EVERSOURCE

Project Approval Form

Project Title: [redacted]	**Project Number: CD01849**
Date Prepared: 09/15/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** SMART SWITCHES PROGRAM
Project Initiator: [redacted]	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** No
Project Sponsor: [redacted]	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Required in service date: 12/31/23	
Total Capital Request: 268.1K	**Authorization Type:** Full Funding

1. Executive Summary

[redacted]

[redacted]

Partial funding was approved for this project in December 2021 at a capital cost of 321K. The project has been completed in the field and full funding is now being requested at a cost of $268.1K – a decrease of $52.9K or 82% of the partial funding. There was no scope change in the project. The lower cost was due to internal resources constructing the project versus using contractors, resulting in less labor and indirect costs.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023	2024	2025+	Total
Internal Labor and Construction Equipment	23.1	0.0	0.0	23.1
Outside Services	0.0	0.0	0.0	0.0
Materials	196.5	0.0	0.0	196.5
Removals	6.2	0.0	0.0	6.2
Risk and Contingency	5.3	0.0	0.0	5.3
Other	0.4	0.0	0.0	0.4
Subtotal	**231.4**	**0.0**	**0.0**	**231.4**

Indirect Capital Costs	2023	2024	2025+	Total
Indirects/Overheads (including benefits)	31.9	0.0	0.0	31.9
Capitalized interest or AFUDC, if any	4.8	0.0	0.0	4.8
Subtotal	**36.7**	**0.0**	**0.0**	**36.7**
Total Capital Costs (Gross)	**268.1**	**0.0**	**0.0**	**268.1**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**268.1**	**0.0**	**0.0**	**268.1**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The Smart Switch Program is a continuation of an initiative approved as part of the System Resiliency PURA Docket 12-07-06RE01; 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.

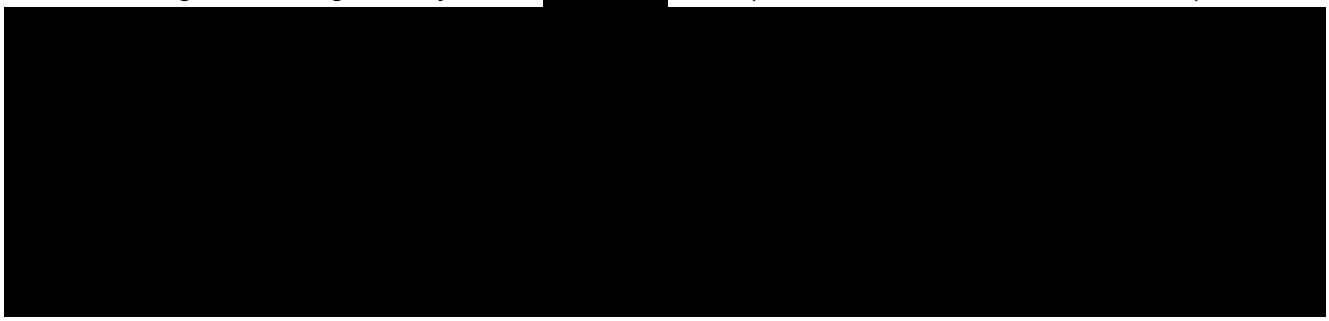
The 2021 Smart Switch Ranking Program was created to identify backbone zones that would impact over 500 customers. This zone was ranked number 27 for areas with large customer outages.
When creating projects for the highest ranked zones, also reduce the number of customers impacted to 500 or less for any other backbone zone on the same circuit if it is ranked in the top 100 devices.

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 the [redacted] zone (December 2017 to December 2021).



The following is the outage history for the [redacted] zone (December 2017 to December 2021).



b. Project Need

[redacted]

c. Project Scope

The scope of this project is as follows:

[redacted]

4. Alternatives Considered

Project Option Comparison

Design Criteria	Option	
[redacted]		
Capital Cost	$244K	$321K
Expense Cost	$15K	$15K
Total Cost	$255K	$336K
Cost / CM Saved	$1.22/CM	$1.78/CM
Cost / CI Saved	$926/CI	$949/CI
Preferred option		X

[redacted]

5. Project Schedule

Milestone/Phase Name	Estimated Completion Date
Initial Funding Authorization	December 2021
Detailed Design	March 2022
Full Funding Authorization	September 2023
Construction Begin	September 2023
Construction End	December 2023

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	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.	2023	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	2023	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods

9. References

References
1. DSEM 02.301 – Automatic Sectionalizing Device Guidelines
2.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Geographic Map	*YES*
C. One-Line Diagram	*YES*
D. Load Sheet	*YES*
E. Partial Funding PAF	*YES*
F.	

Attachment A - Cost Estimate

Option 1:

Design Alternative CD01849-01

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$205,210
Contingency Amount:	$49,250
Estimate:	$254,461
Reimbursement:	$0
Net Amount:	**$254,461**
Description:	

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$10,528.80
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18		$8,000.00
POLE OH - POLE - 3ph (CL&P custodian)	16-OH14		$28,056.00
SECTIONALIZE OH - Recloser - 3ph	16-OH38		$143,968.80
SECTIONALIZE OH - Recloser Control - setting changes only	16-OH39A		$14,656.80

Option 2:

Design Alternative CD01849-02

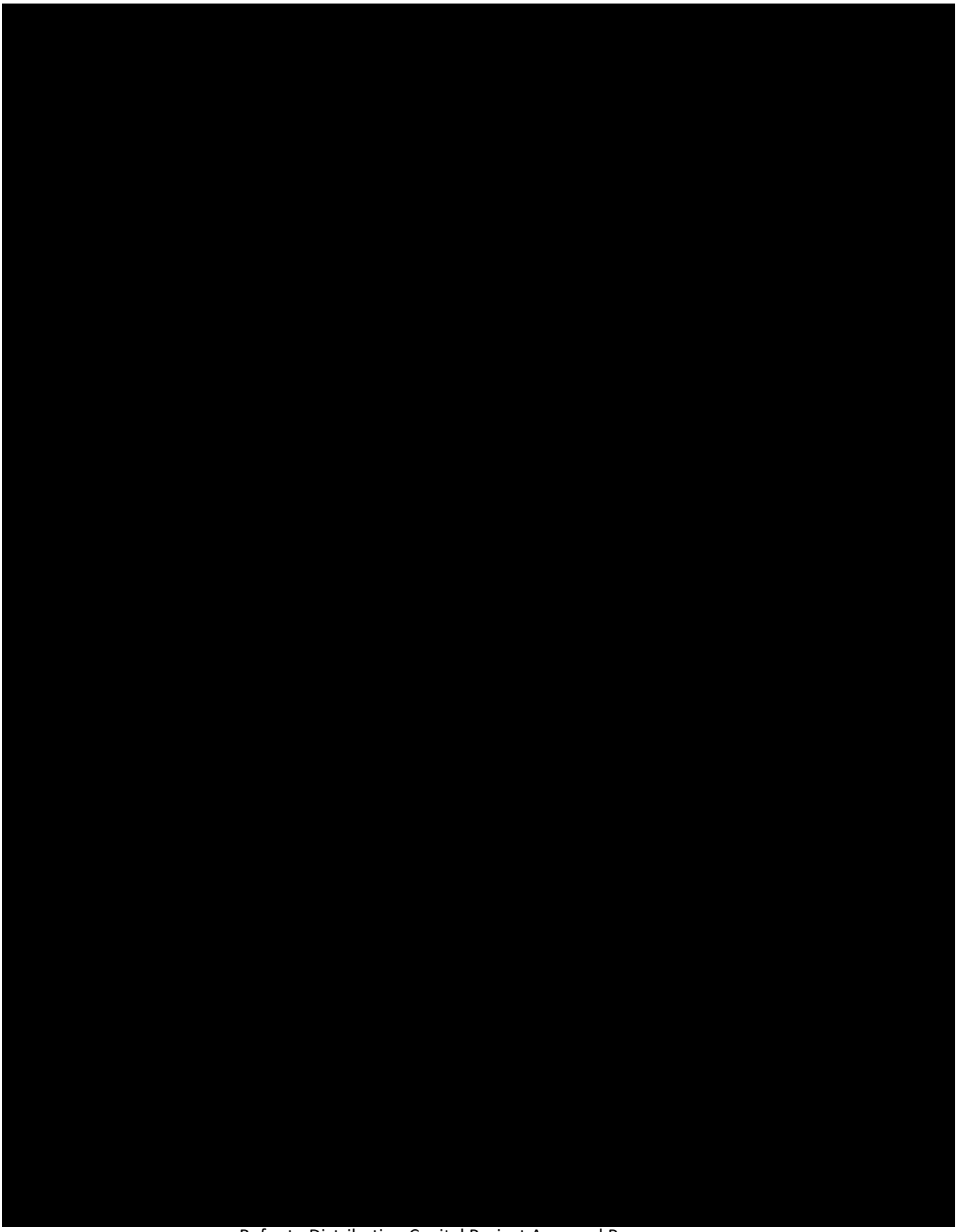
Estimate

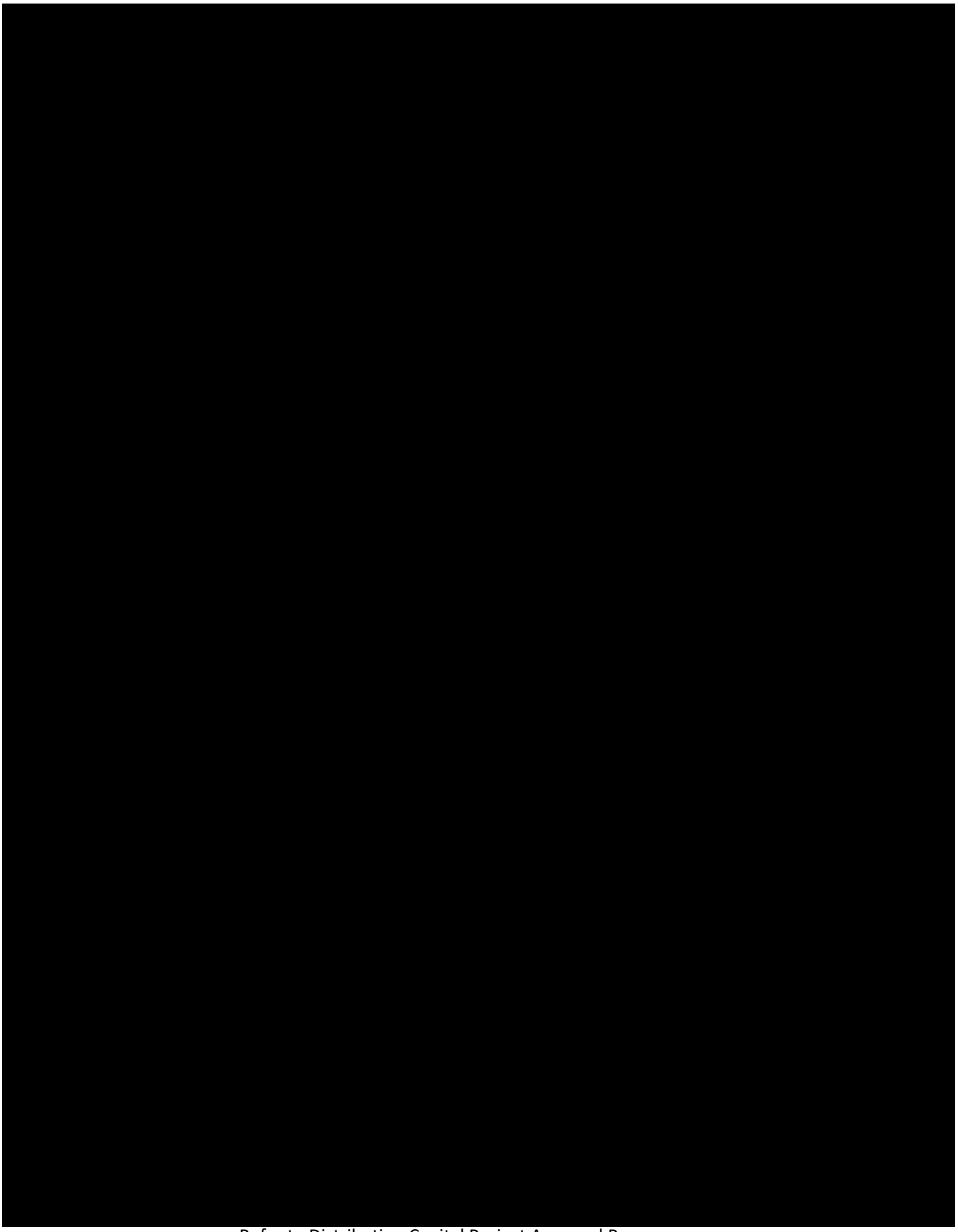
	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$262,176
Contingency Amount:	$73,409
Estimate:	$335,585
Reimbursement:	$0
Net Amount:	**$335,585**
Description:	

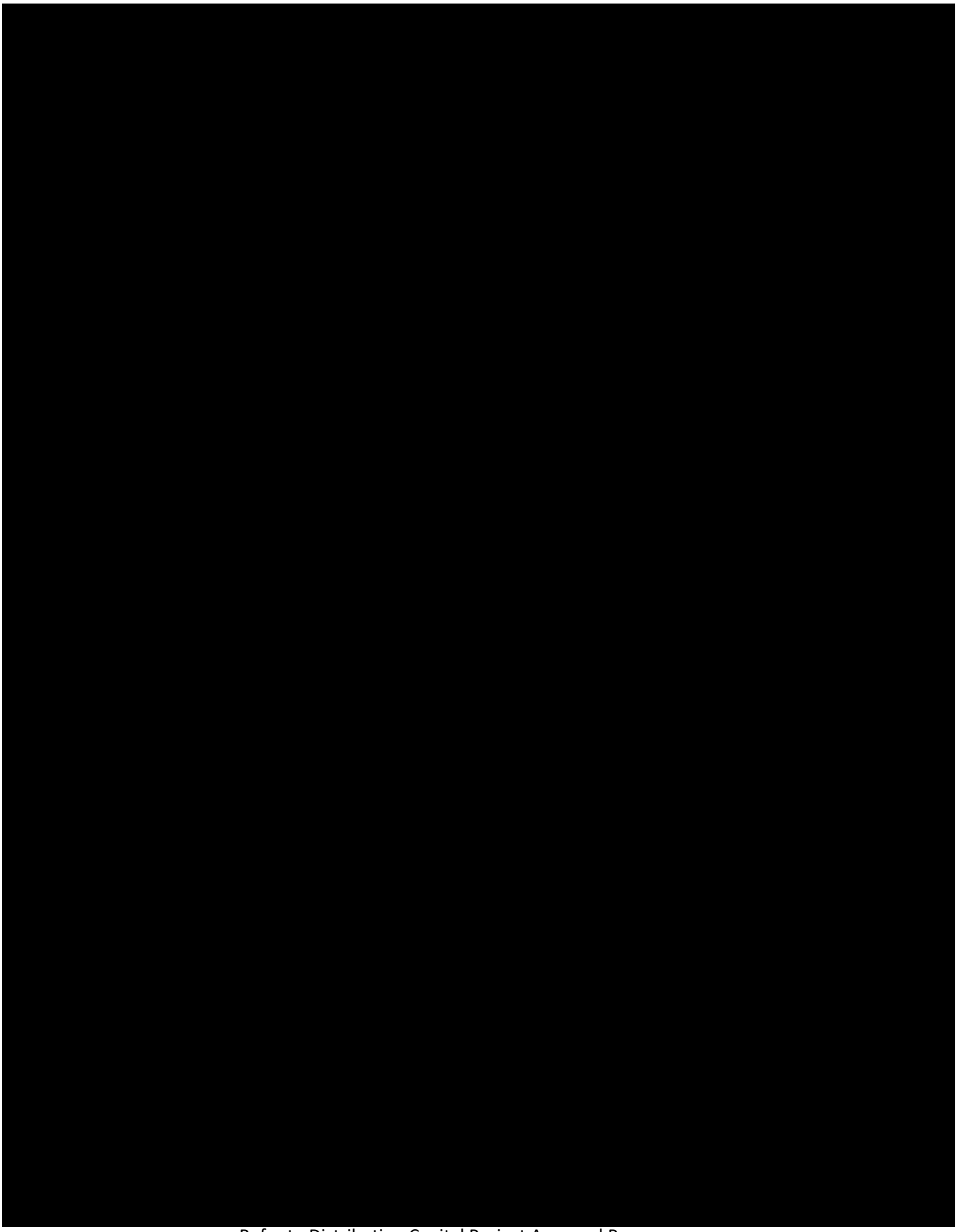
Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18		$9,000.00
POLE OH - POLE - 3ph (CL&P custodian)	16-OH14		$37,408.00
SECTIONALIZE OH - Recloser - 3ph	16-OH38		$191,958.40
SECTIONALIZE OH - Recloser Control - setting changes only	16-OH39A		$9,771.20

Attachment B - Geographic Map









Operations Project Authorization Form

Date Prepared: 12/10/2020	**Project Title:** [redacted]
Company/ies: Eversource CT	**Project ID Number: CD01849**
Organization: Distribution Electric	**Class(es) of Plant: Overhead**
Project Initiator: [redacted]	**Project Category: Line**
Project Manager: [redacted]	**Project Type: Smart Switch Program**
Project Sponsor: [redacted]	**Project Purpose: Reliability Improvement**
Estimated in service date: 12/31/2023	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? N	**Capital Investment Part of Original Operating Plan? N**
Authorization Type: Preliminary Funding	**O&M Expenses Part of the Original Operating Plan? N**
Total Request: $335,585	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

[redacted]

[redacted]

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2023	2024	2025+	Totals
Capital Additions - Direct	$0	$188	$0	$0	$188
Less Customer Contribution	$0	$0	$0	$0	$0
Removals net of Salvage ____%	$0	$8	$0	$0	$8
Total - Direct Spending	$0	$195	$0	$0	$195
Capital Additions - Indirect	$0	$121	$0	$0	$121
Subtotal Request	$0	$317	$0	$0	$317
AFUDC	$0	$4	$0	$0	$4
Total Capital Request	$0	$321	$0	$0	$321
O&M	$0	$14	$0	$0	$14
Total Request	$0	$335	$0	$0	$335

Financial Evaluation

Note: Dollar values are in thousands

	Year 1	Year 2	Year 3+	Total
Straight Time Labor	$25	$0	$0	$25
Overtime Labor	$6	$0	$0	$6
Outside Services	$46	$0	$0	$46
Materials	$117	$0	$0	$117
Other, including contingency amounts (describe)	$1	$0	$0	$1
Total Direct Costs	**$195**	**$0**	**$0**	**$195**

Indirect Capital Costs	**Year 1**	**Year 2**	**Year 3+**	**Total**
Indirects/Overheads (including benefits)	$121	$0	$0	$121
Capitalized interest or AFUDC, if any	$4	$0	$0	$4
Total Indirect Costs	**$125**	**$0**	**$0**	**$125**
Total Capital Costs	**$320**	**$0**	**$0**	**$320**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$320**	**$0**	**$0**	**$320**
Total O&M Project Costs	**$15**	**$0**	**$0**	**$15**
Total Project Cost	**$ 335**	**$ -**	**$ -**	**$ 335**

Technical Justification:

Project Need Statement

[redacted]

Project Objectives

This project will break up the large customer zones of the [redacted] and create smaller customer zone. [redacted]

Project Scope

The scope of this project is as follows:

[redacted]

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.

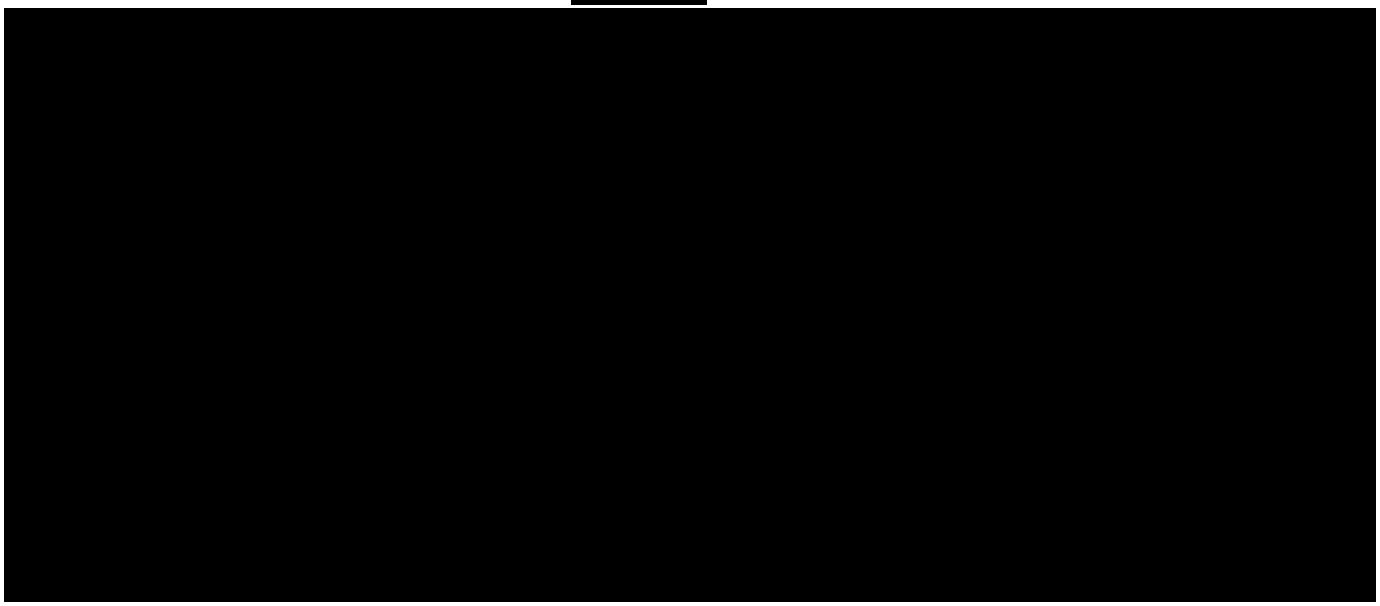
The 2018 Smart Switch Ranking Program was created to identify backbone zones that would impact over 500 customers. These zones were then ranked based on the number of customers impacted over the past three years as follows:

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 the [redacted] zone (December 2017 to December 2021).



The following is the outage history for the [redacted] zone (December 2017 to December 2021).



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).

[redacted]

[redacted]

Alternatives Considered with Cost Estimates

[redacted]

[redacted]

Project Option Comparison

Design Criteria	Option	
[redacted]		
Cost	$255K	$335K
Cost / CM Saved	$1.22/CM	$1.78/CM
Cost / CI Saved	$926/CI	$949/CI
Preferred option		X

Project Schedule

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

Regulatory Approvals

N/A

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.
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System abnormal configuration	2022	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods

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**

[redacted]Geographic Map.pdf

2. **Project One-Lines**

[redacted] Project 4-19-22.pd

3. **Project Load Summary**

[redacted]load Rev1_.xlsx

4. **Cost Estimate Backup Details**

CD01849_project_needs_statement.pdf

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01849 [redacted]

Work Classification

Category: Line
Type: SRSS
Type Desc: SMART SWITCHES PROGRAM
Work Type:

Ownership / Management

AWC: Norwalk
Statewide: No
Owner: Najjar, Nasib
Manager: Escribano, Eduardo

Project Information

Status: Draft
SPS #:
AIS Score:
Associated Projects:
Assignment ID:
Patrol Find ID:

Budget Summary - Preferred Option

Install 4 reclosers to break up two large zones

2022

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
2	Install 4 Reclosers to break up two larg	Prelim	0	24%	$325,098	$325,098
				2022 Total:	$325,098	$325,098
				Total Project:	$325,098	$325,098

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Install 4 reclosers to break up two large zones	2	$325,098	$0	100%	$32.00	$1.70	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Install 3 new reclosers and modify one.	$254,461			$0.00	$0.00
2	Install 4 Reclosers to break up two larg	$325,098			$31.97	$1.70