Operations Project Authorization Form

Project Title: [redacted] TDRP	**Project Number: CD01615**
Date Prepared: 09/01/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** TRMSN DISTR RELIABILTY PERFRM
Project Initiator: [redacted]	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op 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)
Required in service date: 12/30/2023	AWC: Danielson/ Substation: Thompson 23Q / Thompson, CT
Total Capital Request: $1,366.2K	**Authorization Type:** Full Funding

1. Executive Summary

This project is for the Transmission and Distribution Reliability Program (TDRP) and addresses the [redacted] which ranks 14th on the 2020 TDRP ranking. This project focuses on four zones of the [redacted] There is work proposed for two of these zones and vegetation management has completed tree work on the other two.

[redacted] have experienced fourteen events in the last 4 years, thirteen of the events being tree related.

[redacted]

The 487 customers beyond the [redacted] have experienced 11 events, 4 of which being tree related. [redacted] have experienced 4 tree related outages. These areas are being handled by vegetation management as of May 2022.

Project CD01615 was initially presented on April 28, 2021, and approved for $1,037K. However, the full funding request ($1,366.2K) reflects a 32% increase from its original estimate ($1,037K) due to a revised estimate per unit cost for labor and material resulting in both an increase in direct and indirect capital cost.

2. Project Cost Summary

Note: Dollar values are in thousands.

Financial Evaluation

Capital Costs	2023	Year 2	Year 3+	Total
Internal Labor and Construction Equipment	276.7	0.0	0.0	276.7
Outside Services	123.8	0.0	0.0	123.8
Materials	184.1	0.0	0.0	184.1
Removals	76.8	0.0	0.0	76.8
Risk and Contingency	95.3	0.0	0.0	95.3
Other	4.1	0.0	0.0	4.1
Subtotal	**760.9**	**0.0**	**0.0**	**760.9**

Indirect Capital Costs	Year 1	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	605.3	0.0	0.0	605.3
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal	**605.3**	**0.0**	**0.0**	**605.3**
Total Capital Costs (Gross)	**1,366.2**	**0.0**	**0.0**	**1,366.2**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**1,366.2**	**0.0**	**0.0**	**1,366.2**

3.Technical Justification

a. Background

[redacted]

[redacted]

A smart switch will be installed beyond the [redacted]. [redacted]

This table shows each device that is affected by upgrades done in this project.

[redacted]

Device Reliability Table

[redacted]

Business Process and / or Technical Improvements

The expectation is to lessen the vulnerability of the system to outages, mostly caused by trees, while strengthening the infrastructure to become more resilient.

b. Project Need

[redacted]

[redacted]

Both the [redacted] includes hazard tree removal. These sections combine for 22% of the customers interrupted on this circuit. Vegetation management has completed the tree work for these sections.

c. Project Scope

(Preferred option $1,366.6K):

[redacted]

Major Material:

- 8,900 feet of 3-phase 556 TW
- 6, 600A disconnect switches.
- 2, Reclosers (Sectionalizer and Smart Switch)

Project Scope (Cont'd)

4. Alternatives Considered

Alternatives were considered (please describe below)

Alternative 1: (Cost $1,700K)

[redacted] This alternative adds approximately $253,501.

Alternative 2: (Cost $1,982K)

[redacted] This alternative would add approximately $468,135.

Alternative 3: (Cost $2,799K)

[redacted] This alternative would add approximately $1,433,754.

These alternatives were not selected because of their highest cost.

5. Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	10/23/20
Materials Ordered	01/02/23
Construction Start Date	03/0123
Construction End Date	12/31/23

6. Regulatory Decisions

No

7. Codes and Standards

8. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Low	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	2023	Medium	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2023	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2023	Low	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	2023	Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.

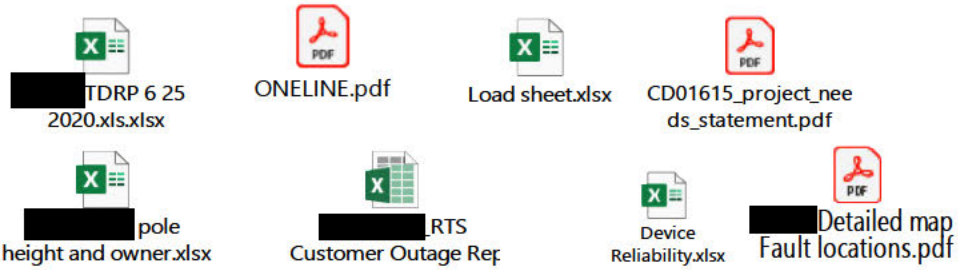
9. References

References
DSEM10.20 – Recloser Guide
DSEM 10.22 – Recloser Three Phase Selection
DSEM 03.301 – Reliability Cost Effectiveness
DSEM 02.423 – Multiple Interruptions
DSEM 02.501 – System Resiliency Guideline

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

Attachment	Included in Submittal?
A. Project Need Statement	*YES*
B. 23Q8 TDRP One Line	*YES*
C. 23Q8 Device Reliability	*YES*
D. 23Q8 Detailed Map fault location	*YES*
E. 23Q8 TDRP 6-25-20	*YES*
F. Load Summary	*YES*

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



- *Attachment A*

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01615 [redacted]

Project Option Summary

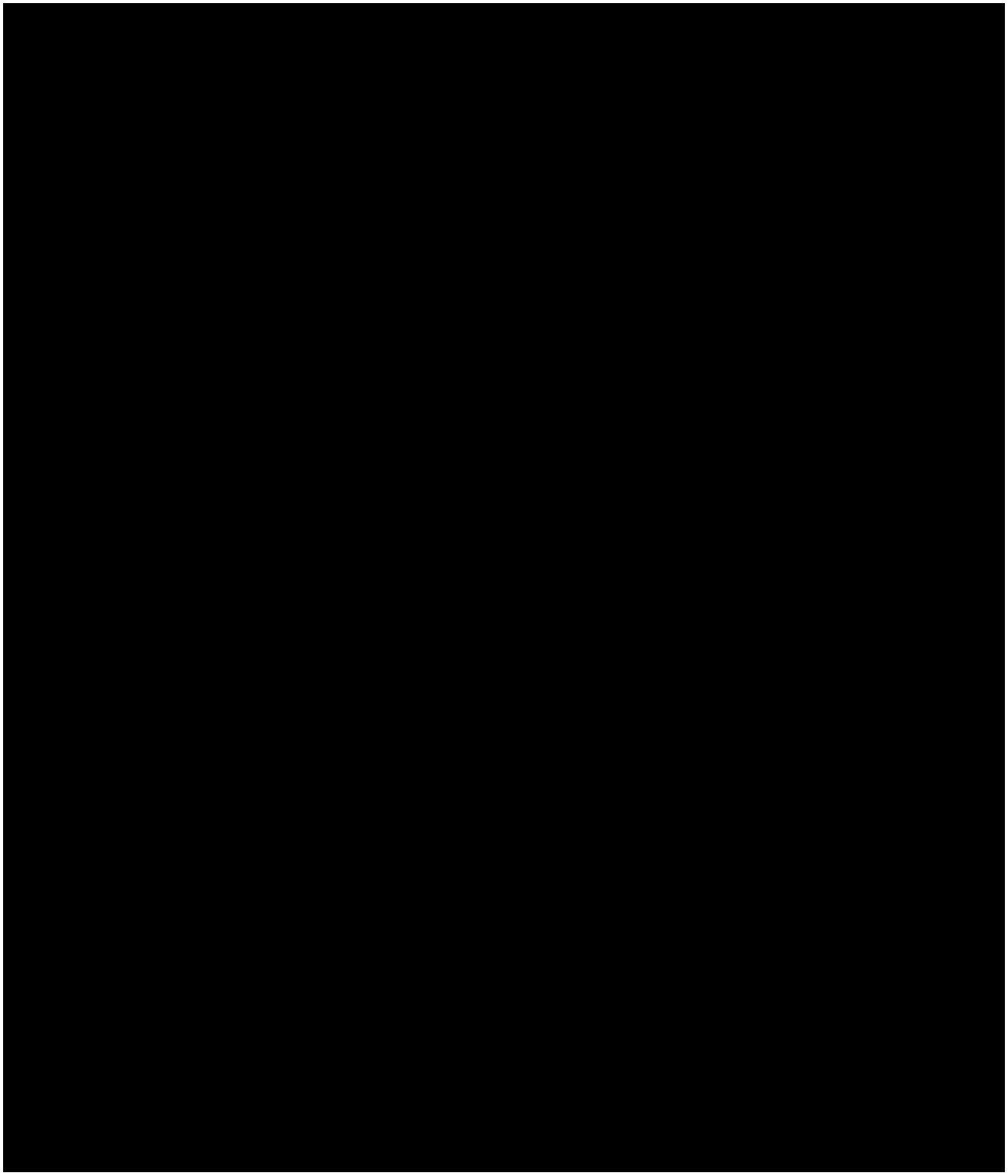
ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O5	Preferred Option - Approved option	2	$1,088,641	$0	100%	$127.68	$3.67	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	(Alt 1)Thompson_Recon btwn Tilcon to exi	$263,964			$55.35	$1.44
2	Preferred Segment 1_[redacted]	$1,088,641			$127.55	$2.93
3	(Alt 2)Thompson Reconductor between 4001	$429,881			$25.57	$25.57
4	Sectionalizing and tieing large section	$2,275,806			$0.00	$0.00
5	Smart switch after [redacted]	$62,483			$0.00	$0.00
6	(Alt 3)Thompson_sectionalize and tie wit	$1,433,754			$0.00	$0.00
7	add smart switch	$0			$0.00	$0.00
8	(Alt 4) [redacted] Hazard Tree Removal	$172,544			$0.00	$0.00
9	(Alt 6) [redacted] SS install	$101,036			$0.00	$0.00
10	(Alt 5) Fuse pole 925_Hazard Tree Remova	$15,800			$0.00	$0.00

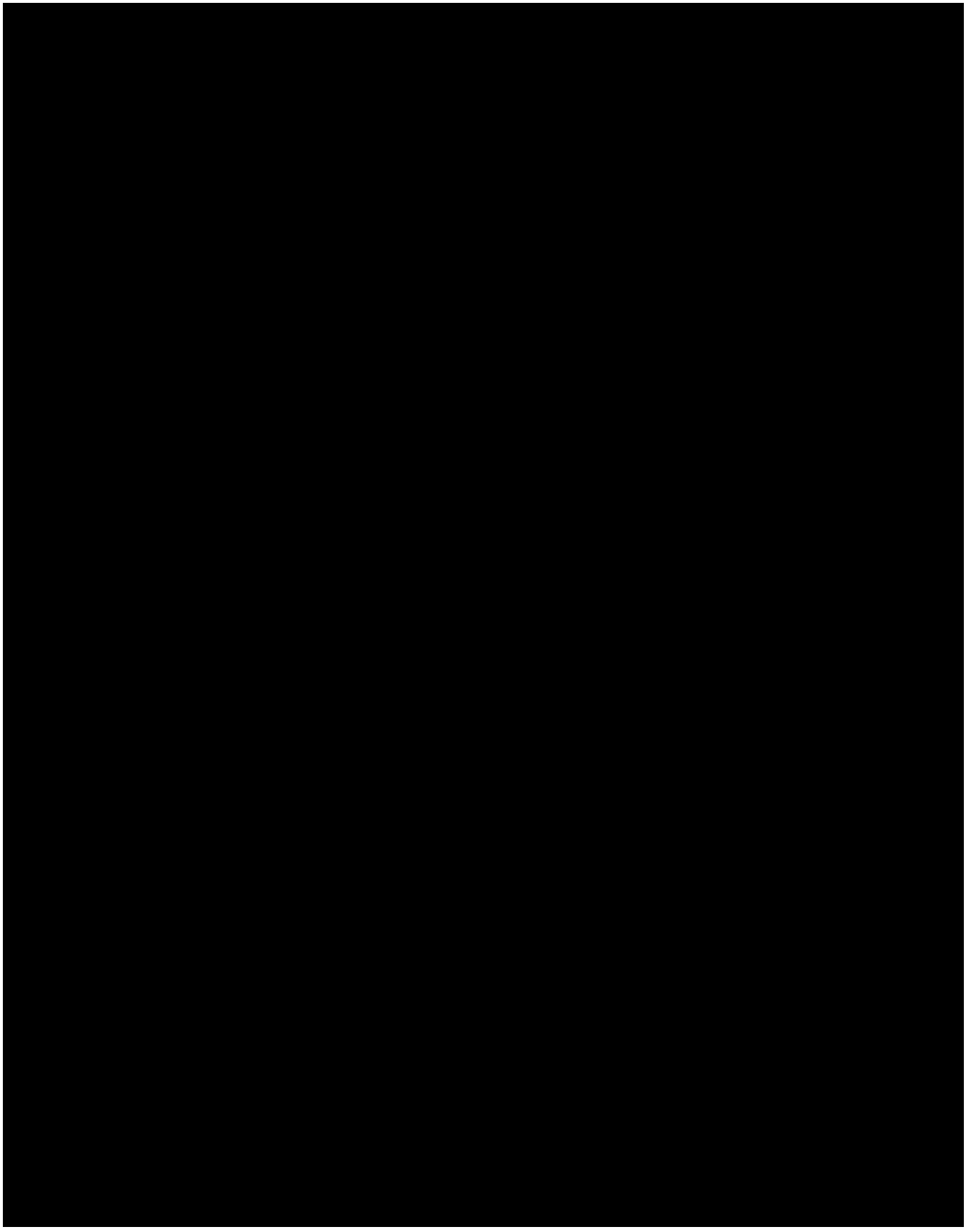
EVERSOURCE

Project Approval Form



EVERSOURCE

Project Approval Form



EVERSOURCE

Project Approval Form

Operations Project Authorization Form

Project Title: [redacted]TDRP	**Project Number:CD01615**
Date Prepared: 04/22/2022	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** TRMSN DISTR RELIABILTY PERFRM
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/2023	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: 1,366k	**Authorization Type:** Initial Funding

Executive Summary

This project is for the Transmission and Distribution Reliability Program (TDRP) and addresses the [redacted] which ranks 14th on the 2020 TDRP ranking. This project focuses on four zones of the [redacted]. There is work proposed for two of these zones and vegetation management has completed tree work on the other two.

[redacted] have experienced fourteen events in the last 4 years, thirteen of the events being tree related.

[redacted] have experienced 11 events, 4 of which being tree related. [redacted] have experienced 4 tree related outages. These areas are being handled by vegetation management as of May 2022.

Project Costs Summary

Note: Dollar values are in thousands

Financial Evaluation

Capital Costs	Year 1	Year 2	Year 3+	Total
Internal Labor and Construction Equipment	276.7	0.0	0.0	276.7
Outside Services	123.8	0.0	0.0	123.8
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Subtotal	**760.9**	**0.0**	**0.0**	**760.9**

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Subtotal	**605.3**	**0.0**	**0.0**	**605.3**
Total Capital Costs (Gross)	**1,366.2**	**0.0**	**0.0**	**1,366.2**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**1,366.2**	**0.0**	**0.0**	**1,366.2**

*The project cost reflects a 31.7% project increase from its original engineering estimate ($1,036K), due to a revised estimate per unit cost for labor, loaders, and material.

Technical Justification:

Project Need, Objective and Justification:

Project Need Statement

[redacted]

EVERSOURCE

Project Approval Form

[redacted]

[redacted]

[redacted]

Project Scope:

[redacted]

Major Material:

-8,900 feet of 3-phase 556 TW
-6, 600A disconnect switches
-2, Reclosers (Sectionalizer and Smart Switch)

Background:

[redacted]

[redacted]

[redacted]

This table shows each device that is affected by upgrades done in this project.

[redacted]

Device Reliability Table

[redacted]

Alternatives Considered:

Were alternative solutions considered/applicable? Include any cost/benefit analysis.

Alternatives were considered (please describe below)

Alternative 1:

[redacted] This alternative adds approximately $253,501.

Alternative 2:

[redacted] This alternative would add approximately $468,135.

Alternative 3:

[redacted] This alternative would add approximately $1,433,754.

Regulatory Approvals:

Are Regulatory body approvals needed for the project?
No

If yes, provide detailed regulatory approvals

Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	10/23/20
Materials Ordered	06/30/22
Start of Construction	03/31/23
End of Construction	12/31/23

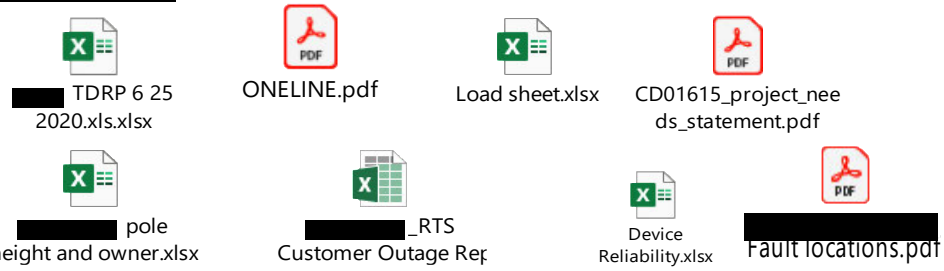
Risks and Risk Mitigation Plans

List top risks and mitigation plans applicable with **THIS** project. Include any contingency related to each risk.
(Permitting/siting; environmental; outage constraints; customer/community outreach; material delivery; constructability challenges; excavation; etc.) Rank each risk low medium and high.

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	202X	High/Medium/Low	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	202X	High/Medium/Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	202X	High/Medium/Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	202X	High/Medium/Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	202X	High/Medium/Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	202X	High/Medium/Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	202X	High/Medium/Low	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	202X	High/Medium/Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	202X	High/Medium/Low	Use of mats and specialty equipment, only work during certain times of the year.

References


[redacted] TDRP 6 25 2020.xls.xlsx
ONELINE.pdf
Load sheet.xlsx
CD01615_project_needs_statement.pdf
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[redacted]_RTS Customer Outage Rep
Device Reliability.xlsx
[redacted] Fault locations.pdf