EVERSOURCE
Project Authorization Form

Operations Project Authorization Form

Date Prepared: 04/09/2020	**Project Title:** [redacted]
Company/ies: Eversource CT	**Project ID Number**: CD01522
Organization: Distribution Electric	**Class(es) of Plant:** Distribution
Project Initiator: [redacted]	**Project Category:** Smart Switch
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Project Purpose:** Eliminate large customer zone
Estimated in service date: 12/31/2021	**If Transmission Project: PTF?** N/A
Eng. /Constr. Resources Budgeted? No	**Capital Investment Part of Original Operating Plan?**
Authorization Type: Full Funding	**O&M Expenses Part of the Original Operating Plan?**
Total Request: $248k	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project will address the reliability of a large customer zone on the [redacted]

[redacted]

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2020	2021	20__+	Totals
Capital Additions - Direct	$0	$149,533	$0	$0	$149,533
Less Customer Contribution	$0	$0	$0	$0	$0
Removals net of Salvage ____%	$0	$6,260	$0	$0	$6,260
Total - Direct Spending	$0	$155,792	$0	$0	$155,792
Capital Additions - Indirect	$0	$84,641	$0	$0	$84,641
Subtotal Request	$0	$240,433	$0	$0	$240,433
AFUDC	$0	$3,859	$0	$0	$3,859
Total Capital Request	$0	$244,292	$0	$0	$244,292
O&M	$0	$3,646	$0	$0	$3,646
Total Request	$0	$247,938	$0	$0	$247,938

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2020	2021	Year 3+	Total
Straight Time Labor	$3,568	$0	$0	$3,568
Overtime Labor	$2,419	$0	$0	$2,419
Outside Services	$136,758	$0	$0	$136,758
Materials	$13,177	$0	$0	$13,177
Other, including contingency amounts (describe)	($131)	$0	$0	($131)
Total Direct Costs	**$155,792**	**$0**	**$0**	**$155,792**

Indirect Capital Costs	2020	2021	Year 3+	Total
Indirect/Overheads (including benefits)	$84,641	$0	$0	$84,641
Capitalized interest or AFUDC, if any	$3,801	$0	$0	$3,801
Total Indirect Costs	**$88,442**	**$0**	**$0**	**$88,442**
Total Capital Costs	**$244,234**	**$0**	**$0**	**$244,234**
Less Total Customer Contribution	$0	$0	$0	$0
Total Capital Project Costs	**$244,234**	**$0**	**$0**	**$244,234**
Total O&M Project Costs	**$3,704**	**$0**	**$0**	**$3,704**
Total Project Cost	**$ 247,938**	**$ -**	**$ -**	**$ 247,938**

Note: Explain unique payment provisions, if applicable

Future Financial Impacts:

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 project breaks 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 zone to below 500. A zone that is broken in half with tie to another source can improve the zone reliability by 50%. Adding an additional device in radial zone can improve the zone reliability by 30%. Project may include breaking up large customer zones with several devices and multiple ties.

On Completion of this [redacted]

Project Scope

[redacted]

Major Material:

1. 2 – Modify sectionalizing reclosers with various settings.
2. 3 - Cooper Nova/ Form 6 sectionalizing reclosers with various settings.
3. Installing Y upside down Y 6 step transformers to make [redacted] and [redacted] circuit live tie.(currently 60 degree out of phase)

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 outage history for [redacted] customer zone (January 2016 to April 2020)

[redacted]

The following is the outage history for [redacted] customer zone (January 2016 to April 2020)

[redacted]

The following is the outage history for [redacted] customer zone (January 2016 to April 2020)

[redacted]

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

[redacted]

Project Option Comparison

[redacted]			
Cost	$200k	$248k	**$393k**
Cost / MVA added	N/A	N/A	N/A
Cost / CM Saved	$10.36	$4.15	$4.66
Preferred option		X	

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Preliminary Approval	06/2020
Detailed Design	10/31/2020
Settings Requested	01/01/2021
Construction Start Date	03/2021
Construction End Date	07/2021

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.	2021	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Customer Permission / Siting Council / Municipal approvals	2021	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach
Internal construction resources not available to perform the work.	2021	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2021	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.

Storm delays	2021	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2021	Low	Schedule work to minimize system abnormal time. Most of this work will require system to be abnormal for any extended period of time.

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**



CD01522 [redacted] Existing Map.pdf



CD01522 [redacted] SS Option_3 Map.pdf



CD01522 [redacted] SS Option_5 Map.pdf



CD01522 [redacted] SS Option_6 Map.pdf

2. **Project One-Lines**



CD01522 One_line.pdf

3. **Project Load Summary**



[redacted]_Loadsheet.pdf

4. **Cost Estimate Backup Details**



CD01522_project_needs_statement.pdf