Operations Project Authorization Form

Date Prepared: June 24, 2021	**Project Title: Viper Switch Installations**
Company/ies: Eversource CT	**Project ID Number: CD01774**
Organization: Distribution	**Class(es) of Plant: Distribution**
Project Initiator: [redacted]	**Project Category: Reliability**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Project Purpose: Backbone Sectionalizing**
Estimated in service date: 12/31/2022	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Y	**Capital Investment Part of Original Operating Plan? Y**
Authorization Type: Preliminary Funding	**O&M Expenses Part of the Original Operating Plan? Y**
Total Request: $6,000,000	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

This project is being proposed to install 100 Viper switches on circuits throughout Connecticut to be able to easily isolate circuit backbones in the event of a fault. This will reduce the overall customer minutes lost due to a fault on a circuit. Various zones on circuits with the worst reliability have been targeted to have these switches installed.

The project is broken into 3 segments representing the Eastern, Central and Western Divisions in Connecticut. 100 Viper switches are to be installed as follows:

- Eastern – 50 Viper switches
- Western – 25 Viper switches
- Central – 25 Viper switches

Project Costs Summary

	Prior Authorized	2021	2022	2023+	Totals
Capital Additions - Direct	$0	$2,565,702	$855,234	$0	$3,420,936
Removals net of Salvage ____%	$0	$236,731	$78,910	$0	$315,641
Total - Direct Spending	$0	$2,802,433	$934,144	$0	$3,736,577
Capital Additions - Indirect	$0	$1,525,732	$508,577	$0	$2,034,309
Subtotal Request	$0	$4,328,165	$1,442,722	$0	$5,770,886
AFUDC	$0	$34,509	$11,503	$0	$46,012
Total Capital Request	$0	$4,362,673	$1,454,224	$0	$5,816,898
O&M	$0	$137,327	$45,776	$0	$183,102
Total Request	$0	$4,500,000	$1,500,000	$0	$6,000,000

Financial Evaluation

Direct Capital Costs	2021	2022	2023+	Total
Straight Time Labor	$190,541	$63,514	$0	$254,055
Overtime Labor	$34,774	$11,591	$0	$46,366
Outside Services	$1,913,326	$637,775	$0	$2,551,102
Materials	$655,469	$218,490	$0	$873,959
Other, including contingency amounts (describe)	$8,322	$2,774	$0	$11,096
Total Direct Costs	**$2,802,433**	**$934,144**	**$0**	**$3,736,577**

Indirect Capital Costs	Year 1	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	$1,525,732	$508,577	$0	$2,034,309
Capitalized interest or AFUDC, if any	$33,448	$11,149	$0	$44,597
Total Indirect Costs	**$1,559,180**	**$519,727**	**$0**	**$2,078,906**
Total Capital Costs	**$4,361,612**	**$1,453,871**	**$0**	**$5,815,483**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$4,361,612**	**$1,453,871**	**$0**	**$5,815,483**
Total O&M Project Costs	**$138,388**	**$46,129**	**$0**	**$184,517**
Total Project Cost	**$4,500,000**	**$ 1,500,000**	**$ -**	**$6,000,000**

Technical Justification:

Project Need Statement
Some circuits on Eversources' system have large customer zones with little or no sectionalizing devices on the circuit backbones. In the event a faulted area on these circuits need to be isolated, the nearest sectionalizing device is resulting in the circuit having too many customers without power while the issue is being resolved. Installing Viper switches on these circuits will remedy this issue. These switches will not only ensure that there will be an isolating device, but because these devices will be SCADA operable with current monitoring, they can be operated much faster to save customers from long duration outages.

Project Objectives
This project is being developed to have 100 Viper switches installed on the worst performing circuit segments within the Eversource's distribution system. Fifty switches are to be installed in the Eastern Division while 25 each will be installed in the Western and Central Divisions.

Project Scope
Purchase and install Viper switches at predetermined locations based on the worst performing circuit segments.

Background / Justification
Sectionalizing devices on the system – especially SCADA operable devices – allow for quick isolation of faulted areas on a circuit, and reduces the length of time that a customer is without power.

Business Process and / or Technical Improvements:
The Viper switches, not only allow for quick isolation of faults and increased reliability of circuits, they also allow the monitoring of current flow throughout different sections of a circuit. This is helpful in determining the actual load in different sections of a circuit.

Alternatives Considered with Cost Estimates
G.O.A.B switches could have been used in place of the Viper switches, however the Viper switches are more efficient mainly due to its SCADA capability. Doing nothing is also an option, but this will not result in increased reliability of the distribution system.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Purchase switches	July, 2021
Begin Construction	November, 2021

Regulatory Approvals
None

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2022	Low	Included higher number of defective pole replacements in estimate to reduce changes during design.
Construction resources / storm delays	2022	Medium	Use competitive bidding to ensure lowest outside labor cost. Bid early in the year to allow long construction period.
Materials shortage or long lead times	2021	Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.

References
None

Attachments (One-Line Diagrams, Images, etc.)



CD01774_project_needs_statement.pdf