

February 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 – Third Quarter Ending December 31, 2018**

Dear Ms. Massaro:

On behalf of National Grid,<sup>1</sup> I have enclosed ten copies of the Company's fiscal year (FY) 2019 Electric Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the third quarter ending December 31, 2018. 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

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<sup>1</sup>The 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

February 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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## **Electric Infrastructure, Safety, and Reliability Plan**

### **FY 2019 Quarterly Update**

#### **Third Quarter Ending December 31, 2018**

### **EXECUTIVE SUMMARY**

For the third quarter of fiscal year 2019 (FY), the Company<sup>1</sup> spent approximately \$77.0 million for fiscal year-to-date (FYTD) capital investment projects against a FYTD 2019 budget of \$77.4 million. Overall, spending for FYTD 2019 was under-budget by approximately \$0.4 million. For the third quarter of FY 2019, FYTD spending for the Non-Discretionary category was \$29.5 million, which was \$4.7 over the FYTD budget of \$24.8 million. FYTD spending for the Discretionary category was approximately \$47.4 million, which was approximately \$5.2 million under the FYTD budget of \$52.6 million. Each of these categories is addressed in more detail below.

On July 11, 2016, the Rhode Island Public Utilities Commission (PUC) issued an Order<sup>2</sup> 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.<sup>3</sup> The most recent update is provided in Section 2 (e) below.

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

<sup>2</sup> Written Order No. 22471 (issued on July 11, 2016 in Docket No. 4592), at pages 16, 29.

<sup>3</sup> 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 – \$5.0 million over-budget FYTD variance**

Capital spending through the third quarter of FY 2019 in the Customer Request/Public Requirement category (*previously called the Statutory/Regulatory category*) was approximately \$19.5 million, which was approximately \$5.0 million over the FYTD 2019 budget of \$14.5 million. Among the major drivers through the FYTD for this category were the following:

- The net FYTD spending on “Distributed Generation” (DG) project spending was \$1.6 million over budget.
- Capital spending through the third quarter of FY 2019 on New Business and Public Requirements projects was a combined \$1.7 million over budget.
- Capital spending for through the third quarter of FY 2019 on Transformer Purchases was approximately \$3.3 million, which was \$1.7 million over the FYTD 2019 budget of \$1.6 million due to increased issuances of transformers to the field.

At this time, the Company forecasts that the Customer Request/Public Requirement category will be \$6.2 million over-budget at the end of the fiscal year as year to date trends are expected to continue.

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

Capital spending through the third quarter of FY 2019 in the Damage/Failure category was \$10.0 million, which was approximately \$0.2 million under the FYTD 2019 budget of \$10.2 million for this category. This over/under budget variance was driven primarily by the following:

- Capital spending on the Ocean State Damage/Failure Blanket through the third quarter was approximately \$6.7 million which was \$1.1 million under the FYTD 2019 budget of \$7.8 million. The Company monitors charges to this blanket to minimize discretionary work from being incorrectly charged to this project.
- Through the third quarter, the capital spending on the Storm Capital program was \$2.2 million which was \$1.0 million over the FYTD 2019 budget of \$1.2 million.

At this time, the Company forecasts that the Damage Failure category is forecasted to be slightly less than \$0.2 million over-budget at the end of the fiscal year, essentially on budget for the fiscal year for this Non-discretionary category.

**c. Non-Discretionary Summary**

In summary, as shown in Attachment A, capital spending through the third quarter of FY 2019 in the Non-Discretionary Sub-category was \$29.5 million, which was \$4.7 million over the FYTD 2019 budget of approximately \$24.8 million.

**2. Discretionary Spending**

**a. Asset Condition (without Southeast Substation) - \$3.3 million under-budget FYTD variance**

Capital spending through the third quarter of FY 2019 in the Asset Condition category (absent the Southeast Substation project) was approximately \$16.3 million, which was \$3.3 million under the FYTD 2019 budget of \$19.6 million primarily driven by the following:

- I&M inspection FYTD spending was \$0.2 million which was \$1.0 million under the FYTD budget of \$1.2 million.
- The Westerly Substation FYTD budget is \$.4 million, but since the approach to flood mitigation has changed, there has not been any spending to date.
- The URD and Underground programs combined are favorable FYTD by \$1.0 million due to timing of work, but since both programs are managed to meet the approved budget, the expectation is that they will on a combined basis be only slightly favorable by year end.
- Dyer Street substation work is favorable to budget by \$0.4 million due to delay in obtaining required approvals.

Offsetting the favorability noted above are:

- The South Street Substation project completed a significant milestone as the third and final cutovers were completed early and went into service in November 2018 ahead of scheduled. That advanced work moved some costs that were expected to occur in FY20 to FY19.
- The Asset Replacement Blanket is over budget by \$0.7 million

The Company actively manages the projects in this category to remain within the overall budget. At this time, the Company forecasts that the Asset Condition category (absent the Southeast Substation Project) will be \$27.3 million, approximately \$0.3 million under the fiscal year end budget of \$27.7 million.

***b. Non-Infrastructure – \$2.6 million over-budget FYTD variance***

Capital spending through the third quarter of FY 2019 for the Non-Infrastructure category was \$3.0 million which was \$2.6 million over the FYTD 2019 budget of approximately \$0.4 million. This variance was due primarily to accounting overhead charges of \$2.6 million. These charges will be cleared to the appropriate work orders through the normal capital allocation process.

At this time, the Company forecasts that the Non-Infrastructure category will be \$60,000 at the end of the fiscal year, essentially on-budget.

***c. System Capacity and Performance - \$3.4 million under-budget FYTD variance***

Capital spending through the third quarter of FY 2019 for the System Capacity and Performance category was approximately \$27.7 million, which was \$3.4 million under the FYTD 2019 budget of \$31.2 million. This variance was driven primarily by the following:

- Capital spending through the third quarter on the Chase Hill substation project was \$0.8 million which was approximately \$2.0 million under the FYTD 2019 budget of \$2.8 million primarily due to phasing the work scheduled that began in the third quarter of FY 2019.
- Capital spending through the third quarter on the Aquidneck Island projects project was approximately \$16.1 million which was \$1.0 million under the FYTD 2019 budget of approximately \$17.1 million.
- The long-term flood contingency strategy has been revised, reducing the Flood Contingency plan by \$0.7 million FYTD.
- Quonset substation related projects spending FYTD was \$0.7 million under-budget but as the work was completed in the third quarter, it is expected outstanding costs will be paid by the fourth and be on budget

At this time, the Company forecasts the System Capacity and Performance category to be \$0.3 million under-budget at the end of the fiscal year.

***d. Southeast Substation Projects – \$1.0 million under-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 third quarter of FY 2019 on the Southeast Substation project was \$0.3 million, which was approximately \$1.0 million under the FYTD budget of approximately \$1.3 million.

At this time, the Company forecasts that the Southeast Substation category will be approximately \$0.8 million under-budget at the end of the fiscal year.

***e. Discretionary Summary***

Finally, as shown in Attachment A, total capital spending for FYTD 2019 in the Discretionary Sub-category was \$47.4 million, which was approximately \$5.2 million under the FYTD 2019 budget of \$52.6 million.

**3. 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%).<sup>4</sup> 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 projects<sup>5</sup> with variances that exceed +/- 10% of the annual fiscal year budget. These FYTD projects represented \$30.6 million of the total FY 2019 budget of \$102.8 million. Specific project information is provided in Attachment E.

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<sup>4</sup> Docket No. 4473 Order No. 21559 at p. 25.

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



#### **4. 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.<sup>6</sup> 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.

#### **5. Investment Placed-in-Service**

Through the third quarter of FY 2019, \$61.2 million of investment was placed-in-service, which was 72% of the annual forecasted plant-in-service of \$85.3 million and 57% 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 third quarter of FY 2019, the Non-Discretionary Sub-category had \$31.1 million of plant additions placed-in-service, which was 100% of the planned amount of \$31.0 million. The Discretionary Sub-category had \$30.1 million of plant additions placed-in-service, which was 55% of the planned amount of \$54.3 million.

#### **6. Vegetation Management (VM)**

Through the third quarter of FY 2019, the Company completed 853 miles or 62% of its annual distribution mileage cycle pruning goal of 1,374 miles. This represents an associated spend of 45% of the FY 2019 budget for the cycle pruning program. Overall, through the third quarter of FY 2019, the Company's VM operation and maintenance (O&M) spending was \$5.5million. The Company expects to complete 100% of their work plan for FY 2019 within the budget of \$9.8 million.

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<sup>6</sup> 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 and other pest related damage tracked by the Company through the third quarter of FY 2019<sup>7</sup>.

## **7. Inspection and Maintenance (I&M)**

Through the third quarter of FY 2019, the Company completed 89% of its annual structure inspection goal of 56,613 with an associated spend of approximately \$0.32 million, or approximately 53% 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 third 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.

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<sup>7</sup> 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 12/31/18	Not Repaired as of 12/31/18
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	16,146	10,468
	III	9,011	4,599	4,412
FY 2014	I	11	11	0
	II	23,031	3,274	19,757
	III	8,695	1,596	7,099
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	12	12	0
	II	8,821	0	8,821
	III	7,237	0	7,237
FY 2019	I	17	16	1
	II	3,685	0	3,685
	III	2,456	0	2,456
Total Since Program Inception	I, II, III	179,170	54,891	124,279

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  
Third Quarter Ending December 31, 2018  
Page 9 of 24

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

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 12/31/18	Units with Voltage Found (>1.0v)	Percent of Units Tested with Voltage (>1.0v)
Distribution Facilities	259,225	48,746	0	0%
Underground Facilities	12,438	3,034	0	0%
Street Lights	4,328	2,028	0	0%

Attachment D provides the FY 2018 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 December 31, 2018 (\$000)

	FYTD			FY 2019 Total		
	Budget	Actual	Variance	Budget	Forecast	Variance
Customer Request/Public Requirement	\$14,556	\$19,528	\$4,972	\$19,205	\$25,397	\$6,192
Damage Failure	\$10,252	\$10,026	(\$225)	\$13,674	\$13,852	\$178
<i>Subtotal Non-Discretionary</i>	\$24,807	\$29,554	\$4,746	\$32,879	\$39,248	\$6,369
Asset Condition	\$19,628	\$16,280	(\$3,348)	\$27,667	\$27,326	(\$341)
Non-Infrastructure	\$417	\$3,054	\$2,637	\$556	\$496	(\$60)
System Capacity & Performance	\$31,185	\$27,773	(\$3,411)	\$38,965	\$39,276	\$311
<i>Subtotal Discretionary (Without Southeast Substation)</i>	\$51,230	\$47,107	(\$4,123)	\$67,188	\$67,098	(\$90)
Southeast Substation Project	\$1,339	\$300	(\$1,039)	\$2,700	\$1,903	(\$797)
<i>Subtotal Discretionary</i>	\$52,569	\$47,408	(\$5,162)	\$69,888	\$69,001	(\$887)
<b>Total Capital Investment in System</b>	<b>\$77,377</b>	<b>\$76,961</b>	<b>(\$415)</b>	<b>\$102,767</b>	<b>\$108,249</b>	<b>\$5,482</b>

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

## Attachment B

### US Electricity Distribution - Rhode Island Plant Additions by Spending Rationale FY 2019 through December 31, 2018 (\$000)

	FY 2019 Annual ISR Forecast	FYTD Actual in Service	FY 2019 Year- end Forecast	% of FY 2019 Year-end Annual Forecast Placed in Service	% of FY 2019 Year-end Forecast Placed in Service
<b>Customer Request/Public Requirement</b>	\$17,938	\$16,681	\$16,014	93%	104%
<b>Damage Failure</b>	\$13,053	\$14,451	\$18,667	111%	77%
<i>Subtotal Non-Discretionary</i>	\$30,990	\$31,132	\$34,680	100%	90%
<b>Asset Condition (w/Southeast Substation)</b>	\$31,939	\$12,304	\$34,835	39%	35%
<b>Non- Infrastructure</b>	\$494	(\$37)	\$290	-7%	-13%
<b>System Capacity &amp; Performance</b>	\$21,913	\$17,810	\$36,937	81%	48%
<i>Subtotal Discretionary</i>	\$54,346	\$30,077	\$72,062	55%	42%
<b>Total Capital Investment in System</b>	<b>\$85,336</b>	<b>\$61,209</b>	<b>\$106,742</b>	<b>72%</b>	<b>57%</b>

## Attachment C

### US Electricity Distribution - Rhode Island Vegetation Management O&M Spending FY 2019 through December 31, 2018 (\$000)

	FY 2019 Annual ISR Budget	FYTD Actual	FY 2019 Year-End Forecast	FYTD % Spend
Cycle Pruning (Base)	\$6,150	\$2,770	\$6,150	45%
Hazard Tree	\$1,250	\$977	\$1,250	78%
Sub-T (on & off road)	\$325	\$279	\$325	86%
Police/Flagman Details	\$850	\$487	\$850	57%
Core Crew (all other activities)	\$1,225	\$1,012	\$1,225	83%
<b>Total VM O&amp;M Spending</b>	<b>\$9,800</b>	<b>\$5,525</b>	<b>\$9,800</b>	<b>56%</b>
* ( ) denotes an underspend for the period				

	FY 2019 Goal	FY YTD Goal	FY YTD Complete	FY YTD % Complete	FY 2019 % Complete
<b>Distribution Mileage Trimm</b>	1,374	1,031	853	83%	62%

### FY 2019 3Q Gypsy Moth Update

Location	Circuit	Completed Removals	
		Total Trees	Gypsy Moth
Hope	49_53_15F2	65	14
Tiverton	49_56_33F4	328	168
Peacedale	49_56_59F1	225	60
Kenyon	49_56_68F1	7	2
Scituate (Tunk Hill Rd)	49_53_15F2	101	101
Scituate-Glocester	49_53_34F2	140	140
Scituate-Foster-Glocester	49_53_34F3	119	119
Richmond & Hopkinton, RI	49_56_68F1	143	143
	49_56_68F4		
	49_56_85T1		
	49_56_85T3		
Charlestown-Carolina Rte 112	49_56_155F6	42	42
	49_56_68F3		
Burrillville	49_56_68F4	42	42
Cumberland	49_53_127W40	58	58
	49_53_112W44	25	25
	49_53_102W54		
North Smithfield	49_53_112W42	25	25
Exeter	49_53_26W1	14	14
Scituate-Foster	49_56_63F6	91	91
	49_53_34F1	111	111
<b>Totals</b>		<b>1,469</b>	<b>1,088</b>

FY 2019 Total Gypsy Moth Spend	\$ 524,464.00
Gypsy Moth Removals	1,088
Cost/Tree	\$ 482.04



## Attachment D

### US Electricity Distribution - Rhode Island Inspection and Maintenance Program O&M Spending FY 2019 through December 31, 2018 (\$000)

	FY 2019 Annual ISR Budget	FYTD Actual	FY 2019 Year-End Forecast	FYTD % Spend
Opex Related to Capex	\$255	\$40	\$255	16%
Repair & Inspections Related Costs	\$612	\$172	\$612	28%
System Planning & Protection Coordination Study	\$25	\$0	\$25	0%
VVO/CRV Program	\$244	\$4	\$244	2%
<b>Total I&amp;M O&amp;M Spending</b>	<b>\$1,136</b>	<b>\$216</b>	<b>\$1,136</b>	<b>19%</b>

\* ( ) denotes an underspend for the period

	FY 2019 Annual ISR Budget	FYTD Actual	FY 2019 Year- End Forecast	FYTD % Spend
Opex Related to Capex	\$255	\$12	\$255	5%
Repair & Inspections Related Costs	\$612	\$323	\$612	53%
System Planning & Protection Coordination Study	\$25	\$13	\$25	52%
VVO/CRV Program	\$244	\$62	\$244	25%
<b>Total I&amp;M O&amp;M Spending</b>	<b>\$1,136</b>	<b>\$410</b>	<b>\$1,136</b>	<b>36%</b>
* ( ) denotes an underspend for the period				

	FY 2019 Goal	FYTD Goal	FYTD Complete	FYTD % Complete	FY 2019 % Complete
<b>RI Distribution Overhead Structures Inspected</b>	56,613	42,460	50,280	118%	89%

## Attachment E

### US Electricity Distribution - Rhode Island Project Variance Report FY 2019 through December 31, 2018 (\$000)

Project Description	Spending Rationale	Project Funding	FYTD			FY 2019 Total			Variance Cause
			Budget	Actual	Variance	Budget	Forecast	Variance	
Aquidneck Island Projects (Gate 2, Newport, Jepson)	System Capacity & Performance	CD00649, C024159, C015158, C028628, C054054, CD00656	\$17,091	\$16,113	(\$978)	\$21,534	\$20,861	(\$673)	Resequencing of work was required due to winter condition restrictions obtained from RIDOT Permit.
Volt/Var Program	System Capacity & Performance	C077201, C075571, C053111, C076367, C046352, C075573, C076365, C077200, C052708, C079288, C080900, C080896, C078300, C079482, C079282, C053111-C	\$950	\$1,104	\$154	\$1,900	\$1,761	(\$139)	FY19 program lagging somewhat to coordinate work with substations
Lee Street & Cottage Street D-Line and D-Sub	Asset Condition	C050758, C051118, C051126, C050760	\$1,122	\$1,060	(\$62)	\$2,000	\$2,650	\$650	Lee St moving ahead of schedule for completion. Moved material payments into FY19
Lafayette Substation Transformer Replacement	Asset Condition	C051824	\$822	\$916	\$94	\$1,150	\$1,562	\$412	Crews were able to mobilize early, at the end of FY 2018.
Flood Contingency Plan NEOO - D	System Capacity & Performance	C059882	\$870	\$198	(\$672)	\$1,020	\$198	(\$822)	Long term flood scope removed as short term scope is mitigating flood risk adequately.
Green Development LLC	Customer Requirement	C078529, C078827, C078825, C078820, C078824	\$0	\$395	\$395	\$0	\$1,950	\$1,950	CIAC for DG projects are received at different time then costs are spent
New Southeast Substation D-Line and D-Sub	Asset Condition	C053657, C053658	\$1,339	\$299	(\$1,041)	\$2,700	\$1,901	(\$799)	Design delays due to project complexity.
South Street Substation	Asset Condition	C051212, C055623, C051213	\$1,887	\$3,068	\$1,181	\$3,720	\$4,843	\$1,123	Final phase of cutovers completed in November 2018 ahead of schedule
Dyer Street Substation	Asset Condition	C051205, C051211, C075328, CD00397	\$901	\$477	(\$424)	\$1,124	\$789	(\$335)	Project spending less than budget due to delays in receiving permit approvals
Southern Sky - Johnston & Cranston RI	Customer Requirement	C079031, C079081	\$0	(\$2,278)	(\$2,278)	\$0	(\$671)	(\$671)	CIAC for DG projects are received at different time then costs are spent
New London Avenue Substation	System Capacity & Performance	C028920, C028921	\$6,011	\$6,899	\$888	\$6,416	\$8,529	\$2,113	D-line work was supposed to start in Q4 FY 2018 but was deferred to avoid resource constraints as a result of on property and contractor crews supporting Puerto Rico restoration. Work will now be accomplished in FY 2019.
West Cranston Transformer Replacement	Asset Condition	C055844	\$1,242	\$905	(\$338)	\$2,400	\$2,184	(\$216)	Transformer payment occurred in FY 2018 instead of FY 2019.
Quonset Sub D-Line and D-Sub	System Capacity & Performance	C053646, C053647	\$1,250	\$588	(\$662)	\$1,288	\$1,209	(\$79)	Resources will be working on project throughout the year. Overall cost should remain the same.
Chase Hill D-Line and D-Sub	System Capacity & Performance	C024175, C024176	\$2,828	\$832	(\$1,996)	\$3,900	\$3,525	(\$375)	Resources will be working on project throughout the year. Managing close to budget. Work continues through Q4.
			<b>\$36,314</b>	<b>\$30,575</b>	<b>(\$5,739)</b>	<b>\$49,152</b>	<b>\$51,291</b>	<b>\$2,140</b>	

## Attachment F

### US Electricity Distribution - Rhode Island Damage/Failure Detail by Work Type FY 2019 through December 31, 2018

	Project Type					Grand Total
	D-Line Blanket	D-Line Property Damage	D-Line Storm	D-Sub Blanket	D-Sub & D-Line Specific	
AFUDC	\$23,753	\$0	\$16,405	\$3,993	\$17,584	\$61,735
Default Accounting	\$1,238,816	\$142,628	\$48,099	(\$299,878)	\$559,948	\$1,689,613
Engineering/Design/Supervision	\$565,455	\$11,437	\$138,315	\$11,917	\$18,612	\$745,737
Outdoor Lighting - Cable/Wire	\$8,252	\$125	\$37	\$0	\$0	\$8,415
Outdoor Lighting - Framing	\$78,764	\$1,033	\$4,071	\$0	\$0	\$83,868
Outdoor Lighting - Poles/Foundation	\$8,022	\$8,144	\$0	\$0	\$0	\$16,166
Overhead Bonding/Grounding	\$14,914	\$42	\$3,209	\$0	\$0	\$18,166
Overhead Services	\$187,468	\$11,590	\$35,301	\$0	\$0	\$234,359
Overhead Switches/Reclosers/Fuses	\$305,254	\$10,801	\$138,263	\$0	\$0	\$454,319
Overhead Transformers/Capacitors/Regulators/Meters	\$503,504	(\$8,623)	\$151,809	\$0	\$0	\$646,690
Overhead Wire & Conductor	\$306,213	\$20,233	\$104,935	\$0	\$0	\$431,381
Pole Framing	\$142,593	\$46,217	\$55,528	\$0	\$0	\$244,338
Poles/Anchors/Guying	\$1,024,686	\$194,935	\$1,305,485	\$0	\$4,316	\$2,529,422
Substation Equipment Installations	\$0	\$0	\$0	\$549,236	\$100,411	\$649,648
Substations Civil/Structural	\$0	\$0	\$0	\$559	\$1,256	\$1,815
Switching and Restoration	\$1,175	\$0	\$1,806	\$835	\$0	\$3,816
Traffic Control	\$207,147	\$31,336	\$125,732	\$0	\$484	\$364,699
Underground Cable	\$857,902	\$16,257	\$99,590	\$0	\$4,629	\$978,378
Underground Cable Splicing	\$107,085	\$4,728	\$4,811	\$0	\$0	\$116,624
Underground Civil Infrastructure	\$337,399	(\$8,912)	(\$3,141)	\$0	\$42,454	\$367,800
Underground Direct-Buried Cable	\$35,315	\$6,378	\$1,101	\$0	\$0	\$42,794
Underground Services	\$47,608	\$5,115	\$5,153	\$0	\$0	\$57,875
Underground Switches/Reclosers/Fuses	\$109,624	(\$1,323)	\$6,397	\$0	\$0	\$114,698
Underground Transformers/Capacitors/Regulators/Meters	\$144,664	\$9,270	\$9,837	\$0	\$0	\$163,771
<b>Grand Total</b>	<b>\$6,255,614</b>	<b>\$501,412</b>	<b>\$2,252,744</b>	<b>\$266,662</b>	<b>\$749,696</b>	<b>\$10,026,128</b>

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

## **Attachment G**

### **US Electricity Distribution - Rhode Island New Southeast Substation Budget and Project Management Report January 18, 2019 Update**

## New Southeast Substation

Date: January 18, 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 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	April 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	October 2021



PAWLUCKET NO. 1 Station

## New Southeast Substation Project Support Documentation

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**New Southeast Station (Dunnell Park) – Location**

