

Andrew S. Marcaccio Senior Counsel

March 22, 2022

# VIA ELECTRONIC MAIL

Luly E. Massaro, Clerk Rhode Island Public Utilities Commission 89 Jefferson Boulevard Warwick, RI 02888

### RE: Docket 5209 - Proposed FY 2023 Electric Infrastructure, Safety, and Reliability Plan <u>Responses to Record Requests</u>

Dear Ms. Massaro:

On behalf of The Narragansett Electric Company d/b/a National Grid ("National Grid" or the "Company"), enclosed please find the electronic version of the Company's responses to the record requests issued at the Public Utilities Commission's Evidentiary Hearing in the above-reference matter.<sup>1</sup>

Thank you for your attention to this transmittal. If you have any questions, please contact me at 401-784-7263.

Sincerely,

Cond m

Andrew S. Marcaccio

Enclosure

cc: Docket 5209 Service List Jon Hagopian, Esq. John Bell, Division Greg Booth, Division Linda Kushner, Division

<sup>&</sup>lt;sup>1</sup> Per a communication from Commission counsel on October 4, 2021, the Company is submitting an electronic version of this filing followed by six (6) hard copies filed with the Clerk within 24 hours of the electronic filing.

#### Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.

Joanne M. Scanlon

<u>March 22, 202</u>2 Date

# Docket No. 5209 - National Grid's Electric ISR Plan FY 2023 Service List as of 01/10/2022

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Matt Sullivan, Green Development LLC	ms@green-ri.com;	

# Record Request No. 1

## Request:

Please provide the amount transferred from preliminary survey & investigation (PS&I) to the Dyer Street project.

# Response:

The amount transferred from preliminary survey & investigation to the Dyer Street project was \$143,015. Amounts were transferred in March, June, and August 2017.

# Record Request No. 2

# Request:

In connection with the Dyer St project, please differentiate the costs incurred through Feb 2020 between capital costs and non-capital costs and provide support justifying such classification per the regulatory used and useful principle. Please provide the costs of the DC building that do not relate to the South Street (Dyer) project.

### Response:

The Company is respectfully requesting more time to evaluate these costs against the regulatory used and useful principle and would propose to address that topic in the Company's FY 2022 Electric ISR reconciliation filing due to be submitted by August 1, 2022

The Company paused the project in February 2020 when \$1.980 million of project costs were incurred. This total includes capital spending of \$0.234 million on the Distribution Line project which supports the South Street (Dyer) project. The Company estimates that \$0.855 million of the remainder of \$1.746 million relates to the DC building and the remainder of \$0.892 million relates to the South Street (Dyer) project. Additional costs of \$10,189 related to the DC Building were incurred after February 2020 due to finalization of invoicing.

### Record Request No. 3

# Request:

Please provide the February 2017 partial sanction paper for the Dyer St project.

# Response:

Please see Attachment RR-3. This sanction paper was also provided in Docket No. 5098 in response to the Division's First Set of Data Requests, R-1-19 and in Docket No. 4995 in response to the Division's First Set of Data Requests, R-1-18.

#### US Sanction Paper

		GMA 54 16	
Title:	Dyer St Indoor Substation	Sanction Paper #:	USSC 16-305
Project #:	C051205, C051211	Sanction Type:	Partial Sanction
Operating Company:	The Narragansett Electric Co.	Date of Request:	02/08/2017
Author:	John Williams	Sponsor:	Carol Sedewitz. Vice President, Electric Asset Management
Utility Service:	Electricity T&D	Project Manager:	John Skrzypczak

#### 1 Executive Summary

#### 1.1 Sanctioning Summary

This paper requests partial sanction of *projects C051205 and C051211* in the amount \$ 6.028 M with a tolerance of +/- 10% for the purposes of final engineering, city permitting and preliminary construction activities that may be required prior to the next planned sanction paper.

This sanction amount is \$6.028 M broken down into:

\$ 5.558 M Capex \$ 0.207 M Opex \$ 0.263 M Removal

NOTE: a potential investment of \$ 14.154 M with a tolerance of +50 /- 25 %, is contingent upon submittal and approval of a Project Sanction paper following completion of permitting, final engineering and design activities. The cost breakdown for each of the associated projects is: C051205 (D-Sub) \$12.982 M and C051211 (D-Line) \$1.172 M.

#### 1.2 Project Summary

Build a new 11 kV to 4.16 kV indoor distribution substation on National Grid's Dyer St site. Retire the existing Dyer St Indoor Substation. Remove all 11 kV and 4.16 kV equipment and demolish the Indoor building. This work will allow the retirement of a circa 1925 indoor substation. The dated substation presents a challenging work environment for National Grid personal as compared to a contemporary substation.

Dyer St Indoor Substation Retirment\_01202017 Uncontrolled When Printed Page 1 of 21

# **US Sanction Paper**

#### 1.3 Summary of Projects

Project Number	Project Type (Elec only)	Project Title		Estimate Amount (\$M)
C051205	D Sub	Dyer St replace indoor substation		12.982
C051211	D line	Dyer St replace indoor Sub D-line		1.172
		· · · · · · · · · · · · · · · · · · ·	Total	14.154

#### 1.4 Associated Projects

Project Number	Project Title	Estimate Amount (\$M)
C051213	South St Replc Indoor Subst D-Sub	38,645

#### 1.5 **Prior Sanctioning History**

None

#### 1.6 Next Planned Sanction Review

Date (Month/Year)	Purpose of Sanction Review
April 2019	Project Sanction

#### 1.7 Category

Category	Reference to Mandate, Policy, NPV, or Other
O Mandatory	
	Notional Crid Indoor Substation Stratemy, December 24
O Justified NPV	2011.
OOther	

#### **US Sanction Paper**

#### 1.8 Asset Management Risk Score

Asset Management Risk Score: 45

Primary Risk Score Driver: (Policy Driven Projects Only)

O Reliability O Environment O Health & Safety O Not Policy Driven

#### 1.9 Complexity Level

High Complexity O Medium Complexity O Low Complexity O N/A

Complexity Score: 27

#### 1.10 Process Hazard Assessment

A Process Hazard Assessment (PHA) is required for this project:

### 1.11 Business Plan

Business Plan Name & Period	Project included in approved Business Plan?	Over / Under Business Plan	Project Cost relative to approved Business Plan (\$)
FY17-21 NEv Distribution and Transmission Capital Plan	⊙ Yes O No	⊙ Over O Under ⊂ NA	\$ 8.126 M

#### 1.12 If cost > approved Business Plan how will this be funded?

Re-allocation of funds within the portfolio has been managed and approved by Resource Planning to meet jurisdictional budgetary, statutory and regulatory requirements

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#### **US Sanction Paper**

#### 1.13 Current Planning Horizon

		Current Planning Horizon						
		Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6+	
\$M	Prior Yrs	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Total
CapEx	0.000	0.033	0.448	1.122	4.789	5.585	0.000	11.977
OpEx	0.000	0.004	0.031	0.065	0.373	0.433	0.000	0.905
Removal	0.000	0.004	0.050	0.098	0.517	0.603	0.000	1.272
CIAC/Reimbursement	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	0.041	0.529	1.284	5.679	6.621	0.000	14.154

#### 1.14 Key Milestones

Milestone	Target Date: (Month/Year)
Partial Sanction	February 2017
Start Preliminary Engineering (Kickoff Meeting)	March 2017
Permitting	March 2018
Engineering Design Complete	March 2019
Construction Start	June 2019
Ready for load	November 2020
Construction Complete	December 2020
Project Closure Sanction	February 2021

#### 1.15 Resources, Operations and Procurement

Resource Sourcing				
Engineering & Design Resources to be provided	M Internal		Contractor	
Construction/Implementation Resources to be provided	Internal		Contractor	
Resource Delivery				
Availability of internal resources to deliver project:	O Red	O Amber	⊙ Green	
Availability of external resources to deliver project:	O Red	O Amber	⊙ Green	
Opera	ational Impac	E		
Outage impact on network system:	O Red	O Amber	⊙ Green	
Procurement Impact				
Procurement impact on network system:	O Red	O Amber	⊙ Green	

Dyer St Indoor Substation Retirment\_01202017 Uncontrolled When Printed Page 4 of 21

# US Sanction Paper

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# 1.16 Key Issues (include mitigation of Red or Amber Resources)

1	Permitting, The Dyer St Site is in Providence's D-1 Zone. By zoning ordinance, the Downtown Design Review Committee reviews and approves of all exterior building alterations in the zone. This includes open landscapes, roof lines and demolition requests.
2	To rehabilitate the DC building the civil contractor will install a steel shoring system to stabilize load bearing walls, replace the roof, and reconstruct interior to accommodate a modern indoor substation.
3	Environmental costs of demolishing the existing Dyer St Indoor building are dependent on the findings of the pre-characterization assessment which is completed when the environmental engineering contractor is able to access to all de-energized parts of the existing indoor substation.

# 1.17 Climate Change

Contribution to National Grid's 2050 80% emissions reduction target:	Neutral	O Positive	O Negative
Impact on adaptability of network for future climate change:	Neutral	O Positive	O Negative

### 1.18 List References

1	National Grid Substation O&M Services Asset Condition Report – Dyer St Station, March 2011
2	Providence Area Long Term Supply and Distribution Study. May 2014
3	National Grid. Doc PR.02.00.004 Investment Grade Report of Substations. 'Dyer St –Existing Substation Retirement and New Substation Location, April 2016
4	Coneco Engineering 'Site Characterization Activities and remediation abatement and disposal of hazardous materials Cost Estimate, April 2016
5	Odeh Civil Engineers, Dyer St Substation Building - Summary of Construction Options, April 2016

#### The Narragansett Electric Company d/b/a National Grid RIPUC Docket No. 5209 Attachment RR-3 Page 6 of 21

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### US Sanction Paper

# 2 <u>Decisions</u>

The US Sanctioning Committee (USSC) at a meeting held on February 8, 2017

- (a) APPROVED the investment of \$ 6.028 M and a tolerance of +/- 10 % for design, procurement and final engineering.
- (b) NOTED the potential investment \$ 14.154 M to and a tolerance of +50 /-25 %, contingent upon submittal and approval of a Project Sanction paper following completion of final engineering and design.
- (c) NOTED that **John Skrypczak** has the approved financial delegation to undertake the activities stated in (a).

U .....Date... Signature...... **Christopher Kelly** Senior Vice President **Electric Process and Engineering** 

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#### **US Sanction Paper**

# nationalgrid

### 3 Sanction Paper Detail

Title:	Dyer St Indoor Substation Retirement	Sanction Paper #:	USSC 16-305
Project #:	C051205 , C051211	Sanction Type:	Select
Operating Company:	The Narragansett Electric Co.	Date of Request:	02/08/2017
Author:	John Williams	Sponsor:	Carol Sedewitz. Vice President, Electric Asset Management
Utility Service:	Electricity T&D	Project Manager:	John Skrzypczak

# 3.1 Background

Dyer St Indoor Substation is located in what is known as the AC building. This four story brick building, constructed in 1925, serves 13 MVA of summer peak load from it's nine 4.16 kV distribution circuits. The station also has an 11 kV bus that supports five supply circuits ( three from South St and two from Franklin Square) one distribution circuit (1103), and two Network Circuits (1105 and 1109).

Located abt 50 ft west of the indoor substation is second brick structure known as the DC building. This building was the original structure on the 1.04 acre site that TNECo purchased in 1897 for \$100. The building was used to generate DC power to supply street lights and the trolley line. The last DC circuits were retired in the early 1980s. Since then, the building has been used for general storage.

The Providence Area Long Term Supply and Distribution Study, completed in May 2014, recommended the replacement of Dyer St Indoor Substation.

### 3.2 Drivers

Asset Condition and Safety are the main drivers of this project.

National Grid's Network Asset Planning Group completed an Asset Condition Report on the Dyer St Indoor Station in March of 2011. After reviewing equipment test records, operating history, and applying industry knowledge it was concluded that the existing station presents operational, safety and maintenance challenges as compared to operating a modern indoor substation. Replacement of the indoor substation allows for the retirement of the breakers, reactors, and relay schemes that were identified in the

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#### **US Sanction Paper**

Asset condition report as deficient in performance and difficult to maintain. Pls see attachments 1 and 2 for an illustration of identified equipment.

In addition, this indoor substation ranked as the highest priority for replacement following the completion of the 2011 indoor substation replacement prioritization exercise performed by Distribution Asset Strategy.

#### 3.3 Project Description

Tasks associated with C051205 'Dver St Replace indoor subst D-Sub' included:

Rehabilitation of the DC building.

- A new steel framed shoring system will be installed along the interior load bearing walls.
- The exterior brick will be repaired and repointed as needed.
- The building's roof will be replaced.
- Non-load bearing interior walls that make up the south section transformer vaults will be removed.

Installation of a new indoor substation within the DC building

- A new six position 11 kV switchgear will be installed in the south section.
- A new 10 feeder breaker-and-a-half 4.16 kV indoor switchgear will be installed on the mezzanine
- Two 12.5 MVA 11.5 kV 4.16 kV transformers will relocated from the outside of the Indoor building to the north face of the DC building.

Demolition of the existing Indoor Substation.

- All 11 kV and 4.16kV equipment will be removed from the building.
- All 15 kV and 5 kV electrical cables as will as relay and control wire will be removed.
- The 4 story circa 1925 brick building will be demolished.
- A green space / landscaped area will be created in place of the indoor substation building.

Tasks associated with C051211 'Dyer St Replace indoor subst D-Line':

Cutover of 11kV and 4 kV circuits from the old indoor substation to the new indoor substation.

- Rebuild a new duct line from the cable vault inside the DC building.
- Relocate the three 11 kV supply circuits from South St (1102,1104 and 1106) from the indoor substation to the new 11 kV switchgear.
- Join the 11 kV Franklin Square 1149 circuit with the 1103 Dyer Circuit in the duct line outside Dyer St Substation

Relocate nine 4 kV distribution circuits from the existing Dyer St indoor substation to the new indoor switchgear.

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#### 3.4 Benefits Summary

This project will addresses safety and asset condition issues identified in the Dyer St Asset condition report. In addition, the new station will have status and control of the 11 KV and 4 kV breakers at the regional control center in Northboro.

The DC build will be rehabilitated, improving an asset the city of Providence deems historically significant.

#### 3.5 Business and Customer Issues

Impact to Business and Customer Issues is expected to be minimal. Preservation of the DC building will be viewed favorably by the city of Providence.

#### 3.6 Alternatives

# Alternative 1: Install a new Outdoor Substation at Dyer St. Demolish the existing Indoor Substation.

The cost of this alternative was 10 % less than the recommended option. However this alternative involves knocking down the DC building, which the Providence Planning Board has identified as historically significant. It is extremely unlikely the city would grant the zoning variance required to demolish this structure.

# Alternative 2: Install a new Outdoor Substation behind a Façade. Demolish the existing Indoor Substation

This alternative cost 3 % less than the recommended alternative. It involves creating a façade out of two sides of the historically significant DC building. An outdoor substation would then be constructed behind the façade. After initial contact with the Providence Planning Board, permitting for this alternative is also considered improbable. This option will be retained as part of the permitting strategy but has a low probability of success.

### 3.7 Safety, Environmental and Project Planning Issues

A health and safety plan will be developed to insure employees and contractors understand how to perform work that is compliant with the company's safety regulations.

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# **US Sanction Paper**

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Number	Detailed Description of Risk / Opportunity	Probabili	Cost	Schedule	Cost	Schedule	Strategy	Pre-Trigger Mitigation Plan	Residual Risk	Post Trigger Mitigation Plan
1	City of Providence Permitting	3	5	1	15		Accept	Work with the City of Providence Planning Board to insure final design is both cost effective and has a high probability of being approved.	NGrid does not secure variances required to demolish existing indoor substation.	Rehabilitate the existing indoor substation building. Explore alternate uses for the building
2	Coordination of circuit cutover from existing indoor substation to new indoor substation	5	5	4	25	39	Mitigate	Parform detailed inspections of duct and manhole system in and around Dyer St. Choose circuit cutover locations that have the least cost and customer impacts. Determine the most effective cutover circuit sequence.	N/A	Work with designer and local underground department to change cable plan to minimize cost and customer outage time. Adjust schedule and spending forecast
3	Hazardous Material (Asbestos wiring within substation)	3	2	2	6	6	Accept	Conduct pre- demolition walk through.	N/A	Properly dispose of contaminated materials.
4	Hazardous Material (Asbestos removal)	3	2	2	6	6	Accept	Closely inspect cables, inductors and ancillary electrical equipment when the facility is de- energized.	N/A	Property dispose of contaminated materials.
5	Adjustment to scope is required due to Planning or Operations needs	2	5	2	10	1	Accept	Engage with planning and local stakeholders to silicate input before final sanction documentation is complete.	N/A	Confirm that engineering / design changes are justified. Adjust schedule and spending forecast.
6	Unknown cabling, underground structures or blocked duct lines	2	1	1			Mitigate	Mandrel suspect duct line or reroute cable through other duct lines.	N/A	Redesign, adjust schedule, confirm scope changes with the sponsor.
7	Engineering error or commissioning	2	1	1			Miligate	Conduct regular progress meeting with engaged stakeholders to identify Issues prior to beginning construction.	N/A	Confirm that engineering / design changes are justified. Adjust schedule and spending forecast.
8	Storm Duty/ Emergency Response Efforts	2	T.	1		8	Accept	Early engagement with OPR / Control Center to limit issues of temporary circuit configurations during storm emergencies.	N/A	Adjust schedule

#### 3.8 Execution Risk Appraisal

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#### **US Sanction Paper**

#### 3.9 Permitting

Permit Name	Probability Required (Certain/ Likely/ Unlikely)	Duration To Acquire Permit	Status (Complete/ In Progress Not Applied For)	Estimated Completion Date
Providence Planning Board (DDRC)	Likely	15 moths	In progress	March 2018
State Environmental Permits	Likely	6 Month	Not Applied for	June 2019

## 3.10 Investment Recovery

#### 3.10.1 Investment Recovery and Regulatory Implications

Investment recovery will be through standard rate recovery mechanisms approved by appropriate regulatory agencies.

#### 3.10.2 Customer Impact

This project results in an indicative first full year revenue requirement when the asset is placed in service equal to approximately \$ 2.082 M this is indicative only. The actual revenue requirement will differ, depending upon the timing of the next rate case and / or the timing of the next filing which the project is included in the rate base.

#### 3.10.3 CIAC / Reimbursement

There is no CIAC / reimbursement associated with this project.

Dyer St Indoor Substation Retirment\_01202017 Uncontrolled When Printed Page 11 of 21

#### **US Sanction Paper**

#### 3.11 Financial Impact to National Grid

#### 3.11.1 Cost Summary Table

		9				and the	Curren	t Planning H	lorizon	and the second	Contractory of
		Project		See 14	Yr. 1	Yr. 2	Yr, 3	Yr.4	Yr. 5	Yr. 6+	
Project Number	Project Title	Estimate Level (%)	Spend (\$M)	Prior Yrs	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Total
			CapEx	0.000	0.020	0.210	0.829	4.529	5.254	0.000	10.842
C051205	Dyer St replace indoor	Est LvI (e.g.	OpEx	0.000	0.004	0.031	0.065	0.373	0.433	0.000	0.905
0001200	substation	+50 / -25%)	Removal	0.000	0.004	0.042	0.088	0.509	0.592	0.000	1.235
L			Total	0.000	0.028	0.283	0.982	5.411	6.279	0.000	12.982
ſ	ſ		CapEx	0.000	0.013	0.238	0.293	0.260	0.331	0.000	1.135
C051211	Dyer St replace indoor	Est LvI (e.g.	OpEx	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Sub D- line	+50 / -25%)	Removal	0.000	0.000	0.008	0.010	0.008	0.011	0.000	0.037
			Total	0.000	0.013	0.246	0.303	0.268	0.342	0.000	1.172
							-				
			CapEx	0.000	0.033	0.448	1.122	4.789	5.585	0.000	11.977
	Total Project Capation		OpEx	0.000	0.004	0.031	0.065	0.373	0.433	0.000	0.905
Total Project Senction		Removal	0.000	0.004	0.050	0.098	0.517	0.603	0.000	1,272	
			Total	0.000	0.041	0.529	1.284	5.679	6.621	0.000	14,154

It is expected that the plant will be capitalized at the ready for load date, unless otherwise specified.

#### 3.11.2 Project Budget Summary Table

#### **Project Costs Per Business Plan**

		Current Planning Horizon								
	Prior	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6+			
\$M	Yrs	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Total		
CapEx	0.000	0.025	0.400	0.620	2.073	2.440	0.000	5.558		
OpEx	0.000	0.001	0.028	0.037	0.064	0.077	0.000	0.207		
Removal	0.000	0.002	0.032	0.043	0.084	0.102	0.000	0.263		
Total Cost in Bus. Plan	0.000	0.028	0.460	0.700	2.221	2.619	0.000	6.028		

#### Variance (Business Plan-Project Estimate)

		Current Planning Horizon							
<u> </u>	Prior	Yr. 1	Yr. 2	Yr.3	Yr.4	Yr. 5	Yr.6+		
\$M	Yrs	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Total	
CapEx	0.000	(0.008)	(0.048)	(0.502)	(2.716)	(3.145)	0.000	(6.419)	
OpEx	0.000	(0.003)	(0.003)	(0.028)	(0.309)	(0.356)	0.000	(0.698)	
Removal	0.000	(0.002)	(0.018)	(0.055)	(0.433)	(0.501)	0.000	(1.009)	
Total Cost in Bus. Plan	0.000	(0.013)	(0.069)	(0.584)	(3.458)	(4.002)	0.000	(8.126)	

#### 3.11.3 Cost Assumptions

Cost estimate accuracy is +50 / - 25 %. Project sanction cost estimates will be developed after final design is completed.

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### **US Sanction Paper**

3.11.4 Net Present Value / Cost Benefit Analysis Not applicable

3.11.4.1 NPV Summary Table
Not applicable

3.11.4.2 NPV Assumptions and Calculations Not applicable

3.11.5 Additional Impacts Not applicable

#### 3.12 Statements of Support

Not applicable

#### 3.12.1 Supporters

The supporters listed have aligned their part of the business to support the project.

Department	Individual	Responsibilities
Investment Planning	Glen DiConza	Endorses relative to 5 year business plan or emergent work.
Resource Planning	Anne Wyman	Endorses construction resources, cost estimate. Schedule and portfolio alignment.
Resource Planning	Mark Phillips	Endorses construction resources, cost estimate. Schedule and portfolio alignment.
Asset Management / Planning	Alan Labarre	Endorses scope, estimate, and schedule with the company's goals, strategies and objectives.
Substation Engineering and Design	Suzan Martuscello	Endorses scope, design, conformance with design standards.
Protection Engineering	Leonard Swanson	Endorses scope, design conformance with design standards
Project Management	Andrew Schneller	Endorses resources, cost estimate and schedule.

# US Sanction Paper

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#### 3.12.2 Reviewers

The reviewers have provided feedback on the content/language of the paper.

Function	Individual	-
Finance	Patricia Easterly	
Regulatory	Peter Zschokke	
Jurisdictional Delegate	Jim Patterson	
Procurement	Arthur Curran	
Control Center	Michael Gallagher	

#### 4 Appendices

# 4.1 Sanction Request Breakdown by Project

\$M	C051205	C051211	Total
CapEx	4.361	1.197	5.558
ОрЕх	0.087	0.098	0.207
Removal	0.131	0.132	0.263
Total	4.579	1.427	6.028

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#### **US Sanction Paper**



#### 4.2 Other Appendices

Equipment with red circle was identified for replacement in the O&M Services Asset Condition Report

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Equipment with red circle was identified for replacement in the O&M Services Asset Condition Report

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# **US Sanction Paper**



Close up of H- Breakers that were recommend for replacement in the Asset Condition Report.

**One of 7 Breaker Rooms with H-Type Breakers** 

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# **US Sanction Paper**



Room with Gang operated disconnects and 4.16kV bus – Black doors on left wall provide access to each phase energized bus. 1 of 2 such rooms

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# **US Sanction Paper**

Dyer St Indoor Substation 2<sup>nd</sup> row of switches off the 4 kV bus

Room with 4.16kV -4 switches (left), -3 disconnects (ceiling)

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#### **US Sanction Paper**



C051211 Distribution line work. Sample of 4 kV distribution circuit cutover from existing indoor substation to the proposed.

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# Record Request No. 4

# Request:

Please (i) confirm when the new distributed generation (DG) process for making notification to DG developers for project cost estimates was put in place; (ii) provide the percentage of time the Company is sending out supplemental invoices; and (iii) provide an explanation driving the need for the supplemental invoices.

# Response:

(i) Starting February of 2021, the Company initiated a new process in which it began notifying customers for added project costs, specifically once design was completed, a comparison was made between the design estimate and preliminary estimate. In the event, that the design estimate proved to be higher than the preliminary estimate, the customer was notified of said increase, as well as being provided an associated invoice for the added cost responsibility.

Per R.I.P.U.C. 2244, Exhibit I, Section 5.1,

"The Company will, in writing, advise the Interconnecting Customer in advance of any expected cost increase for work to be performed up to a total amount of increase of 10% only. Any such changes to the Company's costs for the work shall be subject to the Interconnecting Customer's consent. The Interconnecting Customer shall, within thirty (30) days of the Company's notice of increase, authorize such increase and make payment in the amount up to the 10% increase cap, or the Company will suspend the work and the corresponding agreement will terminate."

- (ii) Since this process was put in place, the Company has reviewed cost estimates for approximately 64 DG projects, of these, 2 projects required a supplemental invoice, this correlates to 3.13%.
- (iii) For the two projects with supplemental invoices, changes were due to revisions to project design that resulted during the detail design phase when more specific information about project design requirements and therefore scope is known. In one case a new protective device was required instead of using an existing protective device and in the other case detail design identified changes due to field conditions that were not part of the earlier estimate.

# Record Request No. 5

# Request:

For the project identified in Company's response to PUC 2-7, please clarify whether the overtime utilized by the Company was to meet statutory deadlines to complete the interconnection project or a customer-driven request to get the project completed in an accelerated manner.

# Response:

The application for this project identified in Company's response to PUC 2-7 was submitted on October 6, 2016, which was before the tariff required statutory deadlines, more specifically, per R.I.P.U.C. No 2244, sheet 37, Note 8, "These deadlines apply only to Renewable DG Applications received on or after July 1, 2017."

The overtime that was utilized by the Company was to meet a customer-driven request, in order to get the project interconnected in an accelerated manner. The initial estimated connection date that was provided to the customer was January 25, 2021. However, the customer accelerated the interconnection date, and the Company provided the customer an early authorization to interconnect (ATI) date of December 31, 2020.

## Record Request No. 6

# Request:

Please reconcile and explain the difference of the total of \$10.620 million contained in the Company's response to PUC 2-10 to the damage/failure budget of \$10.376 million on Bates 81 of the ISR Plan.

# Response:

The table below reconciles and explains the proposed Damage/Failure spending category total of \$14.251 million summarized on Attachment 3, Bates Page 81 and detailed on Attachment 2, Bates Page 78. On Bates Page 81, the Damage/Failure line item total of \$11.376 million includes estimates for blanket projects and the remaining costs associated with a known failure, the Westerly T2 Transformer.

The Company's response to PUC 2-9 provided an explanation for historical trending used to establish the budgets for the Damage/Failure blanket projects totaling \$10.620 million. The specific work performed is generally not known in advance, so the budget for blanket projects is proposed based on historical costs using a 12-month Moving Annual Total.

The Company's response to PUC 2-10 provided an explanation for Damage/Failure reserves for specific projects of \$0.950 million which are estimates for asset failures that have not occurred yet. If a failure occurs, it will be accounted for in a separate specific project.

Detail in Attachment 2 Bates Page 78	Per Data	Requests	Bates Page 81			
				<u>Damage/</u>		
Project Description	<u>Amount</u>	<u>PUC 2-9</u>	<u>PUC 2-10</u>	<u>Failure</u>	<u>Reserves</u>	<u>Storms</u>
C046986 Reserve for Damage/Failure	\$200		\$200		\$200	
C051608 Reserve for Damage/Failure Substation	750		750		750	
C087902 Westerly T2 Failure	756			756		
COS0002 D/F Substation Blanket	620	620		620		
COS0014 Damage/Failure Blanket	10,000	10,000		10,000		
C022433 Storm Cap Confirm Progrm Proj	1,925			_		1,925
	\$14,251	\$10,620	\$950	\$11,376	\$950	\$1,925

### Record Request No. 7

### Request:

Referencing PUC 2-10, please identify the costs related to the Westerly transformer. Referencing PUC 2-9, are the costs associated with the Westerly transformer incremental to any costs already listed in PUC 2-10?

#### Response:

The FY 2022 forecasted costs related to the Westerly transformer total \$0.903 million, and are shown on the table in the Company's response to PUC 2-10, Transformer and Related Equipment Failures line, FY2022 column. As described in the Company's response to Record Request No. 6, the FY 2023 proposed Damage/Failure reserves of \$0.950 million do not include any costs associated with the Westerly transformer. Reserves are established for asset failures that have not occurred yet. When a failure occurs, it is accounted for in a separate specific project. The Westerly transformer is being accounted for in Funding Project #C087902. The Company proposed a budget of \$0.756 million in the FY 2023 Plan, as shown on Attachment 2, Bates Page 78, and as represented in the table in RR 6, the FY2023 budget for that is included within "Damage/Failure" on Bates Page 81, not within the "Reserves" category.

# Record Request No. 12

# Request:

What could the Company accomplish by Enbridge's requirement to supply The Narragansett Electric Company with some reliable capacity and what could only be accomplished because The Narragansett Electric Company owns the proposed Wampanoag Trail and Tiverton equipment?

# Response:

The differences can be seen in more detail in the "Operate" and "Maintenance" section of the Company's response to Record Request No. 11. The key advantage is that overall management of change and asset integrity is ensured throughout the lifecycle of the asset, and the customer requirements are not dependent on pipeline operations and standards. The benefits of The Narragansett Electric Company ("Narragansett") purchasing the assets were analyzed in a presentation to National Grid management in September 2021, which is included as Attachment RR-12-1. New cost/risk tables and charts have been prepared and attached based on an updated risk analysis. See Attachment RR-12-2 Net Present Value was not updated due to uncertainty around discounting risk in an NPV analysis using Narragansett's internal methods of value analysis.

Below is a breakdown of the new tables and charts which include a summary of the results and a detailed overview of how the results were derived and the assumptions were made:

- Results
  - 1. Wampanoag Trail Heaters
    - If the average annual ISR costs and risks (charts 5-6) are compared on an annual basis excluding, supply costs, i.e. any change in Enbridge rates, as well as future replacement costs, the cost to the customers if the design and O&M responsibility remained with Enbridge would be lower by approximately \$107,000 per year. The increased annual risk compared to the risk of Narragansett's design and O&M begins to exceed this amount after year 1.
    - If the design is changed to the Narragansett design, but Enbridge retains O&M responsibility, the cost to the customer would be lower by approximately \$80,000 per year. The increased annual risk associated with Enbridge O&M begins to exceed this amount around year 10 although this time will likely be reduced when Enbridge rates are adjusted to reflect Enbridge's additional cost of service attributable to the facilities.

# Record Request No. 12, page 2

This option also assumes the additional equipment required for Narragansett's design would be considered ISR costs. However, this would further complicate the demarcation of responsibility for maintenance, standard operations, as well as emergency response.

- Chart 4 compares the customer impact of all three options, which is the annualized risk and future replacement cost impact of the heaters. It shows that comparatively the impact of the Narragansett Design and O&M responsibilities will be at a premium to the customers up until 10 years of service life if the design of the assets are not upgraded to the Narragansett design and 27 years of service life if the O&M responsibilities are not transferred.
- However, this is assuming increased supply cost adjustments are not considered. If considered, this could increase the impact of the Enbridge O&M curves by around \$500,000 annually once adjusted and reduce the impact premium times significantly. This would not be confirmed until the supply cost increases take place in the context of an Enbridge rate adjustment.
- 2. Tiverton Heaters and Regulator Station Replacement
  - If the average annual ISR costs and risks (charts 11-12) are compared on an annual basis and supply costs as well as future replacement costs are not considered, the cost to the customers if the design and O&M arrangement stays with Enbridge would be lower by approximately \$99,000 per year. The increased annual risk begins to exceed this amount around approximately year five although this time will be reduced when supply costs adjustments are made.
  - If the design is changed to the Narragansett design but Enbridge retains O&M responsibility the cost to the customer would be lower by approximately \$64,000 per year. The increased annual risk begins to exceed this amount around year 11 although this time will be reduced when supply costs increase. Like the Wampanoag Trail project, this option also assumes the additional equipment required for Narragansett's design would be considered ISR costs and would further complicate the demarcation of responsibility for maintenance, standard operations, as well as emergency response.

# Record Request No. 12, page 3

- Chart 10 shows that the annualized risk and future replacement cost impact of the heaters and regulator station will be at a premium to the customers up until 10 years of service life if the design of the assets are not upgraded to the Narragansett design and 21 years of service life if the O&M responsibilities are not transferred.
- However, this is assuming increased supply cost adjustments are not considered. If considered, this could increase the impact of the Enbridge O&M curves by around \$500,000 annually and reduce the impact premium times significantly although this would not be confirmed until the supply cost increases take place.
- Tables and Charts detailed overview:

# Wampanoag Heaters:

- 1. The probability of overheating failure (column two) of the tables is currently low because it requires heaters to over-fire and regulators to fail due to the excess heat. The probability that the heater overfires is low due to it being undersized in its current state. In addition, Narragansett Electric retrofitted its outlet valve of the station into an OPP valve which is a mechanical valve and is relatively heat resistant compared to boot regulators.
- 2. The consequence of an overpressure (column 3) is low assuming that downstream piping and regulators could handle the overpressure but this may not always be the case and there could be downstream failures or precautionary shutdowns that were not considered depending on the time of year.
- 3. The probability of an underheating failure (column 5) requires a heating system failure and moisture or hydrates in the gas that would freeze up the regulators.
- 4. The consequence of this failure (column 6) is calculated based on the average of 38,000 customers dependent on this system throughout the year that would be without gas.
- 5. Assumptions have been made in order to adjust probabilities of failure based on maintenance practices of the responsible party and failure prevention multipliers (column 9) are used to adjust for redundancy of design and operational readiness to respond to failures.
- 6. Probability, consequence, and the failure prevention adjustment are multiplied to calculate risk and the two risks are added to show how the risk of the asset (column 10) varies with time (column 1) using either the Enbridge Design and Enbridge O&M, Narragansett Design and Enbridge O&M, or Narragansett Design and Narragansett O&M.

# Record Request No. 12, page 4

- 7. In addition to risk over time, the average annual cost is shown (Column 11) based on the total ISR cost divided over 50 years as well as an annualized future replacement cost (column 12) based on the future ISR cost divided by increasing years the asset is in service.
- 8. Using these values, the asset impact (column 13, charts 1-4) is calculated which measures the trade off between increasing risk versus replacement cost avoidance.
- 9. The differential annual cost (column 14) and differential annual risk (column 15) are compared to show the lower costs and higher risks over time for Enbridge to retain O&M responsibilities and using either the Narragansett or Enbridge Design (charts 5-6).

# **Tiverton Heater and Regulation**

• The process of reading the tables and charts for the Tiverton project are the same as 1-9 above but the heating system risks, and the regulator station risks must be calculated separately and added together for the total station risk.

Importantly, through the Company's discussions with Enbridge, it was established that: (1) the cost to the Company of construction of the Tiverton and Wampanoag facilities by Enbridge would be the same whether they were ultimately owned by Enbridge or the Company, and (2) if the facilities were constructed to the Company's standards, the Company would have to assume responsibility for operation and maintenance through an appropriate agreement whether or not ownership was transferred as proposed.