

May 15, 2019

BY HAND DELIVERY AND ELECTRONIC MAIL

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

**RE: Docket 4783 - Electric Infrastructure, Safety, and Reliability Plan
Quarterly Update – Fourth Quarter Ending March 31, 2019**

Dear Ms. Massaro:

On behalf of National Grid,¹ I have enclosed ten copies of the Company's fiscal year (FY) 2019 Electric Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the fourth quarter ending March 31, 2019. Pursuant to the provisions of the approved FY 2019 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 781-907-2121.

Very truly yours,



Raquel J. Webster

Enclosures

cc: Docket 4783 Service List
Christy Hetherington, Esq.
Al Contente, 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

May 15, 2019
Date

Docket No. 4783 National Grid’s Electric Infrastructure, Safety and Reliability Plan FY 2019 - Service List as of 4/27/18

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

Electric Infrastructure, Safety, and Reliability Plan

FY 2019 Quarterly Update

Fourth Quarter Ending March 31, 2019

EXECUTIVE SUMMARY

As shown on Attachment A, for fiscal year 2019 (FY 2019), the Company¹ spent \$111.5 million for capital investment projects against a FY 2019 budget of \$102.8 million. Overall, spending for FY 2019 was over-budget by approximately \$8.7 million, which was driven by over-spending in the Non-Discretionary and Discretionary categories. 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 2019, 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 Written Order No. 22471 (issued on July 11, 2016 in Docket No. 4592), at pages 16, 29.

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

I. FY 2019 Capital Spending by Key Driver Category

1. Non-Discretionary Spending

a. Customer Request/Public Requirement – \$5 million over-budget variance

Capital spending through the fourth quarter of FY 2019 in the Customer Request/Public Requirement category was approximately \$24 million, which was approximately \$5 million over the FY 2019 budget of \$19 million. Among the major drivers of this variance were the following:

- Capital spending through the fourth quarter of FY 2019 on New Business Residential and Commercial projects and Public Requirements blankets was a combined \$14.1 million, which was \$0.7 million under the FY 2019 budget of \$14.8 million.

The following items offset the variance noted above:

- The net FY 2019 spending on “Distributed Generation” (DG) projects was \$2.5 million over-budget. This variance is primarily driven by over-spend in the PS&I project (\$8.1 million), which was partially offset by CIACs received for the University Solar project, (\$6.1 million).
- Capital spending through the fourth quarter of FY 2019 on Transformer Purchases was approximately \$4.5 million, which was \$2.2 million over the 2019 budget of \$2.3 million due to increased issuances of transformers to the field.

b. Damage/Failure - \$0.3 million over-budget variance

Capital spending through the fourth quarter of FY 2019 in the Damage/Failure category was \$14 million, which was approximately \$0.3 million over the FY 2019 budget of \$13.7 million for this category. Among the major drivers of this variance were the following:

- Capital spending through the fourth quarter of FY 2019 on the Ocean State Damage/Failure Blanket was approximately \$8.4 million, which was \$2 million under the FY 2019 budget of \$10.4 million.

The following item offsets the variance noted above:

- Capital spending through the fourth quarter of FY 2019 on the Storm Capital program was \$3.9 million, which was \$2.3 million over the FY 2019 budget of \$1.6 million.

c. Non-Discretionary Summary

In summary, as shown in Attachment A, capital spending for FY 2019 in the Non-Discretionary Sub-category was \$38.1 million, which was \$5.4 million over the FY 2019 budget of \$32.7 million.

2. Discretionary Spending

a. Asset Condition (without Southeast Substation) - \$3.8 million over-budget variance

Capital spending through the fourth quarter of FY 2019 in the Asset Condition category (absent the Southeast Substation project) was \$30.9 million, which was \$3.8 million over the FY 2019 budget of \$27.1 million. Among the major drivers of this variance were the following:

- The Westerly Substation FY 2019 budget was \$0.5 million, but since the approach to flood mitigation has changed, there has not been any spending to date.
- Capital spending through the fourth quarter of FY 2019 on I&M inspections was \$0.7 million, which was \$1 million under the FY 2019 budget of \$1.7 million.
- Capital spending through the fourth quarter of FY 2019 on the Dyer Street substation was \$0.8 million, which was \$0.3 million under the FY 2019 budget of \$1.1 million. This variance is due to delays in obtaining the required permits.

The following items offset the variances noted above:

- Capital spending through the fourth quarter of FY 2019 on the URD and Underground programs was a combined \$7.2 million, which was \$0.3 million over the FY 2019 budget of \$6.9 million.
- Capital spending through the fourth quarter of FY 2019 on the South Street Substation project was \$5.7 million, which was \$1.9 million over the FY 2019 budget of \$3.7 million. The over-spend is attributed to completing all cutovers early and moving some costs that were expected in FY 2020 to FY 2019.
- Capital spending through the fourth quarter of FY 2019 on the Asset Replacement distribution and substation projects was \$3.7 million, which was \$1.7 million over the FY 2019 budget of \$2.5 million.

- Capital spending through the fourth quarter of FY 2019 on the Lee St. and Cottage St. projects was a combined \$3.6 million, which was \$1.6 million over the FY 2019 budget of \$2 million. The over-spend is attributed to acceleration of the Lee St. project ahead of budgeted Cottage St. work.
- Capital spending through the fourth quarter of FY 2019 on the Franklin Square Breaker project was \$1.1 million. There was no spending budgeted for this project in FY 2019. Spending on this project is attributed to acceleration of future year work.

b. Non-Infrastructure – \$0.3 million over-budget variance

Capital spending through the fourth quarter of FY 2019 for the Non-Infrastructure category was \$0.837 million, which was \$0.281 million over the FY 2019 budget of approximately \$0.556 million. This variance is attributed to accounting overhead charges of \$0.25 million. These charges will be cleared to the appropriate work orders through the normal capital allocation process.

c. System Capacity and Performance - \$0.25 million under-budget variance

Capital spending through the fourth quarter of FY 2019 for the System Capacity and Performance category was approximately \$39.5 million, which was \$0.25 million under the FY 2019 budget of \$39.8 million. Among the major drivers of this variance were the following:

- Capital spending through the fourth quarter of FY 2019 on the Chase Hill substation project was \$2.5 million, which was approximately \$1.4 million under the FY 2019 budget of \$3.9 million. The under-spend variance is attributed to resourcing and construction delays that moved work into Q1 of FY 2020.
- Capital spending through the fourth quarter of FY 2019 on the Flood Contingency project was approximately \$0.2 million, which was \$0.8 million under the FY 2019 budget of \$1 million. The under-spend variance is attributed to a change in the long-term flood contingency strategy.

The following items offset the variances noted above:

- Capital spending through the fourth quarter of FY 2019 on the Aquidneck Island project was approximately \$24 million, which was \$2.4 million over the FY 2019 budget of approximately \$21.5 million. The over-spend variance is attributed to change orders and soil disposal payments that increased Q4 spend.

- Capital spending through the fourth quarter of FY 2019 on the New London Ave. project was approximately \$8.1 million, which was \$1.7 million over the FY 2019 budget of approximately \$6.4 million. The over-spend variance is attributed to FY18 work that was brought into FY19 to balance resource constraints because on-property and contractor crews went to support Puerto Rico restorations.

d. Southeast Substation Projects – \$0.5 million under-budget 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 for FY 2019 on the Southeast Substation project was \$2.2 million, which was approximately \$0.5 million under the FY 2019 budget of \$2.7 million. This variance is attributed to design delays due to project complexity.

e. Discretionary Summary

In summary, as shown in Attachment A, capital spending for FY 2019 in the Discretionary Sub-category was \$73.4 million, which was approximately \$3.3 million over the FY 2019 budget of \$70.1 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 projects represented \$55.4 million of the total FY 2019 budget of \$102.8 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, the new technologies that National Grid is exploring 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.

3. Investment Placed-in-Service

Through the fourth quarter of FY 2019, \$108 million of investment was placed-in-service, which was 126% of the budgeted plant-in-service of \$85.3 million. Details by spending rationale are included in Attachment B.

As shown on Attachment B, for FY 2019, the Non-Discretionary Sub-category had \$40.2 million of plant additions placed-in-service, which was 130% of the planned amount of \$31 million. The Discretionary Sub-category had \$67.4 million of plant additions placed-in-service, which was 124% of the planned amount of \$54.3 million.

4. Vegetation Management (VM)

Through the fourth quarter of FY 2019, the Company completed 1,348 miles or 100% of its annual distribution mileage cycle pruning goal of 1,348 miles. This represents an associated spend of 97% of the FY 2019 budget for the cycle pruning program. Overall, for FY 2019, the Company's VM operation and maintenance (O&M) spending was \$9.7 million. The Company completed 100% of its work plan for FY 2019 within the budget of \$9.8 million.

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

Attachment C provides the FY 2019 YTD spending for all sub-components in the VM category, as well as an update of the gypsy moth related damage tracked by the Company through the fourth quarter of FY 2019.⁷

5. Inspection and Maintenance (I&M)

Through the fourth quarter of FY 2019, the Company completed 100% of its annual structure inspection goal of 56,613 with an associated spend of approximately \$0.53 million, or approximately 88% of the Repair and Inspections Related Cost subcategory budget. The Repairs and Inspection Related Costs subcategory forecast includes the FY 2019 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 fourth quarter of FY 2019, the Company has completed repairs reported for approximately 31% 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 03/31/19	Not Repaired as of 03/31/19
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	16,385	10,229
	III	9,011	4,600	4,411
FY 2014	I	11	11	0
	II	22,772	3,495	19,277
	III	8,665	1,906	6,759
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	0	11,596
	III	6,498	0	6,498
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
Total Since Program Inception	I, II, III	178,913	55,673	123,240

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4783
FY 2019 Electric Infrastructure, Safety and Reliability Plan
FY 2019 Quarterly Update
Fourth Quarter Ending March 31, 2019
Page 9 of 25

FY 2019 – I&M Level 1 Deficiencies Repaired						
Year Inspection Performed	Deficiencies Found	Structure Number	Location	Description of Work Performed	Inspection Date	Repaired Date
2018	1	123	Division St, East Greenwich	Service - non std or unsecured. Completed in field by overhead crew per Supervisor. CL.	9/21/2018	11/1/2018
2018	1	191	Pontiac Ave, Cranston	Replaced switch tag.	8/23/2018	9/18/2018
2018	1	5	Rangeley Rd, Cranston	Replaced switch tag.	8/21/2018	8/23/2018
2018	1	10	Cory's Ln, Portsmouth	Primary on crossarm. Completed in field by overhead crew.	8/8/2018	8/8/2018
2018	1	1	Homestead Ave, Smithfield	Replaced switch tag.	7/26/2018	8/14/2018
2018	1	9030	Wellington Ave, Cranston	Switch tag left off to prevent unintentional operation. Feeders cannot be tied. Different system voltages.	6/4/2018	6/6/2018
2018	1	64-1	Chestnut Hill Rd, Glocester	Repaired neutral.	5/15/2018	5/15/2018
2018	1	10-1	Wood Rd, Glocester	Crew opened fuse at Pole 10 to de-energize service that was on the ground.	5/15/2018	5/15/2018
2018	1	4	Fera St, North Providence	Spoke with Chris and dispatched. Per OH Supervisor, pole is safe. Will need new guy (engineering to create a WR#) CATV & TELCO will be notified.	10/1/2018	10/4/2018
2018	1	107-35	Atwells Ave, Providence	Pole - visual rotting ground line...completed in field by OH crew per Supervisor. CL	10/9/2018	10/17/2018
2018	1	157	Farnum Pike, Smithfield	Switch missing nomenclature, completed in the field by OH Supervisor. CL	10/15/2018	10/26/2018
2018	1	6	Williston Way, Pawtucket	Secondary floating - service coiled up roped to pole. Completed in field by OH crew per OH Supervisor. CL	12/12/2018	12/15/2018
2018	1	98-1	Cindyann Dr, East Greenwich	Insulator floating - completed in field by OH crew per Supervisor. CL	9/26/2018	10/29/2018
2018	1	20-4	South County Trl, East Greenwich	Defective cutout - completed in the field by OH per Supervisor. CL	10/9/2018	10/15/2018
2018	1	14-1	Hamlet Ave, Woonsocket	Ground wire broken/loose-service roped to pole. Completed in field by OH crew per OH Supervisor. CL	10/11/2018	10/15/2018
2018	1	31-1	Park Ave, Woonsocket	Service broken neutral-Level 1. Completed in field by OH crew per OH Supervisor. CL	10/10/2018	10/15/2018

2019	1	71	Douglas Pike, Smithfield	Replaced switch tag.	1/30/2019	2/5/2019
2019	1	71-1	George Washington Hwy, Smithfield	Replaced switch tag.	2/1/2019	2/4/2019
2019	1	101	East Shore Rd, Jamestown	Insulator floating - completed in field by OH crew per Supervisor. CL	1/17/2019	1/18/2019
2019	1	107	East Shore Rd, Jamestown	Riser - Improper cable support/terminate; spoke with Chris regarding bent riser. Completed in field by OH crew per Supervisor. CL	1/18/2019	1/18/2019
2019	1	360	Cranston St, Cranston	Replaced switch tag.	2/20/2019	3/11/2019
2019	1	72	Oaklawn Ave, Cranston	Replaced switch tag.	2/27/2019	3/11/2019
2019	1	6	Park Forest Rd, Cranston	Replaced switch tag.	2/22/2019	3/12/2019
2019	1	35	Pettaconsett Ave, Cranston	Replaced switch tag.	3/5/2019	3/12/2019
2019	1	1	Walker St, Cranston	Secondary floating - service roped to tree limb. Completed in field by OH crew per OH Supervisor. CL	3/1/2019	3/13/2019
2019	1	4	Worthington Rd, Cranston	Replaced switch tag.	3/5/2019	3/13/2019
2019	1	1-4	Commerce Way, Johnston	Braces bent xarm twisted bare wire tracking noted. Completed in field by OH crew per Sup. CL	2/6/2019	2/14/2019
2019	1	120	Beavertail Rd, Jamestown	Insulator floating - completed in field by OH crew per Supervisor. CL	1/3/2019	1/18/2019

As shown in the table below, results of the Company's manual elevated voltage testing for FY 2019 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 2019 Units Completed thru 3/31/19	Units with Voltage Found (>1.0v)	Percent of Units Tested with Voltage (>1.0v)
Distribution Facilities	263,801	54,567	0	0%
Underground Facilities	12,438	6,692	0	0%
Street Lights	4,328	2,028	0	0%

Attachment D provides the FY 2019 spending for all components in the I&M category and other O&M related expenses.

Attachment A

US Electricity Distribution - Rhode Island Capital Spending by Spending Rationale FY 2019 through March 31, 2019 (\$000)

	FY 2019 Total		
	Budget	Actual	Variance*
Customer Request/Public Requirement	\$19,005	\$24,065	\$5,060
Damage Failure	\$13,674	\$13,999	\$325
<i>Subtotal Non-Discretionary</i>	\$32,679	\$38,063	\$5,384
Asset Condition	\$27,067	\$30,888	\$3,820
Non-Infrastructure	\$556	\$837	\$281
System Capacity & Performance	\$39,765	\$39,518	(\$247)
<i>Subtotal Discretionary (Without Southeast Substation)</i>	\$67,388	\$71,242	\$3,854
Southeast Substation Project	\$2,700	\$2,188	(\$512)
<i>Subtotal Discretionary</i>	\$70,088	\$73,430	\$3,342
Total Capital Investment in System	\$102,767	\$111,494	\$8,727

* () denotes an under-spend for the period.

Attachment B

US Electricity Distribution - Rhode Island Plant Additions by Spending Rationale FY 2019 through March 31, 2019 (\$000)

	FY 2019 Annual ISR Forecast	FY 2019 Year End Actual	Variance of Actual to Forecast*	% of FY 2019 Year-end Forecast Placed in Service
Customer Request/Public Requirement	\$17,938	\$24,006	\$6,068	134%
Damage Failure	\$13,053	\$16,172	\$3,119	124%
<i>Subtotal Non-Discretionary</i>	\$30,991	\$40,178	\$9,187	130%
Asset Condition (w/Southeast Substation)	\$31,939	\$36,850	\$4,911	115%
Non- Infrastructure	\$494	(\$144)	(\$638)	-29%
System Capacity & Performance	\$21,913	\$30,710	\$8,797	140%
<i>Subtotal Discretionary</i>	\$54,346	\$67,416	\$13,070	124%
Total Capital Investment in System	\$85,337	\$107,594	\$22,257	126%
* () denotes an underspend for the period				

Attachment C

US Electricity Distribution - Rhode Island Vegetation Management O&M Spending FY 2019 through March 31, 2019 (\$000)

	FY 2019 Annual ISR Budget	FY 2019 Actual Spend	Variance of Actual to Budget*	FY 2019 % Spend
Cycle Pruning (Base)	\$6,150	\$5,995	(\$155)	97%
Hazard Tree	\$1,250	\$1,150	(\$100)	92%
Sub-T (on & off road)	\$325	\$358	\$33	110%
Police/Flagman Details	\$850	\$788	(\$62)	93%
Core Crew (all other activities)	\$1,225	\$1,448	\$223	118%
Total VM O&M Spending	\$9,800	\$9,739	(\$61)	99%
* () denotes an underspend for the period				

	FY 2019 Goal	FY 2019 Complete	FY 2019 % Complete
Distribution Mileage Trimming	1,348	1,348	100%

FY 2019 Q4 Gypsy Moth Update

Location	Circuit(s)	Gypsy Moth Trees Identified	Gypsy Moth Trees Removed
KENYON	49_56_68F1	2	2
PEACEDALE	49_56_59F1	60	60
TIVERTON	49_56_33F4	168	168
Scituate (Tunk Hill Rd)	49_53_15F2	115	115
Scituate-Glocester	49_53_34F2	140	140
Scituate-Foster-Glocester	49_53_34F3	119	119
Richmond & Hopkinton, RI	68F1, 68F4, 85T1, 85T3, 155F6	143	143
Charlestown-Carolina Rte 112	68F3, 68F4	42	42
Burrillville	127W40	58	58
Cumberland	112W44, 102W54, 112W42	25	25
North Smithfield	49_53_26W1	14	14
Exeter	63F6	91	91
Scituate-Foster	49_53_34F1	227	227
Hopkinton	155F8	51	51
Johnston	38F5	27	27
Totals		1282	1282

FY 2019 Total Gypsy Moth Spend	\$ 666,619.93
Gypsy Moth Removals	1,282
Cost/Tree	\$ 519.98

Attachment D

**US Electricity Distribution - Rhode Island
Inspection and Maintenance Program O&M Spending
FY 2019 through March 31, 2019
(\$000)**

	FY 2019 Annual ISR Budget	FY 2019 Actual Spend	Variance*	FY 2019 % Spent
Opex Related to Capex	\$255	\$65	(\$190)	26%
Repair & Inspections Related Costs	\$612	\$538	(\$74)	88%
System Planning & Protection Coordination Study	\$25	\$27	\$2	107%
VVO/CRV Program	\$244	\$100	(\$144)	41%
Total I&M O&M Spending	\$1,136	\$730	(\$406)	64%
* () denotes an underspend for the period				
	FY 2019 Goal	FY 2019 Completed	FY 2019% Completed	
RI Distribution Overhead Structures Inspected	56,613	56,613	100%	

Attachment E

US Electricity Distribution - Rhode Island Project Variance Report FY 2019 through March 31, 2019 (\$000)

Project Description	Project Funding	FY 2019 Total			Variance Cause
		Budget	Actual	Variance*	
Aquidneck Island Projects (Gate 2, New port, Jepson)	CD00649, C024159, C015158, C028628, C054054, CD00656	\$21,534	\$23,963	\$2,429	Change order payments and transfer of soil disposal payments increased spend in Q4.
Volt/Var Program	C077201, C075571, C053111, C076367, C046352, C075573, C076365, C077200, C052708, C079288, C080900, C080896, C079300, C079482, C079282, C053111-C	\$1,900	\$1,472	(\$428)	FY 2019 program lagging somewhat to coordinate work with substations.
Lee Street & Cottage Street D-Line and D-Sub	C050758, C051118, C051126, C050760	\$2,000	\$3,599	\$1,599	Lee St. moving ahead of schedule for completion. Cottage St. Q4 material spend.
Lafayette Substation Transformer Replacement	C051824	\$1,150	\$1,463	\$313	Crews were able to mobilize early, at the end of FY 2018.
Flood Contingency Plan NECO - D	C059882	\$1,020	\$201	(\$819)	Long term flood scope removed as short term scope is mitigating flood risk adequately.
Green Development LLC	C078529, C078827, C078825, C078820, C078824	\$0	\$1,360	\$1,360	Customer driven project with a CIAC paid prior to construction costs occurring.
New Southeast Substation D-Line and D-Sub	C053657, C053658	\$2,700	\$2,205	(\$494)	Design delays due to project complexity.
Dyer Street Substation	C051205, C051211, C075328, CD00397	\$1,124	\$845	(\$279)	Project spending less than budgeted due to delays in receiving permit approvals.
Southern Sky - Johnston & Cranston RI	C079031, C079081	\$0	(\$400)	(\$400)	Customer driven project with a CIAC paid prior to construction costs occurring.
New London Avenue Substation	C028920, C028921	\$6,416	\$8,102	\$1,686	D-line work was supposed to start in Q4 FY 2018 but was deferred to FY 19 to avoid resource constraints as a result of on property and contractor crews supporting Puerto Rico restoration. Costs were increased due to contract change orders.
West Cranston Transformer Replacement	C055844	\$2,400	\$2,459	\$59	Completed retainage payment in Q4 2019.
Quonset Sub D-Line and D-Sub	C053646, C053647	\$1,288	\$857	(\$431)	Resource issues required resequencing of work into Q1 of FY 2020.
Chase Hill D-Line and D-Sub	C024175, C024176	\$3,900	\$2,517	(\$1,383)	Resource issues and construction delays required resequencing of work into Q1 of FY 2020.
South St. D-Line and D-Sub	C051212, C051213, C055623	\$3,720	\$5,652	\$1,932	Completed all cutovers early and moved some costs that were expected in FY 2020 to FY 2019.
Franklin Square Breaker Replacement	C081006	\$0	\$1,143	\$1,143	Accelerated work from future fiscal years.
		\$49,152	\$55,439	\$5,144	
* () denotes an underspend for the period					

Attachment F

US Electricity Distribution - Rhode Island Damage/Failure Detail by Work Type FY 2019 through March 31, 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	\$38,228	\$0	\$27,630	\$5,697	\$33,126	\$104,682
	Default Accounting	\$1,549,852	\$105,503	\$91,029	(\$319,209)	\$975,264	\$2,402,439
	Engineering/Design/Supervision	\$690,494	\$23,350	\$276,326	\$11,855	\$47,031	\$1,049,055
	Outdoor Lighting - Cable/Wire	\$15,901	\$147	\$43	\$0	\$0	\$16,092
	Outdoor Lighting - Framing	\$90,066	\$2,380	\$4,375	\$0	\$0	\$96,821
	Outdoor Lighting - Poles/Foundation	\$13,158	\$10,959	\$0	\$0	\$0	\$24,117
	Overhead Bonding/Grounding	\$16,474	\$320	\$3,492	\$0	\$94	\$20,380
	Overhead Services	\$229,407	\$9,452	\$78,233	\$0	\$0	\$317,091
	Overhead Switches/Reclosers/Fuses	\$440,326	\$18,495	\$178,199	\$0	\$909	\$637,929
	Overhead Transformers/Capacitors/Regulators/Meters	\$602,010	\$4,419	\$163,407	\$0	\$0	\$769,836
	Overhead Wire & Conductor	\$406,574	\$11,712	\$187,901	\$0	\$2,067	\$608,254
	Pole Framing	\$185,704	\$37,713	\$81,399	\$0	\$5,774	\$310,591
	Poles/Anchors/Guying	\$1,350,895	\$233,927	\$2,511,392	\$0	\$5,166	\$4,101,380
	Substation Equipment Installations	\$0	\$0	\$0	\$544,214	\$164,853	\$709,068
	Substations Civil/Structural	\$0	\$0	\$0	\$559	\$1,815	\$2,374
	Switching and Restoration	\$5,828	\$873	\$4,171	\$835	\$237	\$11,944
	Traffic Control	\$265,104	\$68,941	\$163,316	\$0	\$8,256	\$505,617
	Underground Cable	\$967,995	\$33,032	\$104,620	\$0	\$44,454	\$1,150,101
	Underground Cable Splicing	\$112,480	\$4,289	\$5,122	\$0	\$0	\$121,891
	Underground Civil Infrastructure	\$444,512	(\$16,972)	(\$3,141)	\$0	\$128,737	\$553,136
	Underground Direct-Buried Cable	\$43,943	\$4,748	\$2,186	\$0	\$0	\$50,877
	Underground Services	\$63,361	(\$1,505)	\$9,173	\$0	\$0	\$71,028
	Underground Switches/Reclosers/Fuses	\$123,872	(\$1,770)	\$6,408	\$0	\$1,210	\$129,720
	Underground Transformers/Capacitors/Regulators/Meters	\$208,802	\$9,101	\$16,264	\$0	\$0	\$234,166
	Grand Total	\$7,864,984	\$559,114	\$3,911,546	\$243,951	\$1,418,995	\$13,998,590

* () denotes an under-spend for the period.

Attachment G

**US Electricity Distribution - Rhode Island
New Southeast Substation Budget and Project Management Report**

FY 2019 Q4 Update

New Southeast Substation

Date: April 23, 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



- 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 \$23.000M (+50% /- 25%) DOA: \$5.600M
- Transmission Project Cost of \$4.400M (+50%/-25%)
- Distribution Project Cost of \$18.600M (+50%/-25%)



New Southeast Substation Project Major Milestones



Project Major Milestones

Project Sanction	July 2019
Engineering Design Complete (EDC)	August 2019
Construction Start	October 2019
Construction Complete	December 2020
Dunnell Park Sub Ready for Load (RFL)	January 2021
Pawtucket 1 & Valley Sub Ready for Load (RLF)	April 2021
Demolish Pawtucket 1 Station Building	July 2021
Project Closeout	December 2021



New Southeast Substation Project Support Documentation

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New Southeast Station (Dunnell Park) – Location

