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]

[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

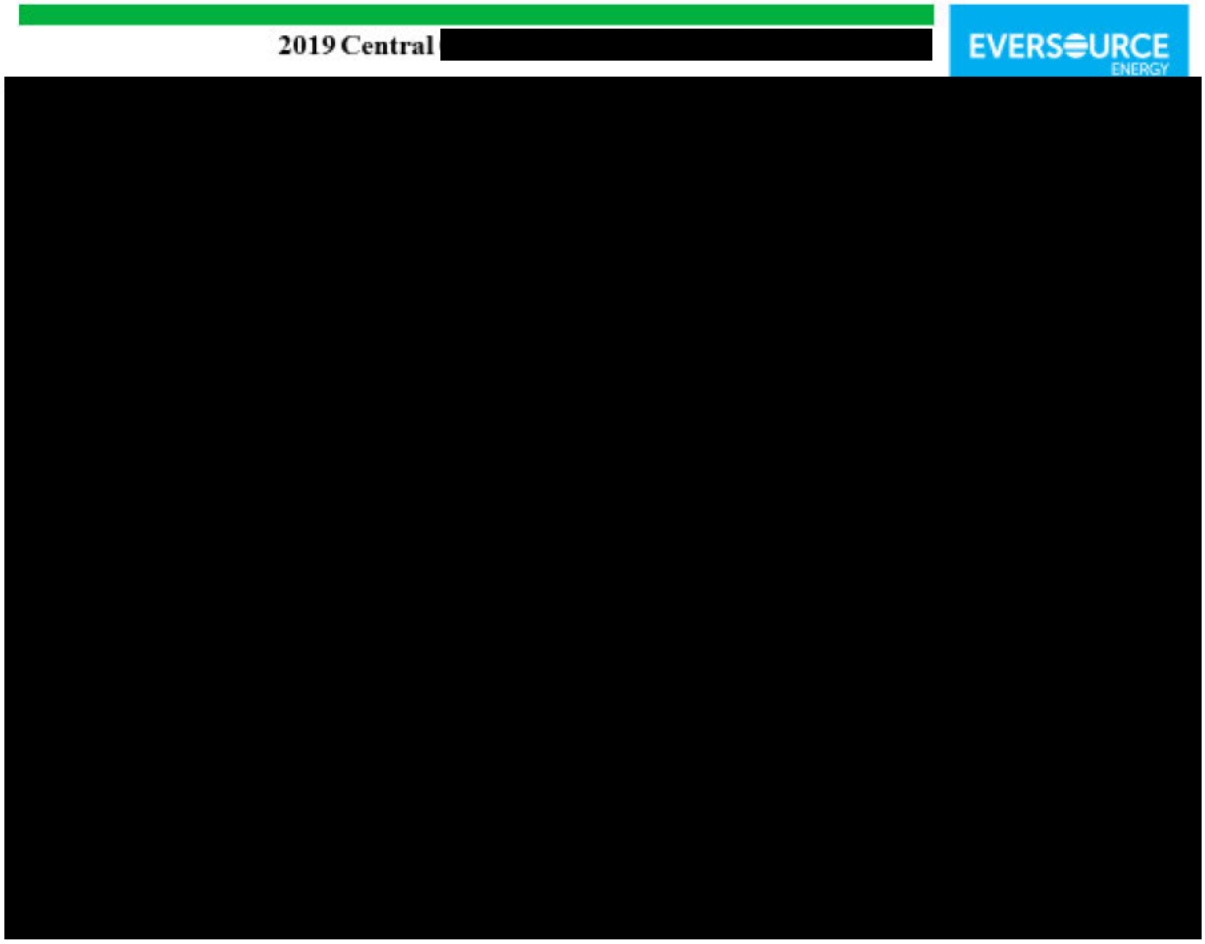


Figure 2 – 2019 Chart indicating [redacted]



Figure 3 – Aerial view of [redacted]



Figure 4 –Aerial view of [redacted]

Project Checklist – Transmission and Substation

INSTRUCTIONS:
It is the responsibility of the initiator to contact the area disciplines to determine if the project considerations contained in this list are applicable to their project. They should fill out the checklist and determine a transition plan for 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	

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]

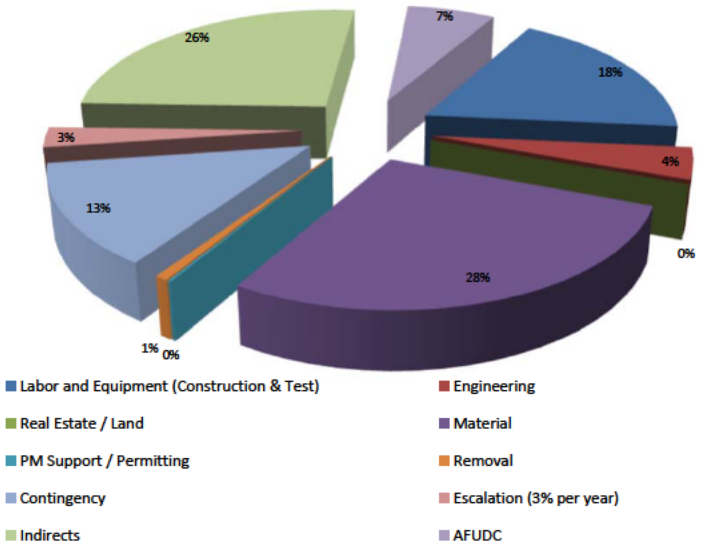
ead Commissioning Engineer mandays are included in the estimate.

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		[redacted]
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	[redacted]	
Contingency			$37,950		$2,668		$0		$0		$0		$40,618	[redacted]	
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	[redacted]	
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	[redacted]	
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 %														[redacted]	In House MDay Rate
Civil (Internal)	$0		$130,480		$83,880		$0		$0		$0		$214,360		[redacted]
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	[redacted]	Contractor MDay Rate
Contractor Civil	$0		$0		$0		$0		$0		$0		$0		[redacted]
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	[redacted]	
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 - %														[redacted]	In House MDay Rate
Civil	$0		$13,048		$8,388		$0		$0		$0		$21,436		[redacted]
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		[redacted]
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	[redacted]	
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	[redacted]	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	[redacted]	
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		[redacted]
Escalation					$0		$0		$0		$0		$0		
LT Subtotal	$0		$0		$0		$0		$0		$0		$0		=If Crossfoot Verification
Purchase Land	$0		$0				$0		$0		$0		$0		
Fees & Payments	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0	[redacted]	
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	[redacted]	
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	[redacted]	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 [redacted]

[redacted] 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 [redacted] Project CD00891 calls for the [redacted]

- [redacted]

[redacted]

- [redacted]

[redacted]

[redacted]

Improve Customer Reliability by [redacted]

There are [redacted]

New Circuit [redacted]

EVERSOURCE
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]_____ *3/16/20*_____

Signature *Date*