EVERSOURCE

Supplement Authorization Form

Project Title: Card [redacted] 2017 System Resiliency	Project Number: CD00702
Date Prepared: 04/10/2026	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** System Resiliency
Initiating Organization: Distribution	**Project Type:** Specific
Project DDE: [redacted]	**Capital Investment part of 5-year 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)
Current Authorized Amount: $1,819.4K	**Approved In-Service Date:** 09/30/2017
Supplement Request: $396.5K	**Estimated In-Service Date: 12/31/19**
Total Capital Request: $2,215.9K	**Authorization Type:** Supplement Request
	Reason: Cost Overage

1. Project Background

Project CD00702 was designed to reduce the frequency of outages by reconductoring several sections of the [redacted] circuit that contained aging infrastructure, specifically bare #4 wire, and replacing it with 336AAC tree covered wire. In addition, the projected aimed to reduce the number of customers affected by an outage by modifying the function of two existing reclosers. With the additional reclosers and smart switches, these zones will be reduced to customer counts of approximately 500 customers. All circuit modifications were completed in accordance with system resiliency standards.

This supplemental authorization addresses out-of-scope activities associated with the replacement of a recloser that could not be reprogrammed in the field due to an obsolete controller. Additionally, the project was completed by a combination of internal and outside resources. The scope adjustment includes additional internal labor and external services, such as tree trimming, traffic control, and rock drilling, necessary to support the successful execution of these changes.

Therefore, the supplemental request for this project is $396.5 and includes additional out-of-scope work for a total capital request of $835.1K. All WOs are closed.

2. Supplement Justification Overview

The following are reasons for the budget being over the authorized amount:

a. Additional replacement of a hydraulic recloser [redacted]
b. Aging conductors that were determined near the end of service life.
c. Increase in internal labor, materials and outside resources

3. Supplement Cost Summary (Project Total)

Capital Costs	To Date Spend	Prior Authorized	Supplemental Request	Total Request
Internal Labor and Construction Equipment	69.6	35.0	29.7	64.6
Outside Services	1,236.2	1,084.0	64.5	1,148.5
Materials	159.6	173.3	-25.0	148.2
Removals	0.0	0.0	104.1	104.1
Risk and Contingency	43.4	0.0	43.4	43.4
Other	2.0	0.0	1.9	1.9
Subtotal	**1,510.8**	**1,292.2**	**218.6**	**1,510.8**

Indirect Capital Costs	To Date Spend	Prior Authorized	Supplemental Request	Total Request
Indirects/Overheads (including benefits)	682.9	515.1	167.8	682.9
Capitalized interest or AFUDC, if any	22.2	12.1	10.1	22.2
Subtotal	**705.1**	**527.2**	**177.9**	**705.1**
Total Capital Costs (Gross)	**2,215.9**	**1,819.4**	**396.5**	**2,215.9**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**2,215.9**	**1,819.4**	**396.5**	**2,215.9**

4. New Total Request by Year (if applicable)

Note: If multi-year project, include actuals for current and years past, and then show forecasted spend for upcoming years.

Capital Costs	2016	2017	2018	2019	TOTAL
Internal Labor & Equipment	4.2	57.9	2.7	-0.2	64.6
Outside Services	74.5	1,029.6	47.2	-2.8	1,148.5
Materials	9.6	132.9	6.1	-0.4	148.2
Removals	6.5	90.5	4.1	3.0	104.1
Risk and Contingency	0.0	0.0	0.0	43.4	43.4
Other	0.1	1.7	0.1	0.0	1.9
SUBTOTAL Direct Cost	**95.0**	**1,312.5**	**60.2**	**43.1**	**1,510.8**
Indirects / Overheads	37.0	601.3	48.5	-3.9	682.9
AFUDC	0.8	21.4	0.4	-0.4	22.2
SUBTOTAL Indirect Cost	**37.8**	**622.7**	**48.9**	**-4.3**	**705.1**
TOTAL Capital Request	**132.8**	**1,935.2**	**109.1**	**38.8**	**2,215.9**
Less Total Customer Contribution	0.0	0.0	0.0	0.0	**0.0**
TOTAL Project Cost	**132.8**	**1,935.2**	**109.1**	**38.8**	**2,215.9**

5. Lessons Learned

Technical Authorization Form

Date Prepared: June 1, 2016	Project Title: Card [redacted] 2017 System Resiliency
Company/ies: Eversource CT	Project ID Number: CD00702
Organization: Distribution Design	Class(es) of Plant: Distribution
Project Initiator: [redacted]	Project Category: System Resiliency
Project Owner/Manager: [redacted]	Project Type: Specific - Structural and Electrical
Project Sponsor: [redacted]	Project Purpose: To Improve Reliability for Major Storm Events
Estimated in service date: 9/30/2017	If Transmission Project: N/A
Authorization Type: ENG	Authorization Amount: $1.695M

Project Need Statement *(Description of Issue)*

[redacted]

The remaining circuit segments were not selected for system resiliency.

Project Objectives

Reduce the number of outages by reconductoring with tree wire and reduce the number of customers affected by an outage by modifying the function of two existing reclosers. Additionally, upon completion of this project, the selected segments will better withstand day-to-day and extreme weather events.

Project Scope

Four segments have been identified for inclusion in this program based on the defined system resiliency criteria.

The proposed work is as follows:



Background / Justification

TDRP Rank History:

Year	TDRP Rank

2015	33
2014	83
2013	119
2012	66
2011	92
2010	31
2009	25
2008	12

Project CD00702 was created to provide reliability enhancements to prevent future outages for both normal and extreme weather conditions. These enhancements were based on historical outage performance and the physical condition (pole class, wire types, age, tree conditions, etc.) of the circuit in the field. In addition, the number of customers by zone along with the number of alternate sources was also reviewed to help reduce the impact to our customers in the event of a future outage. The locations of all critical customers were also considered to help provide them with a high level of service.

Business Process and / or Technical Improvements:

The selected circuit segments and zones will be less likely to experience an outage once they are built to resiliency standards under both normal and extreme weather conditions. Segments built to resiliency standards will be able to withstand winds up to 95 MPH or ¾" ice with 40 MPH winds. With the additional reclosers and smart switches, these zones will be reduced to customer counts of approximately 500 customers.

Cost Estimate and Assumptions

Budget Summary - Preferred Option — 2017 System Resiliency Approved Segments

2017

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
4	LAT_[redacted]_Lebanon_[redacted]_ustomers	Draft	0	24 %	$793,496	$793,496
11	LAT_[redacted]_Lebanon_[redacted]_ustomers	Draft	0	24 %	$730,649	$730,649
12	LAT_Fuse_OH:478_Scotlan[redacted]Customers	Draft	0	24 %	$84,685	$84,685
19	Approved BB_[redacted] Cust	Draft	0	24 %	$86,250	$86,250
				2017 Total:	**$1,695,080**	**$1,695,080**
				Total Project:	**$1,695,080**	**$1,695,080**

Alternatives Considered with Cost Estimates

The following circuit zones were reviewed and not selected for system resiliency:

ID	Title	Status	Preliminary Estimate	Segment Type	Construction Work Type
[redacted]		Draft	$504,737.78	STRUCTURAL HARDENING	BB-Conversion/Rebuild
		Draft	$2,008,574.32	ELECTRICAL HARDENING	BB-Reconductoring
		Draft	$989,241.99	ELECTRICAL HARDENING	BB-Reconductoring
		Draft	$298,455.10	ELECTRICAL HARDENING	LT-Reconductoring
		Draft	$459,741.66	STRUCTURAL HARDENING	BB-Conversion/Rebuild
		Draft	$1,953,896.52	ELECTRICAL HARDENING	BB-Reconductoring
		Draft	$641,452.99	ELECTRICAL HARDENING	BB-Reconductoring
		Draft	$161,785.53	ELECTRICAL HARDENING	LT-Reconductoring
		Draft	$198,624.94	ELECTRICAL HARDENING	LT-Reconductoring

Do nothing option – Reliability (MBI / SAIDI) will continue to degrade and will remain as one of our worst performing circuits on the TDRP list. Negative regulatory findings impacting cost recovery and increased scrutiny by PURA. Customer complaints will increase due to multiple outages.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
ENG/Detail Design	September 30, 2016
ACT	September 30, 2016
Construction	September 30, 2017

Regulatory Approvals

Docket No. 12-07-06REO1, Structural and Electrical Hardening

Risks and Risk Mitigation Plans

Describe the applicable risks and associated risk mitigation plans: e.g., construction, customer, reputational, schedule, financial, regulatory, environmental and IT risks. Indicate discussions with relevant subject matter experts.

Risk Event	Risk Horizon	Likelihood of Occurrence	Expected Value Cost Exposure ($M)	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2017	20%	$1.695M x 20% = $339K	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	2017	5%	$1.695M x 5% = $85K	Design to minimize customer impact. Project Preplanning and customer/community outreach
Internal construction resources not available to perform the work.	2017	10%	$1.695M x 10% = $170K	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2017	5%	$1.695M x 5% = $85K	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2017	5%	1,116 customers * 90 minutes = 0.08 SAIDI minutes	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods

References

None

One-Line Diagrams, Attachments, and Images

CD00702[redacted]
Presentation Detail M

Before:



After:

