Operations Project Authorization Form

Approved at March 21, 2019 EPAC
Link to Meeting Minutes

Date Prepared: 3/11/2019	**Project Title: [redacted] - Replace [redacted] OCBs**
Company/ies: Eversource CT	**Project ID Number: CS00114**
Organization: Asset Management	**Class(es) of Plant: Distribution [redacted]**
Project Initiator: [redacted]	**Project Category: [redacted] - Breakers**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Replacement of oil circuit breakers**
Estimated in service date: 07/31/2019	**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: $2,341K	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is seeking full funding of $2,341K to replace [redacted] Oil Circuit Breakers (OCBs) at [redacted] Eversource CT has an initiative (under PURA Docket No. 14-05-06) that began in 2006 to replace all OCBs in [redacted] to minimize environmental impacts from leaking and failed equipment. The initiative started by targeting OCBs with PCB bushings, then in 2012, the initiative increased in scope to include all distribution substation OCBs. The previous authorized amount of $125K was approved in Power Plan on November 03, 2016 for preliminary engineering. The total spend to date as of March 12, 2019 for the project is $453K. The preliminary engineering dollars were spent on materials at $210K, $88K was allocated to labor for engineering and document review with the remaining dollars for overhead indirect costs at $155K.

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	Prior Spend	2019	Totals
Capital Additions - Direct	$89	$274	$1,166	$1,440
Less Customer Contribution	$0	$0	$0	$0
Removals net of Salvage 6%	$8	$17	$74	$92
Total - Direct Spending	$97	$291	$1,241	$1,532
Capital Additions - Indirect	$26	$127	$564	$691
Subtotal Request	$124	$418	$1,805	$2,223
AFUDC	$1	$12	$106	$118
Total Capital Request	$125	$430	$1,911	$2,341
O&M	$0	$0	$0	$0
Total Request	$125	$430	$1,911	$2,341

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	Prior Spend	2019	2020	Total
Straight Time Labor	$37	$24	$0	$61
Overtime Labor	$0	$0	$0	$0
Outside Services	$45	$1,161	$0	$1,206
Materials	$210	$55	$0	$265
Other, including contingency amounts (describe)	$0	$0	$0	$0
Total Direct Costs	$291	$1,241	$0	$1,532

Indirect Capital Costs	Prior Spend	2019	2020	Total
Indirects/Overheads (including benefits)	$127	$564	$0	$691
Capitalized interest or AFUDC, if any	$12	$106	$0	$118
Total Indirect Costs	$139	$670	$0	$809
Total Capital Costs	$430	$1,911	$0	$2,341
Less Total Customer Contribution	$0	$0	$0	$0
Total Capital Project Costs	$430	$1,911	$0	$2,341
Total O&M Project Costs	$0	$0	$0	$0

Note: Explain unique payment provisions, if applicable

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__	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

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__	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

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? There are no AROs associated with this project.
If yes, please provide details:

Are there other environmental cleanup costs associated with this project? No
If yes, please provide details:

Technical Justification:

Project Need Statement

[redacted] and has been identified as having [redacted] oil circuit breakers (OCBs). The [redacted] Eversource CT has an initiative (under PURA Docket No. 14-05-06) that began in 2006 to replace all OCBs from distribution substations to minimize environmental impacts from leaking and failed equipment. The initiative started by targeting OCBs with PCB bushings. In 2012, the initiative increased in scope to include all substation OCBs.

Project Objectives

The main objectives of this project are to:

- Reduce environmental exposure
- Reduce maintenance intervals
- Increase employee and customer safety
- Increase system reliability

Project Scope

Replace [redacted] OCBs [redacted]. Refer to Figure 1 and Figure 2 for typical breakers being replaced. [redacted]

Nom	Age	Tank Style	Mfg.	Model	Load Rating	V Class	Interrupt kA
[redacted]							

[redacted] See Figure 3

- Additional scope [redacted] he funding for low risk has been included for this project for the [redacted]

There will also be a need to [redacted]. See Figure 4 for an example of a modified foundation.

Background / Justification

The overall capital initiative to eliminate oil-filled circuit breakers from the system was presented to PURA within docket number 14-05-06. It started off with replacing OCBs with PCB bushings and has now expanded to all OCBs. The initiative justification was due to the amount of environmental damage and the associated dollars the company was exposed to with a potential PCB bushing/breaker catastrophically failing.

The remaining [redacted] OCBs that range in [redacted], are what remain after replacing [redacted] OCBs with PCB bushings under projects 201232 and 201330. The initiative was created to decrease the company's environmental exposure to oil spills and leaks, as well as replacing a vital component of aging substation infrastructure.

The OCBs being replaced [redacted].

Business Process and / or Technical Improvements:

The benefit to customers will be improved reliability and less environmental risk in the future by replacing aging oil filled equipment that is both a safety and environmental concern. [redacted]

Alternatives Considered with Cost Estimates

A do-nothing approach is not recommended as an alternative because it does not address the environmental concerns the regulatory bodies were told would be addressed in PURA Docket No. 14-05-06.

As an alternative for the outdoor OCB replacement, each of the OCB replacement projects have been reviewed for [redacted] is roughly $4M to $5M to install. [redacted] due to being cost prohibitive.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Engineering	November 2018
Procurement	January 2019
Construction start	February 2019
Construction finish and In-Service	July 31, 2019

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.	2019	Low	OCB removals and [redacted] will be performed by an outside contractor.
Internal engineering resources not available to perform the work.	2019	Low	This project will be engineered by outside services, with limited support from internal engineering.
[redacted]	2019	Low/Medium	[redacted] during the OCB replacements. [redacted]
[redacted]	2019	High	[redacted]
[redacted]	2019	Medium	[redacted] an-hours were included in the estimate for this.

References

CL&P Operating Initiatives 2014 to 2019, Docket# 14-05-06

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

Figure 1 - Nomenclature diagram indicating locations of OCBs to be replaced
Figure 2- [redacted]
Figure 3 – [redacted]
Figure 4 – [redacted]



Figure 1 - Nomenclature diagram indicating locations of OCBs to be replaced

[redacted]



Figure 4 – [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 the purpose of project execution.

Checklist for Studies and Processes of a Transmission & Substation Capital Project	
Project Name: [redacted] **- Replace** [redacted] **OCBs**	**PAF No: CS00114**
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?	[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	No
Is preliminary short circuit/ breaker duty analysis required?	Yes
Are there any changes to the baseline audible noise?	No
Is there an impact to the existing ground grid?	Yes
Is a Transient Over Voltage (TOV) analysis required?	No
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] **Replace OCBs**	**PAF No: CS00114**
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?	None
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 the Eversource Estimating Team
Who prepared the estimate?	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes

Cost Estimate Backup Details

Funding Project Cash Flow **CS00114** ***ISD:*** **12/31/18** Bo CF 11/20/17

Operating Company	CL&P
Budget Year	2017
Budget Status on Jan 1	TAF
Latest Approved Status or ISD	TAF
SS Description	[redacted] Replace [redacted] OCB's
PURA Initiative	ENVIRNSS
Project Mgr	[redacted]
Project Engineering Mgr	
Accounting Work Order #	CS001141

($000's)

RESOURCES	Prior Yrs	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	TOTAL
DIRECT	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	2017	Project
LT - CT_L01:Labor EESCO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.4	0.5	2.5	4.8	11.0	11.0
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	0.9	0.0	2.4	0.5	2.5	4.8	11.0	11.0
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	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	0.0	0.0	0.0	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0
Total Direct - Including Labor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.4	0.5	2.5	4.8	11.0	11.0
INDIRECT															
CT_ZNP:Non-Productive EESCO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.1	0.4	0.8	1.8	1.8
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	0.7	0.0	1.9	0.4	1.9	3.7	8.5	8.5
CT_Z96:Alloc- E+S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.1	0.6	2.3	3.7	3.7
CT_Z92:Alloc-Misc Costs Cap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5	0.8	0.8
CT_Z90:Alloc- AS+E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.2
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	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	3.0	0.6	3.1	7.3	15.0	15.0
Subtotal X-AFUDC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.3	1.1	5.5	12.1	26.0	26.0
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	0.1	0.1	0.2	0.2
Total Project Prior To Date-->Month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.3	1.1	5.6	12.2	26.3	26.3
Total Project - Cumulative To Date	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.1	7.4	8.5	14.1	26.3	26.3	
CF vs. Resource Sheet - Conditional Format		0.00	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#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	0.0	0.0	0.0	0.0	0.0	0.0	
Monthly Actual & ----------->YTD Actual		0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.3	1.1	5.6	12.2	26.3	YTD Act
Variance Mo. Actual vs. Mo. Budget &--- ->YTD vs. Budget		0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.3	1.1	5.6	12.2	26.3	YTD Var
Variance Mo. Actual vs. Budget & ---------->YE vs. Budget		0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.3	1.1	5.6	12.2	26.3	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	2.0	0.0	5.3	1.1	5.6	12.2	26.3	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	[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	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 CS00114 *ISD:* 12/31/19 Bo CF 11/20/17

Operating Company	CL&P
Budget Year	2018
Budget Status on Jan 1	TAF
Latest Approved Status or ISD	PAF Pend
SS Description	[redacted] Replace [redacted] OCB's
PURA Initiative	ENVIRNSS
Project Mgr	[redacted]
Project Engineering Mgr	
Accounting Work Order #	CS001141

($000's)

RESOURCES DIRECT	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 2018	TOTAL Project
LT - CT_L01:Labor EESCO	11.0	0.6	11.7	0.0	0.1	0.3	1.5	1.9	3.4	4.3	0.3	0.0	0.9	25.0	35.9
LT - CT_LO1:Labor EECT - Civil, Elect, Test	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.2	0.0	0.0	0.9	0.9
L01-LT - Total Labor	11.0	0.6	11.7	0.0	0.1	0.3	1.5	1.9	3.7	4.7	0.5	0.0	0.9	25.9	36.8
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	11.3	0.0	0.0	0.0	0.0	0.0	188.1	0.0	9.9	0.4	0.0	209.7	209.7
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	24.1	20.6	0.1	(0.0)	44.7	44.7
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	11.3	0.0	0.0	0.0	0.0	0.0	188.1	24.1	30.5	0.5	(0.0)	254.4	254.4
Total Direct - Including Labor	11.0	0.6	23.0	0.0	0.1	0.3	1.5	1.9	191.8	28.8	30.9	0.5	0.9	280.2	291.2
INDIRECT															
CT_ZNP:Non-Productive EESCO	1.8	0.0	2.1	0.0	0.0	0.0	0.3	0.3	0.6	0.7	0.1	0.0	0.2	4.3	6.1
CT_ZNP:Non-Productive EECT	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
CT_Z91:Alloc-Mat loaders (Excludes >25K)	0.0	0.0	1.7	0.4	0.0	0.0	0.0	0.0	10.4	(0.6)	0.0	0.0	0.0	12.0	12.0
CT_Z93:Alloc-PR load Payroll Benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.4	0.4
CT_Z94:Alloc-GSCOH EESCO	8.5	0.5	9.4	0.0	0.1	0.2	1.2	1.5	2.8	3.4	0.2	0.0	0.7	19.9	28.4
CT_Z96:Alloc- E+S	3.7	0.3	5.8	0.0	0.1	0.5	2.6	3.4	6.6	29.8	18.1	(0.3)	1.1	68.0	71.8
CT_Z92:Alloc-Misc Costs Cap	0.8	0.1	1.2	0.0	0.0	0.0	0.1	0.2	0.4	1.7	1.0	(0.0)	0.1	4.7	5.4
CT_Z90:Alloc- AS+E	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	1.1	0.3	0.3	0.0	0.0	1.9	2.1
CT_Z98:Alloc - Veh Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.0	0.0	0.0	0.7	0.8
	15.0	0.9	20.4	0.4	0.2	0.8	4.3	5.5	22.2	35.9	19.8	(0.3)	2.1	112.2	127.2
Subtotal X-AFUDC	26.0	1.5	43.4	0.4	0.3	1.0	5.7	7.4	214.0	64.6	50.8	0.2	3.1	392.4	418.4
CT_Z95:Alloc-AFUDC	0.2	0.1	0.3	0.4	0.4	0.4	0.4	0.4	1.0	1.8	2.1	2.2	2.2	11.8	12.0
Total Project Prior To Date-->Month	26.3	1.6	43.7	0.8	0.6	1.4	6.2	7.9	215.0	66.4	52.9	2.4	5.3	404.2	430.5
Total Project - Cumulative To Date	26.3	27.9	71.5	72.3	73.0	74.4	80.5	88.4	303.4	369.9	422.7	425.1	430.5	430.5	
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		17.2	17.3	17.4	17.5	17.5	17.6	0.5	211.8	230.5	231.4	232.4	0.0	1,011.1	
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		1.6	43.7	0.8	0.6	1.4	6.2	7.9	215.0	66.4	52.9	2.4	5.3	404.2	YTD Act
Variance Mo. Actual vs. Mo. Budget &--->YTD vs. Budget		(15.6)	26.3	(16.6)	(16.8)	(16.1)	(11.4)	7.4	3.2	(164.1)	(178.6)	(230.0)	5.3	(607.0)	YTD Var
Variance Mo. Actual vs. Budget &----------->YE vs. Budget		(15.6)	26.3	(16.6)	(16.8)	(16.1)	(11.4)	7.4	3.2	(164.1)	(178.6)	(230.0)	5.3	(607.0)	YE Var
Variance Mo. Actual vs. LAB &----------->YTD vs. LAB														0.0	YTD Var
Variance Mo. Actual vs. LAB & ----------->YE vs. LAB		1.6	43.7	0.8	0.6	1.4	6.2	7.9	215.0	66.4	52.9	2.4	5.3	404.2	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		
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 5/14/18

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 **CS00114** *ISD:* 07/31/19 [redacted] Prepared PAF based [redacted] 02/21/19 Engineering Estimate

031119 PAF based on Cash Flow Projection

Operating Company	CL&P
Budget Year	2019
Budget Status on Jan 1	PAF Pend
Latest Approved Status or ISD	PAF Pend
SS Description	[redacted] Replace [redacted] OCB's
PURA Initiative	ENVIRNSS
Project Mgr	[redacted]
Project Engineering Mgr	
Accounting Work Order #	CS001141

($000's)

RESOURCES DIRECT	Prior Yrs Actual	JAN Actual	FEB Actual	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	35.9	2.4	2.6	3.0	3.0	3.0	3.0	7.2	0.0	0.0	0.0	0.0	0.0	24.2	60.2
LT - CT_LO1:Labor EECT - Civil, Elect, Test	0.9	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	0.9
L01-LT - Total Labor	36.8	2.4	2.6	3.0	3.0	3.0	3.0	7.2	0.0	0.0	0.0	0.0	0.0	24.2	61.0
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	209.7	0.0	0.0	0.0	0.0	55.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.3	265.0
AO - CT_OS1:OS Svc-Contr Env	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0
AQ - CT_OS0:OS Svc-Contr	44.7	1.9	(0.0)	200.0	400.0	554.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,156.3	1,201.0
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	254.4	1.9	(0.0)	200.0	400.0	614.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,216.6	1,471.0
Total Direct - Including Labor	291.2	4.3	2.6	203.0	403.0	617.7	3.0	7.2	0.0	0.0	0.0	0.0	0.0	1,240.8	1,532.1
INDIRECT															
CT_ZNP:Non-Productive EESCO	6.1	0.4	0.5	0.4	0.4	0.4	0.4	1.0	0.0	0.0	0.0	0.0	0.0	3.5	9.6
CT_ZNP:Non-Productive EECT	0.2	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	0.2
CT_Z91:Alloc-Mat loaders (Excludes >25K)	12.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	20.3
CT_Z93:Alloc-PR load Payroll Benefits	0.4	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	0.4
CT_Z94:Alloc-GSCOH EESCO	28.4	2.1	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	32.8
CT_Z96:Alloc- E+S	71.8	2.7	2.1	81.4	161.4	225.1	1.4	3.3	0.0	0.0	0.0	0.0	0.0	477.4	549.1
CT_Z92:Alloc-Misc Costs Cap	5.4	0.3	0.3	10.2	20.2	28.1	0.2	0.4	0.0	0.0	0.0	0.0	0.0	59.7	65.1
CT_Z90:Alloc- AS+E	2.1	0.0	0.0	1.1	2.1	3.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	6.6	8.8
CT_Z98:Alloc - Veh Clear	0.8	0.1	0.1	0.6	0.6	0.6	0.6	1.4	0.0	0.0	0.0	0.0	0.0	4.1	4.8
	127.2	5.8	5.2	93.6	184.7	265.9	2.6	6.2	0.0	0.0	0.0	0.0	0.0	563.9	691.2
Subtotal X-AFUDC	418.4	10.1	7.8	296.6	587.7	883.6	5.6	13.4	0.0	0.0	0.0	0.0	0.0	1,804.8	2,223.2
CT_Z95:Alloc-AFUDC	12.0	2.3	2.4	3.6	6.2	10.6	13.3	12.7	11.9	11.4	11.4	10.1	10.1	106.0	118.1
Total Project Prior To Date-->Month	430.5	12.4	10.2	300.2	593.9	894.2	18.9	26.0	11.9	11.4	11.4	10.1	10.1	1,910.8	2,341.3
Total Project - Cumulative To Date	430.5	442.9	453.1	753.3	1,347.2	2,241.4	2,260.3	2,286.3	2,298.3	2,309.6	2,321.0	2,331.1	2,341.3	2,341.3	
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		2.4	2.4	2.4	410.1	444.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	861.4	
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		12.4	10.2											22.6	YTD Act
Variance Mo. Actual vs. Mo. Budget &-- ->YTD vs. Budget		10.0	7.8											17.8	YTD Var
Variance Mo. Actual vs. Budget & ---------->YE vs. Budget		10.0	7.8	297.8	183.8	450.2	18.9	26.0	11.9	11.4	11.4	10.1	10.1	1,049.4	YE Var
Variance Mo. Actual vs. LAB &---------->YTD vs. LAB														0.0	YTD Var
Variance Mo. Actual vs. LAB & ---------->YE vs. LAB		12.4	10.2	300.2	593.9	894.2	18.9	26.0	11.9	11.4	11.4	10.1	10.1	1,910.8	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	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	
% 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		
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	

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)		0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378
CL&P Non-Productive (ZB)		0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378	0.1378
Stores (ZC)		0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500	0.1500
CL&P Payroll Benefits (ZE)		0.4684	0.4684	0.4684	0.4684	0.4684	0.4684	0.4684	0.4684	0.4684	0.4684	0.4684	0.4684
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)		0.3000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
MDEC (ZM)		0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500	0.0500
Admin Sal & Exp (ZJ)		0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
AFUDC (annual) (ZK)		0.0713	0.0713	0.0713	0.0713	0.0713	0.0713	0.0671	0.0626	0.0593	0.0563	0.0522	0.0522
AFUDC (monthly) (ZK)		0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0056	0.0052	0.0049	0.0049	0.0044	0.0044
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