EVERSOURCE

Supplement Authorization Form

Project Title: [redacted] **Smart Switch Project**	**Project Number: CD00887**
Date Prepared: 04/23/2026	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** SMART SWITCHES PROGRAM
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: $325.5K	**Approved In-Service Date:** 12/30/17
Supplement Request: $204.4K	**Estimated In-Service Date:** 12/30/17
Total Capital Request: $529.9K	**Authorization Type:** Supplement Request
	Reason: Cost Overage

1. Project Background

The [redacted] Smart Switch Project is part of a multiyear program created to improve circuit reliability by adding automatic sectionalizing devices on overhead distribution circuits. This program focuses on breaking up customer zones and lowering the average number of customers impacted by backbone interruptions. This program was approved as part of the System Resiliency PURA Docket 12-07-06RE01.

[redacted]

2. Supplement Justification Overview

This supplement is required due to the Direct costs increasing due to labor, equipment, and outside services.

3. Supplement Justification Detail

Contractors were required to support completion of this project.

4. Supplement Cost Summary (Project Total)

Line-item Category	To Date Spend Year(s)	Prior Authorized Year(s)	Variance (Supplemental Request) Year(s)	New Total Request (Add Prior Authorized and Variance) Year(s)
Internal Labor and Construction Equipment	78.3	42.4	31.8	74.3
Outside Services	38.8	3.1	33.8	36.8
Materials	156.7	157.4	-8.8	148.6
Removals	0.0	0.0	14.6	14.6
Risk and Contingency	10.4	0.0	10.4	10.4
Other	7.4	0.0	7.0	7.0
SUBTOTAL DIRECTS W/ RISKS	**291.7**	**202.9**	**88.8**	**291.7**
Indirect / Overhead (including benefits)	232.2	121.3	110.9	232.2
AFUDC	5.9	1.3	4.7	5.9
Subtotal – Indirect Costs	**238.2**	**122.6**	**115.5**	**238.2**
TOTAL CAPITAL REQUEST	**529.9**	**325.5**	**204.4**	**529.9**
Reimbursables/Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
PROJECT TOTAL (LESS REIMBURSABLES)	**529.9**	**325.5**	**204.4**	**529.9**

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.

Line item Category	2017	2018	2019	Total
Internal Labor and Construction Equipment	69.9	4.3	0.0	74.3
Outside Services	34.7	2.2	0.0	36.8
Materials	139.9	8.7	0.0	148.6
Removals	13.3	1.4	0.0	14.6
Risk and Contingency	0.0	10.4	0.0	10.4
Other	6.6	0.4	0.0	7.0
SUBTOTAL DIRECTS W/ RISKS	**264.4**	**27.4**	**0.0**	**291.7**
Indirect / Overhead (including benefits)	211.5	20.7	0.0	232.2
AFUDC	5.9	0.0	0.0	5.9
Subtotal – Indirect Costs	**217.5**	**20.7**	**0.0**	**238.2**
TOTAL CAPITAL REQUEST	**481.8**	**48.1**	**0.0**	**529.9**
Reimbursables/Customer Contribution	0.0	0.0	0.0	**0.0**
PROJECT TOTAL (LESS REIMBURSABLES)	**481.8**	**48.1**	**0.0**	**529.9**

5. Lessons Learned

Project Authorization Form

Date Prepared: 10/20/17	Project Title: [redacted] Smart Switch Project
Company/ies: Eversource CT	Project ID Number: CD00887
Organization: Distribution Design	Class(es) of Plant: Distribution
Project Initiator: [redacted]	Project Category: Smart Switch Project
Project Owner/Manager: [redacted]	Project Type: *Specific*
Project Sponsor: [redacted]	Project Purpose: System Resiliency PURA Docket 12-07-06RE01
Estimated in service date: 12/30/17	If Transmission Project: NA
Supplement to Existing Authorization? Yes	Capital Investment Part of Original Operating Plan? No
Eng./Constr. Resources Budgeted? No	O&M Expenses Part of the Original Operating Plan? No

Project Authorization

Project authorization must be in accordance with the approval levels included in the Delegation of Authority Policy (DOA).

If Chief Executive Officer or subsidiary board approval is required, document the review by Enterprise Risk Management (ERM) and Financial Planning and Analysis (FP&A)

ERM: _____

FP&A: _____

Executive Summary

The [redacted] Smart Switch Project is part of a multiyear program created to improve circuit reliability by adding automatic sectionalizing devices on overhead distribution circuits. This program focuses on breaking up customer zones and lowering the average number of customers impacted by a

backbone interruption. This program was approved as part of the System Resiliency PURA Docket 12-07-06RE01.

Ranked 69 in the prioritization list, [redacted]

An ENG estimate of $124,606 was presented at TRC on 4/20/17 and was approved for $12,461 for engineering. Due to the accelerated schedule of this project, it was presented at CPAC on 5/24/17 to request additional funding totaling $115,317 for engineering and project equipment, including approximately $102K in long-lead time materials (see chart below).

A change in scope for Segment 4 of the project was approved at TRC on 6/29/17 for $204,000 to include reconductoring of 1,100 feet of 2/0 Cu with 556 AAC tree wire, and replacement of 12 Frontier Poles. The project estimate at this time totalled $458,000.

Following detailed design, **the total project request is: $334,209.** The project estimate is lower than the re-approval amount due to 4 less pole replacements, no switching required, and no traffic control required in Segment 4.

Major Equipment List

Equipment Name	Quantity	Unit Price	Total Price
[redacted]			$69,565.28
			$33,290.40
		Total:	$102,855.68

Project Costs Summary

	Prior Authorized*	Additional Request	2017**	2018+	Total
Capital Additions Direct	0	0	$ 198,279	0	$198,279
Less Customer Contribution	0	0	$ -	0	$0
Removals Net of Salvage	0	0	$ 4,649	0	$4,649
Total - Direct Spending	$0	$0	$ 202,928	$0	$202,928
Capital Additions - Indirect	0	0	$ 121,338	0	$121,338
AFUDC	0	0	$ 1,280	0	$1,280
Total Capital Request	$111,973	$ 213,573	$ 325,545	$0	$325,545
O&M	3,344	$ 5,319	$ 8,664	0	$8,664
Total Request	**$115,317**	**$ 218,892**	**$ 334,209**	**$0**	**$334,209**
* Current amount authorized in PowerPlan					
** Total amount needed for authorization in PowerPlan based on ACT					

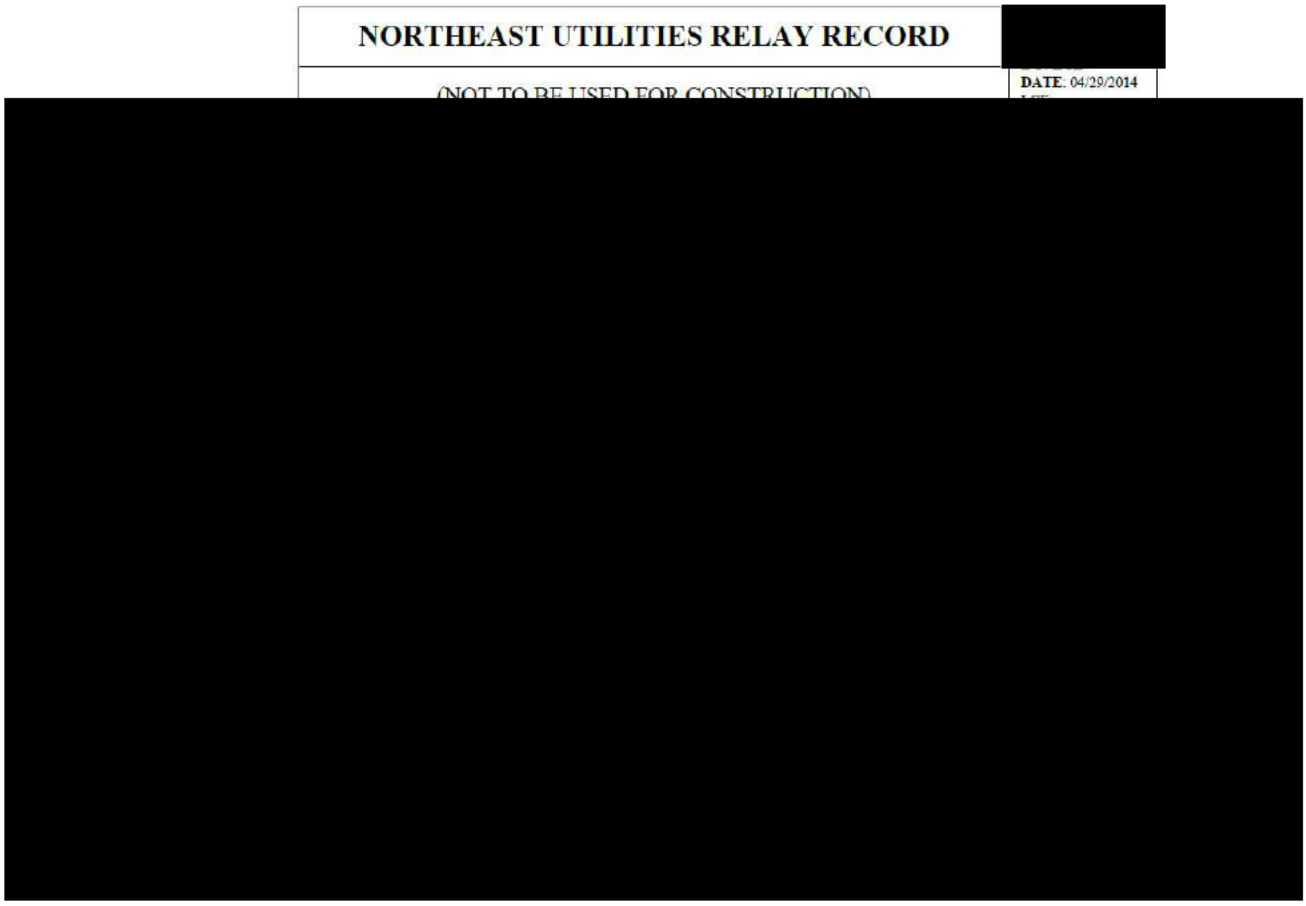
Financial Evaluation

Direct Capital Costs	2017	2018	2019	Total
Straight Time Labor	$ 42,439	0	0	$ 42,439
Overtime Labor		0	0	
Outside Services	$ 3,051	0	0	$ 3,051
Materials	$ 157,437	0	0	$ 157,437
Other, including contingency amounts	$ -	0	0	$ -
Total	$ 202,928	0	0	$ 202,928

Indirect Capital Costs	$ 2,017	2018	2019	Total
Indirects/Overheads (including benefits)	$ 121,338	0	0	$ 121,338
Capitalized interest or AFUDC, if any	$ 1,280	0	0	$ 1,280
Total	$ 122,618	0	0	$ 122,618

Total Capital Costs	$ 325,545	0	0	$ 325,545
Less Total Customer Contribution	$ -	0	0	$ -
Total Capital Project Costs	$ 325,545	0	0	$ 325,545
Total O&M Project Costs	$ 8,664	0	0	$ 8,664
Total Project Cost	$ 334,209	0	0	$ 334,209

One-Line Drawing



Technical Authorization Form

Date Prepared: 4/14/2017	Project Title: Eversource CT Smart Switch Program
Company/ies: Eversource CT	Project ID Number: Multiple (see below for details)
Organization: Distribution Design	Class(es) of Plant: Distribution
Project Initiator: [redacted]	Project Category: Smart Switch Program
Project Owner/Manager: TBD	Project Type: *Specific*
Project Sponsor: [redacted]	Project Purpose: System Resiliency PURA Docket 12-07-06RE01
Estimated in service date: 12/31/17	If Transmission Project: *NA*
Authorization Type: Engineering	Authorization Amount: $452,354

Project Need Statement

This TAF is prepared for the projects identified under the proposed 2018 Smart Switch Program to be accelerated into 2017 System Resiliency. The Smart Switch Program is a continuation of an initiative that was approved as part of the System Resiliency PURA Docket 12-07-06RE01 which is a multiyear 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.

Project Objectives

The goal of the Smart Switch Program is to reduce the number of customers exposed to an outage event. The projects break up large customer zones by creating automated loops and adding sectionalizing reclosers in various settings profiles to isolate outages. The target of each project is to decrease customer zones to below 500. A zone that is broken in half with a tie to another source can improve the zone's reliability by 50%. Adding an additional device in a radial zone can improve the zone's reliability by 30%. Projects may include breaking up large customer zones with several devices and multiple ties.

Project Scope

The Smart Switch Program directly targets SAIDI and SAIFI improvements, thus improving the overall MBI metric. To prioritize the projects, a list of large customer zones was reviewed by a team

of Circuit Owner leads, System Resiliency, Protection and Controls, and Distribution Planning. The prioritization analysis was completed on customer zones larger than 500 that experienced at least 1 outage in the previous 4 years, including storm events. Circuit Owners considered all three phase sectionalizing techniques utilizing reclosers to break up customer zones with a zone size design goal of 500 customers or less. After prioritization, each project was reviewed for scope, cost, thermal limitations and possible coordination issues.

2018 Project Totals

The Program includes [redacted] projects (project numbers and segments are identified in the table below) and [redacted] device installations.

2018 Projects				
	Western	Central	Eastern	Total
# of Projects	[redacted]			
# of Devices				
				$4,523,536

AIMs Project	Division	AWC	Town	[redacted]	4 year Total events	Rank	Project Cost	TRC Approval Request Amount	Approval Status
CD00874	Central	Cheshire	NEW BRITAIN		2	22	$ 210,177	$ 21,018	TRC needed
CD00896	Central	Hartford	MANCHESTER		6	44	$ 70,691	$ 7,069	TRC needed
CD00870	Central	Cheshire	CHESHIRE		2	65	$ 151,037	$ 15,104	TRC needed
CD00906	Central	Hartford	WEST HARTFORD		3	70	$ 133,918	$ 13,392	TRC needed
CD00884	Central	Cheshire	BERLIN		2	52	$1,203,492	$ 120,349	need ERC
CD00880	Eastern	East Hampton	GLASTONBURY		4	49	$ 65,565	$ 6,557	TRC needed
CD00860	Eastern	East Hampton	WINDHAM		1	67	$ 187,201	$ 18,720	TRC needed
CD00908	Eastern	New London	EAST LYME		5	5	$ 264,724	$ 26,472	TRC needed
CD00892	Eastern	Danielson	KILLINGLY		4	45	$ 206,639	$ 20,664	TRC needed
CD00894	Eastern	Danielson	BROOKLYN		3	59	$ 65,099	$ 6,510	TRC needed
CD00886	Eastern	New London	WATERFORD		3	62	$ 242,333	$ 24,233	TRC needed
CD00887	Eastern	New London	WATERFORD		3	69	$ 124,606	$ 12,461	TRC needed
CD00384	Eastern	Madison	OLD SAYBROOK		3	56	$ 283,890	$ 28,389	TRC needed
CD00923	Eastern	Danielson	PLAINFIELD		2	53	$ 562,729	$ 56,273	need ERC
CD00873	Western	Torrington	TORRINGTON		2	42	$ 817,000	$ 81,700	need ERC

NOTE: Projects noted as “need ERC” approval will be brought to TRC separately. Projects noted as “TRC needed” are being requested for approval on 4-20-17.

Cost Estimate and Assumptions:

Projects are estimated using ENG estimating units in AIMs with 24% contingency.

Background / Justification

The Smart Switch Program is an initiative that was approved as part of the System Resiliency PURA Docket 12-07-06RE01 which is a multiyear program to improve circuit reliability by adding automatic sectionalizing devices on overhead distribution circuits. The 2018 Program is a continuation of the existing program outside of the PURA Docket and is being accelerated into the 2017 System Resiliency Program year. The Smart Switch Program provides low cost per customer minutes saved and a low O&M solution to large customer zones affected during an outage event by directly targeting SAIDI and SAIFI.

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.

Alternatives Considered with Cost Estimates:

Alternatives to each project can be found within each Project Need Statement. All projects were separately screen and reviewed within a Smart Switch review team which included Protection and Controls, Circuit Owner leads, System Resiliency, and System Planning. Each project was screened for scope, cost, and design.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Detail Design	6/30/2017
ACT Approval	7/03/2017
Construction & Close Out	12/31/2017

Risks and Risk Mitigation Plans

Risk is very limited with these projects for the following reasons: there are only one to two pole replacements per device installation, long lead time materials are identified ahead of time, and P6 is utilized to avoid P&C FTE shortages.

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2017	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2017	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost if necessary.
Internal engineering resources not available to perform the work.	2017	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost if necessary.
Materials shortage or long lead times	2017	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2017	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2017	Medium	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	2017	Low	Before use of new technology ensure support of standards and manufacture. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.

One-Line Diagrams, Attachments, and Images

See SP&AM data base

All project needs statements and one-lines are also contained here: