EVERSOURCE
Project Authorization Form

Operations Project Authorization Form

Approved at February 14, 2018 EPAC

Link to Meeting Minutes

Date Prepared: 01/06/2018	**Project Title:** [redacted]-Regulator installation
Company/ies: Eversource CT	**Project ID Number: CS00290**
Organization: Asset Management	**Class(es) of Plant: Distribution Substation**
Project Initiator: [redacted]	**Project Category: General Modernization**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Line Regulation**
Estimated in service date: 12/2018	**If Transmission Project: PTF? No**
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/A**
Total Request: $394k	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding of $394K, which also includes charges on a current annual DSQ62048 of $14k, to address the replacement of the failed and yellow tagged (Y-17468-2016) [redacted].

Project Costs Summary

	Prior Authorized	2018	Totals
Capital Additions - Direct	$ 11	$284	$284
Less Customer Contribution	-	$0	$0
Removals net of Salvage ____%	-	$4	$4
Total - Direct Spending	$11	$288	$288
Capital Additions - Indirect	$2	$83	$83
Subtotal Request	$ 14	$371	$371
AFUDC	-	$23	$23
Total Capital Request	$14	$394	$394
O&M	-	$0	$0
Total Request	$14	$394	$394

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	Prior Authorized	2018	Total
Straight Time Labor	.069	68	68
Overtime Labor	.134		.134
Outside Services		84	84
Materials	11.7	111	111
Contingency – see below		25	25
Total	11.9	288	288

Indirect Capital Costs		2018	Total
Indirects/Overheads (including benefits)		83	83
Capitalized interest or AFUDC, if any		23	23
Total	2.190	394	394

Total Capital Costs	14	394	394
Less Total Customer Contribution		0	0
Total Capital Project Costs	14	394	394
Total O&M Project Costs		0	0

Note: Annual project DSQ62048 was created to install regulators on the [redacted] which currently has the operational caution yellow tag. The scope was increased by the circuit owner to include regulation on the [redacted] which now warranted a specific project. The current charges on DSQ62048 will be rolled in to this project which is reflected above in the prior authorized amount.

Contingency:	Potential underground interferences	$8,111
	Material pricing varies from estimate	$16,702
	Total	$24,813

Technical Justification:

Project Need Statement
To address the yellow tag placed on the [redacted]

Project Objectives

To provide regulation on the [redacted] and to remove the current yellow tag on the [redacted]

Project Scope

Install [redacted]. Engineering has determined that there will be some foundation and structure work required. There are existing [redacted]

Background / Justification

The [redacted]

Currently the [redacted] are unregulated. [redacted]

The Decision Making Estimate covers work which originally was proposed to be completed under the following annual work order, DSQ62048. The annual work order should be cancelled and any charges should be transferred to this capital specific project. Previous spend on substation annual DSQ62048 is $14,125.65. The $14k spent covered material costs and project loaders.

Business Process and / or Technical Improvements:

The proposed regulators to be installed on both the [redacted] will be of the latest design and control functions. It will be determined if a communication connection to our SCADA system can be installed for operational information. [redacted]

Alternatives Considered with Cost Estimates

The failed 3ph regulator could be replaced by a similar 3 phase unit. The cost for a new 3 phase unit came in at roughly $240k depending on the manufacture. For cost reasons, this alternative was not chosen.

A second alternative would be to replace the [redacted] This option estimated at $212.7k. Due to the cost and future circuit expansion plans to [redacted] this option was not chosen. Reference project CD01065.

Another option reviewed was the repair of the existing [redacted] The equipment is obsolete and parts for this equipment are not available.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Engineering	Spring 2018
Drawing issue	June 2018
ISD	12/31/2018

Regulatory Approvals

N/A

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Internal construction resources not available to perform the work.	2018	Low Impact	Internal workforce will be taking on this project
Internal engineering resources not available to perform the work.	2017	Low Impact	Internal engineering has developed the project drawings.
Materials Shortage or long lead times	2017	Low Impact	The regulators are on our standards and spare are available. Material has been ordered.

References

The project assignment sheet for annual project DSN62048 has been included for reference. This sheet will have the original engineering scope description and estimate.

Tag Number:	Y-17468-2016
Location	[redacted]
Town	Ledyard
Line or Equipment:	
Circuit Number/Substation:	[redacted]
Pole/Switch/Device #	
Person Responsible/Tagholder [redacted]	
Current Stake Holder: [redacted]NUS **Department:** CT T+D STATION OPS MGMT 61	**Date Assigned:** 06/17/2016 **Date Completed:**
Stake Holder Comments: 2-1-2018 conference call with engr. And S/S ops to discuss plan. SPG	

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

[redacted]



Project Checklist – Transmission and Substation

Checklist for Studies and Processes of a Transmission & Substation Capital Project				
Project Name : [redacted] Regulator installation				**PAF No: CS00290**
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	

Checklist for Studies and Processes of a Transmission & Substation Capital Project	
Project Name : [redacted] Regulator installation	**PAF No: CS00290**
TRANSMISSION LINE ENGINEERING	
Are there any changes that affect the baseline EMF?	No
Are there any changes that affect the baseline EMI?	No
Is there an impact to the existing ground grid?	No
SITING	
Is a Siting application or petition required?	No
PERMITTING	
Is there any permitting required?	No
INITIATOR	
Has a field constructability review been completed?	Yes

Cost Estimate Backup Details

Major Materials: 6 single phase regulators

The cost estimate of $394 reflects the use of contractor support. The higher of the two cost estimates is used for new project proposals in the event the project is awarded to an outside contractor. The $394k estimate will cover the current charges on annual DSQ62048.

Below is a snap shot of the current annual work order DSQ62048 status in Power Plan with total charges spent to date.

Work Order Numbe	Description	Company	Status	Total Charges (Financial)
DSQ62048	Replace failed [redacted] 3ph regulator	Connecticut Light & Power	open	$14,125.65

Distribution Substation Engineering and Partial ACT Estimate

PEM: [redacted] **Date of Estimate:** 8/14/2017

Project Title: [redacted] S/S - Replace failed regulator

Description: Replace the failed three phase regulator on the [redacted] feeder with three single phase regulators and adding three single phase regulators on the [redacted] feeder.

Operating Company:	CL&P
Year of Construction:	2018

Project No.	
In Service Date:	05/31/2018

Labor Estimates	Mandays	NU Labor Daily Rate	NU Labor Labor Total	Outsourced Labor Daily Rate	Outsourced Labor Labor Total
NUMSO - NUSCO Protection & Controls	1	$371	$371	$371	$371
NUMSO - NUSCO Drafting	4	$249	$997	$249	$997
NUMSO - NUSCO Electrical Design	6	$348	$2,087	$348	$2,087
NUMSO - NUSCO Project Engineering/Management	2	$498	$997	$498	$997
NUMSO - NUSCO Apparatus Specialist	0	$498	$0	$498	$0
NUMSO - NUSCO Civil Engineering	3	$498	$1,495	$498	$1,495
NUMSO - NUSCO Civil Design	0	$368	$0	$368	$0
NUMSO - NUSCO Permitting & Surveying	0	$283	$0	$283	$0
ADDS0 - General Construction	55	$481	$26,463	$720	$39,600
ADDS0 - Operating Company Manpower	4	$502	$2,008	$502	$2,008
ADDS0 - Test	10	$502	$5,020	$1,088	$10,880
ADDS0 - Electrical Construction	41	$502	$20,582	$720	$29,520
ADDS0 - Construction Rep	0			$400	$0
ADDS0 - Transformer Shop	0	$398	$0	$398	$0
Totals	126		$60,021		$87,955

Direct Charge Materials	$110,400
Stock Materials	$944
Equipment & Vehicles:	$30,312
Contract Work:	$0
Taxes (4.6%):	$5,890
AFUDC:	$18,524

Environmental Remediation:	

Contingencies		
Op. Co. Labor	15%	$8,111
Materials	15%	$16,702
Contractor	0%	$0

MIB Data		
Materials	ADDS0 AM	$111,344
Contract Work:		$0
Equip&Vehicles:	ADDS0	$30,312
CL&P Labor	ADDS0	$54,074
NUSCO Labor	NUMS0	$5,947
Removals	RMVS0	$3,505
Removals %		1%

Construction Rep & Operating Co. Manpower	
Equip& Veh	$602
Labor Loader	$8,272
Stores	$123
E&S	$2,362
AFUDC:	$23,513

	Adder
Engineering Contractor	$5,947
Contractor Per Diem	$200
	$21,200
Removals %	5%

Loaders						
	NUSCO Labor Loader	97.5%	$5,799	NUSCO Labor Loader	97.5%	$5,799
	CL&P Labor Loader	81.7%	$50,834	Labor Loader	60.0%	$48,000
	Stores	13.0%	$123	Stores	13.0%	$123
	E&S	12.8%	$15,920.05	E&S	12.8%	$13,756.91
	AS&E	1.34%	$3,676	AS&E	1.34%	$4,025

Total Project Capital Cost	**$327,256**	**$394,038**
Subtotal without AFUDC/AS&E	$305,056	$371,489

WORK SCOPE

Major Materials: 6 single phase regulators

Misc: