

August 15, 2019

VIA HAND DELIVERY & ELECTRONIC MAIL

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

**RE: Docket 4915 – FY2020 Electric Infrastructure, Safety, and Reliability Plan
Quarterly Update – First Quarter Ending June 30, 2019**

Dear Ms. Massaro:

On behalf of National Grid,¹ I have enclosed ten copies of the Company's fiscal year (FY) 2020 Electric Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the first quarter ending June 30, 2019. Pursuant to the provisions of the approved FY 2018 Electric ISR Plan, the Company committed to providing quarterly updates on the progress of its Electric ISR program to the Rhode Island Public Utilities Commission and the Rhode Island Division of Public Utilities and Carriers.

Thank you for your attention to this matter. If you have any questions, please contact me at 401-784-7288.

Very truly yours,



Jennifer Brooks Hutchinson

Enclosures

cc: Docket 4915 Service List
Christy Hetherington, Esq.
John Bell, Division
Greg Booth, Division

¹The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

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

August 15, 2019
Date

Docket No. 4915 - National Grid's Electric ISR Plan FY 2020

Docket No. 4857 - Performance Incentives Pursuant to R.I.G.L. §39-1 27.7.1(e)(3)

Service List as of 8/15/2019

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File an original & ten copies w/: Luly E. Massaro, Commission Clerk John Harrington, Commission Counsel Public Utilities Commission 89 Jefferson Blvd. Warwick, RI 02888	Luly.massaro@puc.ri.gov ; John.harrington@puc.ri.gov ; Cynthia.WilsonFrias@puc.ri.gov ; Todd.bianco@puc.ri.gov ; Alan.nault@puc.ri.gov ;	401-780-2107

Electric Infrastructure, Safety, and Reliability Plan

FY 2020 Quarterly Update

First Quarter Ending June 30, 2019

EXECUTIVE SUMMARY

For the first quarter of fiscal year 2020 (FY), the Company¹ spent approximately \$29 million for fiscal year-to-date (FYTD) capital investment projects against a FYTD 2020 budget of \$24.2 million. Overall, spending for FYTD 2020 was over-budget by approximately \$4.8 million. For the first quarter of FY 2020, FYTD spending for the Non-Discretionary category was \$13.2 million, which was \$2.2 million over the FYTD budget of \$11 million. FYTD spending for the Discretionary category was approximately \$15.8 million, which was approximately \$2.6 million over the FYTD budget of \$13.2 million. Each of these categories is addressed in more detail below.

On July 11, 2016, the Rhode Island Public Utilities Commission (PUC) issued an Order² directing the Company to provide more detail on capital spending in the Damage/Failure category. The detail on capital spending must include work type, location, and, where applicable, Level 1 Inspections and Maintenance (I&M) repairs completed with Damage/Failure funding. The Company has included additional detail on Level 1 I&M repairs in Section 5 of this report and has included summary information on capital spending in the Damage/Failure category in Attachment F of this report. Attachment F is also included as an executable Excel file that organizes raw data captured in the Company's financial, asset, and work management systems.

For FY 2020, the Company and the Rhode Island Division of Public Utilities and Carriers (Division) agreed to provide a quarterly budget and project management report on the Southeast project. The latest report is included as Attachment G of this report.

In Order No. 22955, the PUC directed that, commencing with the FY 2018 RI Electric ISR Third Quarter Report, the Company include an explanation of all new technologies that National Grid is exploring to assist in distribution planning, particularly related to the integration of distributed energy resources or providing additional visibility on the distribution grid.³ The most recent update is provided in Section 2 (g) below.

¹ The Narragansett Electric Company d/b/a National Grid (National Grid or the Company).

² Report and Order No. 22471 (issued on July 11, 2016 in Docket No. 4592), at pages 16, 29.

³ Report and Order No. 22955 (issued on November 14, 2017 in Docket No. 4682) at page 19.

I. FY 2020 Capital Spending by Key Driver Category

1. Non-Discretionary Spending

a. Customer Request/Public Requirement – \$2 million over-budget FYTD variance

Capital spending through the first quarter of FY 2020 in the Customer Request/Public Requirement category [EP1] was approximately \$9.7 million, which was approximately \$2 million over the FYTD 2020 budget of \$7.7 million. Among the major variance drivers through the first quarter for this category were the following:

- The net FYTD spending on “Distributed Generation” (DG) project spending was \$1.3 million over budget due to spending on the 65 projects being more than Customer Contributions in Aid of Construction received.
- Capital spending through the first quarter of FY 2020 on New Business Residential and Commercial and Public Requirements projects was a combined \$0.5 million over budget.
- Capital spending through the first quarter of FY 2020 on Transformer Purchases was approximately \$1.4 million, which was \$0.6 million over the FYTD 2020 budget of \$0.9 million.

The over spend noted above is offset by the following:

- Capital spending through the first quarter of FY 2020 on Meter Purchases was \$0.4 million under the FYTD 2020 budget, slightly offset by \$0.1 million over budget FYTD in the Meter Blanket.

At this time, the Company forecasts that the Customer Request/Public Requirement category will be \$5 million over-budget at the end of the fiscal year.

b. Damage/Failure - \$0.2 million over-budget FYTD variance

Capital spending through the first quarter of FY 2020 in the Damage/Failure category was \$3.4 million, which was approximately \$0.2 million over the FYTD 2020 budget of \$3.2 million for this category. Among the major variance drivers through the first quarter for this category were the following:

- Capital spending through the first quarter of FY 2020 on the Ocean State Damage/Failure Blanket was approximately \$2.9 million which was \$0.3 million over the FYTD 2020 budget of \$2.6 million.

The over spend noted above is offset by the following:

- Capital spending on the Storm Capital Confirming program was \$0.3 million which was \$0.1 million under the FYTD 2020 budget of \$0.4 million.

At this time, the Company forecasts that the Damage Failure category will be \$1.5 million over-budget at the end of the fiscal year.

c. Non-Discretionary Summary

In summary, as shown in Attachment A, capital spending through the first quarter of FY 2020 in the Non-Discretionary Sub-category was \$13.2 million, which was \$2.2 million over the FYTD 2020 budget of approximately \$11 million.

2. Discretionary Spending

a. Asset Condition (without Southeast Substation) - \$0.1 million over-budget FYTD variance

Capital spending through the first quarter of FY 2020 in the Asset Condition category (absent the Southeast Substation project) was approximately \$7 million, which was \$0.1 million over the FYTD 2020 budget of \$6.9 million. Among the major variance drivers through the first quarter for this category were the following:

- Capital spending through the first quarter of FY 2020 on I&M was \$0.8 million, which was \$0.7 million over the FYTD budget of \$0.2 million due to work plan being completed ahead of schedule.
- Capital spending through the first quarter of FY 2020 in the Asset Replacement Blanket was \$1.5 million, which was \$0.7 million over the FYTD budget of \$0.9 million.
- Capital spending through the first quarter of FY 2020 on the URD and Underground Cable Replacement programs combined was \$0.9 million which was \$0.5 million over the FYTD budget of \$0.4 million.

- Capital spending through the first quarter of FY 2020 on Dyer Street substation was \$0.3 million which was \$0.2 million over the FYTD budget of \$0.1 million.

The over-spend noted above is offset by the following:

- Capital spending through the first quarter of FY 2020 on the Providence Study projects was a combined \$0.05 million, which was \$1 million under the FYTD budget of \$1 million.
- Capital spending through the first quarter of FY 2020 on Lee St. and Cottage St. was a combined \$0.3 million which was \$0.5 million under the FYTD budget of \$0.8 million.

At this time, the Company forecasts that the Asset Condition category (absent the Southeast Substation Project) will be \$28.4 million, approximately \$4.2 million under the fiscal year end budget of \$32.6 million.

b. Non-Infrastructure – \$1.7 million over-budget FYTD variance

Capital spending through the first quarter of FY 2020 for the Non-Infrastructure category was \$1.8 million, which was \$1.7 million over the FYTD 2020 budget of approximately \$0.1 million. This variance was due primarily to accounting overhead charges of \$1.7 million. These charges will go through the normal capital allocation process throughout the rest of the fiscal year and be allocated to projects. At this time, the Company forecasts that the Non-Infrastructure category will be on budget at the end of the fiscal year.

c. System Capacity and Performance - \$0.7 million over-budget FYTD variance

Capital spending through the first quarter of FY 2020 for the System Capacity and Performance category was approximately \$6.4 million, which was \$0.7 million over the FYTD 2020 budget of \$5.7 million. Among the major variance drivers through the first quarter for this category were the following:

- Capital spending through the first quarter of FY 2020 on the Aquidneck Island projects project was \$4.3 million which was \$0.8 million over the FYTD 2020 budget of \$3.5 million. Over budget variance within the Newport projects due to payment of contractor change orders, slightly offset by under budget within the Jepson projects due to shift in contractor schedule.

- Capital spending through the first quarter of FY 2020 on Quonset substation was \$0.4 million. There was no budget set for Quonset in FY 2020 as project delays pushed completion of work from FY 2019 into FY 2020 after budgets were set.

At this time, the Company forecasts the System Capacity and Performance category to be \$25.8 million, approximately \$4 million over the fiscal year end budget of \$22 million.

d. Southeast Substation Projects – \$0.2 million over-budget FYTD variance

In the FY 2019 ISR proceeding, the Company agreed with the Division to separately track the Southeast Substation project budget variances and construction progress beginning with the FY 2019 quarterly reports. Capital spending through the first quarter of FY 2020 on the Southeast Substation project was \$0.6 million, which was approximately \$0.2 million over the FYTD budget of approximately \$0.4 million.

At this time, the Company forecasts that the Southeast Substation category will be \$6.3 million, <\$0.1 million over the fiscal year end budget of \$6.25 million.

e. Discretionary Summary

Finally, as shown in Attachment A, total capital spending for FYTD 2020 in the Discretionary Sub-category was \$15.8 million, which was approximately \$2.6 million over the FYTD 2020 budget of \$13.2 million.

f. Large Project Variances

In Docket No. 4473, the PUC ordered the Company to include a proposal to identify and report in quarterly and annual reconciliation filings the projects that exceeded or were under the fiscal year-to-date and fiscal year-end budgets by ten percent (10%).⁴ For the identified projects, the Company must note whether variances were due to the project being accelerated or delayed, or whether the variances were due to an increase or decrease in total project cost. The Company agreed to provide in the quarterly reports explanations for the portfolio of large projects⁵ with variances that exceed +/- 10% of the annual fiscal year budget. These FYTD projects represented \$28.2 million of the total FY 2020 budget of \$101.8 million. Specific project information is provided in Attachment E.

⁴ Docket No. 4473 Order No. 21559 at p. 25.

⁵ Large projects are defined as exceeding \$1.0 million in total project cost.

g. New Distribution System Technology Update

In Order No. 22955, the PUC directed that the Company include an explanation of all new technologies that National Grid is exploring to assist in distribution planning, particularly related to the integration of distributed energy resources or providing additional visibility on the distribution grid.⁶ Currently, these include the following:

- The Company utilizes CYME advanced power engineering software to perform distribution system analysis. The software's Hosting Capacity module was used to develop the RI Hosting Capacity Map which was delivered via the System Data Portal on September 28, 2018.
- The Company has implemented advanced protection function and logic in Point of Common Coupling (PCC) Reclosers, which will help reduce the witness testing required at customer DG sites. Also, the advanced sensing and logic functions will allow automatic reconnect to the utility for utility side interruptions which will minimize outage and nuisance tripping.
- The Company has implemented Python Scripting training to assist in refining CYME models. The training focused on creation scripts intended to automate tasks formally done by hand and create accurate base models in a more efficient manner. The training can also be used for data maintenance and review.

3. Investment Placed-in-Service

Through the first quarter of FY 2020, \$27.2 million of investment was placed-in-service, which was 26% of the annual forecasted plant-in-service of \$102.8 million and 26% of the current projected year-end forecast of plant placed-in-service. Details by spending rationale are included in Attachment B.

As shown on Attachment B, through the first quarter of FY 2020, the Non-Discretionary Sub-category had \$11 million of plant additions placed-in-service, which was 33% of the annual ISR forecasted amount of \$33.6 million. The Discretionary Sub-category had \$16.2 million of plant additions placed-in-service, which was 23% of the annual ISR forecasted amount of \$69.2 million.

⁶ Written Order No. 22955 (November 14, 2017 in Docket No. 4682) at page 19.

4. Vegetation Management (VM)

Through the first quarter of FY 2020, the Company completed 526 miles or 44% of its annual distribution mileage cycle pruning goal of 1,208 miles. This represents an associated spend of 38% of the FY 2020 budget for the cycle pruning program. Overall, through the first quarter of FY 2020, the Company's VM operation and maintenance (O&M) spending was \$3.27 million. The Company expects to complete 100% of their work plan for FY 2020 within the budget of \$10.4 million.

Attachment C provides the FY 2020 YTD spending for all sub-components in the VM category, as well as an update of the gypsy moth and other pest related damage tracked by the Company through the first quarter of FY 2020.⁷

5. Inspection and Maintenance (I&M)

Through the first quarter of FY 2020, the Company completed 33% of its annual structure inspection goal of 53,241 with an associated spend of approximately \$0.5 million, or approximately 36% of the Repair and Inspections Related Cost subcategory budget. The Repairs and Inspection Related Costs subcategory forecast includes the FY 2020 mobile elevated voltage testing and repairs, which the PUC approved in Docket No. 4237.

The Company began performing inspections on its overhead distribution system in FY 2011, and, in FY 2012, began performing the repairs based on those inspections. The Company categorizes the deficiencies found as Level I, II, or III, and repairs Level I deficiencies either immediately or within approximately one week of the inspection. The Company bundles Level II and III work for planned replacement. At the end of the first quarter of FY 2020, the Company has completed repairs reported for approximately 32% of the total deficiencies found. Total deficiencies that were found and repairs made-to-date is shown in the table below.

⁷ At the March 20, 2018 Open Meeting in Docket 4783, the PUC directed the Company to include a summary in its FY 2019 ISR quarterly reports of the gypsy moth and other pest-related damage tracked by the Company.

Summary of Deficiencies and Repair Activities RI Distribution				
Year Inspection Performed	Priority Level/Repair Expected	Deficiencies Found (Total)	Repaired as of 6/30/19	Not Repaired as of 6/30/19
FY 2011	I	18	18	0
	II	13,146	13,128	18
	III	28	28	0
FY 2012	I	17	17	0
	II	15,847	15,454	393
	III	626	567	59
FY 2013	I	15	15	0
	II	26,614	16,461	10,153
	III	9,011	4,613	4,398
FY 2014	I	11	11	0
	II	22,772	3,518	19,254
	III	8,665	1,966	6,699
FY 2015	I	5	5	0
	II	21,549	1	21,548
	III	4,392	0	4,392
FY 2016	I	2	2	0
	II	11,596	558	11,038
	III	6,498	58	6,440
FY 2017	I	2	2	0
	II	8,300	0	8,300
	III	7,539	0	7,539
FY 2018	I	11	11	0
	II	8,821	0	8,821
	III	7,237	0	7,237
FY 2019	I	28	28	0
	II	3,699	0	3,699
	III	2,464	0	2,464
FY 2020	I	6	4	2
	II	11	1	10
	III	3	0	3
Total Since Program Inception	I, II, III	178,933	56,466	122,467

FY 2020 – I&M Level 1 Deficiencies Repaired						
Year Inspection Performed	Deficiencies Found	Structure Number	Location	Description of Work Performed	Inspection Date	Repaired Date
2019	1	53	Douglas Ave, Providence	Replaced switch tag.	4/4/2019	4/16/2019
2019	1	83	Danielson Pike, Scituate	Replaced switch tag.	4/4/2019	5/9/2019
2019	1	181	Plainfield Pike, Foster	Replaced switch tag.	5/8/2019	5/14/2019
2019	1	6	Hilton St, Pawtucket	Replaced defective switch.	5/23/2019	6/4/2019

As shown in the table below, results of the Company’s manual elevated voltage testing for FY 2020 have not indicated any instances of elevated voltages found through either overhead or manual elevated voltage inspections.

Manual Elevated Voltage Testing				
Manual Elevated Voltage Testing	Total System Units Requiring Testing	FY 2020 Units Completed thru 6/30/19	Units with Voltage Found (>1.0v)	Percent of Units Tested with Voltage (>1.0v)
Distribution Facilities	263,801	19,501	0	0%
Underground Facilities	12,438	0	0	0%
Street Lights	4,328	0	0	0%

Attachment D provides the FY 2020 spending for all components in the I&M category and other O&M related expenses.

	FYTD			FY 2020 Total		
	Budget	Actual	Variance	Budget	Forecast	Variance
Customer Request/Public Requirement	\$7,719	\$9,689	\$1,970	\$27,025	\$31,945	\$4,920
Damage Failure	\$3,248	\$3,460	\$213	\$13,505	\$14,976	\$1,471
<i>Subtotal Non-Discretionary</i>	<i>\$10,967</i>	<i>\$13,149</i>	<i>\$2,182</i>	<i>\$40,530</i>	<i>\$46,921</i>	<i>\$6,391</i>
Asset Condition	\$6,887	\$6,969	\$81	\$32,575	\$28,392	(\$4,183)
Non-Infrastructure	\$132	\$1,803	\$1,671	\$550	\$557	\$7
System Capacity & Performance	\$5,718	\$6,380	\$662	\$21,895	\$25,769	\$3,874
<i>Subtotal Discretionary (Without Southeast Substation)</i>	<i>\$12,737</i>	<i>\$15,152</i>	<i>\$2,415</i>	<i>\$55,020</i>	<i>\$54,717</i>	<i>(\$303)</i>
Southeast Substation Project	\$446	\$616	\$170	\$6,250	\$6,322	\$72
<i>Subtotal Discretionary</i>	<i>\$13,183</i>	<i>\$15,768</i>	<i>\$2,585</i>	<i>\$61,270</i>	<i>\$61,040</i>	<i>(\$230)</i>
Total Capital Investment in System	\$24,150	\$28,917	\$4,768	\$101,800	\$107,961	\$6,161
* () denotes an underspend for the period						

Attachment B

US Electricity Distribution - Rhode Island Plant Additions by Spending Rationale FY 2020 through June 30, 2019 (\$000)

	FY 2020 Annual ISR Forecast	FYTD Actual in Service	FY 2020 Year- end Forecast	% of FY 2020 Year-end Annual Forecast Placed in Service	% of FY 2020 Year-end Forecast Placed in Service
Customer Request/Public Requirement	\$20,053	\$6,679	\$17,974	33%	37%
Damage Failure	\$13,568	\$4,299	\$12,374	32%	35%
<i>Subtotal Non-Discretionary</i>	\$33,621	\$10,979	\$30,348	33%	36%
Asset Condition (w/Southeast Substation)	\$28,008	\$8,406	\$29,447	30%	29%
Non- Infrastructure	\$553	\$0	\$502	0%	0%
System Capacity & Performance	\$40,615	\$7,835	\$43,486	19%	18%
<i>Subtotal Discretionary</i>	\$69,176	\$16,242	\$73,434	23%	22%
Total Capital Investment in System	\$102,797	\$27,220	\$103,782	26%	26%

Attachment C

US Electricity Distribution - Rhode Island Vegetation Management O&M Spending FY 2020 through June 30, 2019 (\$000)

	FY 2020 Annual ISR Budget	FYTD Actual	FY 2020 Year-End Forecast	FYTD % Spend
Cycle Pruning (Base)	\$5,600,000	\$2,151,391	\$5,600,000	38%
Hazard Tree	\$2,250,000	\$359,359	\$2,250,000	16%
Sub-T (on & off road)	\$500,000	\$36,740	\$500,000	7%
Police/Flagman Details	\$825,000	\$277,321	\$825,000	34%
Core Crew (all other activities)	\$1,225,000	\$441,949	\$1,225,000	36%
Total VM O&M Spending	\$10,400,000	\$3,266,760	\$10,400,000	31%
* () denotes an underspend for the period				

	FY 2020 Goal	FY YTD Goal	FY YTD Complete	FY YTD % Complete	FY 2020 % Complete
Distribution Mileage Trimming	1,208	302	526	174%	44%

FY 2020 Q1 Gypsy Moth Update

District	Circuit	Location	Removals
Capital	49_53_38F1	Smithfield	1
Capital	49_53_26W1	North Smithfield	54
Capital	49_53_127W40	Burrillville	29
Capital	49_53_112W43	Cumberland	18
Coastal	49_56_85T3	Charlestown	19
Coastal	49_56_63F6	Exeter	58
Coastal	49_56_155F6	Hopkinton	31
Coastal	49_56_30F2	North Kingstown	5
Totals			215

FY 2020 Total Gypsy Moth Spend	\$ 160,870.00
Gypsy Moth Removals	215
Cost/Tree	\$ 748.23

Attachment D

US Electricity Distribution - Rhode Island Inspection and Maintenance Program O&M Spending FY 2020 through June 30, 2019 (\$000)

	FY 2020 Annual ISR Budget	FYTD Actual	FY 2020 Year- End Forecast	FYTD % Spend
Opex Related to Capex	\$256	\$81	\$256	32%
Repair & Inspections Related Costs	\$515	\$187	\$515	36%
System Planning & Protection Coordination Study	\$25	\$21	\$25	85%
VVO/CRV Program	\$311	\$1	\$429	0%
Total I&M O&M Spending	\$1,107	\$290	\$1,225	26%
* () denotes an underspend for the period				

	FY 2020 Goal	FYTD Goal	FYTD Complete	FYTD % Complete	FY 2020 % Complete
RI Distribution Overhead Structures Inspected	53,241	13,310	17,744	133%	33%

Attachment E

US Electricity Distribution - Rhode Island Project Variance Report FY 2020 through June 2019 (\$000)

Project Description	Project Funding Number(s)	FYTD			FY 2020 Total			Variance Cause
		Budget	Actual	Variance	Budget	Forecast	Variance	
Aquidneck Island Projects (Gate 2, Newport, Jepson)	CD00649, C024159, C015158, C028628, C054054, CD00656	\$2,920	\$4,305	\$1,385	\$13,450	\$15,813	\$2,363	Newport Sub - Payment of contractor change orders. Newport SubT Conversion - Work Sequencing shift Jepson D-Sub - Work deferred to later in the FY (re-sequencing due to get away issues)
Volt/Var Program	C079300, C080896, C080895, C079282, C080899, C080900, C079482, C079288, C076367, C077201, C077200, C075573, C076365, C080898, C080894, C080897, C080901, C075571	\$88	\$264	\$176	\$1,400	\$2,229	\$829	Nasonville Station Scope was swapped for Woonsocket Scope. Woonsocket Scope is more expensive than Nasonville.
Lee Street & Cottage Street D-Line and D-Sub	C050758, C051118, C051126, C050760	\$770	\$291	(\$479)	\$2,900	\$2,383	(\$517)	Lee Street D-Line - Project received additional credit due to duplicate accrual processed in March FY19
Green Development LLC	C078529, C078827, C078825, C078820, C078824	\$0	\$913	\$913	\$0	\$917	\$917	Green Dev. LLC (C078529) - Emergent Work
Southeast Substation D-Line and D-Sub	C053657, C053658	\$446	\$601	\$155	\$6,250	\$6,253	\$3	No major Variance
Southern Sky - Johnston & Cranston RI	C079031, C079081	\$0	\$541	\$541	\$0	\$578	\$578	Southern Sky Johnston (C079031) - Emergent Work
New London Avenue Substation	C028920, C028921	\$144	\$125	(\$19)	\$150	\$544	\$394	Change Orders are still pending. The forecast may be reduced depending upon review.
Quonset Sub D-Line and D-Sub	C053646, C053647	\$0	\$423	\$423	\$0	\$582	\$582	Project Delays pushed completion of work from FY19 into FY20 [after budget set]
University Solar	C079116	\$1,842	\$1,153	(\$689)	\$4,000	\$2,629	(\$1,371)	CIAC Timing
Sockanosett & Westerly Failure	C082725, C081110	\$0	\$40	\$40	\$0	\$1,718	\$1,718	Sockanosett - Damage Failure (D/F) of TB#1 and purchase of a replacement spare. Westerly - Final payments for replacement transformer of TB#4 D/F
Chase Hill D-Line and D-Sub	C024175, C024176	\$0	\$51	\$51	\$0	\$1,040	\$1,040	Project Delays pushed completion of work from FY19 into FY20 [after budget set]
		\$6,209	\$8,706	\$2,497	\$28,150	\$34,685	\$6,535	
* () denotes an underspend for the period								

Attachment F

US Electricity Distribution - Rhode Island Damage/Failure Detail by Work Type FY 2020 through June 30, 2019

		Project Type					Grand Total
		D-Line Blanket	D-Line Property Damage	D-Line Storm	D-Sub Blanket	D-Sub & D-Line Specific	
Operation Description Rollup	AFUDC	\$21,285	\$0	\$5,877	\$1,241	\$9,792	\$38,196
	Default Accounting	\$516,987	\$30,574	\$19,068	\$32,900	\$23,755	\$623,284
	Engineering/Design/Supervision	\$245,126	\$12,221	\$38,205	\$992	\$10,249	\$306,794
	Outdoor Lighting - Cable/Wire	\$4,197	(\$17)	\$1	\$0	\$0	\$4,181
	Outdoor Lighting - Framing	\$17,662	\$335	\$1,016	\$0	\$0	\$19,012
	Outdoor Lighting - Poles/Foundation	\$4,210	\$0	\$0	\$0	\$0	\$4,210
	Overhead Bonding/Grounding	\$6,064	\$357	\$224	\$0	\$0	\$6,646
	Overhead Services	\$73,608	\$8,595	\$353	\$0	\$0	\$82,556
	Overhead Switches/Reclosers/Fuses	\$202,921	\$15,326	\$16,540	\$0	\$0	\$234,787
	Overhead Transformers/Capacitors/Regulators/Meters	\$174,574	(\$10,504)	\$8,192	\$0	\$0	\$172,262
	Overhead Wire & Conductor	\$210,936	(\$3,494)	(\$2,212)	\$0	\$0	\$205,231
	Pole Framing	\$96,945	\$21,582	\$32,133	\$0	\$0	\$150,660
	Poles/Anchors/Guying	\$570,496	\$142,895	\$149,054	\$0	\$0	\$862,446
	Substation Equipment Installations	\$0	\$0	\$0	\$89,022	\$13,539	\$102,561
	Substations Civil/Structural	\$0	\$0	\$0	\$0	\$9,632	\$9,632
	Switching and Restoration	\$0	\$968	\$0	\$0	\$0	\$968
	Traffic Control	\$87,900	(\$1,356)	\$11,691	\$0	\$3,540	\$101,774
	Underground Cable	(\$31,307)	\$15,588	\$12,793	\$0	\$1,819	(\$1,108)
	Underground Cable Splicing	\$15,888	(\$392)	(\$0)	\$0	\$0	\$15,496
	Underground Civil Infrastructure	\$154,436	\$5,230	\$0	\$0	\$85,566	\$245,232
	Underground Direct-Buried Cable	\$10,569	(\$1,932)	\$0	\$0	\$0	\$8,637
	Underground Services	\$12,215	(\$44)	(\$3,254)	\$0	\$0	\$8,917
	Underground Switches/Reclosers/Fuses	\$100,183	(\$5)	\$4	\$0	\$0	\$100,182
	Underground Transformers/Capacitors/Regulators/Meters	\$158,580	\$791	(\$1,757)	\$0	\$0	\$157,614
	Grand Total		\$2,653,473	\$236,720	\$287,929	\$124,155	\$157,892

* () denotes an underspend for the period

Attachment G

US Electricity Distribution - Rhode Island New Southeast Substation Budget and Project Management Report FY 2020 Q1 Update

New Southeast Substation

Date: August 8, 2019

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New Southeast Substation Project Agenda

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- Background & Drivers
- Scope
- Cost & Major Milestones
- Support Documentation
- Other



New Southeast Substation Project Background & Drivers



- Pawtucket No. 1 substation supplies load in the City of Pawtucket, Rhode Island. It consists of an indoor substation located in a four story brick building constructed in 1907 and an outdoor substation on the yard. It supplies approximately 36,000 customers with a peak electrical demand of 114MW. There are a number of concerns in this area:
 - The equipment in the indoor substation is 40 to 94 years old, obsolete, and no longer supported by any vendor. Parts have to be custom made or salvaged from facilities removed from service.
 - The building has structural issues that cause concern for the continued safe and reliable operation of the substation.
 - There is un-served load for loss of either the 73 transformer or the 74 transformer that exceeds the distribution planning criteria.
 - The loading on a number of feeders is projected to exceed summer normal ratings along with the loading on bus section 73



New Southeast Substation Project Scope

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- Construct a new eight feeder 115/13.8kV metal clad station (Dunnell Park #1201) with two transformers and breaker and a half design on a site adjacent to the transmission line right of way on York Avenue in the City of Pawtucket.
- Supply the new station from the existing 115kV lines crossing the site, X-3 and T-7.
- Rearrange the 13.8kV distribution system so that the new station supplies most of the load east of the Seekonk River.
- Install a new control house at the Pawtucket No 1 station site to house the control equipment for the 115 kV station presently located in the four story brick building and upgrade the 115kV Line Protections (P-11,X-3,T-7).
- Upgrade in Valley station the 115kV Line Protections for P-11.
- Remove the indoor substation and all electrical equipment from the four story brick building and demolish the building.



New Southeast Substation Project Cost & Major Milestones



Project Cost

- Total Project Cost of \$38.182M (+/- 10%) DOA: \$38.182M
- Transmission Project Cost of \$12.742M (+/-10%)
- Distribution Project Cost of \$25.440M (+/-10%)



New Southeast Substation Project Cost & Major Milestones



- The variance between the initial potential project investment of \$23.000M and this sanction of \$38.182M was caused by:
 - Addition of new 115kV equipment on Pawtucket No. 1 and on the new substation (Dunnell Park #1201) as result of the review of protection requirements for the project. The updated scope includes the installation of 115kV CCVT's, Line Traps, Line Tuners and related relaying and civil & structural work on X-3 and T-7 transmission line terminals on both substations (\$4.485M).
 - Additional civil and environmental scope of work on Pawtucket No. 1 based on the final location of the new control house inside the 100 year floodplain and the alignment with Tidewater Environmental Project requirements (\$4.865M).
 - Underestimation on the scope and level of effort on the distribution line work for the new feeders and distribution circuits rearrangement in the City of Pawtucket (\$4.517M).
 - Increase on equipment market value and other miscellaneous additional costs (\$1.315M).



New Southeast Substation Project Major Milestones



Project Major Milestones

Project Sanction	July 2019
Engineering Design Complete (EDC)	August 2019
Construction Start	October 2019
Dunnell Park Sub Ready for Load (RFL)	February 2021
Pawtucket 1 & Valley Sub Ready for Load (RFL)	May 2021
Construction Complete (CC)	August 2021
Demolish Pawtucket 1 Station Building	October 2021
Project Closeout	October 2022



New Southeast Substation Project Support Documentation

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New Southeast Station (Dunnell Park) – Location

