

August 18, 2016

BY HAND DELIVERY AND ELECTRONIC MAIL

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

**RE: Docket 4592 - Electric Infrastructure, Safety, and Reliability Plan
Quarterly Update – First Quarter Ending June 30, 2016**

Dear Ms. Massaro:

On behalf of National Grid,¹ I have enclosed ten copies of the Company's fiscal year (FY) 2017 Electric Infrastructure, Safety, and Reliability (ISR) Plan quarterly update for the first quarter ending June 30, 2016. Pursuant to the provisions of the approved FY 2017 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 4592 Service List
Leo Wold, Esq.
Steve Scialabba
James Lanni
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

August 18, 2016

Date

Docket No. 4592 National Grid's Electric Infrastructure, Safety and Reliability Plan FY 2017 - Service List as of 1/21/16

Name/Address	E-mail Distribution	Phone
Raquel J. Webster, Esq. National Grid. 280 Melrose St. Providence, RI 02907	raquel.webster@nationalgrid.com;	401-784-7667
	celia.obrien@nationalgrid.com;	
	Joanne.scanlon@nationalgrid.com;	
National Grid Jim Patterson Ryan Moe Amy Tabor Adam Crary	Jim.patterson@nationalgrid.com;	
	Ryan.moe@nationalgrid.com;	
	Amy.tabor@nationalgrid.com;	
	Adam.crary@nationalgrid.com;	
	William.richer@nationalgrid.com;	
Division of Public Utilities & Carriers Leo Wold, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Lwold@riag.ri.gov;	401-222-2424
	Steve.scialabba@dpuc.ri.gov;	
	James.lanni@dpuc.ri.gov;	
	Joseph.shilling@dpuc.ri.gov;	
	John.spirito@dpuc.ri.gov;	
	dmacrae@riag.ri.gov;	
David Effron Berkshire Consulting 12 Pond Path North Hampton, NH 03862-2243	Djeffron@aol.com;	603-964-6526
Greg Booth Linda Kushner PowerServices, Inc 1616 E. Millbrook Road, Suite 210 Raleigh, NC 27609	gbooth@powerservices.com;	919-256-5900
	Lkushner@powerservices.com;	
Office of Energy Resources (OER) Andrew Marcaccio, Esq. Dept. of Administration	Andrew.marcaccio@doa.ri.gov;	401-222-3417

Division of Legal Services One Capitol Hill, 4 th Floor Providence, RI 02908	Daniel.majcher@doa.ri.gov;	
Christopher Kearns, OER Danny Musher Nick Ucci	Christopher.Kearns@energy.ri.gov;	
	Danny.Musher@energy.ri.gov;	
	Nicholas.Ucci@energy.ri.gov;	
File an original & nine copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick, RI 02888	Luly.massaro@puc.ri.gov;	401-780-2107
	Cynthia.WilsonFrias@puc.ri.gov;	
	Alan.nault@puc.ri.gov;	
	Todd.bianco@puc.ri.gov;	

Electric Infrastructure, Safety, and Reliability Plan

FY 2017 Quarterly Update

First Quarter Ending June 30, 2016

EXECUTIVE SUMMARY

For the first quarter of fiscal year 2017 (FY 2017), the Company¹ spent \$23.3 million for capital investment projects, which was approximately \$6.0 million over the FY 2017 year-to-date budget of \$17.3 million. Both the Non-Discretionary and Discretionary categories were over-budget by \$2.7 million and \$3.4 million, respectively. The South Street Project made up \$3.1 million of the Discretionary over-budget spending. The Company currently anticipates that the overall capital spend for the fiscal year will be \$89.1 million, which is approximately \$5.7 million over the annual approved budget of \$83.4 million. This year-end variance is driven primarily by the Non-Discretionary category. Each category is addressed in more detail below.

On July 11, 2016, the Rhode Island Public Utilities Commission (PUC) issued an order² that directed the Company to provide more detail on capital spending in the Damage/Failure category. Specifically, the directive orders the Company to include information regarding the type of work, the 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 PUC also directed the Company to manage the South Street projects FY 2017 ISR Plan budget separate from other discretionary projects in the Plan and to provide a quarterly budget and project management report. Please refer to Attachment G for details regarding the status of the South Street Project as of August 2016.

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

² Docket No. 4592, Order No. 22471 (issued July 11, 2016), p. 16.

I. FY 2017 Capital Spending by Key Driver Category

1. Non-Discretionary Spending

a. Customer Request/Public Requirement – \$1.3 million over-budget variance year-to-date

Capital spending through the first quarter of FY 2017 in the Customer Request/Public Requirement category (*previously called the Statutory/Regulatory category*) was \$5.7 million, which was approximately \$1.3 million over the FY 2017 year-to-date budget of \$4.4 million. This variance was driven primarily by the following over-budget projects:

- Capital spending through the first quarter of FY 2017 on the New Business Residential and Commercial blankets was \$2.3 million, which was approximately \$0.8 million over the FY 2017 year-to-date budget of \$1.5 million. Relative to FY 2014, FY 2015, and FY 2016, the labor required to connect customers has been higher than expected through the first quarter of FY 2017, while total reimbursements collected have been approximate. Since the forecasted reimbursements did not offset the increase in labor costs, the overall capital spending is higher than in prior years. At this time, the year-end forecast for the New Business Residential and Commercial blankets are projected to be over-budget by \$0.8 million, due to the aforementioned reasons. However, since the timing of reimbursements can vary and are dependent on the type of work being performed, the year-end forecast may change in the second quarter.
- Capital spending through the first quarter of FY 2017 on the RIAC TF Green Runway Expansion project was \$0.7 million, which was approximately \$0.3 million over the FY 2017 year-to-date budget of \$0.4 million. The customer's contractor was late in installing the conduits, which resulted in the Company having to work overtime to meet the aggressive schedule set by the customer. Also, due to a material issue, the Company had to accelerate the procurement of cable. This resulted in an increase in material cost as well as material payments being made sooner than expected. At this time, the Company projects the year-end forecast to be over-budget by \$0.3 million.
- Capital spending through the first quarter of FY 2017 on specific projects in the Distributed Generation (DG) sub-category was \$1.0 million, which was \$0.7 million over the FY 2017 year-to-date budget of \$0.3 million. This variance was due primarily to construction on the unbudgeted Wind Energy Development (WED) 15MW DG Service and Foster Solar DG Service projects. Also contributing to this variance was over-budget spending on the Block Island Transmission System (BITS) Wakefield Substation Upgrades project, which was due primarily to the execution of

carryover work in FY 2017 that was originally planned for FY 2016, as well as an increase in total project costs during the final estimation of the project.

Among the major projects in this category, offsetting these over-spending projects were the following under-budget projects:

- Capital spending through the first quarter of FY 2017 on the Meter Purchasing blanket was \$0.2 million, which was approximately \$0.2 million under the FY 2017 budget of \$0.4 million. Inventory purchases in FY 2016 supplemented FY 2017 demand and, consequently, the blanket was under-budget for the fiscal year. At this time, the Company projects the year-end forecast to be under-budget by \$0.1 million.

Overall, for FY 2017, capital spending for the Customer Request/Public Requirement category is forecasted to be \$21.3 million, which is approximately \$1.9 million over the annual approved budget of \$19.5 million. This variance is primarily driven by forecasted over-budget spending on multiple projects, including the New Business Residential and Commercial Blankets, the RIAC TF Green Runway Expansion project, the BITS Wakefield Substation Upgrades project, and the DG Service Projects for WED 15MW and Foster Solar.

b. Damage/Failure – \$1.4 million over-budget variance year-to-date

Capital spending through the first quarter of FY 2017 in the Damage/Failure category was \$4.9 million, which was approximately \$1.4 million over the FY 2017 year-to-date budget of \$3.5 million. This variance was primarily driven by the following over-budget project:

- Capital spending through the first quarter of FY 2017 on the unbudgeted Valley 102 22T Replacement project was \$1.5 million. This variance was primarily due to the project being accelerated to replace the failed 22T transformer before peak summer load. Construction is complete and the transformer is ready for load. The Company has scheduled an outage during the second quarter of FY 2017 to connect the transformer to the system and perform miscellaneous punch list items. Therefore, at this time, the Company projects the year-end forecast to be over-budget by approximately the same amount, \$1.6 million.

At this time, for FY 2017, capital spending for the Damage/Failure category is forecasted to be \$13.2 million, which is approximately \$1.7 million over the annual approved budget of \$11.5 million. This variance is primarily driven by the aforementioned reason.

Finally, as noted above and as shown in Attachment A, capital spending through the first quarter of FY 2017 in the Non-Discretionary Sub-category was \$10.6 million, which was approximately \$2.7 million over the FY 2017 year-to-date budget of \$8.0 million. At this time, capital spending is forecasted to be \$34.5 million, which is approximately \$3.6 million over the annual approved budget of \$30.9 million.

2. Discretionary Spending

a. Asset Condition – \$3.0 million over-budget variance year-to-date

Capital spending through the first quarter of FY 2017 in the Asset Condition category was \$9.0 million, which was approximately \$3.0 million over the FY 2017 year-to-date budget of \$5.9 million. This variance was driven primarily by the following over-budget projects:

- Capital spending through the first quarter of FY 2017 on the South Street project was \$4.3 million, which was approximately \$3.1 million over the FY 2017 year-to-date budget of \$1.2 million. This variance is due to the timing of invoice payments and does not represent an increase in total project cost. Approximately \$0.7 million of this variance is due to charges for overhead allocations in April of 2016 that were originally expected in March of 2016. This month lag was due to the timing of an invoice payment that was made between fiscal years. The remaining variance is due to the timing of payments within FY 2017. This variance will reverse over the coming months. Therefore, at this time, the Company projects the year-end forecast to only be \$0.7 million over the fiscal year-end budget of \$15.4 million.
- Capital spending through the first quarter of FY 2017 on the I&M program was \$1.0 million, which was approximately \$0.4 million over the FY 2017 year-to-date budget of \$0.6 million. Despite the over-budget first quarter spending, at this time, the Company projects the year-end forecast to be on budget at \$2.4 million.
- Capital spending through the first quarter of FY 2017 on the Daggett Avenue and Hyde Avenue Metal Clad Retirement projects was \$0.9 million, which was approximately \$0.3 million over the FY 2017 year-to-date budget of \$0.6 million. This variance was primarily due to scope and cost increases to address overhead line asset conditions on both projects. At this time, the Company projects year-end forecast for these projects to be over-budget by \$0.7 million.

Among the major projects in this category, offsetting these over-spending projects were the following under-budget projects:

- Capital spending through the first quarter of FY 2017 on the Memorial Boulevard Easton's Beach project was \$0.1 million, which was approximately \$0.4 million under the FY 2017 year-to-date budget of \$0.5 million. Due to delays with the contractor for final restoration of the site, the Company delayed the final invoice payment until the second quarter of FY 2017. Despite the under-budget first quarter spending, at this time, the Company projects the year-end forecast to be on budget at \$0.5 million.
- Capital spending through the first quarter of FY 2017 on the West Cranston Transformer Replacement project was \$0.01 million, which was approximately \$0.3 million under the FY 2017 year-to-date budget of \$0.3 million. Due to portfolio management decisions, this project was delayed in FY 2016 to help achieve an overall capital spend for the discretionary portfolio that was approximate to the FY 2016 Electric ISR budget. Although this project has yet to resume in FY 2017, at this time, the Company projects the year-end forecast to be on budget at \$0.3 million.

Overall, for FY 2017, capital spending for the Asset Condition category is forecasted to be \$34.5 million, which is approximately \$0.7 million over the annual approved budget of \$33.9 million. The South Street project, which is being managed separate from other discretionary projects in the Plan, is expected to be \$0.7 million over-budget at year-end. The remaining over and under budget project variances within the Asset Condition category are being managed to the aggregate \$18.5 million budget.

b. Non-Infrastructure – \$2.1 million under-budget variance year-to-date

Capital spending through the first quarter of FY 2017 for the Non-Infrastructure category was (\$2.0) million, which was approximately \$2.1 million under the FY 2017 year-to-date budget of \$0.1 million. This variance was primarily due to a large accounting credit booked in April of 2017. These charges will be cleared to the appropriate work orders through the normal capital allocation process, and, therefore, at this time, the Company projects the Non-Infrastructure category to be approximate to budget at fiscal year-end.

c. System Capacity and Performance – \$2.4 million over-budget variance year-to-date

Capital spending through the first quarter of FY 2017 for the System Capacity and Performance category was \$5.7 million, which was approximately \$2.4 million over the FY 2017 year-to-date budget of \$3.3 million. This variance was primarily driven by the following over-budget projects:

- Capital spending through the first quarter of FY 2017 on the Kilvert Street New Feeder project was \$1.1 million, which was approximately \$1.0 million over the FY

- 2017 year-to-date budget of \$0.1 million. In FY 2015, due to portfolio management decisions, this project was deferred. Although this project resumed in late FY 2016, the schedule of work was carried over into FY 2017. Although the Company projects the year-end forecast to be over-budget by \$1.9 million, the overall project costs have not increased.
- Capital spending through the first quarter of FY 2017 on the Volt/Var project was \$0.8 million, which was approximately \$0.4 million over the FY 2017 year-to-date budget of \$0.4 million. During the pilot implementation and construction phases, the complexities of commissioning the equipment and the communications network were greater than expected. This resulted in an increase in overall capital spending on the project. At this time, the Company projects the year-end forecast to be over-budget by \$0.7 million.
 - Capital spending through the first quarter of FY 2017 on the Aquidneck Island projects (Gate 2, Newport, and Jepson substation) was \$1.0 million, which was approximately \$0.3 million over the FY 2017 year-to-date budget of \$0.7 million. This year-to-date over-budget variance was due to the acceleration of the Gate 2 substation and distribution line components, which are needed for summer load. Despite this first quarter over-budget variance, at this time, the Company projects the year-end forecast to be under-budget by \$0.6 million due to under-budget year-end forecasts on the Newport and Jepson substation projects.
 - Capital spending through the first quarter of FY 2017 on the Chase Hill, New Highland Drive, New London Avenue, and Kent County substation expansion projects was \$1.5 million, which was approximately \$0.3 million over the FY 2017 year-to-date budget of \$1.2 million. Despite the over-budget first quarter spending, at this time, the Company projects the year-end forecast to be under-budget by \$2.0 million primarily due to the deferral of the distribution line portion of the New London Avenue project.
 - Capital spending through the first quarter of FY 2017 on the Quonset Substation Expansion project was \$0.3 million, which was approximately \$0.2 million over the FY 2017 year-to-date budget of \$0.1 million. The Company accelerated this project in FY 2016 and FY 2017 to address asset and contingency risks at the existing substation. At this time, the Company projects the year-end forecast to be over-budget by \$0.1 million.
 - Capital spending through the first quarter of FY 2017 on the emergent, unbudgeted Clarkson 13F10 Feeder Position project was \$0.2 million. This distribution line project provided urgent load relief to other Clarkson #13 distribution feeders by

utilizing an existing substation feeder position. At this time, the Company projects the year-end forecast to be over-budget by \$0.3 million.

Overall, for FY 2017, capital spending for the System Capacity and Performance category is forecasted to be \$19.7 million, which is approximately \$1.3 million over the annual approved budget of \$18.4 million. The Company is currently evaluating the over budget variances within this category and may defer projects and/or scale-down programs to achieve a second quarter forecast that is approximate to budget.

Finally, as noted above and as shown in Attachment A, capital spending through the first quarter of FY 2017 in the Discretionary Sub-category was \$12.7 million, which was approximately \$3.4 million over the year-to-date budget of \$9.3 million. As stated earlier, the variance is driven by the South Street project, and the timing of invoices. Capital spending is forecasted to be \$54.6 million at years-end, which is approximately \$2.1 million over the annual approved budget of \$52.5 million. The Company is managing the South Street project, which is expected to be \$0.7 million over budget, separately from the remaining Discretionary Sub-category. Projects within that Discretionary Sub-category will be managed to the \$37.2 million budget, and therefore, the forecast will be reduced in the second quarter report.

In Docket No. 4592, the PUC directed the Company to include, as part of its FY 2017 Electric ISR Plan filing, a proposal to report in quarterly and annual reconciliation filings, detail on individual projects where the costs differed from the fiscal year-to-date and fiscal year-end budgets, respectively, by more than ten percent (10%).³ For the identified projects, the Company is required to note whether variances were caused by the project being accelerated or delayed, or whether the variances were caused by an increase or decrease in total project cost. The PUC also directed the Company to provide in the quarterly reports explanations for the portfolio of large projects⁴ with variances exceeding \$0.1 million. These projects represent approximately \$27.2 million of the FY 2017 budget. This information is shown in Attachment E.

3. Investment Placed in Service

Overall, \$14.3 million of investment was placed in service through the first quarter of FY 2017. At this time, the Company projects that it will place \$69.6 million of plant-in-service in FY 2017, which is approximately \$8.9 million below the original FY 2017 Electric ISR Plan planned amount of \$78.5 million. This represents a 13% forecasted decrease from the original planned amount. Details by spending rationale are included in Attachment B.

³ Docket No. 4592, Order No. 22471 (issued July 11, 2016), p 3.

⁴ Large projects are defined as exceeding \$1.0 million in total project cost.

The Non-Discretionary year-end forecast for plant additions is \$35.6 million, which is approximately \$4.2 million above the original FY 2017 Electric ISR Plan planned amount of \$31.4 million. This variance is due to an increase in mandatory spending on the BITS Wakefield Substation Upgrades and the Franklin Square Fire Escape Replacement projects.

When the Company filed the FY 2017 Electric ISR Plan with the PUC, the Company anticipated that the Chase Hill Substation project and a portion of the Kent Country 2nd Transformer project would have significant asset additions in FY 2017. However, due to portfolio management decisions, these projects will result in lower than expected discretionary asset additions in FY 2017. Consequently, the \$34.0 million discretionary forecast for Asset Additions is approximately \$13.1 million under the original FY 2017 Electric ISR Plan planned amount of \$47.1 million.

4. Vegetation Management

Through the first quarter of FY 2017, the Company completed 28% of its annual distribution mileage cycle pruning goal of 1,259 miles. This represented an associated spend of 20% of the FY 2017 budget for the cycle pruning program. For FY 2017, the Company's vegetation management (VM) operation and maintenance (O&M) spending is forecasted to be on budget at \$8.7 million.

Attachment C provides the FY 2017 spending for all sub-components in the VM category.

5. Inspection and Maintenance

Through the first quarter of FY 2017, the Company completed 29% of its annual structure inspection goal of 50,567. This represented an associated spend of 16% of the total I&M budget. The Company expects that the I&M forecast at year-end will be on budget at \$1.3 million. The Repairs and Inspection Related Costs subcategory forecast includes the FY 2017 mobile elevated voltage testing and repairs, which the PUC approved in Docket No. 4237. Attachment D provides the FY 2017 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 this time, the Company has completed repairs reported for approximately 31% of the deficiencies found. Total deficiencies found and repairs made to date are shown in the table below. Additional detail on FY 2017 Level 1 repairs is also included.

Summary of Deficiencies and Repair Activities				
RI Distribution				
Year Inspection Performed	Priority Level/Repair Expected	Deficiencies Found (Total)	Repaired as of 6/30/16	Not Repaired as of 6/30/16
FY 2011	I	18	18	0
	II	13,146	12,946	200
	III	28	0	28
FY 2012	I	17	17	0
	II	15,848	15,455	393
	III	626	567	59
FY 2013	I	15	15	0
	II	26,882	10,538	16,344
	III	9,056	2,232	6,824
FY 2014	I	11	11	0
	II	23,196	2,330	20,866
	III	8,776	1,189	7,587
FY 2015	I	5	5	0
	II	21,549	1	21,548
	III	4,391	0	4,391
FY 2016	I	2	2	0
	II	11,596	0	11,596
	III	6,498	0	6,498
FY 2017	I	1	1	0
	II	1,874	0	1,874
	III	2,494	0	2,494
Total Since Program Inception	I, II, III	146,029	45,327	100,702

FY 2017 – I&M Level 1 Deficiencies Repaired						
Year Inspection Performed	Deficiencies Found	Structure Number	Location	Description of Work Performed	Inspection Date	Repaired Date
FY 2017	1	280-31	2210 Mendon Rd, Cumberland, RI 02864	Abandoned property, lift secondary taps from service.	4/22/2016	4/22/2016

As shown in the table below, results of the Company's manual elevated voltage testing for FY 2017 have not indicated any instances of elevated voltages found through either overhead or manual elevated voltage inspections.

Manual Elevated Voltage Testing				
	Total System Units Requiring Testing	FY 2017 Units Completed thru 6/30/16	Units with Voltage Found (>1.0v)	Percent of Units Tested with Voltage (>1.0v)
Distribution Facilities	250,441	14,514	0	0%
Underground Facilities	13,870	2,983	0	0%
Street Lights	5,884	0	0	0%

* The Rhode Island Street Light Elevated Voltage Testing Program moved from a five-year to a three-year program. The Company achieved a 100% completion rate in FY 2014. The new three-year cycle began again in FY 2015.

Attachment A
US Electricity Distribution – Rhode Island
Capital Spend by Spending Rationale
FY 2017 through June 30, 2016
(\$000)

	FYTD			FY 2017 Total		
	Budget	Actual	Variance	Budget	Forecast	Variance
Customer Request/Public Requirement	\$4,427	\$5,679	\$1,252	\$19,451	\$21,332	\$1,881
Damage/Failure	\$3,526	\$4,932	\$1,406	\$11,467	\$13,181	\$1,714
<i>Subtotal Non-Discretionary</i>	<i>\$7,953</i>	<i>\$10,611</i>	<i>\$2,658</i>	<i>\$30,918</i>	<i>\$34,513</i>	<i>\$3,595</i>
Asset Condition	\$4,718	\$4,665	(\$53)	\$18,520	\$18,491	(\$29)
Non-Infrastructure	\$84	(\$1,969)	(\$2,053)	\$275	\$368	\$93
System Capacity & Performance	\$3,317	\$5,739	\$2,422	\$18,368	\$19,702	\$1,334
<i>Subtotal Discretionary (Without South Street)</i>	<i>\$8,119</i>	<i>\$8,435</i>	<i>\$316</i>	<i>\$37,163</i>	<i>\$38,561</i>	<i>\$1,398</i>
<i>South Street Project</i>	<i>\$1,224</i>	<i>\$4,294</i>	<i>\$3,070</i>	<i>\$15,360</i>	<i>\$16,039</i>	<i>\$679</i>
<i>Subtotal Discretionary</i>	<i>\$9,343</i>	<i>\$12,729</i>	<i>\$3,386</i>	<i>\$52,523</i>	<i>\$54,600</i>	<i>\$2,077</i>
Total Capital Investment in System	\$17,296	\$23,340	\$6,044	\$83,441	\$89,113	\$5,672

* () denotes an underspend for the period

Attachment B
US Electricity Distribution - Rhode Island
Plant Additions by Spending Rationale
FY 2017 through June 30, 2016
(\$000)

	FY 2017 Annual ISR Forecast	FYTD Actual in Service	FY 2017 Year- end Forecast	% of FY 2017 Year-end Forecast Placed in Service
Customer Request/Public Requirement	\$19,971	\$3,748	\$19,808	19%
Damage Failure	\$11,425	\$4,514	\$15,787	29%
<i>Subtotal Non-Discretionary</i>	\$31,396	\$8,262	\$35,595	23%
Asset Condition	\$26,481	\$3,722	\$16,479	23%
Non-Infrastructure	\$271	\$0	\$0	0%
System Capacity & Performance	\$20,330	\$2,332	\$17,500	13%
<i>Subtotal Discretionary</i>	\$47,082	\$6,054	\$33,979	18%
Total Plant Investment in System	\$78,478	\$14,316	\$69,574	21%

* () denotes an underspend for the period

Attachment C
US Electricity Distribution - Rhode Island
Vegetation Management O&M Spending
FY 2017 through June 30, 2016
(\$000)

	FY 2017 Annual ISR Budget	FYTD Actual Spend	FY 2017 Year-end Forecast	FYTD % Spent
Cycle Pruning (Base)	\$5,050	\$986	\$5,050	20%
Hazard Tree	\$950	\$269	\$950	28%
Sub-T (on & off road)	\$780	\$20	\$780	3%
Police/Flagman Details	\$714	\$204	\$714	29%
Core Crew (all other activities)	\$1,225	\$281	\$1,225	23%
Total VM O&M Spending	\$8,719	\$1,760	\$8,719	20%

* () denotes an underspend for the period

	FY 2017 Goal	FYTD Goal	FYTD Complete	FYTD % Complete	FY 2017 % Complete
Distribution Mileage Trimming	1,259	315	356	113%	28%

Attachment D
US Electricity Distribution - Rhode Island
Inspection and Maintenance Program O&M Spending
FY 2017 through June 30, 2016
(\$000)

	FY 2017 Annual ISR Budget	FYTD Actual Spend	FY 2017 Year-end Forecast	FYTD % Spent
Opex Related to Capex	\$450	\$91	\$475	20%
Repair & Inspections Related Costs	\$817	\$127	\$817	16%
System Planning & Protection Coordination Study	\$25	\$6	\$25	24%
Total I&M O&M Spending	\$1,292	\$224	\$1,317	17%

* () denotes an underspend for the period

	FY 2017 Goal	FYTD Goal	FYTD Complete	FYTD % Complete	FY 2017 % Complete
RI Distribution Overhead Structures Inspected	50,567	12,641	14,913	118%	29%

Attachment E
US Electricity Distribution - Rhode Island
Project Variance Report
FY 2017 through June 30, 2016
(\$000)

Project Description	Project Funding Number(s)	FYTD			FY 2017 Total			Variance Cause
		Budget	Actual	Variance	Budget	Forecast	Variance	
Aquidneck Island Projects (Gate 2, Newport, Jepson)	CD00649, C024159, C015158, C028628, C054054, CD00656	\$691	\$1,031	\$340	\$2,882	\$2,297	(\$585)	The substation and distribution line components of the Gate 2 project were accelerated to the first quarter to relieve summer loading concerns. The year-end forecast is under-budget due to portfolio management decisions which caused schedule delays.
Kilvert Street #87 Upgrades	C036516, C036522	\$96	\$1,083	\$987	\$146	\$2,041	\$1,896	Project was delayed from FY 2015 into FY 2016, and the project schedule has carried into FY 2017.
South Street Substation Replacement	C051212, C051213	\$1,224	\$4,294	\$3,070	\$15,360	\$16,039	\$679	Over-budget spending was due to timing of invoice payments, not an increase in project costs.
Volt/Var Pilot Program	C046352, C052708, C053111	\$385	\$774	\$389	\$852	\$1,524	\$672	Increased costs.
New London Avenue Substation	C032002, C028920, C028921	\$457	\$111	(\$345)	\$4,090	\$2,057	(2,033)	Project partially delayed into FY 2018.
Hope Substation Flood Restoration	C046697	\$7	\$16	\$10	\$221	\$37	(\$184)	Project partially delayed into FY 2018.
Metal Clad Substation Retirements (Hyde Ave., Daggett Ave., Southeast, and Front St.)	C050778, C049910, C053658, C053657, C050006, C050017	\$793	\$890	\$98	\$2,310	\$3,063	\$753	Scope and costs increased on Daggett Avenue and Hyde Avenue. Front Street delayed until FY 2018 to partially offset increase.
BITS Wakefield Sub Upgrades	C046386	\$261	\$324	\$63	\$519	\$1,724	\$1,205	Increase in mandatory spending on project.
RIAC TF Green Runway Expansion	C056850	\$370	\$716	\$346	\$865	\$1,200	\$335	Project had an increase in labor costs and acceleration in the procurement of materials, both a result of an accelerated construction schedule set by the customer. Also the customer contribution in aid of construction (CIAC) was collected prior, in FY 2017.
		\$4,284	\$9,239	\$4,958	\$27,245	\$29,982	\$2,738	

* () denotes an underspend for the period

Attachment F
US Electricity Distribution - Rhode Island
Damage/Failure Detail by Work Type
FY 2017 through June 30, 2016

		Project Type					Grand Total
		D-Line Blanket	D-Line Property Damage	D-Line Storm	D-Sub Blanket	D-Sub Specific	
Operation Description Rollup	AFUDC	\$1,067	\$1	\$1,294	(\$1,524)	\$24	\$863
	Default Accounting	\$345,606 ¹	\$5,404	\$21,433	(\$4,797)	(\$42,561)	\$325,085
	Engineering/Design/Supervision	\$243,812	\$14,887	\$39,397	\$4,756	\$9,471	\$312,322
	Outdoor Lighting - Cable/Wire	\$11,112	\$0	\$19	\$0	\$0	\$11,131
	Outdoor Lighting - Framing	\$52,619	(\$767)	\$690	\$0	\$0	\$52,541
	Outdoor Lighting - Poles	\$17,124	\$190	\$0	\$0	\$0	\$17,314
	Overhead Bonding/Grounding	\$5,034	(\$829)	\$0	\$0	\$0	\$4,206
	Overhead Services	\$84,153	\$1,889	\$23,480	\$0	\$0	\$109,522
	Overhead Switches/Reclosers/Fuses	\$141,241	(\$14,210)	\$10,271	\$0	\$0	\$137,303
	Overhead Transformers/Capacitors/Regulators	\$173,907	(\$9,889)	\$1,447	\$0	\$0	\$165,465
	Overhead Wire & Conductor	\$193,717	\$1,351	\$15,323	\$0	\$0	\$210,392
	Pole Framing	\$85,565	(\$16,178)	\$11,599	\$0	\$0	\$80,985
	Poles/Anchors/Guying	\$432,722	(\$13,190)	\$184,836	\$0	\$0	\$604,368
	Substation Equipment Installations	\$53,360	\$0	\$0	\$59,080	\$207,523 ⁴	\$319,963
	Substations Civil/Structural	\$0	\$0	\$0	\$6,812	\$5,087	\$11,898
	Switching and Restoration	\$12,523	\$10,176	\$0	\$0	\$0	\$22,699
	Traffic Control	\$81,335	\$3,664	\$19,970	\$0	\$0	\$104,969
	Underground Cable	\$471,679	\$24,737	(\$2,485)	\$0	\$0	\$493,931
	Underground Cable Splicing	\$31,953		\$922	\$0	\$0	\$32,875
	Underground Civil Infrastructure	\$150,305 ³	\$1,169	\$0	\$0	\$0	\$151,473
	Underground Direct-Buried Cable	\$12,075	\$0	\$0	\$0	\$0	\$12,075
	Underground Services	\$5,211	(\$2)	\$357	\$0	\$0	\$5,566
	Underground Switches/Reclosers/Fuses	\$10,761	\$0	\$4,971	\$0	\$0	\$15,731
	Underground Transformers/Capacitors/Regulators	\$95,216	\$949	(\$1,526)	\$0	\$0	\$94,638
	Grand Total	\$2,712,095 ²	\$9,352	\$331,997 ⁵	\$64,327	\$179,545	\$3,297,316

* () denotes an underspend for the period

Footnotes:

1. In some cases, the default accounting operation is used to capture work performed.
2. This operation is significantly impacted by monthly Confirming Work Orders (CWOs).
3. \$113,000 for street light repair requiring new underground street light wire/conduit on Red Cross Avenue in Newport.
4. Costs for repairs to Franklin Square Fire Escapes.
5. Weather events from 3/31, 4/4-4/7, and 6/11 drove a majority of these costs.

Attachment G
US Electricity Distribution - Rhode Island
South Street Budget and Project Management Report
August 2016 Update

South Street Project Status Update Meeting

nationalgrid
HERE WITH YOU. HERE FOR YOU.



South Street Project: Major Milestones



South Street Upcoming Milestones	
Milestone	Scheduled Date
Begin Transmission Conduit Installation	5/2016
Building Foundation Pile Installation completion	7/2016
First Transmission Outage – MH installation	9/2016
Building Foundation completion	10/2016
Distribution Duct bank – start of installation	1/2017
Complete building enclosure	2/2017
Substation Construction Complete	11/2017
Start of testing and commissioning	11/2017
Distribution Cutover – Phase 1 (Start)	2/2018
Distribution Cutover – Phase 2 (Start)	9/2018
Distribution Cutover – Phase 3 (Start)	2/2019
Cutover Complete	4/2019
Completion of Demolition of existing substation	9/2019



South Street Project: July Deliverables



TRC Deliverables

- Temp power conduit and pad (north end) – Complete
- Continuation of the transmission line work – on going
- Installed a portion of the drainage system on the north end of the substation
- Building foundation rebar – complete
- Distribution 90% submittal – Complete
- Temp power civil installation - Complete
- Engineering Activities – On Going

National Grid Deliverables

- Met with Manchester Street representatives to discuss upcoming work. - Complete
- Worked with CV to secure the second easement on the Davol Square parking lot – on going
- Submitted last invoice to CV - Complete
- Review submittals - ongoing
- Review design - ongoing



South Street Project: August Deliverables



TRC Deliverables

- Completed first concrete pour for half of the control building slab - Complete
- Scheduled to complete second concrete pour for half of the building foundation (8-4-16)
- Strip building foundation forms (8-12-16)
- Begin installation of foundation wall forms – (8-15-16)
- Continue with T1 transmission conduit excavation and duct work around the Dynamo building and into the substation – Ongoing (ahead of schedule)
- Continue with the T2 and T3 transmission conduit excavation and duct work along the Providence River – Ongoing (to be completed prior to the outage in September) – Scheduled to be completed by (8-10-16)
- Submitted estimate for fence design (8-1-16)
- Engineering Activities – On going

National Grid Deliverables

- Continue to work with CV to obtain the needed easement on the Davol Square parking lot.
- Install temp power transformer and cables (8-19-16)
- Review fence design estimate (8-10-16)
- Review submittals – ongoing
- Review design - ongoing



South Street Project: Permitting Update



- Permitting
 - DDRC- Complete
 - CRMC – Complete
 - Providence Historic District Commission (PHDC) – Complete
 - EFSB - Complete
 - Zoning
 - Will need to review the need to obtain zoning approval for proposed fencing



South Street Project: Project Cash Flow



Transmission	Spend to Date	FY16 (4/1/15 to 3/31/16)	FY17 (4/1/16 to 3/31/17)	FY18 (4/1/17 to 3/31/18)	FY19 (4/1/18 to 3/31/19)	FY20 (4/1/19 to 3/31/20)
Transmission Substation- C055584	\$5,391,495	\$2,561,202.99	\$12,592,923	\$4,205,675	\$1,448,465	\$0.00
U. G. Transmission Cable C055585	\$1,346,835	\$549,817	\$4,337,153	\$1,146,258	\$136,850	\$786,724
Remote End Conv. Mods C055586	\$987,449	\$620,988	\$1,122,531	\$629,199	\$68,601	\$94,156

Distribution	Spend to Date	FY16 (4/1/15 to 3/31/16)	FY17 (4/1/16 to 3/31/17)	FY18 (4/1/17 to 3/31/18)	FY19 (4/1/18 to 3/31/19)	FY20 (4/1/19 to 3/31/20)
Distribution -Line - C051213	\$2,449,709	\$1,640,056	\$4,858,095	\$4,267,341	\$1,641,283	\$2,040,688
Distribution Substation - C051212	\$8,254,577	\$5,414,016	\$10,555,779	\$21,505,766	\$2,443,605	\$0

Note:

- 1) Some Risk is included in the projected spend.
- 2) Currently only carrying \$.8M out of the potential \$3.8M risk for the station elevation (Tsub)
- 3) Reimbursement for the T-line work is not included in the above tables.
- 4) Funding Number for D-sub /T-sub removal is not included in the above tables.



South Street Project: TRC FY17 Payment Schedule



Distribution					
	June	September	December	February	March
C051212	\$2,040,040	\$2,639,537	\$2,425,009	\$256,411.65	\$0.00
C051213	\$433,242	\$265,697	\$475,313.04	\$42,158	\$573,586

Transmission					
	June	September	December	February	March
C055584	\$1,480,015	\$2,305,390	\$2,557,927	\$226,877	\$2,611,787
C055585	\$591,949	\$979,375	\$1,083,742	\$96,123	\$357,809
C055586	\$283,045	\$280,301	\$388,220	\$34,433	\$0.00



South Street Project: Project Risks (Transmission)



Risk (included in cashflow)	Line of Business	Risk Response	Estimated Cost	Confirmation Date
Work Delay due to CV developers (FY17FY18)	Tsub - South Street Tline Tsub - Remote	Working with CV to determine their construction schedule to prevent potential construction delays.	\$400,000	09/01/2018
Transmission Outage Delay (FY17, FY18)	Tsub - South Street Tsub Tsub-remote	Schedule has been created. Working on getting the outage team together to assure that we lock in outage window.	\$225,000	09/01/2018
Transmission line excavation (FY17, FY18)	Tline	Valued engineering to assure that most obstacles are avoided. Soil borings/Below grade investigation being performed.	\$1,000,000	10/01/2017
Building demo (off hour work/additional contamination Tsub removal)	Tsub - South Street Removal	Initial testing has been performed to determine the level of contamination. However, equipment was energized and testing was limited.	\$400,000	09/30/2019



South Street Project: Project Risks (Distribution)



Distribution				
Risk (included in cash flow)	Line of Business	Risk Response	Cost	Confirmation Date
Work Delay due to CV developers (FY17, FY18)	Dsub - South Street Dline	Working with CV to determine their construction schedule to prevent potential construction delays.	\$585,000.00	09/01/2018
Transmission Outage Delay (FY18)	Dsub - South Street Dline	Schedule has been created. Working on getting the outage team together to assure that we lock in outage window.	\$254,690.00	09/01/2018
Remote End Work Delay (FY18)	Dsub - Remote	Site investigation has taken place. Working with CV to prevent construction delays.	\$250,000.00	08/15/2017
Trench/Cutovers (FY17 and FY18) Dline	Dline	Manhole survey to determine sequence of cutover and location of cable splicing.	\$4,000,000	09/01/2018



Open PCRs



PCR #	Description	PCR value (\$K)
27	Intake Louver Relocation (resolved)	\$65
36	Water Service	\$105
42	Station service	\$55
48	Fall of potential testing	\$25



South Street Project: Other



- Other
 - Fence design estimate - submitted
 - Payment milestone schedule - submitted

