

November 15, 2018

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 – First Quarter Ending September 30, 2018**

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 second quarter ending September 30, 2018. 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 781-907-2121.

Very truly yours,



Raquel J. Webster

Enclosures

cc: Docket 4783 Service List
Leo Wold, Esq.
Al Contente

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

November 15, 2018
Date

Docket No. 4783 National Grid’s Electric Infrastructure, Safety and Reliability Plan FY 2019 - Service List as of 2/21/18

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Electric Infrastructure, Safety, and Reliability Plan

FY 2019 Quarterly Update

Second Quarter Ending September 30, 2018

EXECUTIVE SUMMARY

For the second quarter of fiscal year 2019 (FY), the Company¹ spent \$45.0 million for fiscal year-to-date (FYTD) capital investment projects against a FYTD 2019 budget of \$49.7 million. Overall, spending for FYTD 2019 was under-budget by approximately \$4.7 million. For the second quarter of FY 2019, spending for the Non-Discretionary category FYTD was \$16.4 million, which was on-budget. FYTD spending for the Discretionary category was approximately \$28.6 million, which was approximately \$4.7 million under-budget. 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.

The Company and the Rhode Island Division of Public Utilities and Carriers (Division) agreed for FY 2019, 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 (e) 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 – \$0.6 million under-budget FYTD variance

Capital spending through the second quarter of FY 2019 in the Customer Request/Public Requirement category (*previously called the Statutory/Regulatory category*) was approximately \$9.1 million, which was \$0.6 million under the FYTD 2019 budget of \$9.7 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 \$5.6 million. Variances for DG also include the CIAC reimbursements for the Green Development Project (\$1.7 million) and the Southern Sky Project (\$2.2 million) for prior and future capital spending on projects.
- Capital spending through the second quarter of FY 2019 on New Business Residential and Commercial projects and Public Requirements was a combined \$2.0 million under-budget. This under-budget variance was primarily driven by lower spending in the New Business Commercial Blanket Project.
- Capital spending for through the second quarter of FY 2019 on Transformer Purchases was approximately \$2.3 million, which was \$1.1 million over the FYTD 2019 budget of \$1.1 million due to the earlier than planned delivery of the transformer inventory.

At this time, the Company forecasts that the Customer Request/Public Requirement category will be \$6.4 million over-budget at the end of the fiscal year primarily due to higher activity in the Distributed Generation category.

b. Damage/Failure - \$0.4 million over-budget FYTD variance

Capital spending through the second quarter of FY 2019 in the Damage/Failure category was \$7.3 million, which was approximately \$0.4 million over the FYTD 2019 budget of \$6.8 million for this category. This over budget variance was driven primarily by the following:

- Capital spending on the Ocean State Damage/Failure Blanket through the second quarter was approximately \$5.1 million which was \$0.1 million under the FYTD 2019 budget of \$5.2 million. The Company monitors charges to this blanket to minimize discretionary work from being incorrectly charged to this project.
- Through the second quarter, the capital spending on the Storm Capital program was \$1.5 million which was \$0.7 million over the FYTD 2019 budget of \$0.8 million.

At this time, the Company forecasts that the Damage Failure category is forecasted to be approximately \$1.4 million over-budget at the end of the fiscal year, primarily due to the Storm Capital program which, at this time, is forecasted to be \$1.1 million over-budget at the end of the fiscal year.

In summary, as shown in Attachment A, capital spending through the second quarter of FY 2019 in the Non-Discretionary Sub-category was \$16.4 million, which was \$0.2 million under the FYTD 2019 budget of approximately \$16.6 million.

2. Discretionary Spending

a. Asset Condition (without Southeast Substation) - \$1.0 million under-budget FYTD variance

Capital spending through the second quarter of FY 2019 in the Asset Condition category (absent the Southeast Substation project) was approximately \$10.5 million, which was \$1.0 million under the FYTD 2019 budget of \$11.5 million primarily driven by lower spending in the I&M D-Line Overhead work program.

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 approximately \$0.8 million under-budget at the end of the fiscal year.

b. Non-Infrastructure – \$1.8 million over-budget FYTD variance

Capital spending through the second quarter of FY 2019 for the Non-Infrastructure category was \$2.1 million over the FYTD 2019 budget of approximately \$0.3 million due to accounting overhead charges of \$1.8 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 on budget at the end of the fiscal year.

c. System Capacity and Performance - \$5.1 million under-budget FYTD variance

Capital spending through the second quarter of FY 2019 for the System Capacity and Performance category was approximately \$15.8 million, which was \$5.1 million under the FYTD 2019 budget of \$20.9 million. This variance was driven primarily by the following:

- Capital spending through the second quarter on the Chase Hill substation project was \$0.7 million which was approximately \$1.2 million under the FYTD 2019 budget of \$1.8 million primarily due to phasing the work scheduled in the third quarter of FY 2019.
- Capital spending through the second quarter on the Newport Substation project was \$0.5 million which was \$1.5 million under the FYTD 2019 budget of approximately \$2.0 million. As noted in the first quarter FY 2019 ISR Report, this variance reflects the shifting of this project work from FY 2018 into later in FY 2019.
- Capital spending through the second quarter of FY 2019 on VVO projects was \$0.8 million, which was over the FYTD budget. This over-budget variance was due to a slight modification to one project and a lag of FY 18 spending into FY 19.
- At this time, the Company forecasts that the System Capacity and Performance category is forecasted to be \$0.7 million under-budget at the end of the fiscal year.

d. Southeast Substation Projects – \$0.3 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 second quarter of FY 2019 on the Southeast Substation project was \$0.2 million, which was approximately \$0.3 million under the FYTD budget of approximately \$0.5 million.

At this time, the Company forecasts that the Southeast Substation category will be approximately \$0.1 million under-budget at the end of the fiscal year.

Finally, as shown in Attachment A, total capital spending for FYTD 2019 in the Discretionary Sub-category was approximately \$28.6 million, which was \$4.6 million under the FYTD 2019 budget of \$33.2 million.

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 \$45.2 million of the total FY 2019 budget of \$102.8 million. Specific project information is provided in Attachment E.

e. New Distribution System Technology Update

In Order No. 22955, the PUC directed the Company to 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 28th.
- 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.

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

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

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

3. Investment Placed-in-Service

Through the second quarter of FY 2019, \$47.5 million of investment was placed-in-service, which was 56% of the annual forecasted plant-in-service of \$85.3 million and 44% of the current projected year-end forecast of plant placed-in-service. Details by spending rationale are included in Attachment B.

As shown in Attachment B, through the second quarter of FY 2019, the Non-Discretionary Sub-category had \$23.3 million of plant additions placed in service, which was 75% of the planned amount of \$31.0 million. The Discretionary Sub-category had \$24.2 million of plant additions placed in service, which was 45% of the planned amount of \$54.3 million.

4. Vegetation Management (VM)

Through the second quarter of FY 2019, the Company completed 481 miles or 35% of its annual distribution mileage cycle pruning goal of 1,374 miles. This represents an associated spend of 29% of the FY 2019 budget for the cycle pruning program. Overall, through the second quarter of FY 2019, the Company's VM operation and maintenance (O&M) spending was \$3.4 million. The Company expects to complete 100% of their work plan for FY 2019 within the budget of \$9.8 million.

Attachment C provides the FY 2019 YTD spending for all sub-components in the VM category and an update of the gypsy moth and other pest related damage tracked by the Company through the second quarter of FY 2019⁷.

5. Inspection and Maintenance (I&M)

Through the second quarter of FY 2019, the Company completed 66% of its annual structure inspection goal of 56,613 with an associated spend of approximately \$0.3 million, or approximately 46% 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.

⁷ At the March 20, 2018 Open Meeting in Docket 4783, the Commission 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.

4237. Attachment D provides the FY 2018 spending for all components in the I&M category.

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 second quarter of FY 2019, the Company has completed repairs reported for approximately 30% of the total deficiencies found. Total deficiencies found and repairs made-to-date are shown in the table below.

Summary of Deficiencies and Repair Activities RI Distribution				
Year Inspection Performed	Priority Level/Repair Expected	Deficiencies Found (Total)	Repaired as of 9/30/18	Not Repaired as of 9/30/18
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	26,877	16,145	10,732
	III	9,052	4,598	4,454
FY 2014	I	11	11	0
	II	23,196	2,969	20,227
	III	8,776	1,527	7,249
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	8	7	1
	II	3,676	0	3,676
	III	2,427	0	2,427
Total Since Program Inception	I, II, III	179,673	54,506	125,167

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.	9/21/2018	10/15/2018
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, Gloucester	Repaired neutral.	5/15/2018	5/15/2018
2018	1	10-1	Wood Rd, Gloucester	Crew opened fuse at Pole 10 to de-energize service that was on the ground.	5/15/2018	5/15/2018

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 09/30/18	Units with Voltage Found (>1.0v)	Percent of Units Tested with Voltage (>1.0v)
Distribution Facilities	259,225	32,813	0	0%
Underground Facilities	12,438	3,027	0	0%
Street Lights	4,328	0	0	0%

Attachment A

**US Electricity Distribution - Rhode Island
Capital Spending by Spending Rationale
FY 2019 through September 30, 2018
(\$000)**

	FYTD			FY 2019 Total		
	Budget	Actual	Variance	Budget	Forecast	Variance
Customer Request/Public Requirement	\$9,732	\$9,133	(\$599)	\$19,005	\$25,384	\$6,379
Damage Failure	\$6,834	\$7,266	\$432	\$13,674	\$15,032	\$1,358
<i>Subtotal Non-Discretionary</i>	\$16,566	\$16,399	(\$167)	\$32,679	\$40,416	\$7,737
Asset Condition	\$11,495	\$10,470	(\$1,024)	\$27,067	\$26,299	(\$769)
Non-Infrastructure	\$278	\$2,109	\$1,832	\$556	\$507	(\$49)
System Capacity & Performance	\$20,947	\$15,833	(\$5,114)	\$39,765	\$39,039	(\$726)
<i>Subtotal Discretionary (Without Southeast Substation)</i>	\$32,719	\$28,413	(\$4,306)	\$67,388	\$65,845	(\$1,543)
Southeast Substation Project	\$471	\$199	(\$272)	\$2,700	\$2,599	(\$100)
<i>Subtotal Discretionary</i>	\$33,191	\$28,612	(\$4,578)	\$70,088	\$68,444	(\$1,644)
Total Capital Investment in System	\$49,757	\$45,012	(\$4,745)	\$102,767	\$108,860	\$6,094

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

Attachment B

**US Electricity Distribution - Rhode Island
Plant Additions by Spending Rationale
FY 2019 through September 30, 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
Customer Request/Public Requirement	\$17,938	\$11,606	\$19,225	65%	60%
Damage Failure	\$13,053	\$11,690	\$17,164	90%	68%
<i>Subtotal Non-Discretionary</i>	\$30,991	\$23,296	\$36,389	75%	64%
Asset Condition (w/Southeast Substation)	\$31,939	\$9,810	\$35,799	31%	27%
Non- Infrastructure	\$494	(\$37)	\$355	-7%	-10%
System Capacity & Performance	\$21,913	\$14,466	\$35,040	66%	41%
<i>Subtotal Discretionary</i>	\$54,346	\$24,240	\$71,194	45%	34%
Total Capital Investment in System	\$85,337	\$47,536	\$107,584	56%	44%

Attachment C

US Electricity Distribution - Rhode Island Vegetation Management O&M Spending FY 2019 through September 30, 2018 (\$000)

	FY 2019 Annual ISR Budget	FYTD Actual	FY 2019 Year- End Forecast	FYTD % Spend
Cycle Pruning (Base)	\$6,150	\$1,756	\$6,150	29%
Hazard Tree	\$1,250	\$568	\$1,250	45%
Sub-T (on & off road)	\$325	\$68	\$325	21%
Police/Flagman Details	\$850	\$330	\$850	39%
Core Crew (all other activities)	\$1,225	\$676	\$1,225	55%
Total VM O&M Spending	\$9,800	\$3,398	\$9,800	35%
* () denotes an underspend for the period				

	FY 2019 Goal	FY YTD Goal	FY YTD Complete	FY YTD % Complete	FY 2019 % Complete
Distribution Mileage Trimming	1,374	687	481	70%	35%

FY 2019 1Q 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	132	132
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_53_127W40	57	0
Cumberland	49_53_112W44	25	15
	49_53_102W54		
	49_53_112W42		
North Smithfield	49_53_26W1	14	13
Totals		1,258	809

FY 2019 Total Gypsy Moth Spend	\$ 292,949.56
Gypsy Moth Removals	809
Cost/Tree	\$ 362.11

Attachment D

US Electricity Distribution - Rhode Island Inspection and Maintenance Program O&M Spending FY 2019 through September 30, 2018 (\$000)

	FY 2019 Annual ISR Budget	FYTD Actual	FY 2019 Year- End Forecast	FYTD % Spend
Opex Related to Capex	\$255	(\$4)	\$255	-2%
Repair & Inspections Related Costs	\$612	\$282	\$612	46%
System Planning & Protection Coordination Study	\$25	\$0	\$25	0%
VVO/CRV Program	\$244	\$14	\$244	6%
Total I&M O&M Spending	\$1,136	\$292	\$1,136	26%
* () denotes an underspend for the period				

	FY 2019 Goal	FYTD Goal	FYTD Complete	FYTD % Complete	FY 2019 % Complete
RI Distribution Overhead Structures Inspected	56,613	28,307	37,261	132%	66%

Attachment E

US Electricity Distribution - Rhode Island Project Variance Report FY 2019 through September 30, 2018 (\$000)

Project Description	Project Funding	FYTD			FY 2019 Total			Variance Cause
		Budget	Actual	Variance	Budget	Forecast	Variance	
Aquidneck Island Projects (Gate 2, New port, Jepson)	CD00649, C024159, C015158, C028628, C054054, CD00656	\$11,042	\$7,332	(\$3,710)	\$21,543	\$19,721	(\$1,822)	No significant change to overall project cost. Contractor costs in FY19 expected to be higher than previously estimated in given FY.
Volt/Var Program	C077201, C075571, C053111, C076367, C046352, C075573, C076365, C077200, C052708, C079282,	\$0	\$687	\$687	\$1,625	\$1,695	\$70	FY 2018 program lagged due to priority for storm restoration during three back to back Nor'Easters. Remaining work slipped into FY 2019.
Lee Street & Cottage Street D-Line and D-Sub	C050758, C051118, C051126, C050760	\$500	\$472	(\$28)	\$2,000	\$2,192	\$192	Budget is on track. Contractor to be awarded work that will be accomplished in Q3 and Q4.
Lafayette Substation Transformer Replacement	C051824	\$366	\$341	(\$25)	\$1,150	\$1,562	\$412	Crews were able to mobilize early, at the end of FY 2018.
Flood Contingency Plan NECO - D	C059882	\$510	\$185	(\$325)	\$1,020	\$185	(\$835)	Long term flood scope removed as short term scope is mitigating flood risk adequately.
Green Development LLC	C078529, C078827, C078825, C078820, C078824	\$0	(\$3,446)	(\$3,446)	\$0	\$2,019	\$2,019	Customer driven project with a CIAC paid prior to construction costs occurring. Remaining FY variance is due to other CIAC payments for work received in previous FY. Overall the project will be fully reimbursed by the customer.
New South Substation D-Line and D-Sub	C053657, C053658	\$471	\$197	(\$274)	\$2,700	\$2,597	(\$102)	Cable cutovers ahead of schedule
Dyer Street Substation	C051205, C051211, C075328, CD00397	\$422	\$315	(\$107)	\$1,124	\$792	(\$332)	Delay in project due to taking longer time to receive related permits
Southern Sky - Johnston & Cranston RI	C079031, C079081	\$0	(\$2,318)	(\$2,318)	\$0	\$177	\$177	Customer driven project with a CIAC paid prior to construction costs occurring. Remaining FY variance is due to other CIAC payments for work received in previous FY. Overall the project will be fully reimbursed by the customer.
New London Avenue Substation	C028920, C028921	\$5,009	\$4,699	(\$310)	\$6,416	\$8,343	\$1,927	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	C055844	\$561	\$420	(\$141)	\$2,400	\$1,788	(\$612)	Transformer payment occurred in FY 2018 instead of FY 2019.
Quonset Sub D-Line and D-Sub	C053646, C053647	\$1,078	\$493	(\$585)	\$1,288	\$1,207	(\$81)	Resources will be working on project throughout the year. Overall cost should remain the same.
Chase Hill D-Line and D-Sub	C024175, C024176	\$1,844	\$675	(\$1,168)	\$3,900	\$3,757	(\$143)	Resources will be working on project throughout the year. Overall cost should remain the same. Expected to catch-up in Q2 and Q3.
		\$21,803	\$10,053	(\$11,749)	\$45,166	\$46,036	\$870	

* () denotes an underspend for the period

Attachment F

US Electricity Distribution - Rhode Island Damage/Failure Detail by Work Type FY 2019 through September 30, 2018

	Project Type					Grand Total
	D-Line Blanket	D-Line Property Damage	D-Line Storm	D-Sub Blanket	D-Sub & D-Line Specific	
AFUDC	\$10,512	\$0	\$9,662	\$4,679	\$2,385	\$27,238
Default Accounting	\$862,701	\$31,704	\$32,422	\$126,752	\$64,744	\$1,118,323
Engineering/Design/Supervision	\$441,727	(\$14,518)	\$99,316	\$16,483	\$6,499	\$549,508
Outdoor Lighting - Cable/Wire	\$7,593	\$11	\$37	\$0	\$0	\$7,642
Outdoor Lighting - Framing	\$71,793	\$360	\$4,071	\$0	\$0	\$76,225
Outdoor Lighting - Poles/Foundation	\$3,756	\$4,906	\$0	\$0	\$0	\$8,662
Overhead Bonding/Grounding	\$10,791	(\$150)	\$3,174	\$0	\$0	\$13,815
Overhead Services	\$148,861	\$5,085	(\$828)	\$0	\$0	\$153,118
Overhead Switches/Reclosers/Fuses	\$214,494	\$3,260	\$73,440	\$0	\$0	\$291,194
Overhead Transformers/Capacitors/Regulators/Meters	\$380,203	(\$15,086)	\$121,806	\$0	\$0	\$486,923
Overhead Wire & Conductor	\$319,226	\$7,089	\$20,712	\$0	\$0	\$347,028
Pole Framing	\$99,099	\$7,384	\$35,503	\$0	\$0	\$141,986
Poles/Anchors/Guying	\$701,749	\$16,057	\$882,788	\$0	\$0	\$1,600,593
Substation Equipment Installations	\$0	\$0	\$0	\$472,779	\$6,115	\$478,894
Substations Civil/Structural	\$0	\$0	\$0	\$559	\$1,256	\$1,815
Switching and Restoration	\$1,175	\$1,104	\$1,806	\$835	\$0	\$4,920
Traffic Control	\$111,665	(\$9,645)	\$117,887	\$0	\$0	\$219,907
Underground Cable	\$1,204,694	\$5,956	\$74,783	\$0	\$0	\$1,285,433
Underground Cable Splicing	\$61,171	\$3,864	\$4,811	\$0	\$0	\$69,845
Underground Civil Infrastructure	\$185,571	(\$16,388)	(\$3,141)	\$0	\$0	\$166,041
Underground Direct-Buried Cable	\$25,508	\$2,144	\$364	\$0	\$0	\$28,016
Underground Services	\$20,587	(\$6,288)	(\$767)	\$0	\$0	\$13,532
Underground Switches/Reclosers/Fuses	\$50,951	(\$1,932)	\$3,003	\$0	\$0	\$52,022
Underground Transformers/Capacitors/Regulators/Meters	\$106,327	\$9,074	\$8,329	\$0	\$0	\$123,730
Grand Total	\$5,040,152	\$33,992	\$1,489,178	\$622,088	\$81,000	\$7,266,411

* () denotes an under spend for the period.

In some cases, the default accounting operation is used to capture work performed.

Attachment G

**US Electricity Distribution - Rhode Island
New Southeast Substation Budget and Project Management Report
November 15, 2018 Update**

(Following)

New Southeast Substation

Date: November 15, 2018

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New Southeast Substation Project Agenda

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- Safety Moment
- 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

Project Major Milestones

Project Sanction	December 2018
Engineering Design Complete (EDC)	August 2019
Construction Start	October 2019
Construction Complete	December 2020
Ready for Load (RFL)	January 2021
Demolish Pawtucket 1 Station Building	March 2021
Project Closeout	June 2021



RIPUC Docket No. 4783

New Southeast Substation Project Support Documentation

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New Southeast Station (Dunnell Park) – Location

