# Supplement Request Form
## Approved at December 23, 2019 EPAC
## Link to Meeting Minutes

| | |
|---|---|
| **Date Prepared: 11/30/2019** | **Project Title: Circuit Breaker Automation at [redacted]** |
| **Company/Companies: Eversource -CT** | **Project ID Number: CS00177** |
| **Organization: Strategy and Performance** | **Plant Class/(F.P. Type): Distribution Substation** |
| **Project Initiator: [redacted]** | **Project Type: Specific** |
| **Project Manager: [redacted]** | **Capital Investment Part of Original Operating Plan? Yes** |
| **Project Sponsor: [redacted]** | **O&M Expenses Part of the Original Operating Plan? No** |
| **Current Authorized Amount: $450K** | **Estimated in service date(s): 4/26/2019** |
| **Supplement Request: $1,381K** | **Other:** |
| **Total Request: $ 1,831K** | |

### Background

The [redacted] had an original authorized budget of $450K that was approved in PowerPlan on 2/17/16.

The approved project scope was to [redacted] The issued for construction drawings automated [redacted]. The original in service date was extended from December 31, 2017 to May 2, 2018. The project in service date was extended due to use of contractor labor for installation and testing.

The additional scope is the main driver to the cost increase as discussed below. The project cost estimate assumed the installation and testing work would be performed by internal resources. Due to resource issues, contractor labor performed the modification. Using contractor labor also required the use of a lead commissioning engineer (LCE) which also increased the project cost since it was not included in the original estimate.

## Supplement Justification

### Justification for Additional Resources

A formal Project Authorization Form (PAF) was not originally created; the predecessor approval document was used for approval in PowerPlan.

Also, the original estimate approved in Power Plan was developed using total direct costs preventing a detailed comparison and analysis of cost increases.

The reasons for the project authorization supplement of $1,381K are summarized below.

The project cost increase was driven by increased scope items identified during a walkdown prior to engineering release. These additions were not estimated or added to the project approval document. The project used contracted labor to install and test the modification due to a lack of company resources. The use of contractors also required an LCE(Lead Commissioning Engineer) which added costs to the project as well. The increased scope [redacted]

Costs shown below are the project totals.

Design and Engineering costs were $88K

Project materials/Rentals were $68K

Contractor Labor - $793K

- Electrical Construction Matrix contract cost was $243K
- Test contract costs were $416K
- Contracted LCE services were $134K

In House Labor Switching services costs were $20K

Indirect Costs

- Indirect costs were $796K
- AFUDC Charges were $66K

Please see the original authorization documentation attached.

## Supplement Cost Summary

*Note: Dollar values are in thousands*

| | Prior Authorized | Supplement Request | Total |
|---|---|---|---|
| Capital Additions - Direct | $445 | $513 | $958 |
| Less Customer Contribution | $ - | $ - | $ - |
| Removals Net of Salvage 1% | $5 | $6 | $11 |
| Total Direct Spending | $450 | $519 | $969 |
| Capital Additions - Indirect | $ - | $796 | $796 |
| AFUDC | $ - | $66 | $66 |
| Total Capital Request | $450 | $1,381 | $1,831 |
| O&M | $ - | $ - | $ - |
| **Total Request** | $450 | $1,381 | $1,831 |

*Note: Dollar values are in thousands*

*Total Supplement Request by year view:*

| | 2016 | 2017 | 2018 | 2019 | Total |
|---|---|---|---|---|---|
| Capital Additions Direct | $ - | ($407) | $639 | $281 | $513 |
| Less Customer Contribution | $ - | $ - | $ - | $ - | $ - |
| Removals Net of Salvage 1% | $ - | ($5) | $8 | $3 | $6 |
| Total Direct Spending | $ - | ($412) | $647 | $284 | $519 |
| Capital Additions - Indirect | $13 | $35 | $588 | $160 | $796 |
| AFUDC | $ - | $4 | $24 | $38 | $66 |
| Subtotal Request | $13 | ($373) | $1,259 | $482 | $1,381 |
| O&M | $ - | $ - | $ - | $ - | $ - |
| **Total Request** | $13 | ($373) | $1,259 | $482 | $1,381 |

Connecticut Light & Power
A Northeast Utilities Company

# Specific Project Proposal - Project #: CS00177

[redacted] - Circuit Breaker Auto

## Work Classification

Category: Substation
Type: SRCA
Type Desc: SS CIRCUIT BREAKER AUTOMATION
Work Type: Other Work

## Ownership / Management

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

## Project Information

Status: Prelim Design Approved
SPS #:
AIS Score:
Associated Projects:
Assignment ID:
Patrol Find ID:

## Budget Summary - Preferred Option

Automate 6 Feeder Breakers

2017

| ID | Title | Status | Rev # | Contingency | Expenditure Amount | Net Estimate |
|---|---|---|---|---|---|---|
| 1 | [redacted] | Prelim | 0 | 0 % | $450,000 | $450,000 |
| | | | | **2017 Total:** | **$450,000** | **$450,000** |
| | | | | Total Project: | **$450,000** | **$450,000** |

# Specific Project Proposal - Project #: CS00177

[redacted] - Circuit Breaker Auto

## Project Option Summary

| ID | Description | Segments | Preliminary Estimate | Construction Estimate | Variance | IEEE $/CMS | All (w/Storm) | Prfrd |
|---|---|---|---|---|---|---|---|---|
| O1 | [redacted] | 1 | $450,000 | $0 | 100 % | $0.00 | $0.00 | ☑ |

## Segments

| ID | Title | Preliminary Estimate | Construction Estimate | Variance | IEEE $/CMS | All (w/Storm) |
|---|---|---|---|---|---|---|
| 1 | [redacted] | $450,000 | | | $0.00 | $0.00 |

# Specific Project Proposal - Project #: CS00177

[redacted] - Circuit Breaker Auto

## Background / Scope

Issue:

There is an [redacted]

Project Description:

**January 2016** - This is for ENG approval. [redacted] The estimated cost is [redacted] per feeder or $450k total. The ISD is 12/31/17.

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 #:

# Specific Project Proposal - Project #: CS00177

[redacted] - Circuit Breaker Auto

Segment CS00177-01

## General Information

Segment: 1 - [redacted]
Status: Prelim Design Approved
Segment Type: DSCADA
Town: SOUTH WINDSOR
Budget Year: 2017
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2017
Description: [redacted].

## Itemized Work List

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

# Specific Project Proposal - Project #: CS00177

[redacted] - Circuit Breaker Auto

Segment CS00177-01

## Estimate

Preliminary Estimate Summary

| | |
|---|---|
| Revision Number: | 0 |
| Contingency: | 0.00 % |
| SubTotal: | $450,000 |
| Contingency Amount: | $0 |
| Estimate: | $450,000 |
| Reimbursement: | $0 |
| Net Amount: | **$450,000** |
| Description: | [redacted] |

| Item Description | CU | $ / Per | Qty | Amount |
|---|---|---|---|---|
| OTHER | 15-ALL14 | [redacted] | [redacted] | $450,000.00 |
| OTHER | | | | |

## Associated / Impacted Devices

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

# Distribution Substation Engineering and Partial ACT Estimate

**PEM:** [redacted] **Date of Estimate:** 12/3/2014

**Project Title:** [redacted] - Install DSCADA on all Feeders

**Description:** The scope of this DME is to install DSCADA on all feeders to allow for remote tripping and closing of all feeder breakers and change the existing SEL-351S relays setting for arc flash compliance.

| | |
|---|---|
| Operating Company: | CL&P |
| Year of Construction: | 2015 |

| | |
|---|---|
| Project No. | TBD |
| In Service Date: | TBD |

| Labor Estimates | Mandays | NU Labor Daily Rate | NU Labor Labor Total | Outsourced Labor Daily Rate | Outsourced Labor Labor Total |
|---|---|---|---|---|---|
| NUMSO - NUSCO Protection & Controls | 30 | $339 | $10,185 | $339 | $10,185 |
| NUMSO - NUSCO Drafting | 15 | $228 | $3,422 | $228 | $3,422 |
| NUMSO - NUSCO Electrical Design | 20 | $318 | $6,365 | $318 | $6,365 |
| NUMSO - NUSCO Project Engineering/Management | 5 | $456 | $2,281 | $456 | $2,281 |
| NUMSO - NUSCO Apparatus Specialist | 0 | $456 | $0 | $456 | $0 |
| NUMSO - NUSCO Civil Engineering | 2 | $517 | $1,033 | $517 | $1,033 |
| NUMSO - NUSCO Civil Design | 8 | $336 | $2,691 | $336 | $2,691 |
| NUMSO - NUSCO Permitting & Surveying | 0 | $259 | $0 | $259 | $0 |
| ADDS0 - General Construction | 15 | $448 | $6,721 | $720 | $10,800 |
| ADDS0 - Operating Company Manpower | 20 | $467 | $9,350 | $467 | $9,350 |
| ADDS0 - Test | 80 | $467 | $37,398 | $1,088 | $87,040 |
| ADDS0 - Electrical Construction | 95 | $467 | $44,410 | $720 | $68,400 |
| ADDS0 - Construction Rep | 15 | | | $400 | $6,000 |
| ADDS0 - Transformer Shop | 0 | $370 | $0 | $370 | $0 |
| Totals | 305 | | $123,856 | | $207,567 |

| | |
|---|---|
| Direct Charge Materials | $11,094 |
| Stock Materials | $6,890 |
| Equipment & Vehicles: | $38,017 |
| Contract Work: | $0 |
| Taxes (4.6%): | $910 |
| AFUDC: | $24,104 |

| | |
|---|---|
| Environmental Remediation: | |

| Contingencies | | |
|---|---|---|
| Op. Co. Labor | 10% | $9,788 |
| Materials | 10% | $1,798 |
| Contractor | 0% | $0 |

| MIB Data | | |
|---|---|---|
| Materials | ADDS0 AM | $17,984 |
| Contract Work: | | $0 |
| Equip&Vehicles: | ADDS0 | $38,017 |
| CL&P Labor | ADDS0 | $97,878 |
| NUSCO Labor | NUMS0 | $25,977 |
| Removals | RMVS0 | $2,337 |

| Construction Rep & Operating Co. Manpower | |
|---|---|
| Equip& Veh | $4,605 |
| Labor Loader | $22,385 |
| Stores | $896 |
| E&S | $15,445 |
| AFUDC: | $38,316 |
| | |
| Engineering | Adder |
| Contractor | $25,977 |
| Contractor | $200 |
| Per Diem | $38,000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Loaders | NUSCO Labor Loader | 94.3% | $24,504 | NUSCO Labor Loader | 94.3% | $24,504 |
| | CL&P Labor Loader | 89.0% | $95,876 | Labor Loader | 60.0% | $99,744 |
| | Stores | 13.0% | $896 | Stores | 13.0% | $896 |
| | E&S | 31.9% | $81,033.61 | E&S | 31.9% | $85,439.63 |
| | AS&E | 1.85% | $7,070 | AS&E | 1.85% | $9,159 |

| | | |
|---|---|---|
| **Total Project Capital Cost** | **$425,836** | **$641,430** |

WORK SCOPE

**Major Materials:**

DSCADA Cabinet

SEL-3530 RTAC, Satellite Clock, Magnum DX940, Noran Tel Fuse Panel

Control conduit for fiber optic cables between swg's

**Misc:**