Operations Project Authorization Form

Project Title: [redacted]	**Project Number: CD01525**
Date Prepared: 07/14/2022	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** SMART SWITCHES PROGRAM
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** Yes
Estimated in service date: June 1, 2022	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $171.8K	**Authorization Type:** Full Funding

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

CD01525 received initial funding of $151K at the April 9, 2020 CT PAC meeting. This full funding PAF is requesting $171.8K an increase of $20.8K (114%). The project was written as designed and there was no change in scope for this increase.

[redacted]

[redacted]

This project proposes creating a [redacted]

[redacted]

Project Costs Summary

Note: Dollar values are in thousands

Capital Costs	2022	2023	2024+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	$3.7	$0	$0	$3.7
Outside Services	$43.2	$0	$0	$43.2
Materials	$79.6	$0	$0	$79.6
Removals	$0	$0	$0	$0
Risk and Contingency	$0	$0	$0	$0
Other	$0	$0	$0	$0
Subtotal	**$126.5**	**$0**	**$0**	**$126.5**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	$42.4	$0	$0	$42.4
Capitalized interest or AFUDC, if any	$2.9	$0	$0	$2.9
Subtotal	**$45.3**	**$0**	**$0**	**$45.3**
Total Customer Contribution	$0	$0	$0	$0
Total Capital Project Costs	**$171.8**	**$0**	**$0**	**$171.8**

Technical Justification:

Project Need Statement

[redacted]

Project Objectives

The goal of the Smart Switch Program is to reduce the number of customers exposed to an outage event. The projects break up large customer zones by creating automated loops and adding sectionalizing reclosers in various settings profiles to isolate outages. The target of each project is to decrease customer zones to below 500. A zone that is broken in half with a tie to another source can improve the zone's reliability by 50%. Adding an additional device in a radial zone can improve the zone's reliability by 30%. Projects may include breaking up large customer zones with several devices and multiple ties.

Project Scope

The scope of this project is as follows:



Background / Justification

The Smart Switch Program is a continuation of an initiative that was approved as part of the System Resiliency PURA Docket 12-07-06RE01 which is a multiyear program to improve circuit reliability by adding automatic sectionalizing devices on overhead distribution circuits. The Smart Switch Program focuses on breaking up customer zones and lowering the average number of customers impacted by a backbone interruption.

The 2018 Smart Switch Ranking Program was created to identify backbone zones that would impact over 500 customers. These zones were then ranked based on the number of customers impacted over the past three years as follows:

2018 outages X 100% + 2017 outages X 66% + 2016 outages X 33%.

Projects must be created to reduce the number of customers impacted in that zone to 500 or less.

When creating projects for the highest ranked zones, also reduce the number of customers impacted to 500 or less for any other backbone zone on the same circuit if it is ranked in the top 100 devices.

The following is the [redacted] (April 2016 to March 2020).

[redacted]

[redacted] (ref DSEM 05.301)

Business Process and / or Technical Improvements:

Projects within the Smart Switch Program will increase the number of SCADA controlled devices on the system. This upgrade allows for better system visibility, faster restoration, outage isolation and reconfiguration of the system during planned and unplanned switching events. Customer zones are reduced to under 500, where possible (ref. DSEM 02.301).

Replacing the existing oil filled recloser with a new vacuum interrupting recloser at the new location would serve to move this device to a flatter, less hazardous location, as well as removing an oil filled device so close to a river, eliminating a potential environmental disaster.

Alternatives Considered with Cost Estimates

Option 01 includes [redacted]

Option 02 is the same as option 01, [redacted]

Project Option Comparison

Design Criteria	Option [redacted]	
Cost	$88k	$158k
Cost / CM Saved	$13.47/CM	$7.08/CM
Cost / CI Saved	$835/CI	$410/CI
Preferred option		X

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Initial Funding Authorization	March 2020
Detailed Design	June 2021
Full Funding Authorization	July 2021
Construction Begin	March 2022
Construction End	December 2022

Regulatory Approvals

None

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2022	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2022	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost if necessary.
Internal engineering resources not available to perform the work.	2021	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost if necessary.
Materials shortage or long lead times	2022	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2022	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2022	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods
Technological risks involving integration of new technology	2022	Low	Before use of new technology ensure support of standards and manufacture. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.

References

DSEM 02.301 – Automatic Sectionalizing Device Guidelines

DSEM02-301.pdf

DSEM 05.301 - Contingency Planning

DSEM05-301.pdf

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

1. **Project Maps**

CD01525_Project Maps.pdf

2. **Project One-Lines**

CD01525_Project_One-Lines.pdf

3. **Project Load Summary**

CD01525_Project Load Summary.pdf

4. **Cost Estimate Backup Details**

CD01525_project_needs_statement_Initial_

EVERSOURCE
Project Authorization Form

Work Classification

Category: Line

Type: SRSS

Type Desc: SMART SWITCHES PROGRAM

Work Type:

Ownership / Management

AWC: Cheshire

Statewide: No

Owner: [redacted]

Manager: [redacted]

Project Information

Status: Draft

SPS #:

AIS Score:

Associated Projects:

Assignment ID:

Patrol Find ID:

Budget Summary - Preferred Option

Create [redacted] Loop with SR, MR & TR

2022

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	[redacted]tall Loop Scheme with 24H5	Prelim	0	28%	$87,687	$87,687
2	[redacted]Install Mid-Point Recloser	Prelim	0	28%	$70,387	$70,387
				2022 Total:	$158,074	$158,074
				Total Project:	$158,074	$158,074

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted]	1	$87,687	$0	100%	$13.47	$13.47	☐
O2	[redacted]	1,2	$158,074	$0	100%	$7.08	$7.08	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	[redacted]tall Loop Scheme with	$87,687			$13.47	$13.47
2	[redacted]Install Mid-Point Recloser	$70,387			$4.45	$4.45