EVERSOURCE

Project Approval Form

Project Title: [redacted]	**Project Number: CD01995**
Date Prepared: 01/18/2024	**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:** No
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: 12/31/24	
Total Capital Request: $ 476k	**Authorization Type:** Full Funding

1. Executive Summary

Project CD01995 seeks to address [redacted]

[redacted]

- Project Location
  - Division: Western
  - District: Torrington AWC
  - Town: Thomaston
- Approved Initial Funding Authorization: $354K at the 06/16/2022 CT-PAC meeting.
- Requesting Full Funding authorization: $476k, a difference of $122K or 135% of the Initial Funding authorization.

The variance is due to the following:

$107k Updated Estimating Units: The legacy estimating units used to produce the initial funding estimate is about 30% lower than the estimates used today, which were updated to reflect increased labor and material costs.

Accounting for the 30% cost variance, the remaining difference between the initial and full funding estimate is approximately 5% or $15k.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2024	2025	2026+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	13.3	0.0	0.0	13.3
Outside Services	68.0	0.0	0.0	68.0
Materials	195.5	0.0	0.0	195.5
Removals	7.5	0.0	0.0	7.5
Risk and Contingency	43.3	0.0	0.0	43.3
Other	0.0	0.0	0.0	0.0
Subtotal – Direct Costs	**327.6**	**0.0**	**0.0**	**327.6**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	146.7	0.0	0.0	146.7
Capitalized interest or AFUDC, if any	2.0	0.0	0.0	2.0
Subtotal – Indirect Costs	**148.7**	**0.0**	**0.0**	**148.7**
Total Gross Capital Costs	**476.3**	**0.0**	**0.0**	**476.3**
Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Total Net Capital Project Costs	**476.3**	**0.0**	**0.0**	**476.3**

Explain unique payment provisions, if applicable:

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The Smart Switch Program is a 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. Projects will be created to reduce the number of customers impacted in that zone to 500 or less.

b. Project Need

[redacted]

[redacted]

c. Project Scope

[redacted]

[redacted]

Major Material:

- 5 3-PH SCADA Reclosers w/ appropriate settings

4. Alternatives Considered

Project Option Comparison

Design Criteria	Option

	Option 1	Option 2	Option 3
[redacted]			
Authorization Type	Partial	Partial	Full
Capital Cost	$275k*	$349k*	$476k
Expense Cost	$12k	$15k	$21k
Total Cost	$287k	$364k	$497k
Total Cost / MVA added	N/A	N/A	N/A
Total Cost / CM Saved	$1.75/CM	$2.25/CM	$1.69/CM
Total Cost / CI Saved	$289.20/CI	$307.25/CI	$326.57/CI
Preferred option			X

*Partial funding only, would increase by at least 30% based on updated estimating units.

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	6/2022
100% Detailed Engineering Completion	8/2022
Fully Funded	1/2024
Construction Start	1/2024
In Service Date	12/2024

6. Risk and Contingencies

Contingencies:

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2024	High/Medium/Low	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	2024	High/Medium/Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2024	High/Medium/Low	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.	2024	High/Medium/Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2024	High/Medium/Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2024	High/Medium/Low	If storm activity delays work, we may be forced to use external resources.

System abnormal configuration	2024	High/Medium/Low	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	2024	High/Medium/Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	2024	High/Medium/Low	Use of mats and specialty equipment, only work during certain times of the year.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Geographic Map	*YES*
C. Project One-line	*YES*
D. Load Summary	*YES*

8. Cost Summary

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Work Classification

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

Ownership / Management

AWC: Torrington
Statewide: No
Owner: [redacted]
Manager:

Project Information

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

Budget Summary - Preferred Option

Option 3 - Zone reduction, 2B8/2B4, & 2B6/2B4 Ties

2024

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
5	Option 3 - 7 Devices, 1 Settings	Draft	0	28%	$361,065	$361,065
				2024 Total:	$361,065	$361,065
				Total Project:	$361,065	$361,065

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Option 1 - [redacted] Zone Reduction, [redacted] Tie	4	$258,739	$0	100%	$29.28	$1.67	☐
O2	Option 2 - 2B4-2 Zone Reduction, [redacted] Tie, Tie	2	$349,040	$0	100%	$24.22	$2.18	☐
O4	Option 3 - Zone reduction, [redacted] & Ties	5	$361,065	$0	100%	$22.31	$1.64	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Option - Cancelled	$65,099			$0.00	$0.00
2	Option 2 - 7 Devices	$349,040			$25.00	$2.25
3	Option - Cancelled	$281,964			$0.00	$0.00
4	Option 1 - 5 Devices	$258,739			$30.55	$1.75
5	Option 3 - 7 Devices, 1 Settings	$361,065			$22.99	$1.69

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Background / Scope

Issue:

Project Description:

Other Considerations:

Revision / ACT Comments:

If we don't do this project, what will happen?

Environmental

Water Pollution: No Change Soil Contamination: No Change Natural Habitats: No Change

Alternatives considered based on Environmental Impact or Description of Aspects Oil Spill Risks Considered? ☐

Safety Concerns With This Project? ☐

Explain:

External Stakeholders

Customer Impact / Involvement

Cust. Impacted: Approx. Pole Count (NU):

Crit. Cust. Impacted: Approx. Pole Count (Other):

Adjoining Property Owner Consent Required: ☐ Town Hearing Required: ☐

Other Utility Pole Custodian Area: ☐ Easement Required: ☐

State Highway Permit Required: ☐

Relocation / New Service

New Srvc. Contact: Requestor Type:

Customer Type: State Highway Project #:

Request Number: Route #:

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995

[redacted]

Design Alternative

CD01995-01

General Information

Segment: 1 - Option - Cancelled
Status: Cancelled
Segment Type: SECTIONALIZING - OH
Town: THOMASTON
Budget Year: 2023
Work Type: BB-Sctnlzng-Reclosers
Trimming Required: ☐
In Service Date: 12/31/2023
Description:

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$52,499
Contingency Amount:	$12,600
Estimate:	$65,099
Reimbursement:	$0
Net Amount:	**$65,099**

Description:

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$3,509.60
TRAFFIC OH/DB/UG - Traffic Control - Police Officer $1,000/day - Assume 1 Day	16-ALL18		$1,000.00
SECTIONALIZE OH - Recloser - 3ph Install 1 radial recloser (2B4-60R @ P#7)	16-OH38		$47,989.60

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-02

General Information

Segment: 2 - Option 2 - 7 Devices
Status: Draft
Segment Type: SECTIONALIZING - OH
Town: THOMASTON
Budget Year: 2024
Work Type: BB-Sctnlzng-Reclosers
Trimming Required: ☐
In Service Date: 12/31/2023
Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$272,687
Contingency Amount:	$76,352
Estimate:	$349,040
Reimbursement:	$0
Net Amount:	**$349,040**

Description:

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$17,548.00
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph	16-OH43	$41,132.80
TRAFFIC OH/DB/UG - Traffic Control - Police Officer $1,000/Day - Assume 3 Days	16-ALL18	$3,000.00
SECTIONALIZE OH - Recloser - 3ph 2 sectionalizing recloser (P#199 & P#253), 2 Tie recloser (P#244 & [redacted]	16-OH38	191,958.40
OTHER OTHER Install [3] 100k Fuse Saver, $4,464 each	16-ALL14	$13,392.00
SECTIONALIZE OH - Remove Recloser (any) Remove existing hydraulic recloser @ P#253	16-OH42	$5,656.00

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-02

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	[redacted]						
Existing							
Existing							
Existing							
Existing							
Existing							
Existing							

Reliability Projection

Title:

Outage Start Date: 5/1/2018 Outage End Date: 5/1/2022 Years History: 4.00

[redacted]

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-03

General Information

Segment: 3 - Option - Cancelled
Status: Cancelled
Segment Type: SECTIONALIZING - OH
Town: THOMASTON
Budget Year: 2023
Work Type: BB-Sctnlzng-Reclosers
Trimming Required: ☐
In Service Date: 12/31/2023
Description:

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-03

Estimate

Preliminary Estimate Summary	
Revision Number:	0
Contingency:	24.00%
SubTotal:	$227,390
Contingency Amount:	$54,574
Estimate:	$281,964
Reimbursement:	$0
Net Amount:	**$281,964**

Description:

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$17,548.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer $1,000/Day - $3,000	16-ALL18	$3,000.00
TRAFFIC OH/DB/UG - Traffic Control - Flagger $300/Day - $300	16-ALL19	$300.00
OTHER OTHER Install [2] 100k Fuse Saver, $4,464 each	16-ALL14	$8,928.00
SECTIONALIZE OH - Recloser - 3ph Install 4 Reclosers [redacted]	16-OH38	$191,958.40
SECTIONALIZE OH - Remove Recloser (any) Remove existing hydraulic recloser @ P#253	16-OH42	$5,656.00

Connecticut Light & Power
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Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-03

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	[redacted]						
Existing							
Existing							
Existing							

Reliability Projection

Title:

Outage Start Date: 1/1/2007 Outage End Date: 5/6/2022 Years History: 15.35

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-04

General Information

Segment: 4 - Option 1 - 5 Devices
Status: Draft
Segment Type: SECTIONALIZING - OH
Town: THOMASTON
Budget Year: 2024
Work Type: BB-Sctnlzng-Reclosers
Trimming Required: ☐
In Service Date: 12/31/2023

Description:

P# 199: - Install 140k Sectionalizing Recloser

P# 238: - Install 100k Midpoint Recloser

P# 244: - Install 2-way Tie Recloser

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative

CD01995-04

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$202,140
Contingency Amount:	$56,599
Estimate:	$258,739
Reimbursement:	$0
Net Amount:	**$258,739**

Description:

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$14,038.40
SECTIONALIZE OH - Recloser - 3ph	16-OH38	$143,968.80
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph	16-OH43	$41,132.80
TRAFFIC OH/DB/UG - Traffic Control - Flagger	16-ALL19	$3,000.00

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-04

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	[redacted]	ust	Notes
Existing	[redacted]					
Existing						
Existing						
Existing						
Existing						
Existing						

Reliability Projection

Title:

Outage Start Date: 5/1/2018 Outage End Date: 5/1/2022 Years History: 4.00

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995

[redacted]

Design Alternative CD01995-05

General Information

Segment: 5 - Option 3 - 7 Devices, 1 Settings
Status: Draft
Segment Type: SECTIONALIZING - OH
Town: THOMASTON
Budget Year: 2024
Work Type: BB-Sctnlzng-Reclosers
Trimming Required: ☐
In Service Date: 12/31/2023
Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995 [redacted]

Design Alternative CD01995-05

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$282,082
Contingency Amount:	$78,983
Estimate:	$361,065
Reimbursement:	$0
Net Amount:	**$361,065**

Description:

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$21,057.60
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18		$4,000.00
SECTIONALIZE OH - Recloser - 3ph	16-OH38		$191,958.40
SECTIONALIZE OH - Recloser Control - setting changes only	16-OH39A		$4,885.60
SECTIONALIZE OH - Remove Recloser (any)	16-OH42		$5,656.00
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph	16-OH43		$41,132.80
OTHER OTHER Install [3] 100k Fuse Saver, $4,464 each	16-ALL14		$13,392.00

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01995

[redacted]

Design Alternative

CD01995-05

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	[redacted]						
Existing							
Existing							
Existing							
Existing							
Existing							
Existing							
Existing							

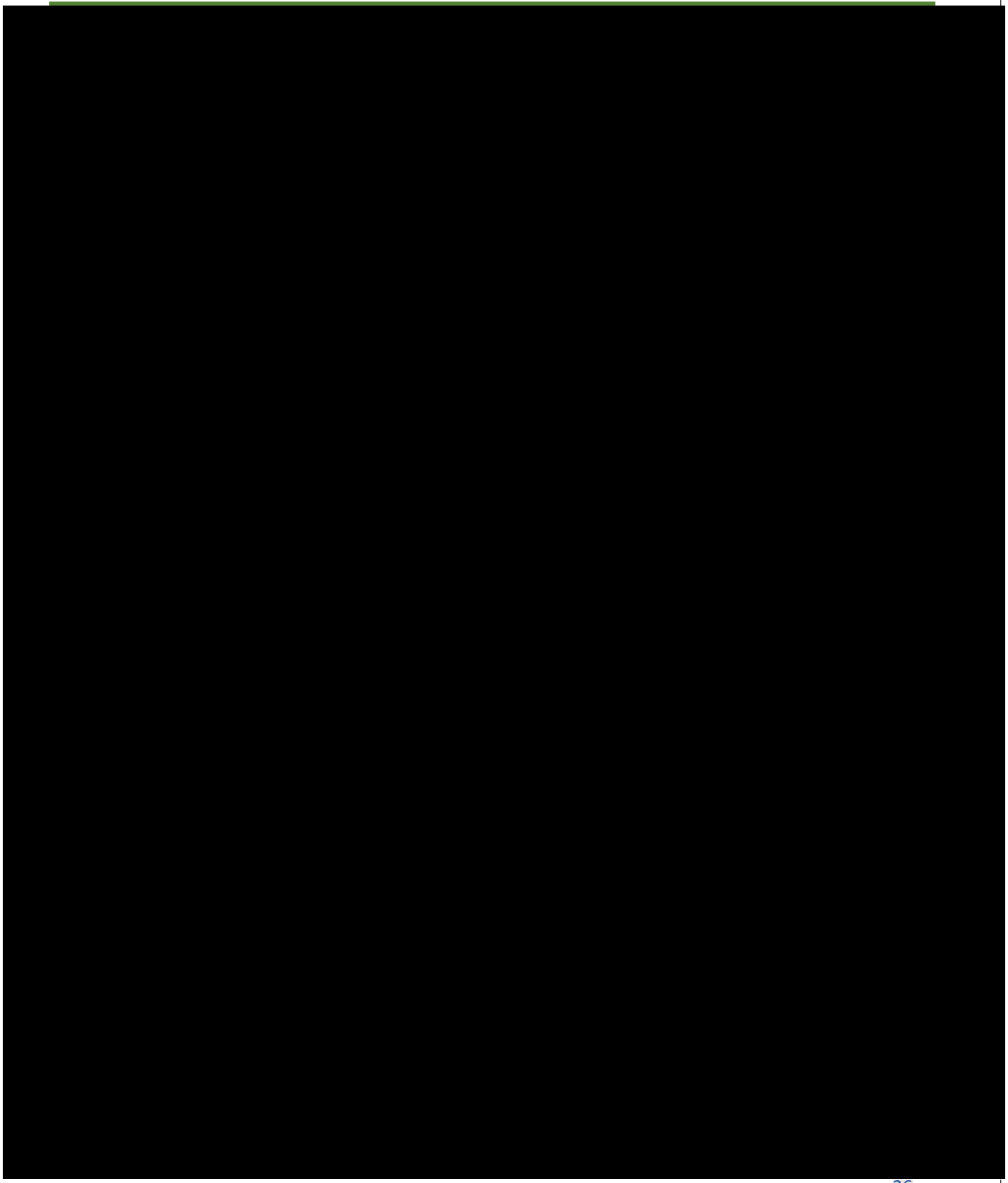
Reliability Projection

Title:

Outage Start Date: 5/1/2018 Outage End Date: 5/1/2022 Years History: 4.00

[redacted]

[redacted]



[redacted]

[redacted]

Operations Project Authorization Form

Project Title: [redacted]	**Project Number: CD01995**
Date Prepared: 06/16/2022	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** Lines - Sectionalizing
Project Manager [redacted]	**Project Type:** Program
Project Sponsor [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/24	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $353,676	**Authorization Type:** Initial Funding

Executive Summary

Project CD01995 seeks to address [redacted]

[redacted]

Project Costs Summary

Note: Dollar values are in thousands

Capital Costs	2024	2025	2026	Total
Internal Labor and Construction Equipment	$30.705	$0.000	$0.000	$30.705
Outside Services	$40.495	$0.000	$0.000	$40.495
Materials	$129.304	$0.000	$0.000	$129.304
Removals	$8.365	$0.000	$0.000	$8.365
Risk and Contingency	$1.222	$0.000	$0.000	$1.222
Other	$0.000	$0.000	$0.000	$0.000
Subtotal	$210.091	$0.000	$0.000	$210.091
Indirect Capital Costs	**2024**	**2025**	**2026**	**Total**
Indirects/Overheads (including benefits)	$139.110	$0.000	$0.000	$139.110
Capitalized interest or AFUDC, if any	$4.476	$0.000	$0.000	$4.476
Subtotal	$143.585	$0.000	$0.000	$143.585
Total Capital Costs (Gross)	**$353.676**	**$0.000**	**$0.000**	**$353.676**

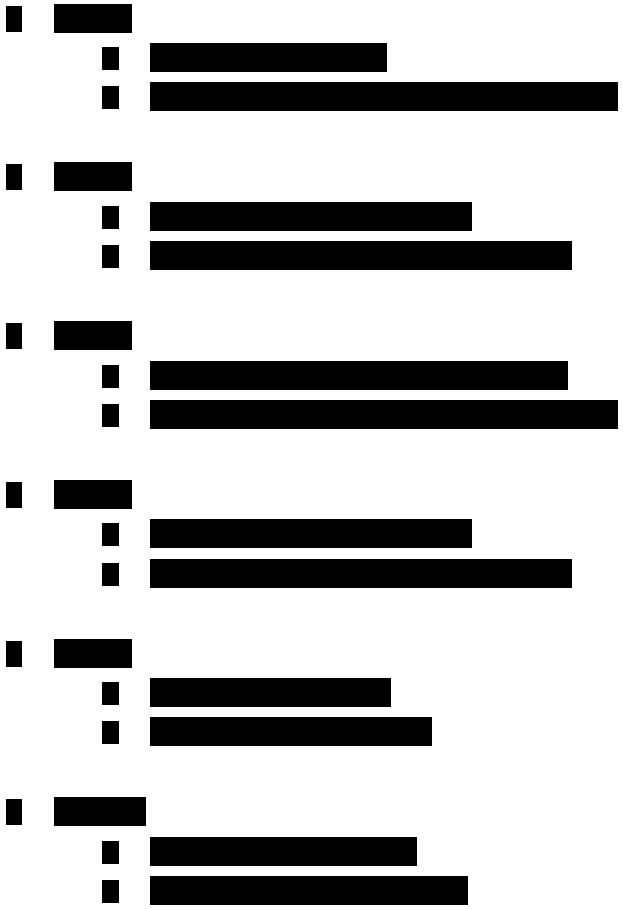
Technical Justification:

Project Need, Objective and Justification:

[redacted]

Indicated below is a list of applicable outages over the last four years:

Project Scope:



Major Material:

- 5 3-PH SCADA Reclosers w/ appropriate settings

Background:

The Smart Switch Program focuses on breaking up customer zones and lowering the average number of customers impacted by a backbone interruption. Projects must be created to reduce the number of customers impacted in that zone to 500 or less.

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)

With the addition of work suggested under option [redacted]

Alternatives Considered:

Were alternative solutions considered/applicable? Include any cost/benefit analysis.

Alternatives were considered (please describe below)

Option 1: [redacted]

Option 2:

Project Option Comparison

Design Criteria	Option		
[redacted]			
Cost	$275k	$349k	$353k
Cost / CM Saved	$1.75/CMS	$2.25/CMS	$1.69/CMS
Preferred option			X

Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	6/30/2022
Detailed Design	8/1/2022
Settings Requested	11/1/2023
Construction Start	1/1/2024
Construction End	5/31/2024

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2024	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	2024	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2024	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.	2024	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2024	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2024	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2024	Low	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	202	High/Medium/Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.

Wetlands / Environmentally sensitive area	2024	High/Medium/Low	Use of mats and specialty equipment, only work during certain times of the year.