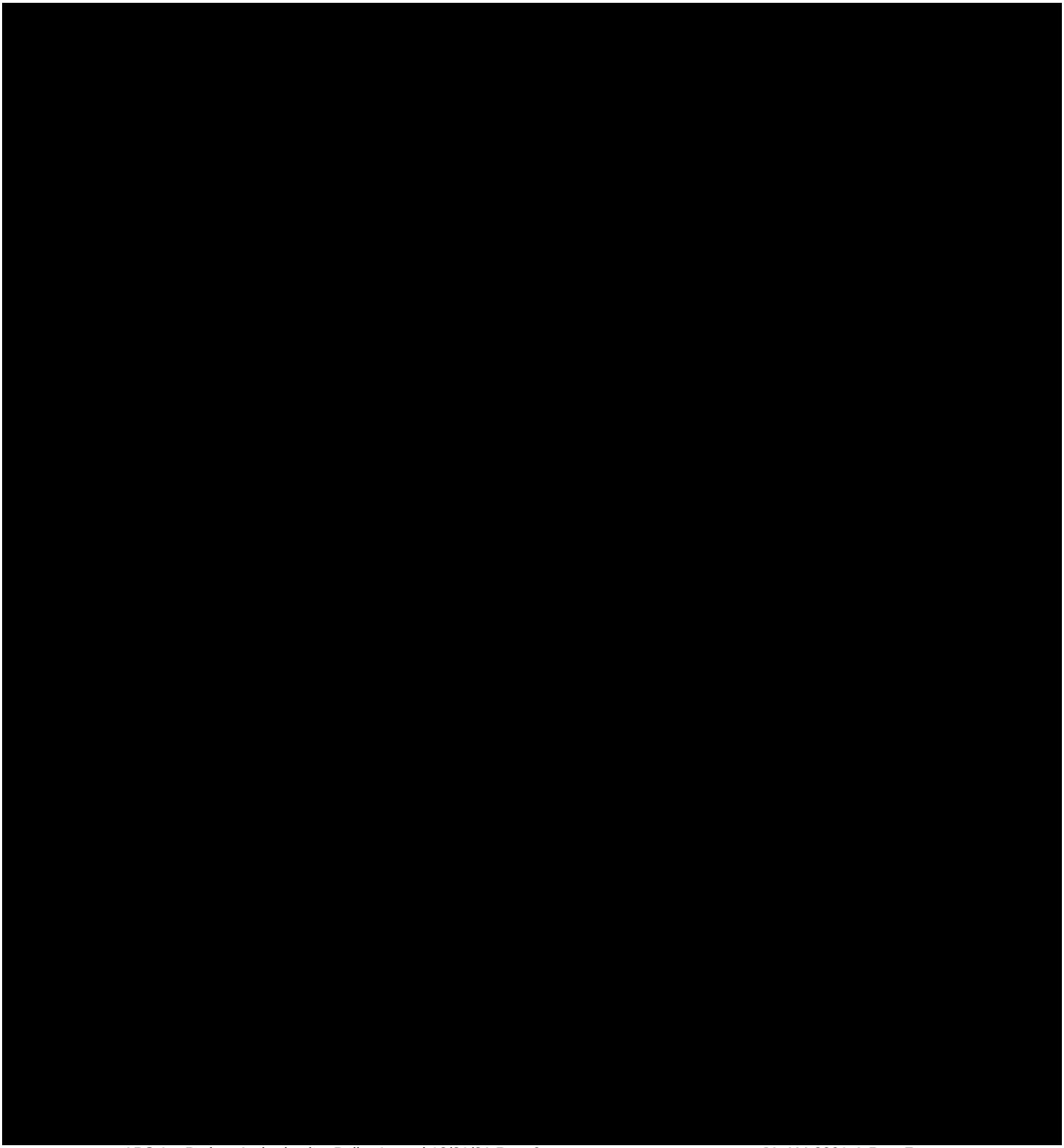

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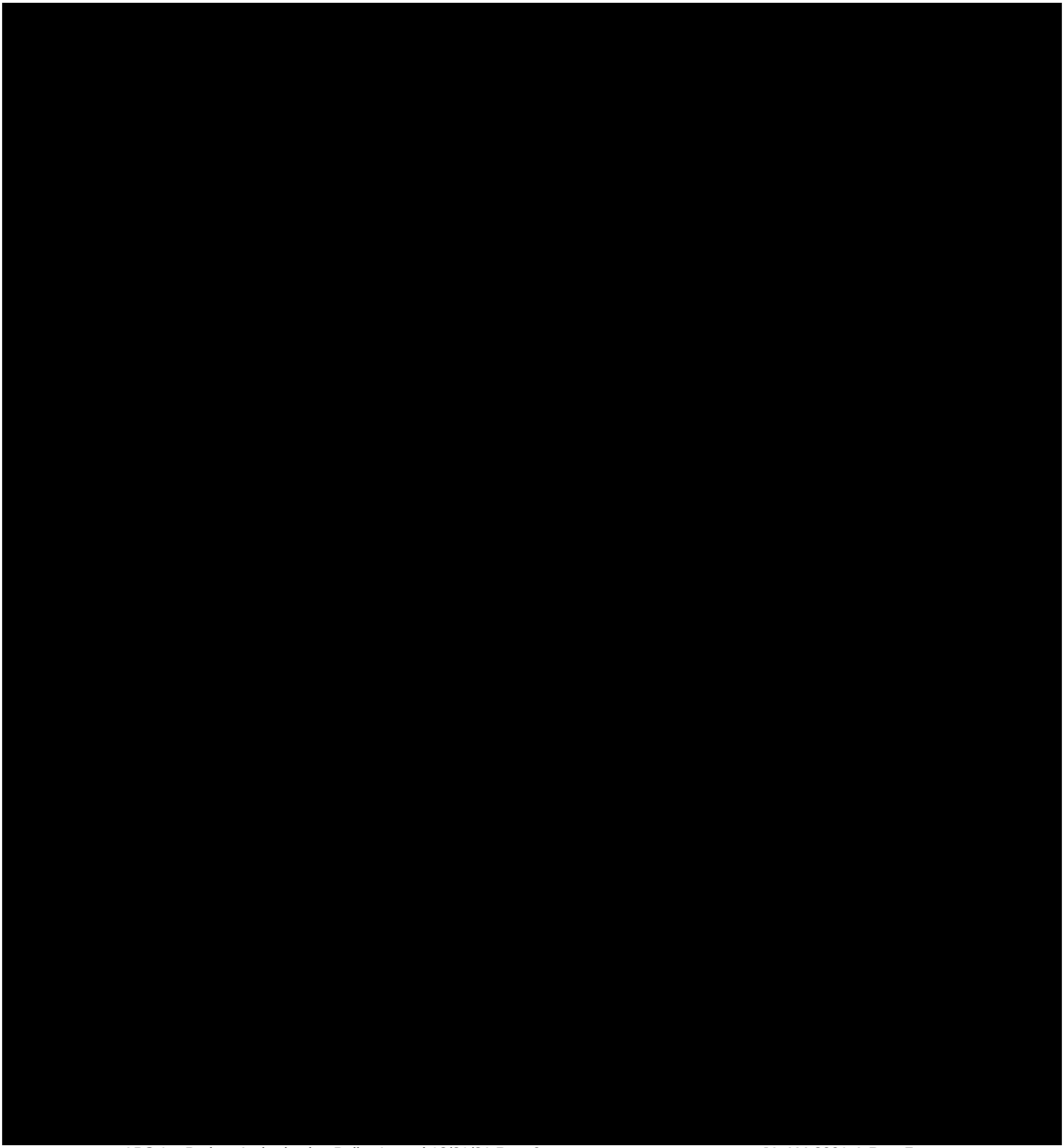

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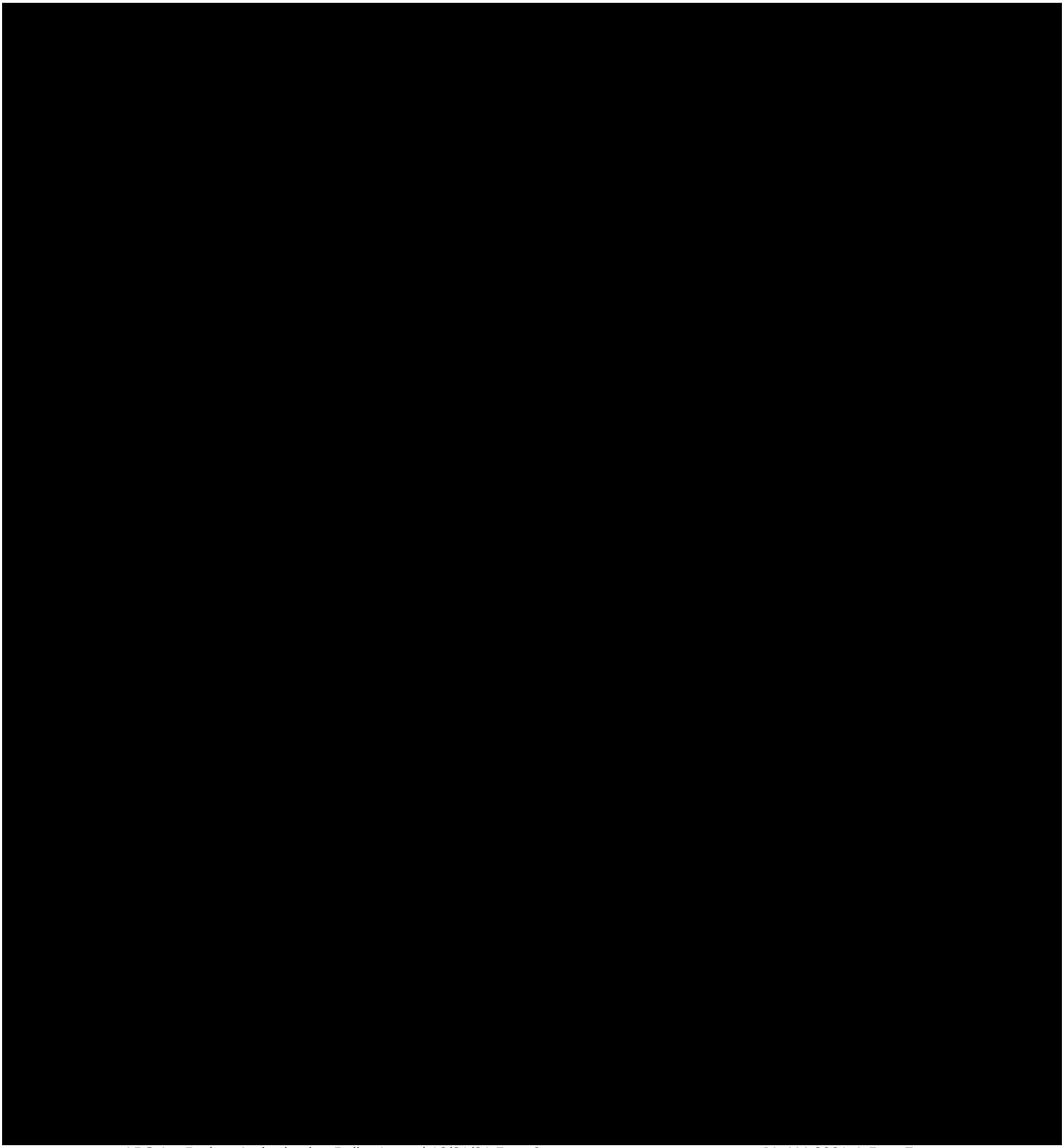

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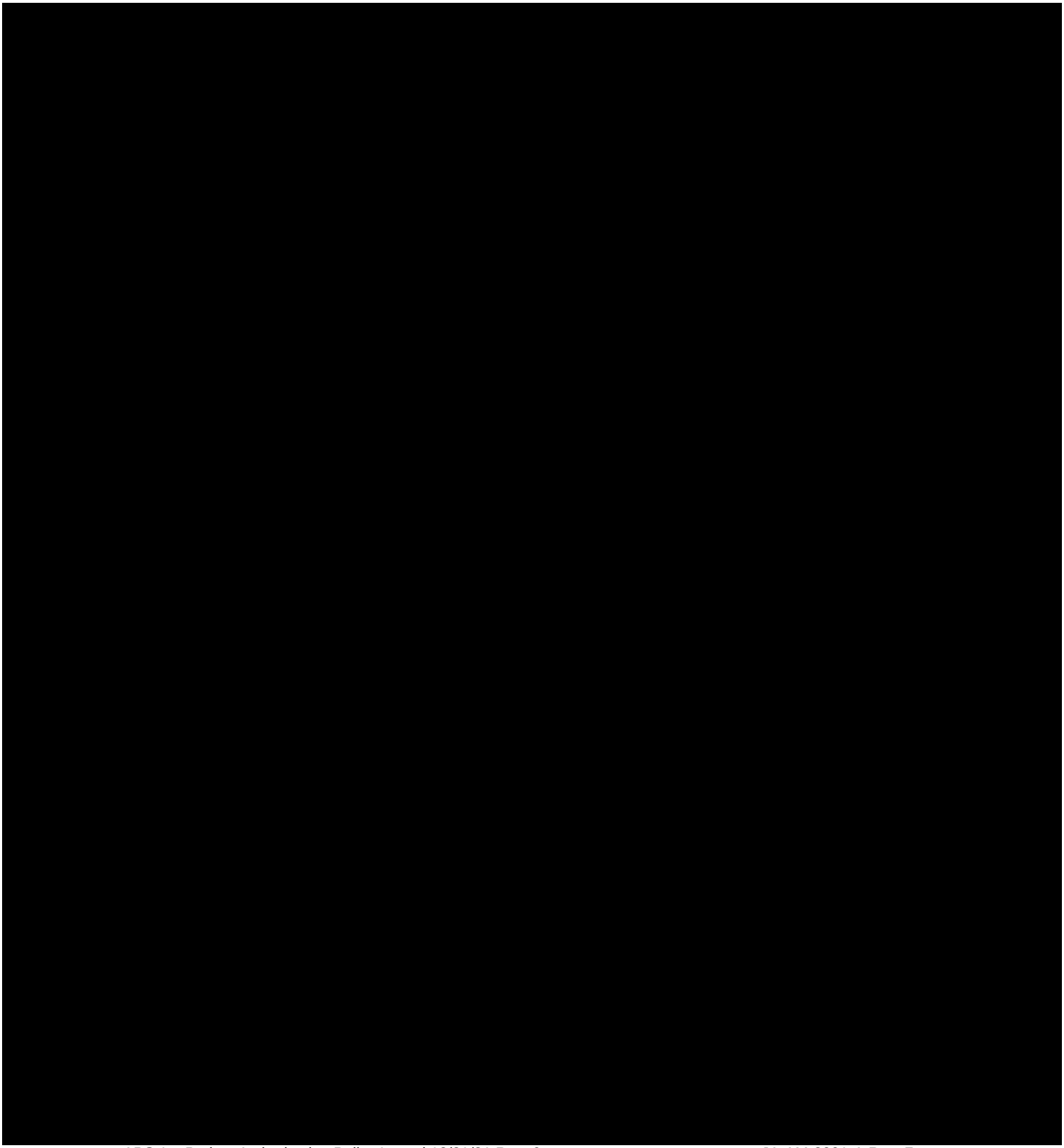

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Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*
[redacted]			

Background

[redacted]

[4] ALTERNATIVES CONSIDERED

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Distribution Alternative #1 – This is the approved solution



Alternative 1: Planning grade estimate for this solution is $**28.7M**.

Transmission Alternative 4A – This is the approved solution



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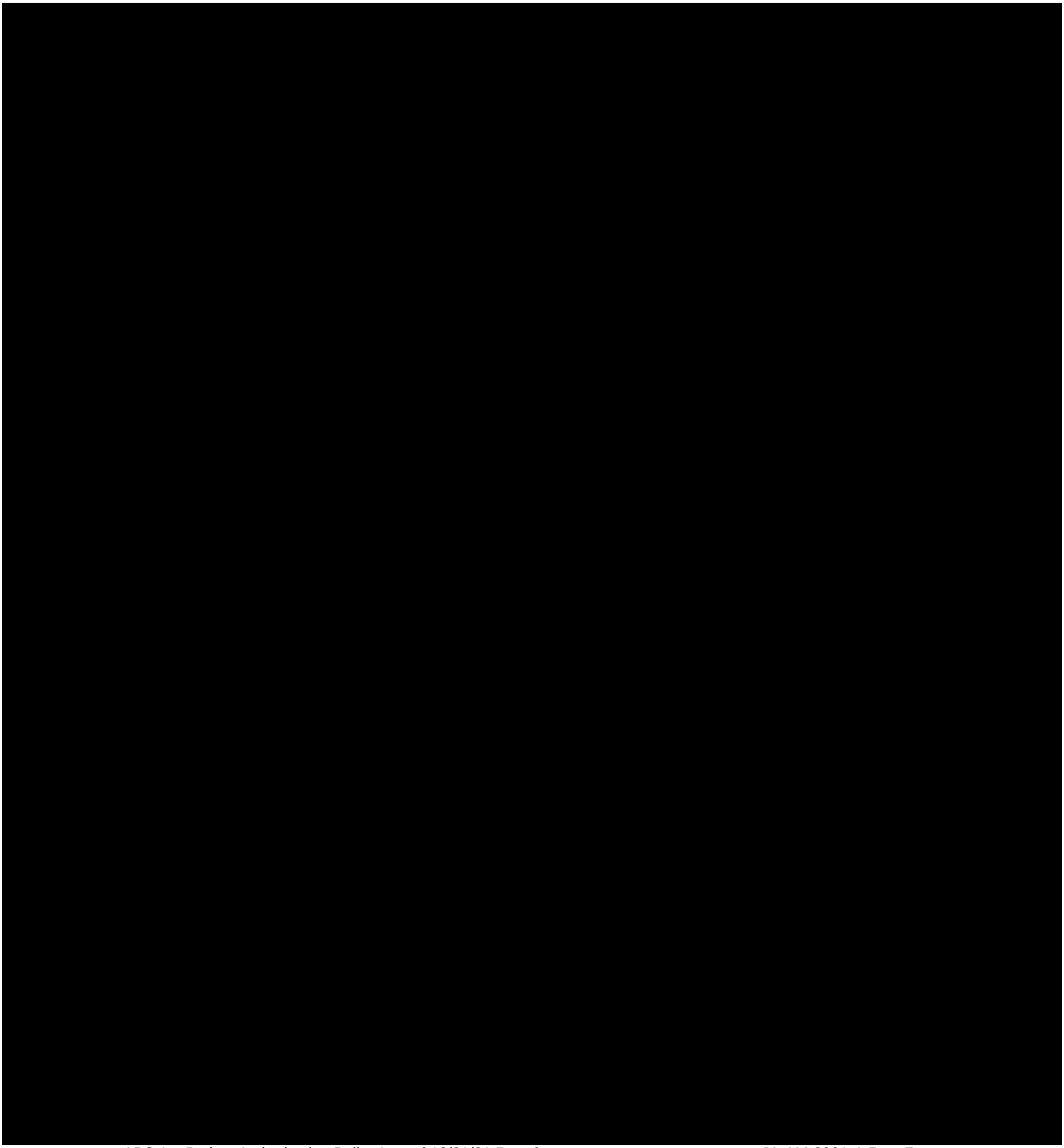

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[redacted]

Planning grade cost estimate for the Transmission portion of Alternative 4A is **$14.7M**.

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[5] PROJECT SCHEDULE

Milestone	Scheduled Completion Date
IFR Approval	November 2020
SDC Approval (for applicable projects)	May 2021
EPAC Partial Funding Approval (for applicable projects)	October 2021
Detailed Design Completion	May 2023
EPAC Full Funding Approval	April 2023
Start of Construction	September 2023
Project In-Service Date (ISD)	August 2024
Project Need Date (for applicable projects)	June 2023
ISO Related Milestones: (for applicable projects)	
• PPA Approval	October 2021
• PAC Presentation	N/A
• TCA Approval	N/A

A P6 schedule is included as Attachment B.

[6] REGULATORY APPROVALS

All work for this project is expected to take place within the existing substation fence. A Notice of Exempt Modification to the Connecticut Siting Council will be needed.

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[7] RISK AND RISK MITIGATION PLANS

Contingency: A total of $1,337K ($466K for 405192 and $871K for CS00365) has been allocated for project unknowns.

[redacted] **Transmission Risk Mitigation:**

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. Outage Constraints which cause project delays	Project has been sequenced to minimize outages during construction. Risk allocation is also included.
5. Over Time due to Project Acceleration	Construction delays caused by weather and storm duty are possible. Try to be flexible with construction schedules. Risk is allocated in the project budget for delays.
6. Overtime due to Outage Durations	Most construction will be done without the need of outages; therefore, minimizing any SCLL concerns. Current discussions with SCLL committee show low risk; most of the construction will be completed without taking any outages. Risk is allocated to the project budget for any SCLL changes.
7. Contaminated Soil Testing & Removal	As civil construction starts there could be contaminated soil that would require to be dealt with. Contaminated soil is not expected, but soil samples will be taken to verify. Risk is allocated in the project budget for removal of any possible contaminated soil.
8. Delay in material delivery	Use approved vendors, contract delivery dates, hold contractors to schedule, Liq. Damages clause in contract – request factory testing of critical path items. Risk allocation is also included.
9. Outage coordination issues with other projects	Distribution Engineering is finalizing the line side project numbers to coordinate with all feeder outages. Risk allocation is also included.

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[redacted] **Distribution Risk Mitigation:**

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. Outage Constraints which cause project delays	Project has been sequenced to minimize outages during construction. Risk allocation is also included.
5. Over Time due to Project Acceleration	Construction delays caused by weather and storm duty are possible. Try to be flexible with construction schedules. Risk is allocated in the project budget for delays.
6. Overtime due to Outage Durations	Most construction will be done without the need of outages; therefore, minimizing any SCLL concerns. Current discussions with SCLL committee show low risk; most of the construction will be completed without taking any outages. Risk is allocated to the project budget for any SCLL changes.
7. Contaminated Soil Testing & Removal	As civil construction starts there could be contaminated soil that would require to be dealt with. Contaminated soil is not expected, but soil samples will be taken to verify. Risk is allocated in the project budget for removal of any possible contaminated soil.
8. Delay in material delivery	Use approved vendors, contract delivery dates, hold contractors to schedule, Liq. Damages clause in contract – request factory testing of critical path items. Risk allocation is also included.
9. Outage coordination issues with other projects	Distribution Engineering is finalizing the line side project numbers to coordinate with all feeder outages. Risk allocation is also included.

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[8] REFERENCES

References
1. Distribution System Planning Guide
2. Transmission System Design and Analysis Guideline
3. CS00365 – 405192 – [redacted] Distribution Transformer Replacement – Initial Funding – PAF – 10/26/2020
4. CS00365 - 405192 – [redacted] SS Reconfiguration – Partial Funding – PAF – 9/15/2021
5. 405192 - CS00365 - [redacted] Dist XFRM Repl-Addition and STA Reconfig - SSF– 7/23/2021

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

Attachment	Included in Submittal?
A1. 405192 [redacted] T EXT rev#03	YES
A2. 405192 [redacted] Remote End T EXT rev01	YES
A3. 405192 [redacted] Remote End T EXT rev01	YES
A4. CS00365 [redacted] D EXT rev#04	YES
B. [redacted] P6 Schedule	YES
C. Constructability Review Form [redacted]	YES
D. [redacted] Existing One-line	YES
E. 20602-91001-Construction-All	YES

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Project Authorization Form

Project Checklist - Transmission & Substation Capital Project			
Project Name: [redacted]		**Project Number: 405192 / CS00365**	
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 N/ADate	
Cost in ISO-NE Presentation ($M) (if completed):		Enter N/ACost ($M)	
Is a PPA required?		Yes	
ISO-NE Approval Date (if completed):		10/27/2021	
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?		TBD	
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?		No	

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Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted]	**Project Number: 405192 / CS00365**
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?	Yes
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? *(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	
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?	Yes
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?	No
COST ESTIMATING	
What team/firm prepared the cost estimate?	Eversource Cost 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/Lead:

Template Revision 2.5a

SUMMARY OF ESTIMATES

WI	Description	TOTAL	% of Directs	% of Total	Substation Expansion [redacted] Planning C-23-76	Substation Expansion [redacted] Planning C-23-77	[redacted] Planning C-23-77A	[redacted] Planning C-23-77B
	Estimate Type: Planning							
1	ROW / Easements /							
2	Environmental	$27,800	0.1%	0.1%	$27,800			
3	Outreach	$102,300	0.3%	0.2%	$73,700	$28,600		
4	Siting Approvals /	$270,700	0.8%	0.6%	$193,400	$77,300		
5	Engineering / Design	$2,544,000	7.8%	5.9%	$1,343,400	$1,200,600		
6	Materials (Eversource	$10,362,400	31.8%	23.8%	$8,574,000	$1,723,600	$22,100	$42,700
7	Construction (incl	$10,172,700	31.2%	23.4%	$5,901,300	$3,596,600	$261,000	$413,800
8	Testing /	$4,418,000	13.5%	10.2%	$2,546,700	$1,296,600	$212,400	$362,300
9	PMT Project Mgmt	$1,345,900	4.1%	3.1%	$667,800	$536,700	$54,700	$86,700
10	Removals	$1,053,800	3.2%	2.4%	$822,900	$34,200	$77,700	$119,000
11	Other							
12	Risks	$2,319,300	7.1%	5.3%	$1,548,000	$644,000	$48,600	$78,700
	Project Directs Total w/Risks	**$32,616,900**	100.0%	75.1%	$21,699,000	$9,138,200	$676,500	$1,103,200
13	Indirects/Overhead	$8,174,800		18.8%	$5,359,100	$2,283,500	$206,800	$325,400
14	AFUDC	$1,388,200		3.2%	$838,500	$479,700	$27,700	$42,300
	Project Total - Baseline Budget	**$42,179,900**		97.1%	$27,896,600	$11,901,400	$911,000	$1,470,900
15	Contingency	$1,274,700		2.9%	$830,900	$367,800	$28,800	$47,200
	Project Total - Funding Approval Level	**$43,454,600**		100.0%	$28,727,500	$12,269,200	$939,800	$1,518,100
16	Reimbursables/Customer Contribution							
	Project Total (less reimbursables)	**$43,454,600**			$28,727,500	$12,269,200	$939,800	$1,518,100
	Cost per key qty (if appl)					$12,269,200	$313,267	$379,525
	Amount of Escalation included above	$1,275,300			$887,600	$311,100	$29,200	$47,400
6	Total materials - Eversource	$10,362,400			$8,574,000	$1,723,600	$22,100	$42,700
	Total materials - Contractor	$293,519			$225,819	$67,700		
	Total materials	$10,655,919			$8,799,819	$1,791,300	$22,100	$42,700

NOTE: Risk / Contingency is 9% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	-25%	25%
	$32,591,000	$54,318,000

Project Scope:

REDACTED

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr/Lead: [redacted]

Project Number: 405192
WO & Task #: 80040137
Estimate revision #: 03
Estimate Type - Station work

Estimate #: C-23-77
Date of Estimate:05/26/2023

Estimate done by: [redacted]
In Service date (ISD):06/01/2024

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2023	2024	2025	2026	2027
1	ROW / Easements / Land purchases									
2	Environmental Approvals / Permits									
3	Outreach	$28,600	0.3%	0.2%		$7,900	$20,700			
4	Siting Approvals / Permits	$77,300	0.8%	0.6%	$2,400	$20,600	$54,300			
5	Engineering / Design	$1,200,600	13.1%	9.8%	$732,000	$395,100	$73,500			
6	Materials (Eversource purchased)	$1,723,600	18.9%	14.0%		$553,700	$1,169,900			
7	Construction (incl materials by contractors)	$3,596,600	39.4%	29.3%	$10,600	$698,600	$2,887,400			
8	Testing / Commissioning	$1,296,600	14.2%	10.6%		$312,400	$984,200			
9	PMT Project Mgmt Team	$536,700	5.9%	4.4%	$144,600	$76,800	$316,300			
10	Removals	$34,200	0.4%	0.3%		$6,700	$27,500			
11	Other									
12	Risks	$644,000	7.0%	5.2%		$297,000	$347,000			
125	**Project Directs Total w/Risks**	**$9,138,200**	100.0%	74.5%	**$889,600**	**$2,367,800**	**$5,880,800**			
13	Indirects/Overhead	$2,283,500		18.6%	$242,400	$568,200	$1,472,900			
14	AFUDC	$479,700		3.9%	$60,500	$186,200	$233,000			
125	**Project Total - Baseline Budget**	**$11,901,400**		97.0%	**$1,192,500**	**$3,122,200**	**$7,586,700**			
15	Contingency	$367,800		3.0%		$99,800	$268,000			
	Project Total - Funding Approval Level	**$12,269,200**		100.0%	**$1,192,500**	**$3,222,000**	**$7,854,700**			
16	Reimbursables/Customer Contribution									
17C	**Project Total (less reimbursables)**	**$12,269,200**			**$1,192,500**	**$3,222,000**	**$7,854,700**			
	Cost per key qty (if appl)	12,269,200	$'s / EA 115kV Substation Expansion Transmission							
	Amount of Escalation included above	$311,100					$311,100			
6	Total materials - Eversource	$1,723,600				$553,700	$1,169,900			
	Total materials - Contractor	$67,700				$21,900	$45,800			
	Total materials	$1,791,300				$575,600	$1,215,700			

NOTE: Risk / Contingency is 9% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	-25%	-	25%
	$9,202,000	-	$15,337,000

COMMENTS:

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

[redacted]

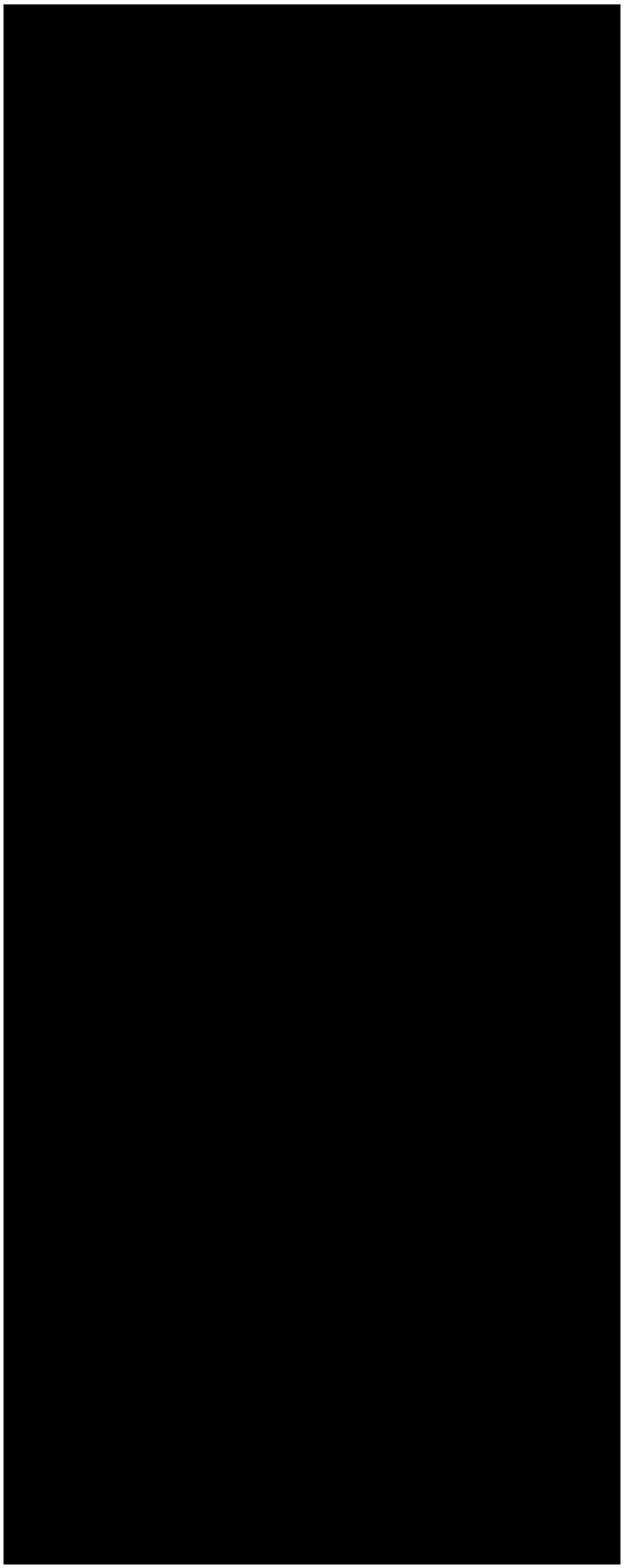
Potential UG Obstructions	$	114,000
Severe Weather. Delays. OT	$	111,000
Design development	$	54,000
Outage Constraints which cause project delays	$	85,000
Over Time due to Project Acceleration	$	98,000
Overtime due to Outage Durations	$	97,000
Delay in material delivery	$	85,000

Alt Estimate Summary for PP4 Calc (escalation separate)

Estimate #: C-23-77
Date of Estimate:05/26/2023

Project Number: 405192
WO & Task #: 80040137

		TOTAL w/ escal broken out
ROW / Easements / Land purchas	$	-
Environmental Approvals / Permit	$	-
Outreach	$	27,500
Siting Approvals / Permits	$	74,700
Engineering / Design	$	1,197,200
Materials (Eversource purchased	$	1,755,479
Construction (incl materials by co	$	3,393,521
Testing / Commissioning	$	1,249,800
PMT Project Mgmt Team	$	521,700
Removals	$	33,400
Other	$	-
Risks	$	644,000
		$8,897,300
Indirects/Overhead	$	2,213,400
AFUDC	$	479,700
	$	-
		$11,590,400
	$	-
Contingency	$	367,800
		$11,958,200
	$	-
	$	-
		$11,958,200
	$	311,100
Escal total		$12,269,300
Check total		$100



REDACTED

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr/Lead: [redacted]
Project Number: 405192
WO & Task #: 80132123
Estimate revision #: 01
Estimate Type - Station work

Estimate #: C-23-77A
Date of Estimate:05/26/2023
Estimate done by: [redacted]
In Service date (ISD):06/01/2024

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2023	2024	2025	2026	2027
1	ROW / Easements / Land purchases									
2	Environmental Approvals / Permits									
3	Outreach									
4	Siting Approvals / Permits									
5	Engineering / Design									
6	Materials (Eversource purchased)	$22,100	3.3%	2.4%		$6,900	$15,200			
7	Construction (incl materials by contractors)	$261,000	38.6%	27.8%		$50,300	$210,700			
8	Testing / Commissioning	$212,400	31.4%	22.6%		$51,200	$161,200			
9	PMT Project Mgmt Team	$54,700	8.1%	5.8%		$13,300	$41,400			
10	Removals	$77,700	11.5%	8.3%	$2,600	$14,700	$60,400			
11	Other									
12	Risks	$48,600	7.2%	5.2%		$24,400	$24,200			
125										
	Project Directs Total w/Risks	**$676,500**	100.0%	72.0%	**$2,600**	**$160,800**	**$513,100**			
13	Indirects/Overhead	$206,800		22.0%	$11,700	$41,900	$153,200			
14	AFUDC	$27,700		2.9%	$3,000	$8,300	$16,400			
125										
	Project Total - Baseline Budget	**$911,000**		96.9%	**$17,300**	**$211,000**	**$682,700**			
15	Contingency	$28,800		3.1%		$6,500	$22,300			
	Project Total - Funding Approval Level	**$939,800**		100.0%	**$17,300**	**$217,500**	**$705,000**			
16	Reimbursables/Customer Contribution									
	Project Total (less reimbursables)	**$939,800**			**$17,300**	**$217,500**	**$705,000**			
	Cost per key qty (if appl)	313,267	$'s / EA Replace Relays							
	Amount of Escalation included above	$29,200					$29,200			
6	Total materials - Eversource	$22,100				$6,900	$15,200			
	Total materials - Contractor									
	Total materials	$22,100				$6,900	$15,200			

NOTE: Risk / Contingency is 9% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range	**-25%**	**25%**
	$705,000	**$1,175,000**

Alt Estimate Summary for PP4 Calc (escalation separate)

Estimate #: C-23-77A
Date of Estimate:05/26/2023

Project Number: 405192
WO & Task #: 80132123

		TOTAL w/ escal broken out
ROW / Easements / Land purchas	$	-
Environmental Approvals / Permit	$	-
Outreach	$	-
Siting Approvals / Permits	$	-
Engineering / Design	$	-
Materials (Eversource purchased)	$	21,600
Construction (incl materials by cc	$	250,900
Testing / Commissioning	$	204,700
PMT Project Mgmt Team	$	52,800
Removals	$	75,900
Other	$	-
Risks	$	48,600
		$654,500
Indirects/Overhead	$	199,500
AFUDC	$	27,700
	$	-
		$881,700
	$	-
Contingency	$	28,800
		$910,500
	$	-
	$	-
		$910,500
	$	29,200
Escal total		**$939,700**
Check total		-$100

COMMENTS:

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

[redacted]

RISKS

Potential UG Obstructions	$	11.800
Severe Weather. Delays. OT	$	11.200
Design development	$	10.100
Outage Constraints which cause project delays	$	8.500
Over Time due to Project Acceleration	$	7.000

REDACTED

[redacted]

REDACTED

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr/Lead: [redacted]
Project Number: 405192
WO & Task #: 80132124
Estimate revision #: 01
Estimate Type - Station work

Estimate #: C-23-77B
Date of Estimate:05/26/2023
Estimate done by: [redacted]
In Service date (ISD):06/01/2024

ESTIMATE SUMMARY

Estimate Type: Planning
External Est Category:

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2023	2024	2025	2026	2027
1	ROW / Easements / Land purchases									
2	Environmental Approvals / Permits									
3	Outreach									
4	Siting Approvals / Permits									
5	Engineering / Design									
6	Materials (Eversource purchased)	$42,700	3.9%	2.8%		$13,400	$29,300			
7	Construction (Incl materials by contractors)	$413,800	37.5%	27.3%		$79,700	$334,100			
8	Testing / Commissioning	$362,300	32.8%	23.9%		$87,300	$275,000			
9	PMT Project Mgmt Team	$86,700	7.9%	5.7%		$20,300	$66,400			
10	Removals	$119,000	10.8%	7.8%	$2,900	$22,700	$93,400			
11	Other									
12	Risks	$78,700	7.1%	5.2%		$40,500	$38,200			
125	**Project Directs Total w/Risks**	**$1,103,200**	100.0%	72.7%	**$2,900**	**$263,900**	**$836,400**			
13	Indirects/Overhead	$325,400		21.4%	$13,300	$68,100	$244,000			
14	AFUDC	$42,300		2.8%	$3,100	$13,000	$26,200			
125	**Project Total - Baseline Budget**	**$1,470,900**		96.9%	**$19,300**	**$345,000**	**$1,106,600**			
15	Contingency	$47,200		3.1%		$10,700	$36,500			
	Project Total - Funding Approval Level	**$1,518,100**		100.0%	**$19,300**	**$355,700**	**$1,143,100**			
16	Reimbursables/Customer Contribution									
17C	**Project Total (less reimbursables)**	**$1,518,100**			**$19,300**	**$355,700**	**$1,143,100**			
	Cost per key qty (if appl)	379,525	$'s / EA Replace Relays							
	Amount of Escalation included above	$47,400					$47,400			
6	Total materials - Eversource	$42,700				$13,400	$29,300			
	Total materials - Contractor									
	Total materials	$42,700				$13,400	$29,300			

NOTE: Risk / Contingency is 9% of Project Total Costs (incl escal/Indirects/AFUDC but excl reimb.)

Estimate Range	-25%	-	25%
	$1,139,000	-	$1,898,000

COMMENTS:

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

[redacted]

Potential UG Obstructions	$	19,200
Severe Weather. Delays. OT	$	19,300
Design development	$	19,900
Outage Constraints which cause project delays	$	20,300
Over Time due to Project Acceleration	$	-

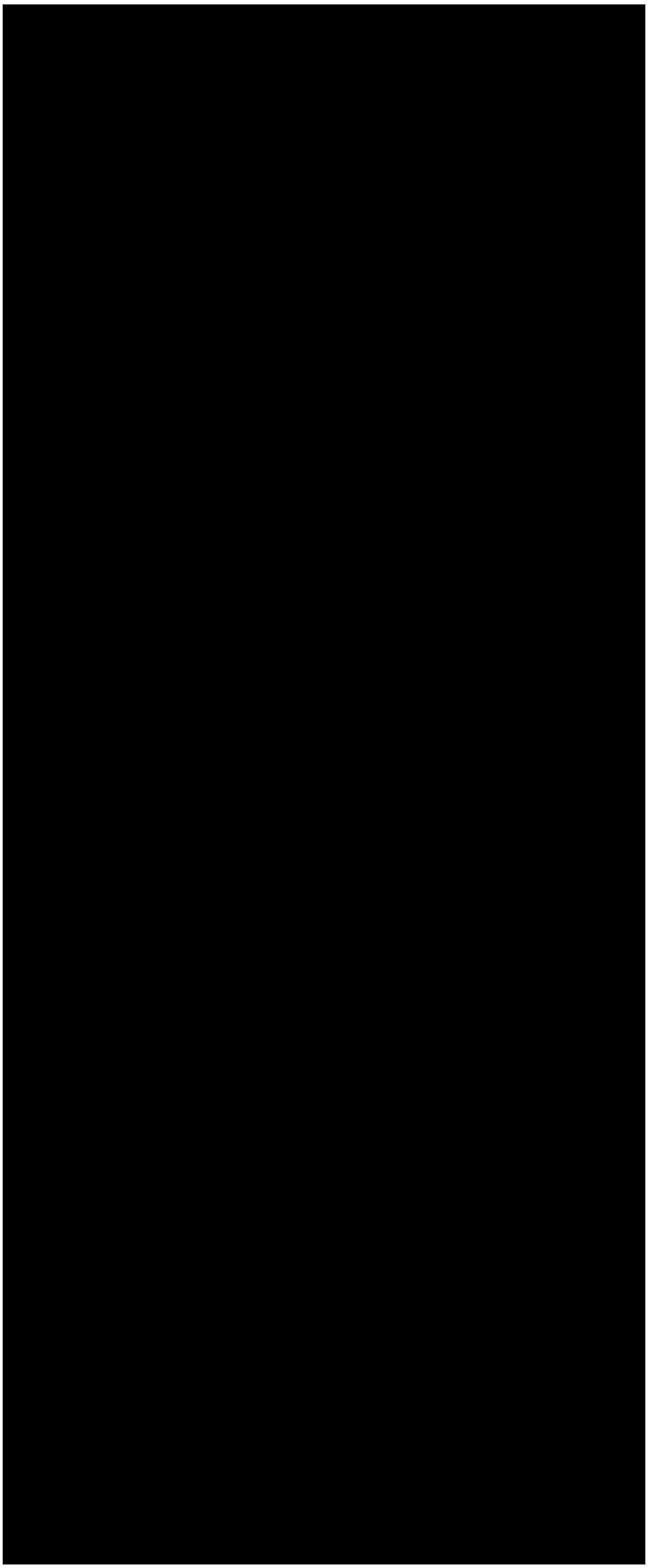
Alt Estimate Summary for PP4 Calc (escalation separate)

Estimate #: C-23-77B
Date of Estimate:05/26/2023

Project Number: 405192
WO & Task #: 80132124

		TOTAL w/ escal broken out
ROW / Easements / Land purchas	$	-
Environmental Approvals / Permit	$	-
Outreach	$	-
Siting Approvals / Permits	$	-
Engineering / Design	$	-
Materials (Eversource purchased	$	41,800
Construction (incl materials by co	$	397,800
Testing / Commissioning	$	349,200
PMT Project Mgmt Team	$	83,500
Removals	$	116,200
Other	$	-
Risks	$	78,700
		$1,067,200
Indirects/Overhead	$	313,800
AFUDC	$	42,300
	$	-
		$1,423,300
	$	-
Contingency	$	47,200
		$1,470,500
	$	-
	$	-
		$1,470,500
	$	47,400
Escal total		**$1,517,900**
Check total		-5200

REDACTED



REDACTED

ESTIMATE SUMMARY

Project Title: [redacted]
Project Mgr/Lead: [redacted]
Project Number: CS00365
WO & Task #: CS003651
Estimate revision #: 04
Estimate Type - Station work

Estimate #: C-23-76
Date of Estimate:05/26/2023
Estimate done by: [redacted]
In Service date (ISD):06/01/2024

ESTIMATE SUMMARY

Estimate Type: Planning
External Est Category:

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2023	2024	2025	2026	2027
1	ROW / Easements / Land purchases									
2	Environmental Approvals / Permits	$27,800	0.1%	0.1%	$27,800					
3	Outreach	$73,700	0.3%	0.3%		$19,500	$40,800	$13,400		
4	Siting Approvals / Permits	$193,400	0.9%	0.7%		$51,100	$107,200	$35,100		
5	Engineering / Design	$1,343,400	6.2%	4.7%	$900,100	$257,700	$140,600	$45,000		
6	Materials (Eversource purchased)	$8,574,000	39.5%	29.8%		$3,353,100	$4,766,100	$454,800		
7	Construction (incl materials by contractors)	$5,901,300	27.2%	20.5%						
8	Testing / Commissioning	$2,546,700	11.7%	8.9%	$400	$895,400	$3,231,600	$1,773,900		
9	PMT Project Mgmt Team	$667,800	3.1%	2.3%	$108,400	$240,800	$1,517,000	$788,900		
10	Removals	$822,900	3.8%	2.9%		$259,700	$284,900	$14,800		
11	Other					$119,300	$450,500	$253,100		
12	Risks	$1,548,000	7.1%	5.4%		$737,000	$811,000			
125	**Project Directs Total w/Risks**	**$21,699,000**	100.0%	75.5%	**$1,036,700**	**$5,933,600**	**$11,349,700**	**$3,379,000**		
13	Indirects/Overhead	$5,359,100		18.7%	$535,100	$1,043,500	$2,623,400	$1,157,100		
14	AFUDC	$838,500		2.9%	$72,000	$333,600	$432,900			
125	**Project Total - Baseline Budget**	**$27,896,600**		97.1%	**$1,643,800**	**$7,310,700**	**$14,406,000**	**$4,536,100**		
15	Contingency	$830,900		2.9%		$237,700	$457,700	$135,500		
	Project Total - Funding Approval Level	**$28,727,500**		100.0%	**$1,643,800**	**$7,548,400**	**$14,863,700**	**$4,671,600**		
16	Reimbursables/Customer Contribution									
126	**Project Total (less reimbursables)**	**$28,727,500**			**$1,643,800**	**$7,548,400**	**$14,863,700**	**$4,671,600**		
	Cost per key qty (if appl)	-	$'s / EA							
	Amount of Escalation included above	$887,600					$528,500	$359,100		
6	Total materials - Eversource	$8,574,000				$3,353,100	$4,766,100	$454,800		
	Total materials - Contractor	$225,819			$19	$88,600	$125,500	$11,700		
	Total materials	$8,799,819			$19	$3,441,700	$4,891,600	$466,500		

NOTE: Risk / Contingency is 9% of Project Total Costs (Incl escal/Indirects/AFUDC but excl reimb.)

Estimate Range	-25%	-	25%
	$21,546,000	-	**$35,909,000**

COMMENTS:

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

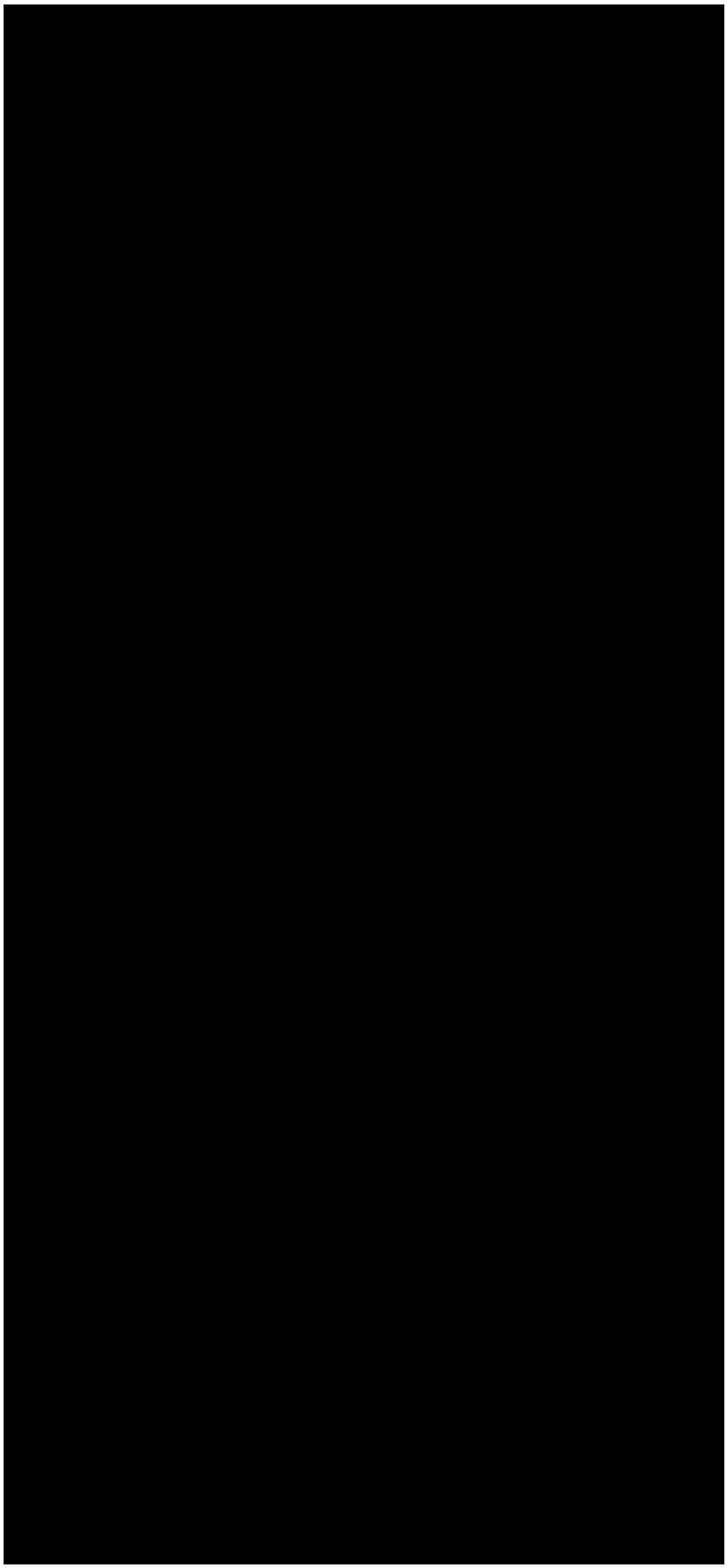
[redacted]

Alt Estimate Summary for PPI Calc (escalation separate)

Estimate #: C-23-76
Date of Estimate:05/26/2023

Project Number: CS00365
WO & Task #: CS003651

		TOTAL w/ escal broken out
ROW / Easements / Land purchas	$	-
Environmental Approvals / Permit	$	27,800
Outreach	$	70,600
Siting Approvals / Permits	$	185,300
Engineering / Design	$	1,333,000
Materials (Eversource purchased	$	8,633,755
Construction (incl materials by c	$	5,379,245
Testing / Commissioning	$	2,408,000
PMT Project Mgmt Team	$	652,900
Removals	$	795,300
Other	$	-
Risks	$	1,548,000
		$21,033,900
Indirects/Overhead	$	5,136,600
AFUDC	$	838,500
	$	-
		$27,009,000
	$	-
Contingency	$	830,800
		$27,839,800
	$	-
	$	-
		$27,839,800
	$	887,600
Escal total		**$28,727,400**
Check total		-$100



[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
CS003651						
[redacted]						
PROJECT PLANNING & FUNDING						
T-Minus Milestones						
Civil T-Minus Milestone						
AT0805C	Civil IFC - Civil (BG) w/BOM	0			12-Jul-23	
AT0814	ALL CONSTRUCTION CONTRACTS IN PLACE	0			19-Jul-23	
AT0203	CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	0			09-Aug-23	
AT00	T-00 START OF CONSTRUCTION Civil Pre-Outage - WO#	0	04-Sep-23*			
Electrical T-Milestones						
BT1202	P/C DESCRIPTION / DRAFT OPERATING INSTRUCTIONS ISSUED	0			13-Jun-23	
BT0805P	P&C IFC - P&C w/BOM	0			15-Jun-23	
BT0805E	Elect IFC - Electrical (AG) w/Final BOM	0			14-Jul-23	
BT0203	CAN COMPLETE (CONSTRUCTION AUTHORIZATION NOTICE)	0			09-Aug-23	
BT0409	B-T-04 ALL FIRM TOA APPLICATIONS DUE TO LCC ([redacted])	0			30-Aug-23	
BT1801	T-18 All Firm TOA Applications Due to LCC	0			30-Aug-23	
BT2404	DETERMINE / ASSIGN LCE (LEAD COMMISSIONING ENGINEER)	0			21-Sep-23	
BT0814	ALL CONSTRUCTION CONTRACTS IN PLACE	0			27-Nov-23	
BT1805	B-T-18 NX9 Preliminary Ratings to LCC for New Equipment ([redacted])	0			01-Feb-24	
BT0404	ALL FINAL RELAY PROTECTIVE SETTING ISSUED	0			05-Feb-24	
BT1301	COMMISSIONING PLAN COMPLETE	0			16-Feb-24	
BT0301	B-T-03 NX9 THERMAL RATINGS TO LCC AND CONVEX	0			09-Apr-24	
BT0401	ALL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED	0			20-Apr-24	
BT00	T-00 START OF CONSTRUCTION Electrical Outage - WO#	0	06-May-24*			
Project Funding						
Full Funding						
EPAC - FF						
PAFF2110	EPAC Full Funding Meeting	0			11-May-23*	
PAFF2200	Incorporate EPAC Full Funding PAF Review Comments	7	12-May-23		22-May-23	
FF1010	Ful Funding PowerPlan Approval	7	12-May-23		22-May-23	
FF1000	EPAC Full Funding Approval	0			22-May-23	
Project Management						
Compliance Authorization Notification						
1170	Prepare CAN (Construction Authorization Notice)	15	20-Jul-23		09-Aug-23	
Outage Permits / TOAs Request						
1290	Construction Rep SUBMIT OUTAGE REQUESTS [redacted]	45	28-Jun-23		30-Aug-23	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
1250	Construction Rep SUBMIT OUTAGE REQUESTS[redacted]	45	28-Jun-23		30-Aug-23	
SITING APPROVALS / PERMITS / PROJECT SERVICES						
State Approvals and Permits						
Siting Council / Board						
3630	Notice of Exempt Modification to the Connecticut Siting Council	10	28-Jun-23		12-Jul-23	
ENGINEERING DETAILED / IFC DESIGN						
Civil Engineering						
Civil Engineering Detailed Design						
CE1210	ES Engineering Review Civil Substation Detail Design & Approves the Deliverables Checklist	11	03-Apr-23 A	03-Apr-23	01-May-23	
Civil Engineering IFC Design						
CE1300	Vendor Engineer Develop Civil Substation IFC in Accordance with the Deliverables Checklist	40	02-May-23		27-Jun-23	
CE1310	ES Engineering Review Civil Substation IFC & Approves the Deliverables Checklist	10	28-Jun-23		12-Jul-23	
Electrical Engineering						
Electrical Engineering Detailed Design						
EE1210	ES Engineering Review Electrical Substation Detail Design & Approves the Deliverables Checklist	11	03-Apr-23 A	03-Apr-23	01-May-23	
Electrical Engineering IFC Design						
EE1300	Vendor Engineer Develop Electrical Substation IFC in Accordance with the Deliverables Checklist	40	02-May-23		27-Jun-23	
EE1310	ES Engineering Review Electrical Substation IFC	12	28-Jun-23		14-Jul-23	
[redacted] - Vendor Drawings with Schematics						
[redacted]		30	11-Aug-23		22-Sep-23	
[redacted]		10	25-Sep-23		06-Oct-23	
[redacted]		10	10-Oct-23		23-Oct-23	
[redacted] Diagrams						
[redacted]	[redacted]	40	03-Apr-23 A	03-Apr-23	12-Jun-23	
[redacted]	[redacted]	10	13-Jun-23		26-Jun-23	
[redacted]	[redacted]a	10	27-Jun-23		11-Jul-23	
P&C Engineering						
P&C Engineering Detailed Design						
PC1110	ES Engineering Review P&C Detail Design	11	03-Apr-23 A	03-Apr-23	01-May-23	
P&C SCADA						
EE920	Operating Instructions - SSED Review Draft Convex OI	30	02-May-23		13-Jun-23	
EE460	Operating Instructions - SSED Review Draft Distribution OI	30	02-May-23		13-Jun-23	
P&C Engineering IFC Design						
P&C Design Package						
PC1320	Vendor Engineer Creates SDS in Accordance with the Deliverables Checklist	22	02-May-23		01-Jun-23	
PC1330	ES Engineering Reviews and Issues SDS	10	02-Jun-23		15-Jun-23	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
Relay Settings						
PC1400	[redacted]	24	02-Jan-24*		05-Feb-24	
P&C DFR Design						
DFR1040	Verify CASCADE Forms Exists for S/S DFR, if not then Initiate Form	10	16-Jun-23		29-Jun-23	
DFR1000	Verify DFR Calibration is Required	10	16-Jun-23		29-Jun-23	
DFR1010	P&C Prepare Configuration for DFRs	5	30-Jun-23		07-Jul-23	
DFR1020	Peer Review and Comment DFR Configuration	5	10-Jul-23		14-Jul-23	
DFR1030	P&C Issue Configuration For DFR	5	17-Jul-23		21-Jul-23	
DFR1050	DFR Config Complete	5	24-Jul-23		28-Jul-23	
Electrical Engineering NX-9						
[redacted]						
[redacted]	[redacted]	5	12-Jul-23		18-Jul-23	
[redacted]	[redacted]	5	19-Jul-23		25-Jul-23	
[redacted]	[redacted]	5	26-Jul-23		01-Aug-23	
[redacted]	[redacted]	5	02-Aug-23		08-Aug-23	
Substation Thermal Rating [redacted]						
[redacted]						
Substation - [redacted]						
[redacted]		5	12-Jul-23		18-Jul-23	
[redacted]		5	19-Jul-23		25-Jul-23	
[redacted]		5	26-Jul-23		01-Aug-23	
[redacted]		5	01-Dec-23		07-Dec-23	
[redacted]		5	08-Dec-23		14-Dec-23	
[redacted]		5	15-Dec-23		21-Dec-23	
[redacted]		5	22-Dec-23		29-Dec-23	
[redacted]		5	02-Jan-24		08-Jan-24	
[redacted]		5	09-Jan-24		16-Jan-24	
[redacted]		5	17-Jan-24		23-Jan-24	
[redacted]		1	24-Jan-24		24-Jan-24	
[redacted]		5	25-Jan-24		31-Jan-24	
[redacted]		1	01-Feb-24		01-Feb-24	
Substation - [redacted]						
[redacted]		5	02-Feb-24		08-Feb-24	
[redacted]		5	09-Feb-24		15-Feb-24	
[redacted]		5	16-Feb-24		23-Feb-24	
[redacted]		5	26-Feb-24		01-Mar-24	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
	[redacted]	5	04-Mar-24		08-Mar-24	
	[redacted]	5	11-Mar-24		15-Mar-24	
	[redacted]	5	18-Mar-24		22-Mar-24	
	[redacted]	5	25-Mar-24		29-Mar-24	
	[redacted]	1	01-Apr-24		01-Apr-24	
	[redacted]	5	02-Apr-24		08-Apr-24	
	[redacted]	1	09-Apr-24		09-Apr-24	
	Substation [redacted]					
	Substation [redacted]					
	[redacted]	5	12-Jul-23		18-Jul-23	
		5	19-Jul-23		25-Jul-23	
		5	26-Jul-23		01-Aug-23	
		5	01-Dec-23		07-Dec-23	
		5	08-Dec-23		14-Dec-23	
		5	15-Dec-23		21-Dec-23	
		5	22-Dec-23		29-Dec-23	
		5	02-Jan-24		08-Jan-24	
		5	09-Jan-24		16-Jan-24	
		5	17-Jan-24		23-Jan-24	
		1	24-Jan-24		24-Jan-24	
		5	25-Jan-24		31-Jan-24	
		1	01-Feb-24		01-Feb-24	
		1	06-May-24		06-May-24	
		3	02-Aug-24		06-Aug-24	
		1	06-Aug-24		06-Aug-24	
		5	07-Aug-24		13-Aug-24	
	PROCUREMENT LONG LEAD MATERIAL					
	Electrical Long Lead Material					
	MATERIAL FOR [redacted]					
	[redacted]	274	26-Sep-22 A	26-Sep-22	15-Jan-24	
		21	23-May-23		21-Jun-23	
		15	22-Jun-23		13-Jul-23	
		10	14-Jul-23		27-Jul-23	
		5	28-Jul-23		03-Aug-23	
		5	04-Aug-23		10-Aug-23	
		5	16-Jan-24		20-Jan-24	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
	MATERIAL FOR [redacted]					
	[redacted]	113	05-Sep-22 A	05-Sep-22	07-Aug-23	
		121	05-Sep-22 A	05-Sep-22	15-Aug-23	
		365	05-Sep-22 A	05-Sep-22	15-Apr-24	
		5	23-May-23		30-May-23	
		10	31-May-23		09-Jun-23	
		5	16-Apr-24		20-Apr-24	
	MATERIAL FOR [redacted]					
	[redacted]	121	06-Mar-23 A	06-Mar-23	15-Aug-23	
		10	16-Aug-23		25-Aug-23	
	PROCUREMENT MATERIAL [redacted]					
	Civil Balance of Material					
	[redacted]	5	07-Jun-23		11-Jun-23	
		10	12-Jun-23		21-Jun-23	
		90	22-Jun-23		19-Sep-23	
		5	20-Sep-23		24-Sep-23	
	Electrical Balance of Material					
	[redacted]	5	12-Jun-23		16-Jun-23	
		10	17-Jun-23		26-Jun-23	
		90	27-Jun-23		24-Sep-23	
		5	25-Sep-23		29-Sep-23	
	P&C Balance of Material					
	[redacted]	5	12-Jun-23		16-Jun-23	
		10	17-Jun-23		26-Jun-23	
		90	27-Jun-23		24-Sep-23	
		5	25-Sep-23		29-Sep-23	
	PROCUREMENT OF SERVICE CONTRACTS					
	Constructor of Choice - Direct Award or Bid					
3430	CONST.SERVICES - BID - Eversource provide Spec / RFP	11	13-Feb-23 A	13-Feb-23	01-May-23	
3440	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal	20	16-May-23		13-Jun-23	
3450	CONST.SERVICES - BID - Eversource reviews contractor proposals	20	14-Jun-23		12-Jul-23	
3460	CONST.SERVICES - BID - Contract is Awarded - PO Issued	5	13-Jul-23		19-Jul-23	
	Testing Service - Direct Award or Bid					
1010	STAFFING DECISION: EVERSOURCE OR OUTSOURCE BID/COC	10	10-Aug-23		23-Aug-23	
	TEST SERVICES - CONTRACTOR OF CHOICE					
3470	TEST SERVICES - COC - Eversource Provides Spec / RFQ to COC	5	24-Aug-23		30-Aug-23	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
3480	TEST SERVICES - COC - COC Evaluates Spec and Provides Quote	10	31-Aug-23		14-Sep-23	
3490	TEST SERVICES - COC - Eversource Reviews Quote from COC	10	15-Sep-23		28-Sep-23	
3500	TEST SERVICES - COC - Eversource Awards Contract - PO Issued	10	29-Sep-23		13-Oct-23	
TEST SERVICES - BID PROCESS						
3510	TEST SERVICES - BID - Eversource provide Spec / RFP	15	24-Aug-23		14-Sep-23	
3520	TEST SERVICES - BID - Contractors Evaluate RFP and Provide Proposal	15	15-Sep-23		05-Oct-23	
3530	TEST SERVICES - BID - Eversource reviews contractor proposals	15	06-Oct-23		27-Oct-23	
3540	TEST SERVICES - BID - Eversource awards contract - PO Issued	20	30-Oct-23		27-Nov-23	
CONSTRUCTION						
CSM	Construction Start Milestone	0	04-Sep-23			
CFM	Construction Finish Milestone	0			01-Aug-24	
ISD	EQUIPMENT IN SERVICE DATE (requires FOOB constraint)	0			01-Aug-24	
Construction Support LOEs						
ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	230	05-Sep-23		01-Aug-24	
CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	30	20-Jun-24		01-Aug-24	
Outages						
[redacted]		45	06-May-24		19-Jun-24	
[redacted]		45	06-May-24		19-Jun-24	
Substation Construction						
[redacted]		30	04-Sep-23		03-Oct-23	
[redacted]		60	06-May-24		04-Jul-24	
[redacted]		60	06-May-24		04-Jul-24	
[redacted]		60	06-May-24		04-Jul-24	
P&C Construction						
[redacted]		5	20-Jun-24		26-Jun-24	
TEST & COMMISSIONING						
Isolation Plan						
[redacted]		30	28-Jun-23		09-Aug-23	
[redacted]		30	10-Aug-23		21-Sep-23	
[redacted]		15	22-Sep-23		06-Oct-23	
[redacted]		15	22-Sep-23		06-Oct-23	
[redacted]		45	10-Oct-23		12-Dec-23	
[redacted]		45	13-Dec-23		16-Feb-24	
Testing Activities						
[redacted]		30	20-Jun-24		01-Aug-24	
[redacted]		30	20-Jun-24		01-Aug-24	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
PROJECT CLOSE OUT						
Civil Close Out						
CV1000	Prepare Civil Field Mark Ups (Tie after Last Civil Construction Activity)	21	09-Aug-24		09-Sep-24	
CV1100	Eversource Engineering Prepares & Sends Civil Field Mark Up Packge to Vendor	5	10-Sep-24		16-Sep-24	
CV1200	Vendor Engineering Verifies Civil Mark Ups and Updates As-Built Drawing Package. Submits Final Package t	30	17-Sep-24		29-Oct-24	
CV1300	Eversource Engineering Verifies Quality of Submitted Civil Drawings	20	30-Oct-24		27-Nov-24	
CV1400	ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	29-Nov-24		05-Dec-24	
PM1000	PM to Document Civil As-Built Drawings Complete	5	06-Dec-24		12-Dec-24	
CV1500	FE Files Civil Design Drawings at Station	30	13-Dec-24		28-Jan-25	
Electrical Close Out						
EV1000	Prepare Electrical Field Mark Ups	21	23-Aug-24		23-Sep-24	
EV1100	Eversource Engineering Prepares & Sends Electrical Field Mark Up Packge to Vendor	5	24-Sep-24		30-Sep-24	
EV1200	Vendor Engineering Verifies Electrical Mark Ups and Updates As-Built Drawing Package. Submits Final Packa	30	01-Oct-24		13-Nov-24	
EV1300	Eversource Engineering Verifies Quality of Submitted Electrical Drawings	20	14-Nov-24		12-Dec-24	
EV1400	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	13-Dec-24		19-Dec-24	
PM1100	PM to Document Electrical As-Built Drawings Complete (Electrical & P&C)	5	20-Dec-24		27-Dec-24	
EV1500	FE Files Substation Design Drawings at Station	30	30-Dec-24		11-Feb-25	
P&C Close Out						
PC8000	Prepare P&C Field Mark Ups	21	23-Aug-24		23-Sep-24	
PC1111	Eversource Engineering Prepares & Sends Electrical Field Mark Up Packge to Vendor	5	24-Sep-24		30-Sep-24	
PC1200	Vendor Engineering Verifies P&C Mark Ups and Updates As-Built Drawing Package. Submits Final Package t	30	01-Oct-24		13-Nov-24	
PC1300	Eversource Engineering Verifies Quality of Submitted P&C Drawings	20	14-Nov-24		12-Dec-24	
PC1411	P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Field	5	13-Dec-24		19-Dec-24	
PC8500	FE Files P&C Design Drawings at Station	30	30-Dec-24		11-Feb-25	
LCE Closeout						
LCE700	LCE Ensure Test Group Prepare Electrical Field Mark Ups	10	02-Aug-24		11-Aug-24	
LCE800	LCE Ensures Marked up Prints Ready for Pick-up	5	02-Aug-24		08-Aug-24	
LCE900	LCE Review Test Data and Issue Commissioning Report	10	09-Aug-24		22-Aug-24	
Work Order / Financial Close Out						
1020	Cost Analyst Prepares FINAL Units of Property	30	02-Aug-24		13-Sep-24	
1030	Asset Management Complete Asset Update(s) in CASCADE	30	16-Aug-24		27-Sep-24	
Project Management Close Out						
TD1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List	5	02-Aug-24		08-Aug-24	
1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	30	02-Aug-24		13-Sep-24	
1270	Prepare TD-707 Document	30	02-Aug-24		13-Sep-24	
1110	Restore / Remediate Site	10	02-Aug-24		15-Aug-24	

TASK filter: Remove Completes.

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[redacted] | WBS - RD - All Activities | 18-Apr-23 08:55

Activity ID	Activity Name	Rem Dur	ES	Actual Start	EF	Actual Finish
1260	Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)	10	02-Aug-24		15-Aug-24	
FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)	0			11-Feb-25	

TASK filter: Remove Completes.

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

Project Title: [redacted]	☒	Prior Constructability Review Performed?
	☐	Program Related Site Specific Review?
Project Numbers(s): CS00365 // 405192	**Project Constructability Phase:**	
Date(s) of Constructability Review: 01/18/2023	☐ Conceptual Engineering Design	
Click to enter a date	☐ Preliminary Engineering Design	
	☒ Detailed Engineering Design	
Project Scope Statement: Station Reconfiguration		

Department Review/Walkdown Attendees*:

Required [X]	Attended [X]	Department	Name	Required [X]	Attended [X]	Department	Name
☒	☒	Project Management	[redacted]	☒	☒	S/S Engineering	[redacted]
☐	☐	Asset Management		☒	☒	P&C Engineering	
☒	☒	Constr. Management	[redacted]	☒	☒	Civil Engineering	
☐	☐	S/S Technical / LCE		☐	☐	Telecom	
☒	☒	S/S Operations**	[redacted]	☒	☐	Environmental	
☐	☐	Field Engineering		☒	☐	Real Estate	
☐	☐	Line Engineering		☐	☐	ROW T&D Rights & Survey	
☐	☐	Vegetation Management		☐	☐	Survey Engineering	
☒	☐	Siting		☐	☐	Cost Estimating	
☐	☐	Safety		☐	☐	Project Services (Outreach)	
☐	☐	SCADA		☐	☐	Material Procurement	

*** Sign-off in the table above for the Detailed Engineering Design Constructability Review indicates that all Action Items/Concerns from prior Constructability Reviews have been mitigated/resolved as documented in this form. Not every department is required to attend walkdowns for every project but should be consulted for project impact considerations**

** Internal Eversource Substation Operations must be included in the review even if external construction resources are planned

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

[Project Manager] certifies that this review was performed to completeness, that all applicable departments were informed of the project and have had opportunity to provide input to this review:

[redacted] 1/9/22

Name / Signature *Date*

Documents available for use prior to Constructability Review					
[X]	Document	[X]	Document	[X]	Document
☐	Initial Scope -Birdseye site plan -General Arrangement	☐	Detailed Drawings -Civil Site Drawing -Electrical Drawing -Section Drawings	☒	Prints in hand for marking up -Panel Front/Read View -Control Enclosure Layout -Floor / Wall Plans
☒	Detailed Scope Document	☐	Proposed Schedule	☒	Construction Sequence/Timeline
☐	Previous Notes / Comments / Observations	☐	Major Material / Equipment List	☐	Replace / Reuse of equipment

Action Items and Resolutions:

Item No.	Const. Review Action Item/Concern	Design Resolution/Mitigation:
1	Get buy-in from Environmental Dept of 3X Oil Containment Design	[redacted] to follow up
2	Determine what updates required for Control wiring	Follow up meeting setup for 1/23/23
3		
4		
5		

REDACTED

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
A	**Engineering & Asset Management**		
1	**Scope of Work** - Is scope adequately developed and sufficiently detailed for intended deliverable? - Any complimentary projects or other adjacent obsolete equipment for inclusion? - Any overlapping projects that could impact work/outages? - Consider Physical Installation, P&C Scope, Civil Scope, Engineering studies, Design standard adherence - Any remote station impacts? - Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project	☐	- SOW has been reviewed and finalized. - No complimentary projects or other adjacent obsolete equipment for inclusion. - No overlapping projects that could impact work/outages. - Additional civil SOW to deal with flooding issues in the station. - No remote station impacts - Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project – completed and included in SSF
2	**Materials Identified/Ordered** -Any concerns with BOM/Major Materials? Review BOM lead times and project need dates -Specialty Major Materials: Identify Specialty Equipment & Materials potentials - temporary/replacement - long lead items? -Any Materials needed to facilitate construction access?	☐	[redacted]
3	**Control House** - Review Unmapped equipment interferences, Control/Battery Enclosure Layout, HVAC System (if equipment added), space for new or modified equipment, AC / DC station breaker availability and service loading, Panel Space, Expansion, one-line and/or riser type panelboard drawings, other..	☐	N/A
4	**Ratings & Dimensions** for Major Equipment. Any concerns upon field review? Equipment Rating One Line (and/or equipment thermal ratings tables) - Review for any errors in field	☐	N/A

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
5	**Wall, Fence, Gate, and Foundation Considerations** -Any permanent / temporary alterations or relocations required? -Pre-Project Sound Measurements Needed? Sound Walls? -Take measurements for Foundation quantities, dimensions and concrete volumes -CIP Review/Ballistic needs. Any Physical Security Requirement Consideration? -Assess condition of existing yard equipment foundations and viability for reuse (if proposed) -Review station expansion areas (if needed) for structures, old foundations, etc. -Any Steel Structural Plan Considerations? -Any impacts to construction plan?	☐	Oil Containment for 3X needs further review
6	**Below Grade / Enclosure Raceway** - If possible, evaluate existing raceway and review spacing requirements. Review for any subsurface investigation needs or potential below grade obstructions. GPR/test pits needed? Geotechnical Investigation - is soil boring or resistivity investigation needed?	☐	N/A
7	**Underground Obstructions** -Drawing review concerns? -Is preconstruction or test excavation needed? -Is reuse of underground control cables / Conduits /replace Non-Shielded Cable feasible (if applicable) -Are spare conduits available? Are they useable? -Review if any areas will need to be plated for increased load bearing for equipment access (i.e., large Xfmr, etc.)	☐	N/A
8	**Grounding Plan (Ground Grid)** - Will footprint impact layout or other equipment? Identify locations to improve grounding. Impacts to foundations and ground grid plans. Observations on wetlands or ability to perform tests	☐	We will ground the new gear to the existing grid.

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
9	Nomenclature / Switching One-Line Diagram -Any obvious deviations from diagrams provided?	☐	N/A
10	BPS Separation Requirements - Is this BPS Substation? Y/N (part of PAF) - Changes to pre-existing BPS standards?	☐	Not BPS
11	IEC 61850 Substation Automation and Communication Requirements - Any Impacts/Retrofit needed?	☐	N/A
12	Any Upgrades to ES Standards - Is retrofit needed to bring up to ES standards? Can that be done?	☐	N/A
B	**Construction**		
1	**Any safety hazards specific to the facility? i.e., Low Bus, Deterioration, etc.**	☐	N/A
2	**Prior known Site Specific Conditions** -Common or Obvious station Issues -Missing scope items that could impact costs?	☐	Some existing oil containments don't work well
3	**Identify/Consider Required Depts for Construction?** -Who is constructor: Internal vs External Resources -S/S Ops, GO, Test, Field Engineering, etc. -Specialty Contractors Required? -Required Oversite Needed - Estimated level of CR and LCE support needed	☐	- Constructor has not been determined yet - Will need to perform UG surveys, soil testing/characterization

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
4	**Site Plan, Access, and Temporary Construction Facilities:** -Confirm maintenance access for proposed new or replaced equipment -Verify clear footprint for yard equipment / Property Plan -General access to site, can areas outside substation be utilized? -Substation Entry Plan (driveway and drive path modifications) - Identification of Unique Requirements, i.e. (access bridges, station service, etc.) -Site Development Plan (grading and drainage) with Cut/Fill -Existing Rock Conditions? Potential Impacts (rock quantity)? -Any police details needed for deliveries, restricted hours, and/or need for extended hour approvals -Any Sanitary Civil Requirements? (Septic tanks, etc.) -Review turning radius for delivery trucks (if critical) -Any Substation Access and site/yard access Limitations? -Office Trailer Needs: Facilities, Utilities, Restroom, Container, Dumpster Space -Weather impacts to Site (Snow Placement) -Identify Material Laydown and Security -Where will new vs removed equipment go? -Construction permit for trailers outside substation fence?	☐	- Construction Access will be through the existing station gate into the yard. - Laydown area will most likely be inside the station - If work is done by a contractor, then their trailer will be outside the station.
5	Unique Equipment Considerations: Gas insulated substation, Gas insulated line, Gas insulated bus, Pass Breaker, Statcom, Sync Condenser		N/A

EVERSOURCE

Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Outage & Energization Plan and Construction Sequence:** *Review electrical working clearances for equipment during construction, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized.* ***Considerations:*** -Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -Distribution Clearances -Clearance Holder Assignments -Drawings vs Field Conditions -Outage boundaries and interconnections -Phased approach needs for additional mobilizations -Verify outage sequence supports the planned construction sequence and timeline. (Lead Commissioning Engineer "LCE", Substation Operations, and Outage Planner input) -Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions -Additional outage requirements: Railroad Catenaries, Fiber outage, SCADA outage, Relay permissions -Seasonal or weather conditions impacts	☐	We have not performed Outage Planning or review yet.
7	**Equipment Testing & Acceptance** -Grounding plans / Resources? Will we need grounds hung? -Hi-pot testing and where will the equipment be set up?	☐	We have not performed detailed construction planning yet.
8	Need for mobile generator and where connected (if needed)	☐	We have not performed detailed construction planning yet.
9	Need for mobile battery and where connected (if needed)	☐	We have not performed detailed construction planning yet.
10	OT work required or Notable Permit Conditions (special hours)?	☐	We will work within normal work hours – no plans for OT
11	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	☐	We have not discussed this

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
C	**Environmental**		
1	Soil Pre-Characterization or Grab Sampling Completed/Planned	☐	We will perform soil characterization
2	**Desktop investigation and EAD Review** -Required Permits -Stormwater Considerations -Dewatering requirements -Wetland and buffer review	☐	- Siting permit = Exempt MOD - No enviro permits since we are staying inside the station
3	Risk or presence of PCB's/Asbestos/Lead/SF6	☐	Possible
4	Transformer Spill Containment Recommended?	☐	Yes
5	Expanding Footprint / New Buildings or future Expansion Plans? (Enviro Impact)	☐	N/A
6	Environmental oversight considerations? (Inspection type/Interval)	☐	We will review later
7	Environmental mitigations - Any matting or seasonal needs? Review D&M Plan with CR.	☐	N/A
D	**Siting, Project Services, and ROW T&D Rights & Survey**		
1	**Any regulatory concerns or approvals needed?** - Any concerns noted that could be mitigated by scope/design alterations? - Likely to require visual screening? What considerations (feasibility or location)? -Zoning Relief and Permits required?	☐	Exempt Mod permit needed
2	Other siting considerations?	☐	N/A
3	**Neighbor/Abutter impacts:** - Any noise, visual impacts, or sensitive abutters - Any changes to lighting or additional lighting needed?	☐	N/A
4	Review for roadway, gate access, trailers, equip height, noise, weekend/night work, or any potential public disturbance related to work	☐	We will review later
5	Installation within Eversource Rights - Is Rights and Restrictions Review required?	☐	Within S/S yard

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	Expanding Footprint / New Buildings / Fence line or future Expansion Plans?	☐	N/A
7	Proposed Equipment on same property? - Any Encroachments	☐	Same property – no encroachment
F	**Protection & Controls**		
1	Panel Graphic additions and/or Modifications	☐	No concerns.
2	Space on existing panels for new equipment? (front & rear of panel fronts)	☐	No concerns.
3	Panel fronts conform to drawings	☐	Confirmed existing panel conditions.
4	Access to bring new panels into control enclosure	☐	No concerns.
5	Nameplate list and location of nameplates	☐	Existing – see panel views and nameplate list.
6	Verifies that relays and meters that will be an interconnected project work are as shown on the drawings.	☐	N/A.
7	Temporary protection, relays, control cable needed? How long will they be required?	☐	N/A.
8	Will relay setting changes be needed? Any additional outage requirements for changes?		N/A.
G	**Telecom Engineering**		
1	Review telecom equipment in existing control enclosure	☐	N/A
2	Review path to get telecom circuits into the station and paths within the control house. Determine whether new underground duct or overhead tray work is needed.	☐	N/A – telecom circuits are existing.
3	Review current or proposed Telecom equipment power connections and validate with P&C any need for system 1 and system 2 separation.	☐	N/A – telecom circuits are existing and no separation is required.
4	Review current Telecom fiber diversity and validate with P&C any fiber diversity requirements.	☐	N/A – only one fiber based scheme on each line, no diversity required.
5	Review and list any remote station impacts/updates	☐	
6	Confirm whether correct interface equipment is available (i.e.) for fiber termination or multiplexor termination	☐	

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
7	Confirm whether existing communications cabinets are enough to support additional telecommunications equipment installed	☐	
8	Review space for any required additional communications cabinets which may be required to support additional telecommunications equipment installed	☐	
9	Review third party Telecommunications at substation and confirm whether additional capacity or Ground Potential Rise protection is required	☐	

Photos

(Ex. Equipment control cabinet, Breakers, MODs, CCVTs, PTs, Transformers)



[redacted]

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Operations Supplement Request Form

Approved on July 1, 2025 EPAC

Link to Meeting Minutes

Project Title: Bokum 15L Distribution Transformer Replacement/Addition and Station Reconfiguration	**Project Number: CS00365 (D SS), 405192 (T SS)**	
Date Prepared: 06/18/2025	**Company: Eversource CT**	
Organization: System Planning	**Class(es) of Plant: D SS**	**T SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformer**	
Managing Organization: Project Mgt and Construction	**Schedule ID#: CS003651**	
Project Manager: [redacted]	**Project Type: Specific**	
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**	
Project Manager's Director: [redacted]	**Estimated in service date: August 2026**	
Current Authorized Amount: **CS00365 - $28,728K** **405192 - $14,727K**	**Emergency Related Request? No**	
Supplement Request: **CS00365 - $13,043K** **405192 - $8,950K**	**Supplement Type: Supplement**	
Total Capital Request: **CS00365 - $41,771K** **405192 - $23,677K**	**ISO-NE Approval Required (check all that apply):** **☐ PAC ☐ TCA**	
EJ Community: No		

[1] Background

This supplement is requesting an additional $21,993K ($13,043K CS00365; $8,950K 405192) for a new total of $65,448K ($41,771K CS00365; $23,67K 405192) for completion of the Bokum 15L ([redacted] The additional $21,993K requested is for overages in environmental, engineering, materials, construction, project management, AFUDC and indirect costs.

Initial funding of $250K ($125K CS00365; $125K 405192) was approved in PowerPlan on November 3 and 23, 2020, respectively. Partial Funding of $2.7M was approved in PowerPlan on

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October 18, 2021 ($1,405K CS00365; $1,333K 405192). Full Funding of $43.455M was approved in PowerPlan on August 4, 2023, and June 26, 2023, respectively ($28,728K CS00365; $14,727K 405192). To date (6/23/2025), $23,375K (CS00365) and $11,149K (405192) has been spent for Engineering and Design completion, reconfiguration of [redacted] The remaining scope to be completed for this project includes [redacted]

Distribution scope changes have included redesign of the [redacted] prompted by the discovery of unforeseen underground obstructions during the early construction phase, and relocation of [redacted] The transmission scope change involved [redacted] On the other hand, [redacted] his configuration would have required a major DC outage for installation. To avoid this, [redacted]. The AC redesign stemmed from outdated panels incompatible with available breakers.

[2] Supplement Justification Overview

The project cost increased due to several key factors across different categories. Project environmental costs increased due to the need for soil management and offsite disposal to approved facilities due to the presence of contaminates, in addition to asbestos abatement, which were not anticipated in the original estimate. These environmental challenges added over $700K to the project.

The project also experienced cost overruns in materials and construction due to market conditions and unforeseen factors. Material costs, particularly for Distribution transformers, were

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underestimated—actual costs exceeded estimates by over $5.6M. Transmission material costs also exceeded estimates due to underestimated and unaccounted items such as structural steel, thermal concrete and thermal sand, and new relay cabinets. Construction costs also increased due to scope modifications required to meet outage conditions and sequencing, unforeseen site conditions like rock removal, allowances needed to address unexpected construction challenges, and the need for temporary infrastructure such as a [redacted] bypass, temporary poles, and mobile transformer, necessary to maintain system reliability and to address physical constraints.

Lastly, extended project duration played a major role. The original schedule projected a 45-week timeline, but the actual duration extended to 155 weeks due to an unrealistic original schedule coupled with project changes during construction that resulted in schedule delays. This added timeline led to increased project management costs, higher indirect/overhead expenses, and an increase in AFUDC. The in service date has been extended from August 2024 to August 2026.

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[3] Supplement Justification Detail

The reasons for the project authorization supplement of $21,993K ($13,043K CS00365; $8,950K 405192) are summarized below:

1. **ROW / Easements / Land purchases: $3K**
    a. **Transmission $3K** – Survey of property lines and coordination of laydown yard not included in estimate.
2. **Environmental Approvals / Permits: $708K**
    a. **Transmission $25K -** Environmental specialist support, typically required for environmental and remediation planning and evaluation was not included in the original transmission estimate. This includes support from internal and external resources to plan and coordinate soil and groundwater characterization activities, concrete testing, soil export to approved facilities, and monitor compliance.
    b. **Distribution $683K -** During the initial phases of substation improvement work, soil waste characterization sampling was completed to allow for management of excess soil that would be generated as part of the project. Soil analyses indicated the presence of low level contaminates in specific areas which required soils to be transported and disposed of at approved facilities, rather than utilized as backfill as originally estimated. Additionally, sound wall abatement required due to asbestos containing materials, including abatement monitoring and cost for transport and disposal.
3. **Outreach: ($92K) -** For both Transmission and Distribution, actual costs are lower than estimated as the level of support needed was less than anticipated.
    a. **Transmission ($19K)**
    b. **Distribution ($73K)**
4. **Siting Approvals / Permits: ($251K) -** For both Transmission and Distribution, actual costs are lower than estimated as the level of support needed was less than anticipated.
    a. **Transmission ($64K)**
    b. **Distribution ($187K)**
5. **Engineering / Design: $679K**
    a. **Transmission $59K -** Associated with post-IFC redesign of the 6T breaker location to resolve clearance issues.
    b. **Distribution $620K -** This cost variance is primarily driven by change orders to the Engineering vendor ($262K) along with completed and projected in-house engineering through 2026.

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Engineering vendor change orders included updates such as the redesign of the [redacted] due to unforeseen underground obstructions found during the early construction phase. A cost driver for internal engineering is the relocation of the [redacted] to optimize site access and reduce extent of underground construction, as well as the development of a mobile transformer drawing package and associated relay settings. In-house engineering continues to manage Requests for Information (RFIs) to support construction.

6. **Materials (by Eversource): $5,638K**

   a. **Transmission $424K -** Material cost actuals are higher than estimated. Structural steel was estimated at $178K compared to actuals of $229K; thermal concrete and thermal sand, which were not included in the original estimate, added $108K; and new relay cabinets, not included in the estimate, contributed an additional $265K—resulting in a total cost overrun of $424K.

   b. **Distribution $5,214K -** This additional cost was primarily due to distribution transformers [redacted] that were originally estimated at $4,606K, compared to actuals at $10,240K, an increase of $5,634K.

7. **Construction: $7,868K.**

   a. **Transmission $5,013K -** Major factors that have led to increases in the transmission construction costs are:

   $1,393K - Scope changes required to address clearance challenges that impacted constructability (i.e., [redacted]), in addition to Engineering and design modifications arising from site conditions that were not identified during the Constructability Reviews conducted prior to funding approval (i.e., [redacted]).

   $974K - Temporary infrastructure was required during construction, including installation of a [redacted] temporary bypass, which was not anticipated during project planning and estimation, needed to be installed to support the construction sequence and keep the [redacted] ring bus in service while the existing [redacted] bus was removed. The [redacted] bus needed to be removed because it would not have allowed for the clearances required to transport the [redacted] its final positions, and for the access of equipment to install these. In addition, during project construction work, the Project team identified the need for additional electrical clearance [redacted], resulting in the installation of temporary wood support structures to ensure Phase to Phase distances are met.

   $996K - Allowances included to cover future unexpected charges associated with test support, temporary wiring, SCADA and Network Communications, material handling, stand by time, premium time coverage, and winter conditions.

   $1,366K - Testing and Commissioning vendor charges are included in the Prime Electrical Construction vendor's contract.

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b. **Distribution $2,855K -** Major factors that have led to increases in the distribution construction costs are:

$527K - Allowances included to cover future unexpected charges associated with test support, temporary wiring, SCADA and Network Communications, material handling, stand by time, premium time coverage, winter conditions, and rock removal.

$258K - A mobile transformer installation is required per The Connecticut System Operations Center (SOC) while the [redacted] ransformer is replaced due to Single Contingency Load Loss (SCLL) conditions of the [redacted] ransformer. The use of a mobile transformer was not included in the original estimate.

$2,168K - Testing and Commissioning vendor charges are included in the Prime Electrical Construction vendor's contract.

8. **Testing/Commissioning: ($3,534K) -** Testing and Commissioning vendor charges are included in Construction vendor's contract (Item #7 shown above).

   a. **Transmission ($1,366K)**

   b. **Distribution ($2,168)**

9. **Project Management Team: $2,249K -** Additional Project Management Team time is required due to the actual construction schedule exceeding the duration originally accounted for in the project estimate. The estimate considered a project duration of 45 weeks (from June 2023 until April 2024). Actual project duration is projected to be 155 weeks (from September 2023 until August 2026). The original project schedule used during estimation was unrealistic since it considered a timeline that was overly ambitious for the scope of work included in this project.

   a. **Transmission $1,854K**

   b. **Distribution $395K**

10. **Removals: $385K -** Removal projections have increased due to higher than anticipated project costs.

    a. **Transmission $252K**

    b. **Distribution $133K**

11. **Risks: $2,319K -** The project still has a significant amount of work remaining, and several risks have been identified. These are primarily related to potential challenges in the completion of planned outages due to delays in mobile transformer delivery and installation, testing and commissioning issues, late issuance of drawings, and material delivery setbacks.

    a. **Transmission $771K**

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b. **Distribution $1,548K**

12. **Indirects/Overhead: $3,964K -** Indirects were higher due to the increase in direct costs.

    a. **Transmission $1,505K**

    b. **Distribution $2,459K**

13. **AFUDC: $4,374K -** AFUDC has increased as a result of extended project duration beyond initial schedule projections.

    a. **Transmission $1,265K**

    b. **Distribution $3,109**

Total Supplement Request: $21,993K

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[4] Supplement Cost Summary

The table below summarizes the line item categories from the original project estimates and the updated project estimates.

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

Line item Category	Prior Authorized	New Total Request	Variance (Supplemental Request)
1. ROW / Easements / Land Acquisition	$	$3	$3
2. Environmental Approvals / Permits	$28	$736	$708
3. Outreach	$103	$11	($92)
4. Siting Approvals / Permits	$270	$20	($250)
5. Engineering / Design	$2,544	$3,223	$679
6. Materials (Eversource purchased)	$10,363	$16,001	$5,638
7. Construction (incl materials by contractors)	$10,174	$18,042	$7,868
8. Testing / Commissioning	$4,417	$883	$(3,534)
9. Project Mgmt Team	$1,345	$3,594	$2,249
10. Removals	$1,054	$1,439	$385
11. Other	$	$	$
12. Risks	$2,319	$2,319	$
SUBTOTAL DIRECTS W/ RISKS	**$32,617**	**$46,271**	**$13,654**
13. Indirects/Overhead	$8,175	$12,140	$3,965
14. AFUDC	$1,387	$5,761	$4,374
PROJECT TOTAL – BASELINE BUDGET	**$42,179**	**$64,172**	**$21,993**
15. Contingency	$1,275	$1,275	$
TOTAL CAPITAL REQUEST	**$43,454**	**$65,447**	**$21,993**
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$43,454**	**$65,447**	**$21,993**

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Transmission 405192

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

Line item Category	Prior Authorized	New Total Request	Variance (Supplemental Request)
13. ROW / Easements / Land Acquisition	$	$3	$3
14. Environmental Approvals / Permits	$	$25	$25
15. Outreach	$29	$10	($19)
16. Siting Approvals / Permits	$77	$13	($63)
17. Engineering / Design	$1,201	$1,260	$58
18. Materials (Eversource purchased)	$1,789	$2,213	$424
19. Construction (incl materials by contractors)	$4,272	$9,285	$5,013
20. Testing / Commissioning	$1,871	$504	($1367)
21. Project Mgmt Team	$677	$2,531	$1854
22. Removals	$231	$483	$251
23. Other	$	$	$
24. Risks	$771	$771	$
SUBTOTAL DIRECTS W/ RISKS	**$10,918**	**$17,098**	**$6,179**
13. Indirects/Overhead	$2,816	$4,321	$1,506
14. AFUDC	$548	$1,813	$1,265
PROJECT TOTAL – BASELINE BUDGET	**$14,282**	**$23,232**	**$8,950**
15. Contingency	$444	$444	$
TOTAL CAPITAL REQUEST	**$14,726**	**$23,677**	**$8,950**
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$14,726**	**$23,677**	**$8,950**

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Distribution CS00365

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

Line item Category	Prior Authorized	New Total Request	Variance (Supplemental Request)
1. ROW / Easements / Land Acquisition	$	$	$
2. Environmental Approvals / Permits	$28	$711	$683
3. Outreach	$74	$1	($73)
4. Siting Approvals / Permits	$193	$7	($187)
5. Engineering / Design	$1,343	$1,963	$620
6. Materials (Eversource purchased)	$8,574	$13,788	$5,215
7. Construction (incl materials by contractors)	$5,901	$8,757	$2,856
8. Testing / Commissioning	$2,547	$379	($2,168)
9. Project Mgmt Team	$668	$1,063	$395
10. Removals	$823	$956	$133
11. Other	$	$	$
12. Risks	$1,548	$1,548	$
SUBTOTAL DIRECTS W/ RISKS	**$21,699.0**	**$29,173**	**$7,474**
13. Indirects/Overhead	$5,359	$7,818	$2,459
14. AFUDC	$838	$3,948	$3,109
PROJECT TOTAL – BASELINE BUDGET	**$27,896**	**$40,939**	**$13,042**
15. Contingency	$831	$831	$
TOTAL CAPITAL REQUEST	**$28,727**	**$41,770**	**$13,042**
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	**$28,727**	**$41,770**	**$13,042**

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Total Supplement Request by Year
(NOTE: This table should show only the supplement request)

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

Line item Category	2025	2026	Total
1. ROW / Easements / Land Acquisition	$3	$	$3
2. Environmental Approvals / Permits	$707	$1	$708
3. Outreach	($92)	$	($92)
4. Siting Approvals / Permits	($250)	$	($250)
5. Engineering / Design	$497	$181	$679
6. Materials (Eversource purchased)	$2,315	$3,323	$5,638
7. Construction (incl matl's by contractors)	$2,775	$5,093	$7,868
8. Testing / Commissioning	($3,534)	$	($3,534)
9. Project Mgmt Team	$1,356	$893	$2,249
10. Removals	$123	$262	$385
11. Other	$0	$	$
12. Risks	$0	$	$
SUBTOTAL DIRECTS W/ RISKS	$3,900	$9,753	$13,654
13. Indirects/Overhead	$2,969	$996	$3,965
14. AFUDC	$3,208	$1,167	$4,374
PROJECT TOTAL – BASELINE BUDGET	$10,077	$11,916	$21,993
15. Contingency	$	$	$
TOTAL CAPITAL REQUEST	$10,077	$11,916	$21,993
16. Reimbursables/Customer Contribution	$	$	$
PROJECT TOTAL (LESS REIMBURSABLES)	$10,077	$11,916	$21,993
O&M	$	$	$
TOTAL REQUEST	$10,077	$11,916	$21,993

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Transmission

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

Line item Category	2025	2026	Total
1. ROW / Easements / Land Acquisition	$3	$	$3
2. Environmental Approvals / Permits	$24	$1	$25
3. Outreach	($19)	$	($19)
4. Siting Approvals / Permits	($64)	$	($64)
5. Engineering / Design	$	$59	$59
6. Materials (Eversource purchased)	$424	$	$424
7. Construction (incl matl's by contractors)	$2,775	$2,238	$5,013
8. Testing / Commissioning	($1,367)	$	($1,367)
9. Project Mgmt Team	$1,069	$786	$1,854
10. Removals	$123	$128	$252
11. Other	$	$	$
12. Risks	$	$	$
SUBTOTAL DIRECTS W/ RISKS	$2,968	$3,212	$6,180
13. Indirects/Overhead	$1,007	$498.0	$1,505
14. AFUDC	$682	$583	$1,265
PROJECT TOTAL – BASELINE BUDGET	$4,657	$4,293	$8,950
15. Contingency	$0	$0	$0
TOTAL CAPITAL REQUEST	$4,657	$4,293	$8,950
16. Reimbursables/Customer Contribution	$0	$0	$0
PROJECT TOTAL (LESS REIMBURSABLES)	$4,657	$4,293	$8,950
O&M	$0	$0	$0
TOTAL REQUEST	$4,657	$4,293	$8,950

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Distribution

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

Line item Category	2025	2026	Total
1. ROW / Easements / Land Acquisition	$	$	$
2. Environmental Approvals / Permits	$683	$	$683
3. Outreach	($73)	$	($73)
4. Siting Approvals / Permits	($187)	$	($187)
5. Engineering / Design	$498	$123	$620
6. Materials (Eversource purchased)	$1,892	$3,323	$5,215
7. Construction (incl matl's by contractors)	$	$2,855	$2,855
8. Testing / Commissioning	($2,168)	$	($2,168)
9. Project Mgmt Team	$288	$107	$395
10. Removals	$	$133	$133
11. Other	$	$	$
12. Risks	$	$	$
SUBTOTAL DIRECTS W/ RISKS	$932	$6,542	$7,474
13. Indirects/Overhead	$1,961	$498	$2,459
14. AFUDC	$2,526	$583	$3,109
PROJECT TOTAL – BASELINE BUDGET	$5,420	$7,623	$13,043
15. Contingency	$0	$0	$0
TOTAL CAPITAL REQUEST	$5,420	$7,623	$13,043
16. Reimbursables/Customer Contribution	$0	$0	$0
PROJECT TOTAL (LESS REIMBURSABLES)	$5,420	$7,623	$13,043
O&M	$0	$0	$0
TOTAL REQUEST	$5,420	$7,623	$13,043