EVERSOURCE

# Project Approval Form

| | |
|---|---|
| **Project Title:** [redacted] | **Project Number: CD01953** |
| **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:** 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: 12/31/2024** | |
| **Total Capital Request: $572.1K** | **Authorization Type:** Full Funding |

## 1. Executive Summary:

[redacted] The total capital cost of this proposal is $572,100.00 and has a cost per minute saved of $1.53. This project has an in-service date of 12/31/2024.

- Division: Western
- District: Torrington
- City: New Hartford, Barkhamsted

### Initial Funding Estimate vs. Bid Document:

The bid amount of $572,120 was 12% above the partial funding estimate amount of $509,800 for the Canton 5R5 Smart Switch Project. The overall difference between partial funding estimate as compared to the bid document equates to an over expenditure of $62,300 with no change in scope. To summarize, this difference between the partial funding estimate as compared to the bid document equates to the difference in the cost of labor in the partial funding estimate versus the cost of labor in the bid document.

# 2. Project Cost Summary:

Note: Dollar values are in thousands.

| Capital Costs | Year 2024 | Year 2025 | Year 2026+ | Total |
|---|---|---|---|---|
| **Direct Capital Costs** | | | | |
| Internal Labor and Construction Equipment | 85.3 | 0.0 | 0.0 | 85.3 |
| Outside Services | 7.3 | 0.0 | 0.0 | 7.3 |
| Materials | 199.9 | 0.0 | 0.0 | 199.9 |
| Removals | 8.1 | 0.0 | 0.0 | 8.1 |
| Risk and Contingency | 52.0 | 0.0 | 0.0 | 52.0 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal – Direct Costs | 352.6 | 0.0 | 0.0 | 352.6 |
| **Indirect Capital Costs** | | | | |
| Indirect/Overheads (including benefits) | 219.5 | 0.0 | 0.0 | 219.5 |
| Capitalized interest or AFUDC, if any | 0.0 | 0.0 | 0.0 | 0.0 |
| Subtotal – Indirect Costs | 219.5 | 0.0 | 0.0 | 219.5 |
| **Total Gross Capital Costs** | **572.1** | **0.0** | **0.0** | **572.1** |
| Customer Contribution | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total Net Capital Project Costs** | **572.1** | **0.0** | **0.0** | **572.1** |

# 3. Technical Justification:

## Background, Project Need/Justification, and Project Scope

### a. Background

[redacted]

### b. Project Need

[redacted]

[redacted]

## c. Project Scope

[redacted]

[redacted]

**Major Material:**

- 5 - 25kV NOVA Three Phase Reclosers
- 15 - 600A bypass disconnects
- 15 - 900A visible break switches
- 3 – 55/1 Poles
- 6 – 50/1 Poles
- 6 – 45/1 Poles

## 4. Alternatives Considered

[redacted]

[redacted] The cost of the second alternate proposal would be at an approximate cost of $325k at a cost per minute saved of $1.50.

[redacted] The cost of the second alternate proposal would be at an approximate cost of $ 8.03M at a cost per minute saved of $191.91.

[redacted] and by resulting in a low cost per CMS of $1.57 as compared to the third and fourth alternate options. The third alternative option was

[redacted] even though this alternate would produce a reduction in the capital expenditure of this project by $207k. The fourth alternative option was not considered as a preference because of the large capital expenditure of $8.03M for the expansion of a [redacted] with minimal gain and a high cost per minute saved of $191.91.

**Project Option Comparison**

| | Option | | |
|---|---|---|---|
| [redacted] | | | |
| Authorization Type | Full | Partial | Partial |
| Capital Cost | $572.1K | $311.7K | $7,691.3K |
| Expense Cost | $25.1K | $13.6K | $337.0K |

| | | | |
|---|---|---|---|
| Total Cost | $597.2K | $325.3K | $8,028.3K |
| Total Cost / MVA added | $0/MVA | $0/MVA | $0.892/MVA |
| Total Cost / CM Saved | $1.53/CM | $0.835/CM | $20.61/CM |
| Total Cost / CI Saved | $119,440/CI | $65,073.40/CI | $1,605,652.80/CI |
| Preferred option | X | | |

## 5. Project Schedule

Add any additional milestones that are pertinent to the project

| Milestone/Phase Name | Estimated Date |
|---|---|
| Partial Approval | 9/29/2022 |
| 100% Detailed Engineering Completion | 11/29/2023 |
| Fully Funded | 1/8/2024 |
| Construction Start | 5/1/2024 |
| In Service Date | 12/31/2024 |

## 6. Regulatory Decisions

## 7. Codes and Standards

## 8. Risk and Contingencies:

| Risk Event | Risk Horizon | Likelihood of Occurrence | Risk Mitigation |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Actual cost higher than estimated due to scope changes. | 2024 | 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 | Low | Design to minimize customer impact. Project Preplanning and customer/community outreach. |
| Internal construction 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. |
| 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 | High | 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 | 2024 | 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 | Low | Use of mats and specialty equipment, only work during certain times of the year. |

## 9. References

| References |
|---|
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |

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

| Attachment | Included in Submittal? |
|---|---|
| A. Partial PAF Document | *YES* |
| B. Cost Estimate | *YES* |
| C. Geographic Map | *NO* |
| D. System and Station One-Lines | *YES* |
| E. Load Sheets | *YES* |

# A. Partial PAF Document:

| | |
|---|---|
| **Project Title:** [redacted] | **Project Number: CD01953** |
| **Date Prepared:** 09/29/2022 | **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: 12/31/2024** | |
| **Total Capital Request: $509.67K** | **Authorization Type:** Partial Funding |

## 1. Executive Summary

[redacted]

[redacted]

[redacted] The total cost capital of this proposal is $509,670.00 and has an in-service date of 12/31/2024.

## 2. Project Cost Summary

Note: Dollar values are in thousands.

| Capital Costs | 2023 | 2024 | 2025+ | Total |
|---|---|---|---|---|
| **Direct Capital Costs** | | | | |
| Internal Labor and Construction Equipment | $27.78 | $0.00 | $0.00 | $27.78 |
| Outside Services | $57.01 | $0.00 | $0.00 | $57.01 |
| Materials | $264.63 | $0.00 | $0.00 | $264.63 |
| Removals | $30.45 | $0.00 | $0.00 | $30.45 |
| Risk and Contingency | $1.32 | $0.00 | $0.00 | $1.32 |
| Other | $0.00 | $0.00 | $0.00 | $0.00 |
| Subtotal – Direct Costs | $381.18 | $0.00 | $0.00 | $381.18 |
| **Indirect Capital Costs** | **2023** | **2024** | **2025+** | **Total** |
| Indirect/Overheads (including benefits) | $122.45 | $0.00 | $0.00 | $122.45 |
| Capitalized interest or AFUDC, if any | $6.03 | $0.00 | $0.00 | $6.03 |
| Subtotal – Indirect Costs | $128.49 | $0.00 | $0.00 | $128.49 |
| **Total Gross Capital Costs** | $509.67 | $0.00 | $0.00 | $509.67 |
| Customer Contribution | $0.00 | $0.00 | $0.00 | $0.00 |
| **Total Net Capital Project Costs** | $509.67 | $0.00 | $0.00 | $509.67 |

# 3. Technical Justification

## Background, Project Need/Justification, and Project Scope

### a. Background

[redacted]

## b. Project Need

[redacted]

## c. Project Scope

[redacted]

[redacted]

**Major Material:**

- 5 - 25kV NOVA Three Phase Reclosers
- 15 - 600A bypass disconnects
- 15 - 900A visible break switches
- 3 – 55/1 Poles
- 6 – 50/1 Poles
- 6 – 45/1 Poles

## 4. Alternatives Considered

[redacted] The cost of the second alternate proposal would be at an approximate cost of $325k at a cost per minute saved of $1.50.

[redacted]

[redacted]. The cost of the second alternate proposal would be at an approximate cost of $ 8.03M at a cost per minute saved of $191.91.

[redacted]. The fourth alternative option was not considered as a preference because of the large capital expenditure $8.03M for the expansion of a bi-directional loop scheme with minimal gain and a high cost per minute saved of $191.91.

**Project Option Comparison**

| | Option |
|---|---|
| [redacted] | |

[redacted]

| | | | |
|---|---|---|---|
| Expense Cost | $22.34k | $13.66k | $336.99k |
| Total Cost | $532k | $325k | $8,028k |
| Total Cost / MVA added | $0/MVA | $0/MVA | $0.892/MVA |
| Total Cost / CM Saved | $1.57/CM | $1.50/CM | $191.91/CM |
| Total Cost / CI Saved | $2,268.84/CI | $2,056.66/CI | $41,927.43/CI |
| Preferred option | X | | |

## 5. Project Schedule

Add any additional milestones that are pertinent to the project

| Milestone/Phase Name | Estimated Date |
|---|---|
| Partial Approval | 9/30/2022 |
| 100% Detailed Engineering Completion | 8/31/2023 |
| Fully Funded | 10/31/2023 |
| Construction Start | 3/31/2024 |
| In Service Date | 12/31/2024 |

# 6. Risk and Contingencies

| Risk Event | Risk Horizon | Likelihood of Occurrence | Risk Mitigation |
|---|---|---|---|
| Actual cost higher than estimated due to scope changes. | 2024 | 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 | Low | Design to minimize customer impact. Project Preplanning and customer/community outreach. |
| Internal construction 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. |
| 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 | High | 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 | 2024 | 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 | 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 | *NO* |
| C. System and Station One-Lines | *NO* |
| D. Load Summary | *YES* |

# B. Cost Estimate:

Connecticut Light & Power
A Northeast Utilities Company

**Specific Project Proposal - Project #: CD01953** [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**

Preferred Option

2024

| ID | Title | Status | Rev # | Contingency | Expenditure Amount | Net Estimate |
|---|---|---|---|---|---|---|
| 1 | [redacted] - Smart Switch Instl. @ P# 735 | Prelim | 0 | 28% | $105,141 | $105,141 |
| 2 | [redacted] - Midpoint Recloser Instl. @ P# 424 | Prelim | 0 | 28% | $200,038 | $200,038 |
| 3 | [redacted] - Sectionalizing Recloser @ P# 3195 | Prelim | 0 | 28% | $117,960 | $117,960 |
| 4 | [redacted] - Radial Recloser Instl. @ P# 6505 | Prelim | 0 | 28% | $108,981 | $108,981 |
| | | | | 2024 Total: | $532,121 | $532,121 |
| | | | | Total Project: | $532,121 | $532,121 |

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## Specific Project Proposal - Project #: CD01953 [redacted]

### Project Option Summary

| ID | Description | Segments | Preliminary Estimate | Construction Estimate | Variance | IEEE $/CMS | All (w/Storm) | Prfrd |
|---|---|---|---|---|---|---|---|---|
| O1 | Preferred Option | 1,2,3,4 | $532,121 | $0 | 100% | $8.89 | $1.57 | ☑ |
| O2 | First Alternate Option | 1,4,5 | $325,367 | $0 | 100% | $11.51 | $1.50 | ☐ |
| O3 | Second Alternate Option | 6 | $8,028,264 | $0 | 100% | $8,008.80 | $191.91 | ☐ |

### Segments

| ID | Title | Preliminary Estimate | Construction Estimate | Variance | IEEE $/CMS | All (w/Storm) |
|---|---|---|---|---|---|---|
| 1 | [redacted] Smart Switch Instl. @ P# 735 | $105,141 | | | $3.84 | $0.61 |
| 2 | [redacted] Midpoint Recloser Instl. @ P# | $200,038 | | | $6.15 | $1.55 |
| 3 | [redacted] Sectionalizing Recloser @ P# | $117,960 | | | $5.83 | $0.93 |
| 4 | [redacted] Radial Recloser Instl. @ P# | $108,981 | | | $0.00 | $2.93 |
| 5 | [redacted] First Alternate Option | $111,244 | | | $125.40 | $3.00 |
| 6 | [redacted] Second Alternate Option - Loop | $8,028,264 | | | $8,000.82 | $191.71 |

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## Specific Project Proposal - Project #: CD01953 [redacted]

### Background / Scope

Issue:

[redacted] The total cost of this proposal is $643,339.00 at a cost per minute saved of $1.90 and has an in-service date of 12/31/2024.

Project Description:

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

**Specific Project Proposal - Project #: CD01953** [redacted]

Other Considerations:

[redacted]

Revision / ACT Comments:

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

[redacted]

**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:

Connecticut Light & Power
A Northeast Utilities Company

**Specific Project Proposal - Project #: CD01953** [redacted]

## External Stakeholders

Customer Impact / Involvement

| | | | |
|---|---|---|---|
| Cust. Impacted | [redacted] | Approx. Pole Count (NU): | 13 |
| Crit. Cust. Impacted: | | Approx. Pole Count (Other): | 2 |
| 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 #: | |

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## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-01

### General Information

Segment: 1 [redacted] Smart Switch Instl. @ P# 735 Status: Prelim Design Submitted

Segment Type: RECLOSERS Town: NEW HARTFORD Budget Year: 2024

Work Type: BB-Sctnlzng-Reclosers Trimming Required: ☑ In Service Date: 12/31/2024

Description: [redacted]

### Itemized Work List

| ID | Major Grid | Minor Grid | Description of Work to be Performed |
|---|---|---|---|
| 1 | [redacted] | | |

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-01

### Estimate

| | Preliminary Estimate Summary |
|---|---|
| Revision Number: | 0 |
| Contingency: | 28.00% |
| SubTotal: | $82,142 |
| Contingency Amount: | $23,000 |
| Estimate: | $105,141 |
| Reimbursement: | $0 |
| Net Amount: | **$105,141** |
| Description: | ENG Estimate for one Smart Switch on Main Street @ P# 735 |

| Item Description | CU | Amount |
|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 16-ALL17 | $10,528.80 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 16-ALL18 | $3,000.00 |
| SECTIONALIZE<br>OH - Recloser Control - setting changes only | 16-OH39A | $9,771.20 |
| TREE<br>OH - Trimming for Taller Pole | 16-OH64 | $1,500.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>Inst. 1 - SS @ P# 735 | 16-OH38 | $47,989.60 |
| POLE<br>OH - POLE - 3ph (CL&P custodian)<br>Repl. P# 734 & 736 - 50/1 CCA Poles | 16-OH14 | $9,352.00 |

### Associated / Impacted Devices

| Status | Type / SysID | Street / Cross St | Structure / Town | Circuit | Map | Cust | Notes |
|---|---|---|---|---|---|---|---|
| Existing | [redacted] | PUDDLETOWN RD<br>FARMINGTON RIVER TPKE | 826<br>CANTON | [redacted] | | 2443 | |

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-01

**Reliability Projection**

Title:

Outage Start Date: 2/28/2018 Outage End Date: 2/28/2022 Years History: 4.00

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-02

### General Information

Segment: 2 - [redacted] Midpoint Recloser Instl. @ P# 424 Status: Prelim Design Submitted

Segment Type: RECLOSERS Town: NEW HARTFORD Budget Year: 2024

Work Type: BB-Sctnlzng-Reclosers Trimming Required: ☑ In Service Date: 12/31/2024

Description: [redacted]

### Itemized Work List

| ID | Major Grid | Minor Grid | Description of Work to be Performed |
|---|---|---|---|
| 1 | G3-3C | C8 | [redacted] |

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-02

**Estimate**

| | Preliminary Estimate Summary |
|---|---|
| Revision Number: | 0 |
| Contingency: | 28.00% |
| SubTotal: | $156,280 |
| Contingency Amount: | $43,758 |
| Estimate: | $200,038 |
| Reimbursement: | $0 |
| Net Amount: | **$200,038** |
| Description: | ENG Estimate for Midpoint Recloser on West Hill Rd. at P# 93 |

| Item Description | CU | Amount |
|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 16-ALL17 | $21,057.60 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Flagger | 16-ALL19 | $10,000.00 |
| SECTIONALIZE<br>OH - Recloser Control - setting changes only | 16-OH39A | $9,771.20 |
| TREE<br>OH - Trimming for Taller Pole | 16-OH64 | $3,000.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>Inst. 1 - SS @P# 54,, 1 - MR @ P# 424 | 16-OH38 | $95,979.20 |
| POLE<br>OH - POLE - 3ph (CL&P custodian)<br>P# 423, P# 425 | 16-OH14 | $9,352.00 |
| POLE<br>OH - POLE - 3ph (Telephone custodian)<br>P# 53, P#54, | 16-OH12 | $7,120.00 |

[redacted]

Asset & Investment Management System 9/29/2022 Page 10 of 25

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953

SSRK54.22-5R5-71S-978-RWO.5

Design Alternative CD01953-02

### Associated / Impacted Devices

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

### Reliability Projection

Title:

Outage Start Date: 2/28/2018 Outage End Date: 2/28/2022 Years History: 4.00

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-03

### General Information

Segment: 3 [redacted]- Sectionalizing Recloser @ P# 3195 Status: Prelim Design Submitted

Segment Type: RECLOSERS Town: BARKHAMSTED Budget Year: 2024

Work Type: BB-Sctnlzng-Reclosers Trimming Required: ☑ In Service Date: 12/31/2024

Description: [redacted]

### Itemized Work List

| ID | Major Grid | Minor Grid | Description of Work to be Performed |
|---|---|---|---|
| 1 | [redacted] | | |

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-03

**Estimate**

| | Preliminary Estimate Summary |
|---|---|
| Revision Number: | 0 |
| Contingency: | 28.00% |
| SubTotal: | $92,156 |
| Contingency Amount: | $25,804 |
| Estimate: | $117,960 |
| Reimbursement: | $0 |
| Net Amount: | **$117,960** |
| Description: | ENG Estimate for installation of Sectionalizing Recloser on Main Street at P# 3195 |

| Item Description | CU | [redacted] | Amount |
|---|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 16-ALL17 | | $10,528.80 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 16-ALL18 | | $6,000.00 |
| SECTIONALIZE<br>OH - Recloser Control - setting changes only | 16-OH39A | | $9,771.20 |
| TREE<br>OH - Trimming for Taller Pole | 16-OH64 | | $1,500.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>1 - SR @ P# 3195 | 16-OH38 | | $47,989.60 |
| POLE<br>OH - POLE - 3ph (CL&P custodian)<br>P# 3194 | 16-OH14 | | $4,676.00 |
| POLE<br>OH - JUNCTION POLE - 3ph (CL&P custodian)<br>P# 708 | 16-OH14A | | $11,690.40 |

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-03

### Associated / Impacted Devices

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

### Reliability Projection

Title:

Outage Start Date: 2/28/2018 Outage End Date: 2/28/2022 Years History: 4.00

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953

[redacted]

Design Alternative

CD01953-04

### General Information

Segment: 4 - [redacted] Radial Recloser Instl. @ P# 6505 Status: Prelim Design Submitted

Segment Type: RECLOSERS Town: BARKHAMSTED Budget Year: 2024

Work Type: BB-Sctnlzng-Reclosers Trimming Required: ☑ In Service Date: 12/31/2024

Description: [redacted]

### Itemized Work List

| ID | Major Grid | Minor Grid | Description of Work to be Performed |
|---|---|---|---|
| 1 | [redacted] | | |

Connecticut Light & Power
A Northeast Utilities Company

## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-04

**Estimate**

| | Preliminary Estimate Summary |
|---|---|
| Revision Number: | 0 |
| Contingency: | 28.00% |
| SubTotal: | $85,142 |
| Contingency Amount: | $23,840 |
| Estimate: | $108,981 |
| Reimbursement: | $0 |
| Net Amount: | **$108,981** |

Description: ENG Estimate for one Radial Recloser on Morgan Brook Rd. at P# 6505

| Item Description | CU | [redacted] | Amount |
|---|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 16-ALL17 | | $10,528.80 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Flagger | 16-ALL19 | | $6,000.00 |
| SECTIONALIZE<br>OH - Recloser Control - setting changes only | 16-OH39A | | $9,771.20 |
| TREE<br>OH - Trimming for Taller Pole | 16-OH64 | | $1,500.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>Inst. 1 - RR @ P# 6505 | 16-OH38 | | $47,989.60 |
| POLE<br>OH - POLE - 3ph (CL&P custodian)<br>P# 6504, P# 6506 | 16-OH14 | | $9,352.00 |

**Associated / Impacted Devices**

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

Connecticut Light & Power
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**Specific Project Proposal - Project #: CD01953**

[redacted]

Design Alternative CD01953-04

**Reliability Projection**

Title:

Outage Start Date: 2/28/2018 Outage End Date: 2/28/2022 Years History: 4.00

[redacted]

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## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-05

### General Information

Segment: 5 [redacted] First Alternate Option | Status: Draft

Segment Type: OTHER | Town: NEW HARTFORD | Budget Year: 2024

Work Type: BB-Sctnlzng-Reclosers | Trimming Required: ☑ | In Service Date: 12/31/2024

Description: [redacted]

### Itemized Work List

| ID | Major Grid | Minor Grid | Description of Work to be Performed |
|---|---|---|---|

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## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-05

**Estimate**

Preliminary Estimate Summary

| | |
|---|---|
| Revision Number: | 0 |
| Contingency: | 28.00% |
| SubTotal: | $86,910 |
| Contingency Amount: | $24,335 |
| Estimate: | $111,244 |
| Reimbursement: | $0 |
| Net Amount: | **$111,244** |
| Description: | ENG Estimate for First Alternative |

| Item Description | CU | Amount |
|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 16-ALL17 | $10,528.80 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 16-ALL18 | $10,000.00 |
| SECTIONALIZE<br>OH - Recloser Control - setting changes only | 16-OH39A | $9,771.20 |
| TREE<br>OH - Trimming for Taller Pole | 16-OH64 | $1,500.00 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>1 - MR @ P# 54 | 16-OH38 | $47,989.60 |
| POLE<br>OH - POLE - 3ph (Telephone custodian)<br>P# 53, P#54, | 16-OH12 | $7,120.00 |

[redacted]

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## Specific Project Proposal - Project #: [redacted]

Design Alternative CD01953-05

### Associated / Impacted Devices

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

### Reliability Projection

Title:

Outage Start Date: 2/28/2018 Outage End Date: 2/28/2022 Years History: 4.00

[redacted]

Connecticut Light & Power
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## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-06

### General Information

Segment: 6 - [redacted] - Second Alternate Option -14N2 Loop Status: Draft

Segment Type: OTHER Town: BARKHAMSTED Budget Year: 2024

Work Type: BB-Conversion-Recond Trimming Required: ☑ In Service Date: 12/31/2024

Description: [redacted]

### 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 #: [redacted]

Design Alternative

CD01953-06

**Estimate**

Preliminary Estimate Summary

| | |
|---|---|
| Revision Number: | 0 |
| Contingency: | 28.00% |
| SubTotal: | $6,272,081 |
| Contingency Amount: | $1,756,183 |
| Estimate: | $8,028,264 |
| Reimbursement: | $0 |
| Net Amount: | **$8,028,264** |

Description: ENG Estimate for 5R5/14N2 Loop Scheme

| Item Description | CU | [redacted] | Amount |
|---|---|---|---|
| SWITCHING<br>OH/DB/UG - SWITCHING NonNetwork - Average | 16-ALL17 | | $14,038.40 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Police Officer | 16-ALL18 | | $563,048.00 |
| TRAFFIC<br>OH/DB/UG - Traffic Control - Flagger | 16-ALL19 | | $241,306.00 |
| OH WIRE<br>OH - Ampact Connectors - 3ph (6 Ampacts) | 16-OH22 | | $8,652.00 |
| OH WIRE<br>OH - Neutral | 16-OH31 | | $135,520.00 |
| OH WIRE<br>OH - Remove circuit wire (1 phase) | 16-OH37 | | $19,267.20 |
| OH WIRE<br>OH - Remove circuit wire (3 phase) | 16-OH37A | | $15,120.00 |
| SECTIONALIZE<br>OH - Recloser Control - setting changes only | 16-OH39A | | $9,771.20 |
| XF<br>OH - OH XF - 1ph | 16-OH45 | | $116,028.00 |

Asset & Investment Management System

9/29/2022

Page 22 of 25

Connecticut Light & Power
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**Specific Project Proposal - Project #: CD01953**

[redacted]

| Design Alternative | | [redacted] | CD01953-06 |
|---|---|---|---|
| XF<br>OH - OH XF's - bank of 3-1ph | 16-OH46 | | $20,076.80 |
| EQUIPMENT<br>OH - Regulators, 3-1ph - on RACK | 16-OH48 | | $61,800.00 |
| XF<br>OH - Stepdown - 1ph - on POLE | 16-OH49 | | $13,600.00 |
| EQUIPMENT<br>OH - Capacitor, any kVAR, any voltage | 16-OH52 | | $20,694.40 |
| EQUIPMENT<br>OH - Remove Capacitor, any kVAR | 16-OH54 | | $1,800.00 |
| EQUIPMENT<br>OH - Capacitor Control - Install or Replace | 16-OH55 | | $17,995.20 |
| EQUIPMENT<br>OH - Conversion Prep Work - 1ph | 16-OH56 | | $67,980.00 |
| EQUIPMENT<br>OH - Conversion Prep Work - 3ph | 16-OH57 | | $8,240.00 |
| EQUIPMENT<br>OH - Conversion - CUTOVER | 16-OH58 | | $31,576.80 |
| TREE<br>OH - Tree Trimming | 16-OH61 | | $120,000.00 |
| DB CABLE<br>DB/UG - #1 - 3-1/C (3ph) Al | 16-UG112 | | $15,200.00 |
| XF<br>DB/UG - Padmount XF - 3ph | 16-UG131 | | $12,598.40 |
| CONDUIT<br>DB - Conduit Installation | 16-UG152 | | $17,920.00 |

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## Specific Project Proposal - Project #: CD01953 [redacted]

| Design Alternative | | [redacted] | CD01953-06 |
|---|---|---|---|
| OH WIRE<br>OH - Line Extension - 3ph (556 kcmil) | 16-OH34 | | $936,000.00 |
| POLE<br>OH - POLE - 3ph (CL&P custodian)<br>45/1 | 16-OH14 | | $378,756.00 |
| POLE<br>OH - JUNCTION POLE - 3ph (CL&P custodian)<br>50/1 Jct Pole | 16-OH14A | | $35,071.20 |
| SECTIONALIZE<br>OH - Recloser - 3ph<br>6 + 5 | 16-OH38 | | $527,885.60 |
| OTHER<br>OTHER<br>9 MVA Auto Xfmrs on Rack | 16-ALL14 | | $63,000.00 |
| OTHER<br>OTHER<br>Contractor Adder @ 20% | 16-ALL14 | | $1,278,386.00 |
| OTHER<br>OTHER<br>Core Bore for 123 Poles @ $950/ea. | 16-ALL14 | | $111,150.00 |
| OTHER<br>OTHER<br>Cost to Remove 4.8 kV Substation Xfmr. | 16-ALL14 | | $30,000.00 |
| OH WIRE<br>OH - Reconductor w/Spacer Cable - 556 kcmil<br>P# 3761 - 3508, P# 6548 - 3703, 383 - 7181 | 16-OH29 | | $1,369,600.00 |
| OTHER<br>OTHER<br>Rack for 3000 kVA Auto Xfmrs. | 16-ALL14 | | $5,000.00 |
| OTHER<br>OTHER<br>Rack for 333 kVA Step Xfmrs. | 16-ALL14 | | $5,000.00 |

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## Specific Project Proposal - Project #: CD01953 [redacted]

Design Alternative CD01953-06

### Associated / Impacted Devices

| Status | Type / SysID | Street / Cross St | Structure / Town | [redacted] | Cust | Notes |
|---|---|---|---|---|---|---|
| Existing | [redacted] | | | | | |
| Existing | | | | | | |
| Existing | | | | | | |
| Existing | | | | | | |
| Existing | | | | | | |

### Reliability Projection

Title:

Outage Start Date: 2/28/2018 Outage End Date: 2/28/2022 Years History: 4.00

[redacted]

## C. One Line Diagram: Before Change







