Operations Project Authorization Form

Approved at December 23, 2019 EPAC
Link to Meeting Minutes

Date Prepared: December 12, 2019	**Project Title: [redacted] Replace SWGR SF6 Breakers**
Company/ies: Eversource CT	**Project ID Number: CS00360**
Organization: Asset Management	**Class(es) of Plant: Distribution Substation**
Project Initiator: [redacted]	**Project Category: Stations – Circuit Breakers**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Replace obsolete equipment**
Estimated in service date: 06/30/2020	**If Transmission Project, PTF/Non-PTF: Non-PTF**
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: No**
Total Request: $615K	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding approval of $615K for the [redacted] This project was originated in 2016 with annual work order DSN62003 approved for $100K to replace [redacted]

DSN62003 has accumulated a spend of $197K as of December 13,2019. The circuit breakers have been procured and engineering is ongoing. [redacted]

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2019	2020	2021	Totals
Capital Additions - Direct	$100	$204	$202	$ -	$406
Less Customer Contribution	$ -	$ -	$ -	$ -	$ -
Removals net of Salvage ____%	$ -	$1	$6	$ -	$7
Total - Direct Spending	$100	$205	$208	$ -	$413
Capital Additions - Indirect	$ -	$56	$113	$ -	$169
Subtotal Request	$ -	$261	$321	$ -	$582
AFUDC	$ -	$8	$26	$ -	$34
Total Capital Request	$100	$269	$346	$ -	$616
O&M	$ -	$ -	$ -	$ -	$ -
Total Request	**$100**	**$269**	**$346**	**$ -**	**$616**

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2019	2020	2021	Totals
Straight Time Labor	$27	$24	$ -	$51
Overtime Labor	$ -	$ -	$ -	$ -
Outside Services	$21	$167	$ -	$188
Materials	$155	$2	$ -	$157
Other, including contingency amounts (describe)	$2	$15	$ -	$17
Total Direct Costs	**$205**	**$208**	**$ -**	**$413**
			$ -	
Indirect Capital Costs	**2019**	**2020**	**2021**	**Totals**
Indirects/Overheads (including benefits)	$56	$113	$ -	$169
Capitalized interest or AFUDC, if any	$8	$26	$ -	$34
Total Indirect Costs	**$64**	**$139**	**$ -**	**$203**
			$ -	
Total Capital Costs	**$269**	**$347**	**$ -**	**$616**
Less Total Customer Contribution	$ -	$ -	$ -	$ -
Total Capital Project Costs	**$269**	**$347**	**$ -**	**$616**
Total O&M Project Costs	$ -	$ -	$ -	$ -

Note: Explain unique payment provisions, if applicable:

The $17K in contingency is to address potential outage delays.

Future Financial Impacts:

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

Future Costs	Year 20__	Year 20__	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.

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__	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: No

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

Technical Justification:

Project Need Statement

The [redacted]

Project Objectives

[redacted]

Project Scope

[redacted]

Background / Justification

[redacted]

Business Process and / or Technical Improvements:

This project will replace obsolete equipment and increase reliability.

Alternatives Considered with Cost Estimates

[redacted]

Refurbishment and replacement with refurbished circuit breakers was considered; however, it was determined the preferred solution to replace the circuit breakers since the circuit breakers reached end-of-life and there was a desire to use the standard vacuum circuit breaker designed used in current switchgear applications.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
EPAC Approval	Q4 2019
Engineering & Design	Q1 2020
Procurement	Q1 2020
Construction & Testing	Q2 2020
In-Service Date	6/30/2020
Project Closeout	Q4 2020

Regulatory Approvals

N/A

Risks and Risk Mitigation Plans

[redacted]

References

- 2016 Substation Technical Services Presentation – Proposal to Replace [redacted]

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

- Figure 1 - [redacted] Station Diagram
- Figure 2 - [redacted] One - Line

Figure 1 - [redacted] Station Diagram

[redacted]

Figure 2 - [redacted] One - Line

APPENDIX A

Foxwoods One-line Visio diagram

[redacted]

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Project Checklist – Transmission and Substation

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

Checklist for Studies and Processes of a Transmission & Substation Capital Project					
Project Name: [redacted] – Replace SWGR SF6 Breakers				**Project ID Number: CS00360**	
Facility Type: ☐ BPS ☐ BES ☐ PTF ☐ non-PTF ☐ CIP ☒ Distribution					
PLANNING					
Is a NX-9 required?				No	
Is an ISO-NE PAC presentation required?				No	
Is a PPA required?				No	
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?				No	
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?				No	
Is there an impact to the existing ground grid?				No	
Is a Transient Over Voltage (TOV) analysis required?				No	
P&C ENGINEERING					
OP-22 - Are PMUs and DDR required?				No	
If BPS, is an NPCC Directory #4 presentation required?				No	
Are ISO-NE OP-24 Appendix B updates necessary?				No	

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Checklist for Studies and Processes of a Transmission & Substation Capital Project	
Project Name: [redacted] – Replace SWGR SF6 Breakers	**Project ID Number: CS00360**
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?	No
PERMITTING	
Is there any permitting required?	No
SITING & CONSTRUCTION SERVICES (OUTREACH)	
What is the level of outreach expected?	Low
INITIATOR	
Has a field constructability review been completed?	Yes
INVESTMENT RECOVERY	
Does the project require development of an Investment Recovery plan?	Yes
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?	No

Cost Estimate Backup Details

Project Title: [redacted] – Replace [redacted] Breakers TAF / Project #: TBD	Prior Yrs $	2019 Mdays	N/A $	2020 MDays	1 $	2021 MDays	2 $	2022 MDays	3 $	2023 MDays	4 $	TOTAL MDays	N/A $	%	Escalation 3.0%
ENRXX-TG ENG / DESIGN															Avg ENG Rate
Substation Engineering	$0	[redacted]	$1,480	[redacted]	$1,480	0	$0	0	$0	0	$0	[redacted]	$2,960		370
Substation Design	$0		$2,590		$2,960	0	$0	0	$0	0	$0	[redacted]	$5,550		
Substation Drafting	$0		$1,850		$1,850	0	$0	0	$0	0	$0	[redacted]	$3,700		
Protection & Control Engineering	$0		$1,480		$740	0	$0	0	$0	0	$0	[redacted]	$2,220		
Transmission Line & Civil Engineering	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Underground Transmission Line Engineering	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Survey Engineering	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Telecom Engineering	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
SS Technical Engineer	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Apparatus Specialist	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Escalation					$211		$0		$0		$0		$211		
LT Subtotal	$0		$7,400	[redacted]	$7,241	0	$0	0	$0	0	$0	[redacted]	$14,641	$14,641	=If Crossfoot Verification
Distribution Contractor Engineering	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		370
Eng Contractor = W19 x Material & Construction Cost	$0		$17,882		$17,961		$0		$0		$0		$35,843	10.0%	
Contingency			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$539		$0		$0		$0		$539		
ENRXX TOTAL	$0		$25,282		$25,741		$0		$0		$0		$51,023	$51,023	=If Crossfoot Verification
PSMXX-PROJECT MGR & SUPPORT															
Project Management/Engineer (PM)	$0	[redacted]	$1,110	[redacted]	$2,590	0	$0	0	$0	0	$0	[redacted]	$3,700		
Project Planning/Cost (IP)	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Contracts/Purchasing (C/P)	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
System Planning	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Environmental	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Siting / Permits	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Legal	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Estimating	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		
Escalation					$78		$0		$0		$0		$78		
LT Subtotal	$0	[redacted]	1,110	[redacted]	$2,668	0	$0	0	$0	0	$0	[redacted]	$3,778	$3,778	=If Crossfoot Verification
Employee Expenses	$0		$11		$27		$0		$0		$0		$38	1%	
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			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$1		$0		$0		$0		$1		
PSMXX-PROJECT MGR & SUPPORT TOTAL	$0		$1,121		$2,696		$0		$0		$0		$3,817	$3,817	=If Crossfoot Verification
CSTXX-CONSTRUCTION - Additions %														100.0%	In House MDay Rate
Civil (Internal)	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$466
Electrical (Internal)	$0	[redacted]	$14,220	[redacted]	$12,798	0	$0	0	$0	0	$0	[redacted]	$27,018		$474
Test (Internal)	$0	[redacted]	$2,370	0	$0	0	$0	0	$0	0	$0	[redacted]	$2,370		$474
Other - Switch / Tag Support (Internal)	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$474
Construction Reps (internal)	$0		$0		$0	0	$0	0	$0	0	$0	0	$0		$370
Escalation					$384		$0		$0		$0		$384		
LT Subtotal	$0	[redacted]	$16,590	[redacted]	$13,182	0	$0	0	$0	0	$0	[redacted]	$29,772	$29,772	=If Crossfoot Verification
Employee Expenses	$0		$166		$132		$0		$0		$0		$298	1%	Contractor MDay Rate
Contractor Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	3.9%	$880
Contractor Electrical	$0	0	$0	[redacted]	$40,320	0	$0	0	$0	0	$0	[redacted]	$40,320	3.9%	$1,120
Contractor Test	$0	0	$0		$43,200	0	$0	0	$0	0	$0		$43,200	3.9%	$1,200
Contractor Other		0	$0		$36,000	0	$0	0	$0	0	$0		$36,000	3.9%	$1,200
Contractor Construction Reps	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	3.9%	$1,120
Misc. Costs (rigging, oil handling, mob / demob, material testing, soil mgt, etc.)	$0		$0		$0		$0		$0		$0		$0	3.9%	
Contractor Equipment = % of Total Construction Labor	$0		$3,318		$19,264		$0		$0		$0	0	$22,582	20.0%	
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			$2,007		$15,210		$0		$0		$0		$17,217	10.0%	
Escalation					$4,624		$0		$0		$0		$4,624		
CSTXX TOTAL	$0		$22,081		$171,932		$0		$0		$0		$194,013	$194,013	=If Crossfoot Verification
REMXX-TG REMOVAL - %														10.0%	In House MDay Rate
Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$466
Electrical	$0	[redacted]	$1,422	[redacted]	$1,422	0	$0	0	$0	0	$0	[redacted]	$2,844		$474
Escalation					$43		$0		$0		$0		$43		
LT Subtotal	$0	[redacted]	$1,422	[redacted]	$1,465	0	$0	0	$0	0	$0	[redacted]	$2,887	$2,887	=If Crossfoot Verification
Employee Expenses	$0		$14		$15		$0		$0		$0		$29	1%	Contractor MDay Rate
Contractor Civil	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	3.9%	$880
Contractor Electrical	$0	0	$0	[redacted]	$4,480	0	$0	0	$0	0	$0	[redacted]	$4,480	3.9%	$1,120
Contractors - Include Sales Tax	$0		$0		$0		$0		$0		$0		$0		
Contingency			$0		$0		$0		$0		$0		$0	0.0%	
Escalation					$135		$0		$0		$0		$135		
REMXX TOTAL	$0		$1,436		$6,095		$0		$0		$0		$7,531	$7,531	=If Crossfoot Verification
MATXX-TG MATERIAL (Includes Tax)															
Misc Purchases (Credit Card Etc.)	$0		$201		$1,521		$0		$0		$0		$1,722	1%	1% Construction Labor
Stock	$0		$0		$0		$0		$0		$0		$0		
Direct	$0		$155,100		$0		$0		$0		$0		$155,100		
Contingency Excluding Big Ticket Items			$2		$15		$0		$0		$0		$17	1.0%	
Escalation					$46		$0		$0		$0		$46		
MATXX TOTAL	$0		$155,303		$1,582		$0		$0		$0		$156,885	$156,885	=If Crossfoot Verification
Contingency Excludes Large Items	$0		$155,100		$0		$0		$0		$0		$155,100		Note Only - Large Items
LNDXX-TG LAND															ENG Blended Rate
Real Estate	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$370
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	0.0%	
Escalation					$0		$0		$0		$0		$0		
LNDXX TOTAL	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	$0	=If Crossfoot Verification
DIRECT COST TOTAL	$0		$205,223		$208,046		$0		$0		$0		$413,269		
INDIRECTS															
Non-Productive Allocation (ZB-TM1-ZNP)	$0		$3,655		$3,285		$0		$0		$0		$6,940	13.78%	
Payroll Benefits Allocation (ZE-TM1-Z93)	$0		$14,135		$11,167		$0		$0		$0		$25,302	46.84%	
Material Stores Allocation (Stock) <25k (ZC-TM1-Z91)	$0		$30		$228		$0		$0		$0		$258	15.00%	Excludes Big Ticket Tabs
Gen Service Co. OH Allocation (ZF-TM1-Z94)	$0		$0		$0		$0		$0		$0		$0	0.00%	
E&S Allocation (25%<20M<3%) - (ZI-TM1-Z96)	$0		$26,205		$79,807		$0		$0		$0		$106,012	40.00%	
Misc. Dist. Exp. Cap. Allocation (ZH-TM1-Z92)	$0		$3,276		$9,976		$0		$0		$0		$13,252	5.00%	
AS&E Allocations (ZJ-TM1-Z90)	$0		$1,115		$1,513		$0		$0		$0		$2,628	0.50%	
Vehicle Allocations (ZV-TM1-Z98)	$0		$7,426		$6,675		$0		$0		$0		$14,101	28.00%	
INDIRECT Subtotal	$0		$55,842		$112,651		$0		$0		$0		$168,493	168,493	=If Crossfoot Verification
AFUDC (ZK - TM1-Z95)	$0		$7,780		$25,580		$0		$0		$0		$33,360	5.96%	Annual Rate
PROJECT COST TOTAL	$0		$268,845		$346,277		$0		$0		$0		$615,122	$615,122	=If Crossfoot Verification

Calc OH's	Prior Years	2019	Subtotal	2020	Subtotal	2021	Subtotal	2022	Subtotal	2023	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	$0	[redacted]	$7,400	[redacted]	$7,030	0	$0	0	$0	0	$0	[redacted]	$14,430		
Civil	$0		$0		$0	0	$0	0	$0	0	$0		$0		
Electrical	$0		$15,642		$14,220	0	$0	0	$0	0	$0		$29,862		
Test	$0		$2,370		$0	0	$0	0	$0	0	$0		$2,370		
Other Support/Switch/Constr Rep/RE	$0		$1,110		$2,590	0	$0	0	$0	0	$0		$3,700		
LT Sub - Total	$0		26,522		23,840	0	0	0	0	0	0		$50,362		$50,362
Employee Expenses	$0		$191		$174		$0		$0		$0		$365		
Materials	$0		$155,301		$1,521		$0		$0		$0		$156,822		
Contractors	$0		$21,200		$161,225		$0		$0		$0		$182,425		
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		$2,009		$15,225		$0		$0		$0		$17,234		
Escalation	$0		$0		$6,061		$0		$0		$0		$6,061		
Contingency & Escalation Subtotal	$0		$2,009		$21,286		$0		$0		$0		$23,295		
DIRECT TOTAL	$0		$205,223		$208,046		$0		$0		$0		$413,269		
Overhead Subtotal	$0		$63,622		$138,231		$0		$0		$0		$201,853		
PROJECT COST TOTAL	$0		$268,845		$346,277		$0		$0		$0		$615,122		$615,122

Summary by Activity															
Labor & Equipment (Construction & Test)	$0		$20,074		$151,714		$0		$0		$0		$171,788		
Engineering	$0		$25,282		$24,991		$0		$0		$0		$50,273		
Real Estate / Land	$0		$0		$0		$0		$0		$0		$0		
Material	$0		$155,301		$1,521		$0		$0		$0		$156,822		
Project Management Support / Permitting	$0		$1,121		$2,617		$0		$0		$0		$3,738		
Removals	$0		$1,436		$5,917		$0		$0		$0		$7,353		
Contingency	$0		$2,009		$15,225		$0		$0		$0		$17,234		
Escalation	$0		$0		$6,061		$0		$0		$0		$6,061		
Indirects	$0		$55,842		$112,651		$0		$0		$0		$168,493		
AFUDC	$0		$7,780		$25,580		$0		$0		$0		$33,360		
PROJECT COST TOTAL	$0		$268,845		$346,277		$0		$0		$0		$615,122		$615,122

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