Supplement Request Form

Approved at July 20, 2020 EPAC
Link to Meeting Minutes

Date Prepared: June 10, 2020	**Project Title: [redacted] Greenjacket Animal Protection**
Company/Companies: Eversource CT	**Project ID Number: CS00200**
Organization: Strategy & 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: $400K	**Estimated in service date(s): January 2021**
Supplement Request: $1,231K	**Other:**
Total Request: $1,631K	

Supplement Justification

Eversource CT launched a pilot program to retrofit substations with Greenjacket's animal protection covers on the substation equipment. The [redacted] substation is the remaining pilot project with an original authorized budget of $400K approved in Power Plan on April 26, 2016. The original in-service date of December 31, 2016 has been extended to the new projected in-service date of January 2021. This supplement requests an additional $1,231K for an updated total request of $1,631K.

The approved scope was to install [redacted]

The original estimate prepared in 2016 for this project did not include adequate man-hours for the completion of the work, outages, and additional materials, which are the primary drivers for the increased project direct costs.

The project delay was primarily caused by extended duration to resolve the complexities of the first few installations as well as coordinating the appropriate resources with other project priorities. The pilot projects identified new information required for the design and application of the new technology, that contributed to additional outage requirements based on the configuration of the station, which were the primary drivers of the cost increase. The lessons learned associated with project execution from the pilot, will be applied to future installations where appropriate to realize the added benefits of the technology to improve animal protection and ultimately substation reliability.

Justification for Additional Resources

CS002001 was created to install Greenjacket covers at [redacted]. Most of the materials were delivered at the substation. The manufacturer of the covers could not specify some equipment because they were already covered. As a result, Greenjacket covering installation was delayed.

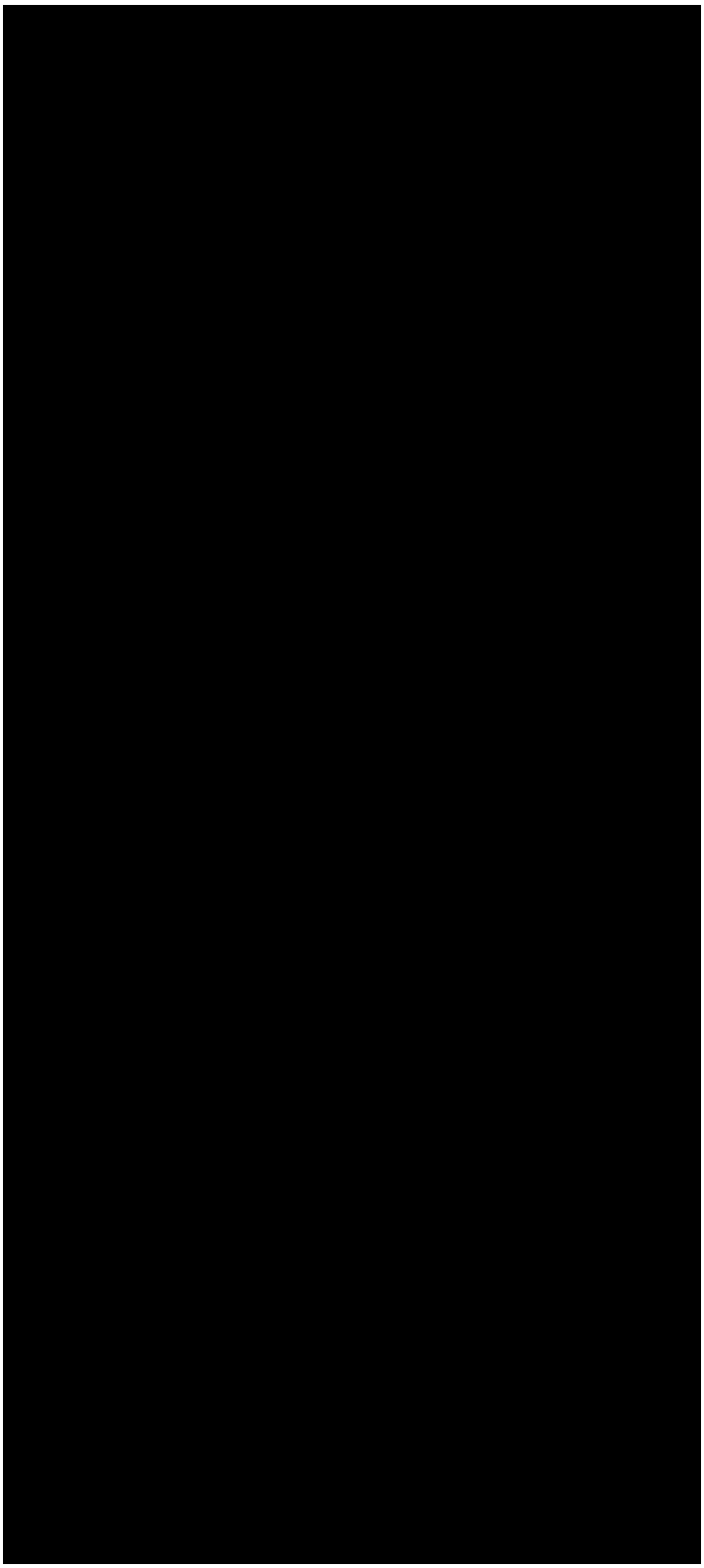
In addition to the original scope, Engineering and Operations have identified that [redacted] (CS00378).

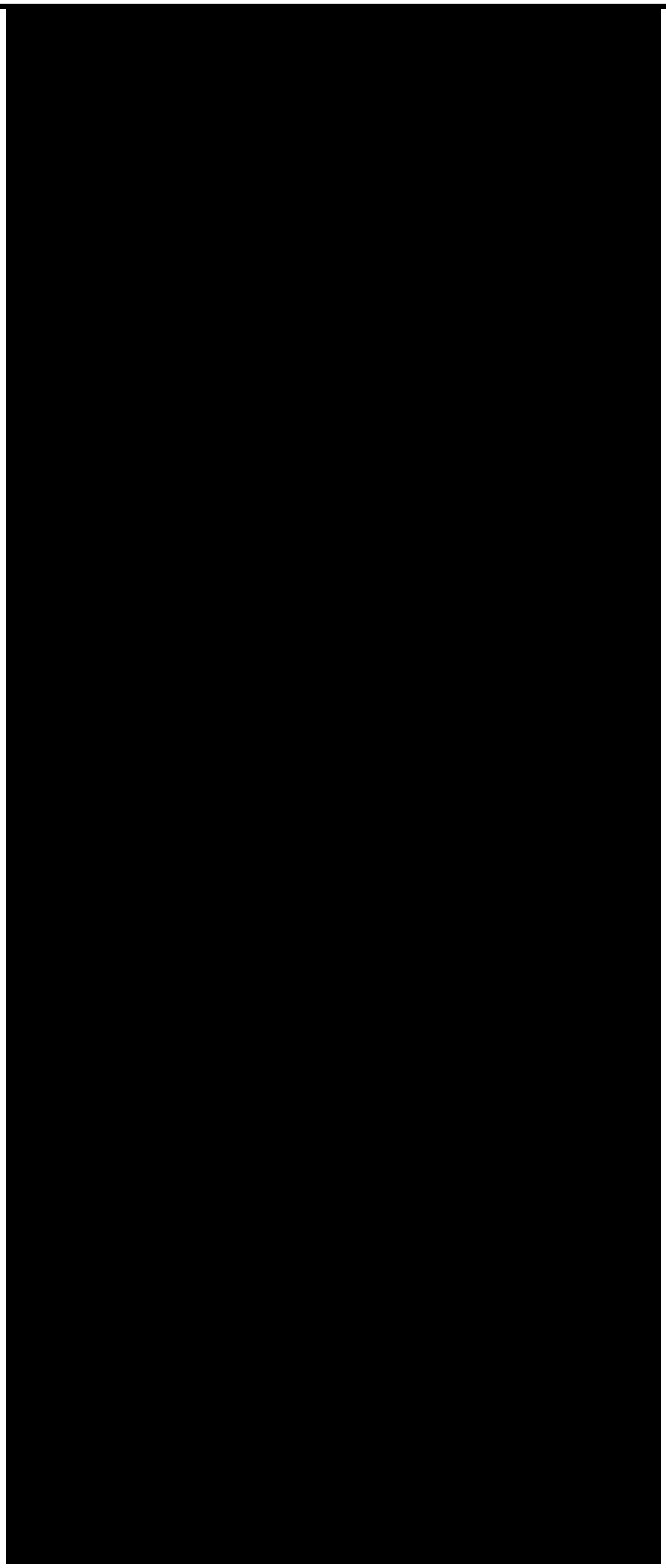
[redacted]

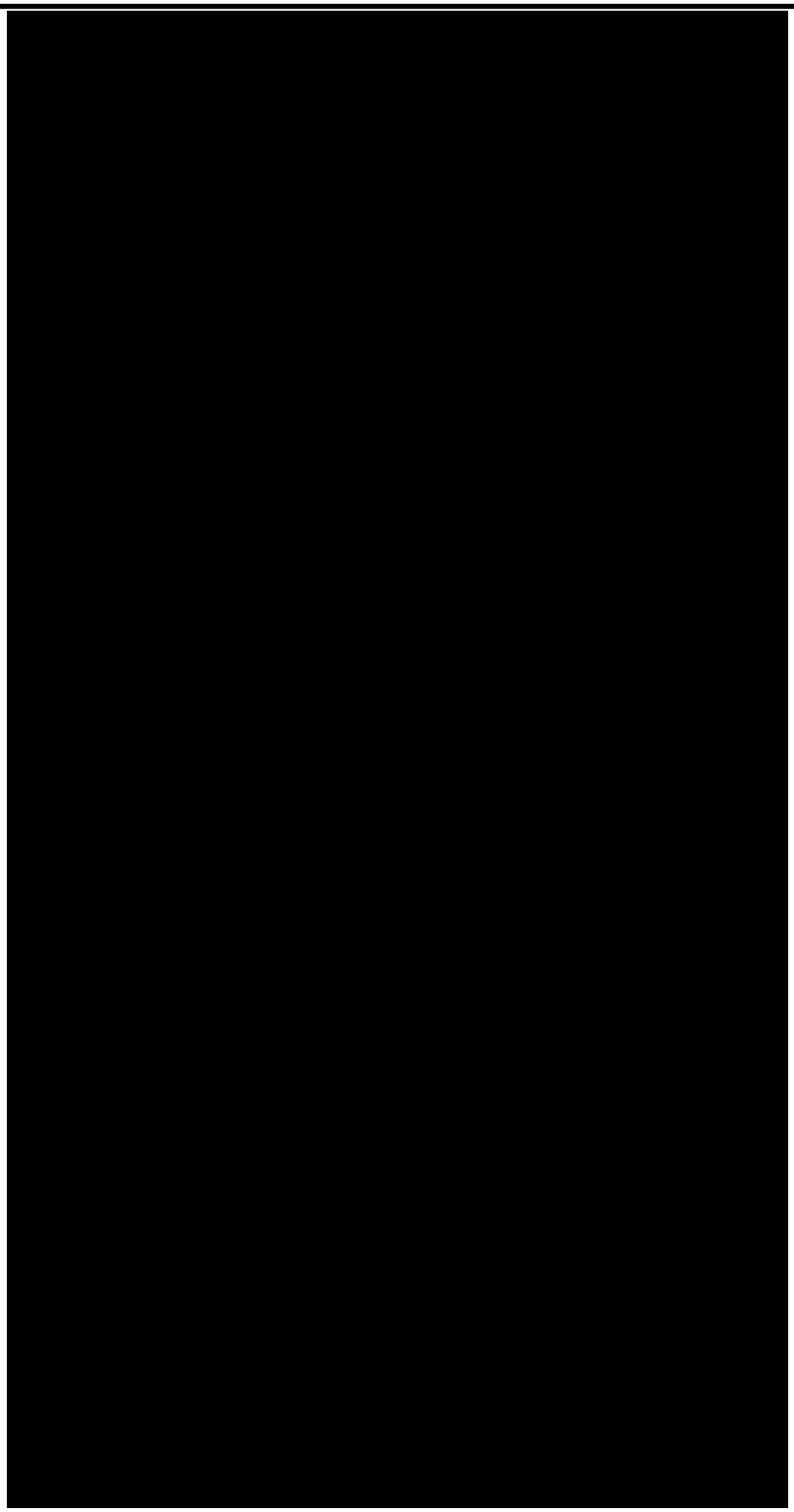
Below is a summary of the process to develop an estimate for Greenjacket cover installation on already covered equipment. Note a one-day outage cannot be taken for all breakers for equipment where animal protection is to be installed.

1. Eversource Substation Engineering schedules a site visit so that a Greenjacket technician can come to the substation and collect data (scan substation and take pictures) needed to fabricate animal covers.
2. Eversource electricians take a feeder/transformer outage to remove existing bushing covers while the Greenjacket technician is on site.
3. Eversource electricians remove existing animal protection covers on breaker bushings.
4. Greenjacket technician takes pictures.
5. Eversource electricians re-install bushings covers.
6. Eversource electricians put the breaker in service.
7. Greenjacket starts design, completes production of the covers and ships to Eversource substation.
8. Eversource electricians request an outage to remove existing covers and install new Greenjacket covers.
9. Eversource electricians put the breaker back in service.

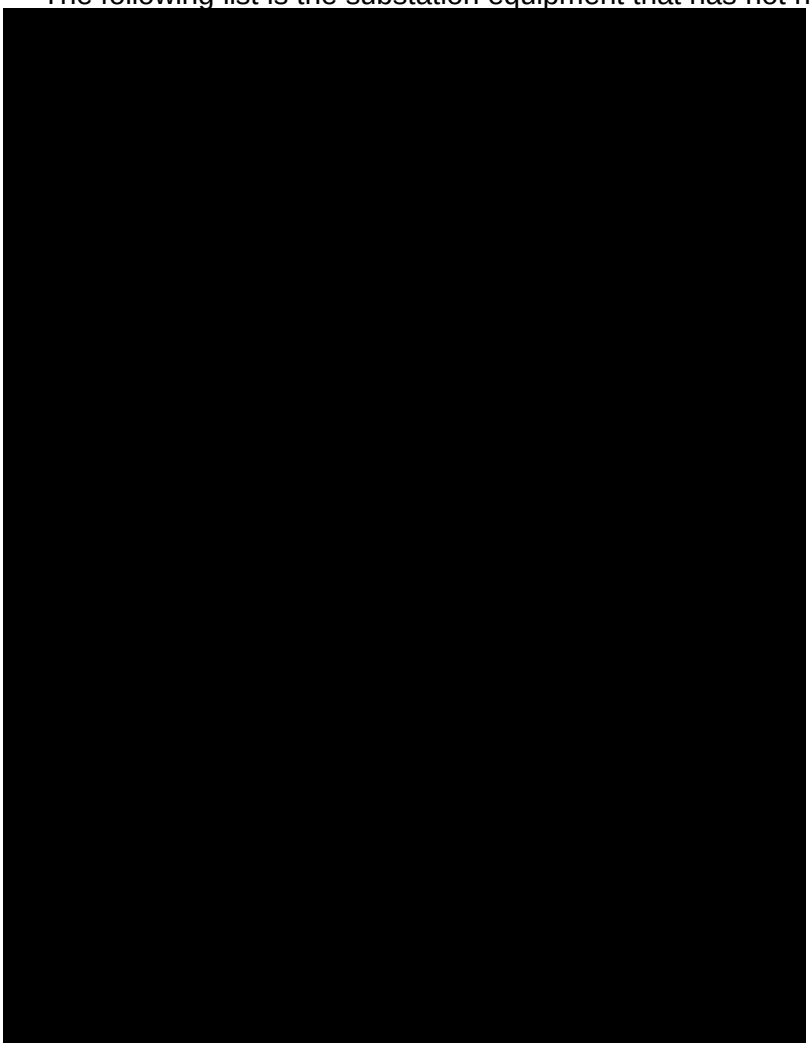
The following list is the substation equipment that has had green jacket covers installed.







The following list is the substation equipment that has not had green jacket covers installed



The below list shows what equipment covers have been purchased and are not yet installed. This equipment will have these covers installed in the fall of 2020.



The original project cost estimate did not have a line item break down, which prevents a comparison of direct cost line items in this supplement request.

The new forecasted project cost breakdown is as follows:

1.	Design and Engineering costs	$ 5K
2.	Project Materials/Rentals	$714K
3.	Labor costs	$318K
4.	Outside services cost	$ 58K
5.	Indirect Costs	$389K
6.	AFUDC Charges	$147K
TOTAL:		**$1,631K**

Please see attached original authorization documentation.

Supplement Cost Summary

Note: Dollar values are in thousands

	Prior Authorized	Supplement Request	Total
Capital Additions - Direct	$400	$685	$1,085
Less Customer Contribution	$0	$0	$0
Removals Net of Salvage 0%	$0	$10	$10
Total Direct Spending	$400	$695	$1,095
Capital Additions - Indirect	$0	$389	$389
AFUDC	$0	$147	$147
Total Capital Request	$400	$1,231	$1,631
O&M	$0	$0	$0
Total Request	$400	$1,231	$1,631

Total Supplement Request by Year View:

Note: Dollar values are in thousands

	Prior Years	2020	Total
Capital Additions Direct	$400	$685	$1,085
Less Customer Contribution	$0	$0	$0
Removals Net of Salvage 0%	$0	$10	$10
Total Direct Spending	$400	$695	$1,095
Capital Additions - Indirect	$0	$389	$389
AFUDC	$0	$147	$147
Subtotal Request	$400	$1,231	$1,631
O&M	$0	$0	$0
Total Request	$400	$1,231	$1,631

Superseded Project Summary & Previous Estimates

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CS00200

[redacted] - Greenjacket Animal Protect

Work Classification

Category: Substation
Type: REL1
Type Desc: SUBSTATION BUS REHABILITATION
Work Type: Other Work

Ownership / Management

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

Project Information

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

Budget Summary - Preferred Option

Install Greenjacket Animal Protection

2016

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	Install Greenjacket Animal Protection	Prelim	0	0 %	$400,000	$400,000
				2016 Total:	**$400,000**	**$400,000**
				Total Project:	**$400,000**	**$400,000**

Specific Project Proposal - Project #: CS00200

[redacted] - Greenjacket Animal Protect

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Install Greenjacket Animal Protection	1	$400,000	$0	100 %	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Install Greenjacket Animal Protection	$400,000			$0.00	$0.00

Background / Scope

Issue:

[redacted] has had animal outages in the past, despite having animal proofing installed. A more effective method is a product called "Greenjacket" which provides customized animal proofing material that is installed on the equipment.

Project Description:

April 13, 2016 - This project is being presented for ENG approval. The proposed scope is to install Greenjacket animal protection on the [redacted]. The equipment includes:

- [redacted]
- [redacted]
- [redacted]
- [redacted]

Some of this equipment has older style animal protection already that will be replaced/upgraded to Greenjacket material. Some of the protection material can be installed while the equipment is energized, while other protection material will require an outage to be installed.

The estimated cost is $400k, which include the cost of the Greenjacket material, labor to install, labor to switch out equipment, and loaders. The ISD is 12/31/16.

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 #: CS00200

[redacted] - Greenjacket Animal Protect

Segment CS00200-01

General Information

Segment: 1 - Install Greenjacket Animal Protection
Status: Prelim Design Approved
Segment Type: S/S - BUS REHAB
Town: CANTON
Budget Year: 2016
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2016
Description: Install Greenjacket Animal Protection

Itemized Work List

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

Specific Project Proposal - Project #: CS00200

[redacted] - Greenjacket Animal Protect

Segment CS00200-01

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	0.00 %
SubTotal:	$400,000
Contingency Amount:	$0
Estimate:	$400,000
Reimbursement:	$0
Net Amount:	**$400,000**
Description:	Install Greenjacket Animal Protection

Item Description	CU	$ / Per	Qty	Amount
OTHER OTHER	16-ALL14	1.00 / $	400,000	$400,000.00

Associated / Impacted Devices

Status	Type / SysID	[redacted]	Structure / Town	Circuit	Map	Cust	Notes
Existing	[redacted]					0	
Existing						0	
Existing						0	

Segment CS00200-01

Reliability Projection

Title:

Outage Start Date: 01/01/2007 Outage End Date: 03/22/2016 Years History: 9.23

[redacted]