

The Narragansett Electric Company  
d/b/a National Grid

**Electric Infrastructure,  
Safety, and Reliability Plan  
FY 2017 Proposal**

December 9, 2015

**Submitted to:**  
Rhode Island Public Utilities Commission

Submitted by:  
**nationalgrid**



December 9, 2015

**BY HAND DELIVERY AND ELECTRONIC MAIL**

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

**RE: National Grid's Proposed FY 2017 Electric Infrastructure, Safety, and Reliability Plan  
Docket No. \_\_\_\_\_**

Dear Ms. Massaro:

On behalf of National Grid,<sup>1</sup> I have enclosed ten (10) copies of the Company's proposed Electric Infrastructure, Safety, and Reliability Plan (the Electric ISR Plan or Plan) for fiscal year 2017.<sup>2</sup> National Grid has developed this proposed Electric ISR Plan, which is designed to enhance the safety and reliability of the Company's electric distribution system. As required by law, the Company submitted the Plan to the Rhode Island Division of Public Utilities and Carriers (Division) for review. In refining the Plan, the Company received and responded to discovery requests from the Division and met with the Division's representatives regarding the Plan. Accordingly, the proposed spending levels and the clarifying language in the Plan regarding budget management and reporting reflect an agreement between the Company and the Division.

The Electric ISR Plan is designed to protect and improve the electric delivery system through repairing failed or damaged equipment, addressing load growth/migration, sustaining system viability through targeted investments that are driven primarily by condition, maintaining levels of inspection and maintenance, and operating a cost-effective vegetation management program. The Plan is intended to achieve these safety and reliability goals through a cost-effective, comprehensive work plan. The level of work that the Plan provides will sustain and enhance the safety and reliability of the Rhode Island electric distribution infrastructure and directly benefit all Rhode Island electric customers.

The Plan separates the general categories of work into discretionary and non-discretionary work, and it includes a description of the categories of work the Company proposes to perform in fiscal year 2017 as well as the proposed targeted spending levels for each work category. In addition to the Plan, this filing includes the pre-filed direct testimony of several witnesses. In joint testimony, Mr. James Patterson and Mr. Ryan Moe introduce the Plan, and describe the Plan's

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

<sup>2</sup> The Electric ISR Plan is submitted in compliance with the provisions of R.I. Gen. Laws § 39-1-27.7.1.

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large program components; Ms. Amy S. Tabor sponsors the calculation of the Company's fiscal year 2017 revenue requirement under the Plan; and Mr. Adam Crary describes the calculation of the Electric ISR factors proposed in this filing and provides the customer bill impacts from the proposed rate changes. For the average residential customer using 500 kWh per month, implementation of the proposed ISR factors will result in a monthly bill increase of \$0.61, or 0.6%.

The enclosed Plan, which the Company is submitting to the PUC for review and approval, presents an opportunity to facilitate and encourage investment in the Company's electric utility infrastructure and enhance its ability to provide safe, reliable, and efficient electric service to customers.

Thank you for your attention to this transmittal. If you have any questions, please contact me at (781) 907-2121.

Very truly yours,



Raquel J. Webster

Enclosures

cc: Steve Scialabba, Division  
Greg Booth, Division  
Leo Wold, Esq.  
James Lanni, Division  
Al Contente, Division

**Testimony of  
Jocelyn Orwig, 140  
(Ryan Moe)**

**JOINT PRE-FILED DIRECT TESTIMONY**

**OF**

**JAMES H. PATTERSON, JR.**

**AND**

**RYAN MOE**

**December 8, 2015**

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1 **I. INTRODUCTION**

2 **Q. Mr. Patterson, please state your name and business address.**

3 A. My name is James H. Patterson, Jr. My business address is 40 Sylvan Road, Waltham,  
4 Massachusetts 02451.

5

6 **Q. Mr. Patterson, by whom are you employed and in what position?**

7 A. I am employed by National Grid USA Service Company, Inc. (Service Company) as  
8 Director, Network Strategy, New England Electric. I am responsible for regulatory  
9 filings and regulatory compliance related to electric distribution operation of The  
10 Narragansett Electric Company d/b/a National Grid (the Company or National Grid). I  
11 am also responsible for similar filings relative to National Grid USA's electric  
12 distribution operations in Massachusetts.

13

14 **Q. Mr. Patterson, please describe your educational background and professional  
15 experience.**

16 A. In 1999, I graduated from Worcester Polytechnic Institute in Worcester, Massachusetts, with  
17 a Bachelor's Degree in Electrical Engineering. In the same year, I was employed by  
18 Massachusetts Electric Company as an Associate Operations Engineer in the Operations  
19 Engineering department. I was promoted to Operations Engineer in 2001. In these two  
20 roles, I was responsible for the engineering and design of distribution line construction  
21 projects, as well as participating in system restoration efforts due to equipment failures and  
22 severe weather events. In 2002, I joined the Distribution Planning and Engineering

1 department as an Engineer. In 2005, I was promoted to Senior Engineer. In these two roles,  
2 I was responsible for identifying asset, capacity, and reliability issues, justifying proposed  
3 solutions, and initiating selected projects for Operations and Substation engineering  
4 departments. I also reviewed and recommended solutions to serve customers requiring  
5 significant demand. In 2005, I was promoted to Supervisor of the Distribution Design  
6 department, which was formerly called Operations Engineering. In 2007, I was promoted to  
7 Manager of the Distribution Design departments. In these two roles, I was responsible for  
8 the quality and throughput of the design of distribution line construction projects, as well as  
9 directing staff in system restoration during equipment failures and severe weather events. In  
10 2010, I joined the Operations Program Management department in the National Grid USA  
11 Service Company as manager for the New England and New York Distribution Line  
12 portfolios. In 2012, my roles and responsibilities were changed to only include  
13 Massachusetts and New Hampshire Gas and Distribution Line functions in the Resource  
14 Planning department, formerly known as the Program Management department. In 2013,  
15 my roles and responsibilities were changes to only include Massachusetts and Rhode Island  
16 Distribution Line portfolios. In these three positions, I was responsible for creating,  
17 monitoring, and execution of the work plans for the applicable portfolio of construction  
18 projects. I was promoted and assumed my current role on October 1, 2014.

19  
20 **Q. Have you previously testified before the Rhode Island Public Utilities Commission**  
21 **(PUC)?**

1 A. Yes. I have testified in support of the FY 2016 Electric Infrastructure, Safety and  
2 Reliability (ISR) Plan filing in Docket No. 4539.

3  
4 **Q. Mr. Moe, please state your name and business address.**

5 A. My name is Ryan Moe. My business address is 40 Sylvan Road, Waltham,  
6 Massachusetts 02451.

7  
8 **Q. Mr. Moe, by whom are you employed and in what position?**

9 A. I am employed by the Service Company as a Vegetation Strategist. I am responsible for  
10 supporting the design and long term planning of vegetation strategies used on National  
11 Grid USA's distribution and transmission assets. I also provide vegetation strategy  
12 support for regulatory reporting in Rhode Island.

13  
14 **Q. Mr. Moe, please describe your educational background and professional experience.**

15 A. I graduated from the University at Buffalo with a bachelor's degree in Environmental  
16 Design in 2006. I began working for National Grid's Real Estate department in September  
17 2008. My responsibilities included mapping the Company's property records along the  
18 transmission lines as well as analyzing vegetation management rights. In February 2012, I  
19 began working in my current position as a Vegetation Strategist.

20  
21 **Q. Have you previously testified before the PUC?**

1 A. Yes. I have testified in support of the FY 2015 Electric ISR Plan filings in Docket No.  
2 4473 and in support of the FY 2016 Electric ISR Plan filing in Docket No. 4539 regarding  
3 vegetation management issues. In addition, I have represented National Grid in  
4 negotiation sessions with the Division for the FY 2015, FY 2016, and FY 2017 Electric  
5 ISR Plans regarding vegetation management issues.  
6

7 **II. PURPOSE OF JOINT TESTIMONY**

8 **Q. What is the purpose of this joint testimony?**

9 A. The purpose of this joint testimony is to present the Electric ISR Plan, which the  
10 Company developed as part of a collaborative process with the Division<sup>1</sup>. As is  
11 described in the Plan, implementation of the Electric ISR Plan will allow the Company to  
12 meet its obligation to provide safe, reliable, and efficient electric service for customers at  
13 a reasonable cost. The proposed Electric ISR Plan document is attached as Exhibit 1 to  
14 this testimony.  
15

16 **Q. Please summarize the categories of infrastructure, reliability and safety spending**  
17 **covered by the FY 2017 Electric ISR Plan.**

18 A. The proposed Electric ISR Plan addresses the following budget categories for FY 2017,  
19 or the twelve month fiscal year from April 1, 2016 to March 31, 2017: capital spending  
20 on electric infrastructure projects; operation and maintenance (O&M) expenses for

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<sup>1</sup> The Electric ISR Plan presented in this filing is the fourth annual plan submitted to the PUC pursuant to the provisions of R.I. Gen. Laws § 39-1-27.7.1.

1 vegetation management (VM); and O&M expenses for an inspection and maintenance  
2 (I&M) program.

3  
4 **Q. Please explain how the FY 2017 Electric ISR Plan is structured.**

5 A. The FY 2017 Electric ISR Plan, which is provided as Exhibit 1 to this testimony,  
6 encompasses the electric infrastructure, safety, and reliability spending plan for FY 2017,  
7 as well as an annual rate reconciliation mechanism that would provide for recovery  
8 related to capital investments and other spending undertaken pursuant to the annual pre-  
9 approved budget for the Electric ISR Plan. The Electric ISR Plan itemizes the  
10 recommended work activities by general category and provides budgets for capital  
11 investments, as well as O&M expenses for a VM and I&M program. At the end of the  
12 fiscal year, the Company will true up the Electric ISR Plan's projected capital and O&M  
13 expense levels used for establishing the revenue requirement to actual or allowed  
14 investment and expenditures on a cumulative basis. The Company will then reconcile the  
15 revenue requirement associated with the actual investment and expenditures to the  
16 revenue billed from the rate adjustments implemented at the beginning of each fiscal  
17 year.

18  
19 **III. CAPITAL INVESTMENT PLAN**

20 **Q. How has the Company formulated the capital investment plan for review by the**  
21 **PUC?**

1 A. The Company prepared the Electric ISR Plan and submitted it to the Division for review.  
2 In formulating the capital investment plan, the Company received and responded to  
3 discovery requests from the Division and had meetings and discussions with the  
4 Division's consultants, Mr. Greg Booth and Ms. Linda Kushner of PowerServices, Inc.,  
5 regarding this proposed Plan. In this filing, the Company has proposed a capital spending  
6 plan for FY 2017 in the amount of \$83.4 million, which includes a range of project work  
7 that is needed to maintain safe and reliable service. The project work that is included in  
8 the FY 2017 Electric ISR Plan is specifically designed to meet system performance  
9 objectives and/or customer service requirements, which the Company must address as  
10 part of its public service obligation. In the Plan, attached as Exhibit 1, the Company has  
11 provided a detailed explanation of the categories of investment that it plans to undertake,  
12 the factors motivating the nature and amount of investment to be completed, and the  
13 specific projects that will be undertaken in Rhode Island.

14  
15 **Q. Please describe the categories of work activities that are included in the FY 2017**  
16 **Electric ISR Plan to address service reliability.**

17 A. The Company's overall objective in preparing the Electric ISR Plan is to arrive at a  
18 capital spending plan that is the optimal balance in terms of making the investments  
19 necessary to improve the performance of discreet aspects of the system, thereby resulting  
20 in maintaining the overall reliability of the system, while also ensuring a cost-effective  
21 use of available resources. Therefore, the Plan includes the capital investment needed to:  
22 (1) meet state and federal regulatory requirements applicable to the electric system; (2)

1 repair failed or damaged equipment; (3) address load growth/migration; (4) maintain  
2 reliable service; and (5) sustain asset viability through targeted investments driven  
3 primarily by condition. These categories of investment constitute the core work required  
4 for the Company to meet its public service obligation in Rhode Island, which is why  
5 these categories of work are included in the proposed Plan.

6  
7 **Q. Please review the FY 2017 capital investment levels.**

8 A. The investment levels proposed for recovery through the Electric ISR Plan for FY 2017  
9 are associated with five key work categories: Statutory/Regulatory, Damage Failure,  
10 System Capacity and Performance, Asset Condition, and Non-infrastructure. The Chart  
11 below summarizes the proposed spending level for each of these key driver categories  
12 proposed for FY 2017.

13  
14 **Proposed FY 2017 Capital Investment by Key Driver Category (\$000)**

	<b>FY 2017 Proposed Budget</b>	<b>Percent</b>
Customer Request/Public Requirement	\$19,451	23.3%
Damage Failure	\$11,467	13.7%
<i>Subtotal Non-Discretionary</i>	<i>\$30,918</i>	<i>37.1%</i>
Asset Condition	\$33,280	39.9%
Non-Infrastructure	\$275	0.3%
System Capacity & Performance	\$18,968	22.7%
<i>Subtotal Discretionary</i>	<i>\$52,523</i>	<i>62.9%</i>
<b>Total Capital Investment</b>	<b>\$83,441</b>	<b>100%</b>

15  
16 As shown in the table above, a significant portion of the investment for capital projects in  
17 FY 2017 are necessary to meet regulatory obligations or to comply with various statutes,

1 regulatory requirements, or mandates. These investments total approximately \$19.5  
2 million, or 23% of the Company's proposed capital investment in FY 2017. These  
3 investments arise from the Company's regulatory, governmental, or contractual  
4 obligations, such as responding to new customer service requests, transformer and meter  
5 purchases and installations, outdoor lighting requests and service, and facility relocations  
6 related to public works projects requested by the Rhode Island Department of  
7 Transportation (RIDOT). Overall, the scope and timing of this work is defined by others  
8 external to the Company.

9  
10 The need to repair failed and damaged equipment totals approximately \$11.5 million, or  
11 14% of the Company's proposed capital investment in FY 2017. These projects are  
12 required to restore the electric distribution system to its original configuration and  
13 capability following damage from storms, vehicle accidents, vandalism, and other  
14 unplanned events.

15  
16 The Plan defines the investment necessary to comply with statutory and regulatory  
17 requirements, along with the investment to fix damaged or failed equipment, as  
18 mandatory and non-discretionary in terms of scope and timing. Together, these items  
19 account for approximately \$30.9 million, or 37% of the Company's proposed capital  
20 investment in FY 2017. Since the investments associated with these categories of work  
21 are non-discretionary, they are typically driven by forces outside the control of the  
22 Company, making them subject to necessary and unavoidable deviations. These

1 mandatory non-discretionary capital investments are recovered through a capital rate  
2 adjustment mechanism that reconciles the plant-in-service amounts associated with this  
3 projected spending to the lesser of actual plant-in-service or actual capital spending on a  
4 cumulative basis following the close of the fiscal year.

5  
6 The system capacity, asset condition, and non-infrastructure projects that the Company  
7 will pursue in FY 2017 have been chosen to maintain the overall reliability of the system  
8 and collectively total approximately \$52.5 million, or 63% of the Company's proposed  
9 capital investment in FY 2017. System capacity and performance projects are required to  
10 ensure that the electric network has sufficient capacity to meet the existing and growing  
11 and/or shifting demands of customers. Generally, projects in this category address  
12 loading conditions on substation transformers and distribution feeders to comply with the  
13 Company's system and capacity loading policy. These projects are designed to reduce  
14 the degradation of equipment service lives due to thermal stress and to provide  
15 appropriate degrees of system configuration flexibility to limit adverse reliability impacts  
16 of large contingencies.

17  
18 In addition to accommodating existing load and load growth/migration, the investments  
19 in this category are used to install new equipment, such as capacitor banks to maintain the  
20 requisite power quality required by customers, and reclosers that limit the customer  
21 impact associated with system events. This category also includes investments to  
22 improve the overall performance of the network that is realized by the reconfiguration of

1 feeders and the installation of feeder ties. System capacity and performance projects  
2 account for approximately \$19.0 million, or 23% of the Company's proposed capital  
3 investment in FY 2017.

4  
5 Projects, necessary due to the poor condition of infrastructure assets, account for  
6 approximately \$33.3 million, or 40% of the Company's proposed capital investment in  
7 FY 2017. These projects have been identified to reduce the risk and consequences of  
8 unplanned failures of assets based on their present condition. The focus of the  
9 assessment is to identify specific susceptibilities (failure modes) and develop alternatives  
10 to avoid such events. The investments required to address these situations are essential,  
11 and the Company schedules these investments to minimize reliability issues.

12  
13 Finally, the non-infrastructure category of investment represents those capital  
14 expenditures that do not fit into one of the foregoing categories, such as general and  
15 telecommunications equipment, but which are necessary to run the electric system. In  
16 total, capital investment for non-infrastructure projects will account for \$275,000 or less  
17 than one percent of the Company's proposed capital investment in FY 2017.

18  
19 **Q. Is the Company able to provide a list and detail of the specific projects that will be**  
20 **undertaken in each of the work categories of the FY 2017 Electric Plan?**

21 A. Yes. In the FY 2017 Electric Plan, the Company has provided detail on specific projects  
22 within each spending rationale category. The Company and the Division have reviewed

1 these planned projects, along with their overall spending levels, and have come to a  
2 consensus as to the appropriate investment levels for FY 2017.

3  
4 **Q. Throughout the fiscal year, will the Company provide periodic updates regarding**  
5 **the various categories of capital work approved in the FY 2017 Electric ISR Plan?**

6 A. Yes. The Company will provide quarterly reports with the Division and PUC on the  
7 progress of its Electric ISR Plan. The Company will provide an annual report on the  
8 prior fiscal year's activities when it files its reconciliation and rate adjustment filings with  
9 the PUC.

10  
11 The Company and the Division are aware that, in executing the approved Electric ISR  
12 Plan, the circumstances encountered during the year may require reasonable deviations  
13 from the original plan. In such cases, the Company will include an explanation of any  
14 significant deviations in its quarterly and annual year-end reports. As agreed to with the  
15 Division, given the magnitude of the scope and cost for the South Street project, the  
16 Company will manage any deviations from the FY 2017 South Street project budget  
17 separately from the overall discretionary budget. If deviations do occur with the South  
18 Street project, the Company will neither advance nor delay other discretionary work to  
19 compensate for those changes in FY 2017 costs. The Company has also agreed to  
20 augment quarterly reporting to include additional detail on the damage and failure  
21 subcategory. The detail will include cost, location, and work type, such as level 1  
22 Inspections and Maintenance construction.

1 **Q. Could you briefly review the status of the Long Term Plan?**

2 **A.** The Company has completed the study for the East Bay area, submitted the study to the  
3 Division, and has included spending for preliminary engineering of identified projects in  
4 FY 2018. The Providence Short-Term, Blackstone Valley North, and North Central area  
5 studies are in progress. Although the Company has not accelerated the completion of  
6 studies for the other areas, there have been no significant, multi-year projects advanced in  
7 those locations.

8  
9 In Docket No. 4539, the PUC ordered the Company to consider distributed generation  
10 resources as part of its long-range studies. Distributed generation resources are  
11 incorporated into the area load forecasting models for these studies.<sup>2</sup>

12  
13 **IV. VEGETATION MANAGEMENT PROGRAM**

14 **Q. Could you briefly review the FY 2017 spending levels for the Company's VM**  
15 **program that have been identified by the Company and the Division as appropriate**  
16 **to maintain safe and reliable distribution service to customers?**

17 **A.** Yes. The VM program that the Company has reviewed with the Division has been  
18 carefully balanced to implement the program aspects to a degree and in a manner that  
19 will achieve the reliability benefits sought by the Company without unduly burdening  
20 customers. The Electric ISR Plan provides for approximately \$8.9 million in VM  
21 spending for FY 2017.

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<sup>2</sup> See Order No. 22174.

1 **V. INSPECTION AND MAINTENANCE PROGRAM**

2 **Q. Could you briefly review the FY 2017 spending levels for the Company's I&M**  
3 **program that have been identified by the Company and the Division as appropriate**  
4 **to maintain safe and reliable distribution service to customers?**

5 A. The Electric ISR Plan incorporates the implementation of an inspection program for  
6 overhead and underground distribution infrastructure to achieve the objective of  
7 maintaining safe and reliable service to customers in the short and long term. The I&M  
8 program is designed to provide the Company with comprehensive system-wide  
9 information on the condition of overhead and underground system components. The  
10 I&M program includes a component for a Contact Voltage (CV) program as ordered in  
11 Docket No. 4237. This category also includes a component for a long range system  
12 capacity load study as agreed to with the Division. The Company proposes a total I&M  
13 program O&M expense budget of approximately \$1.3 million for FY 2017.

14  
15 **VI. CONCLUSION**

16 **Q. In your opinion does the FY 2017 Electric ISR Plan fulfill the requirements**  
17 **established in relation to the safety and reliability of the Company's electric**  
18 **distribution system in Rhode Island?**

19 A. Yes. The Electric ISR Plan for FY 2017 is designed to establish the capital investment,  
20 VM, and I&M activities in Rhode Island that are necessary to meet the needs of its  
21 customers, while maintaining the overall safety and reliability of the Company's electric  
22 distribution system. The Company believes that the proposed Plan accomplishes these

1 objectives. The PUC's approval of the proposed FY 2017 Electric ISR Plan is essential  
2 for the Company to continue maintaining a safe and reliable electric distribution system  
3 for its Rhode Island customers.

4

5 **Q. Does this conclude this testimony?**

6 A. Yes.

**Exhibit 1 – LJ R & RO  
Electric ISR Plan FY2019**

**Exhibit 1 – JJ R & RM  
Section 1  
Intro. & Summary**

## **Section 1**

### Introduction and Summary FY 2017 Electric ISR Plan

## **Introduction and Summary FY 2017 Proposal**

### **Background**

National Grid<sup>1</sup> has developed the following proposed Fiscal Year 2017 (FY 2017) Electric Infrastructure, Safety, and Reliability Plan (the Electric ISR Plan or Plan) in compliance with Rhode Island’s statute providing for an annual electric “infrastructure, safety, and reliability spending plan for each fiscal year and an annual rate reconciliation mechanism that includes a reconcilable allowance for the anticipated capital investments and other spending pursuant to the annual pre-approved budget.”<sup>2</sup> The proposed FY 2017 Electric ISR Plan addresses the following categories of costs, as specified in R.I. Gen. Laws § 39-1-27.7.1(d): capital spending on electric infrastructure; operation and maintenance (O&M) expenses on vegetation management (VM); O&M expenses on system inspection; and other costs related to maintaining safety and reliability of the electric distribution system, including a discussion of O&M inspection and maintenance (I&M) costs associated with the Company’s Contact Voltage Detection and Repair Program (Contact Voltage Program), mandated by R.I. Gen. Laws § 39-2-25 and approved by the Rhode Island Public Utilities Commission (PUC) in Docket No. 4237.

This Introduction and Summary presents an overview of the proposed FY 2017 Plan for the above-referenced categories of costs, a description of how the Company proposes to calculate a revenue requirement, a description of how the Company will calculate new rates, and customer bill impacts.

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

<sup>2</sup> R.I. Gen. Laws § 39-1-27.7.1, An Act Relating to Public Utilities and Carriers – Revenue Decoupling.

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The proposed Plan that the Company is submitting for its electric distribution operations is the product of a collaborative effort between the Company and the Rhode Island Division of Public Utilities and Carriers (Division). The Plan is designed to maintain and upgrade the Company's electric delivery system through repairing failed or damaged equipment, addressing load growth/migration, providing for asset viability through targeted investments driven primarily by condition, sustaining levels of I&M, and operating a cost-effective vegetation management program. The Company now submits this Plan to the PUC for final review and approval.<sup>3</sup>

The Electric ISR Plan provides a description of the Company's proposed electric distribution system safety and reliability activities along with the Company's proposed investments and expenditures contained in the Plan for FY 2017. The proposed Plan itemizes the recommended work activities by general category and provides budgets for capital investment, as well as O&M expenses for a VM and I&M program.

Consistent with the statute, after the end of the fiscal year, the Company will true up the Electric ISR Plan's projected capital and O&M levels used for establishing the revenue requirement to actual or allowed investment and expenditures and reconcile the revenue requirement to the revenue billed from the rate adjustments implemented at the beginning of the fiscal year.

As approved in PUC Docket No. 4218, the Company will continue to file quarterly reports with the Division and PUC on the progress of its Electric ISR Plan programs. The

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<sup>3</sup> R.I. Gen. Laws § 39-1-27.7.1 (d) provides that the Company and the Division must work together over the course of 60 days in an attempt to reach an agreement on a proposed plan, which must then be submitted to the PUC for its review and approval.

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Company will file the annual report on the prior fiscal year's activities when it makes its reconciliation and rate adjustment filing. In executing the Electric ISR Plan, the circumstances encountered during the year may require reasonable deviations from the original Electric ISR Plan. In such cases, the Company will include an explanation of any significant deviations in its quarterly reports and annual year-end report. In addition, the Company has committed to include additional detail on spending within the damage and failure category in the future quarterly reports going forward. The detail will include costs, asset category (poles, services, transformer, etc.), type of work (Level 1 Inspections & Maintenance, storm vs. blue-sky, etc.), and location.

In Docket No. 4473, the PUC directed the Company to provide a proposal in the FY 2016 ISR Plan to report in the quarterly reports and annual reconciliation filing details on individual projects where costs have differed from the annual budget by more than 10% where the difference resulted from either an over or under spending, or where the differences were due to the advancement or delay in the project schedule. The Company provided this information for the first time in its second Electric ISR quarterly report for FY 2015. To improve adherence to annual project budgets and schedules, which would reduce the number of projects reported, the Company is focusing on three areas. First, the Company has implemented process improvements to improve scope definition at project initiation by collecting more information from Operations and other local departments during this phase of the project lifecycle. This information may have otherwise been discovered later in the project lifecycle, resulting in budget variances due to changes to the project scope, estimate, and schedule at that time. Second, the Company has consolidated large project estimating under a single department, which will provide consistent estimating practices when developing Conceptual, Planning, and Project

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Grade estimates. For previous ISR plans, multiple departments were responsible for developing estimates. By applying consistent practices, such as the application of payroll overheads (i.e. benefits, capital clearing accounts, etc.) to direct charges, the variances between the project estimate stages should decline. Third, the Company is endeavoring to increase the number of those projects that require construction in the upcoming year that have a Project Grade estimate at the time of the ISR filing. By improving scope definition, estimates, and project maturity, the Company believes that the forecasted cash flows used for the development of the annual ISR budgets will result in fewer annual budget variances.

The Company has portfolio management processes to manage the discretionary ISR budget, which is comprised of the asset condition, system capacity and performance, and non-infrastructure subcategories. When a fiscal year variance is forecasted due to over or under spend on one or more projects, the Company may advance or delay other project schedules to compensate for the variance and balance the portfolio to the overall discretionary budget. The South Street project presents unique challenges to managing the discretionary portfolio due to its size, cost, and complexity. As part of the execution of the project, the forecasted \$15.3 million spend in FY 2017 may change as risks occur and/or cost savings are achieved. If South Street is managed with the overall discretionary portfolio, any changes may result in the need to advance or delay several projects, especially if the variance is significant. Instead, the Company will manage the South Street project as a distinct portfolio of spend and not advance or delay other discretionary projects if over- or under-spend occurs on the South Street project.

The Company continues to make progress with establishing a Long Range Plan for the eleven study areas in Rhode Island. Figure 1 illustrates this progress. In Docket No. 4539, the

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PUC ordered the Company to consider distributed generation resources as part of its long-range studies. Distributed generation resources are incorporated into the area load forecasting models for these studies.

**Figure 1**

**National Grid’s Study Area Current Priority and Statistics**

Rank	Study Area	Load (MVA)	% State Load	# of Feeders	# of Stations	Study Status
1	Providence	364	19%	95	17	50%
2	East Bay	157	8%	23	7	100%
3A	Blackstone Valley North	145	7%	20	5	20%
3B	North Central RI	254	13%	35	10	20%
4	Central RI East	197	10%	38	10	
5	South County East	184	10%	21	9	
6	Central RI West	178	9%	30	11	
7	Newport	136	7%	54	14	
8	Blackstone Valley South	198	10%	60	13	
9	Tiverton	30	2%	4	1	
10	South County West	97	5%	12	6	
	<b>Total:</b>	<b>1,940</b>	<b>100%</b>	<b>392</b>	<b>103</b>	<b>22%</b>

\* Study Status Total = % State Load Weighted Total

The Division has requested that large new infrastructure projects, unless compelled by imminent safety or reliability concerns, should be justified under the Long Range Plan before the Company includes such projects in the ISR Plan. The Company is advancing projects identified in the recently completed Providence Long Term, Quonset Point, and Pawtucket Area studies, particularly the South Street and Quonset substation rebuild projects. In recognition of the matured estimate and cash flow for implementing the South Street substation rebuild that was developed during the finalization of the project’s Engineer, Procure, and Construct (EPC) contract, the Company has re-phased the schedules for several asset and capacity projects into

future years such that the overall FY 2017 discretionary budget did not exceed the FY 2017 discretionary budget provided in the FY 2016 ISR, which was \$56.0 million. Consequently, the Company anticipates completing the Long Range Plan prior to the construction of several multi-year projects, such as indoor substation projects for Dyer Street, Olneyville, and Admiral Street.

The FY 2017 Annual Plan contains \$83.4 million of net capital investment, \$8.9 million of VM O&M expense, and \$1.3 million of I&M O&M expense. The remaining sections of this document will address the Annual Plan in more detail. Section 2 contains the Company's proposed capital investment plan for FY 2017; Section 3 contains the Company's proposed VM program; Section 4 contains the Company's proposed I&M program; Section 5 includes a description of how the Company has calculated the FY 2017 Electric ISR Plan revenue requirement; Section 6 includes the calculation of the proposed rates based on the final revenue requirement consistent with the rate design described below; and Section 7 provides the bill impacts associated with the proposed rates. These sections are summarized below.

## **Section 2: Electric Capital Investment Plan**

The Company's proposed electric capital investment plan included in Section 2 summarizes capital investments by key drivers, describes the development of the capital plan, and outlines the large programs and projects contained in the Plan. For purposes of the ratemaking treatment of capital spending, the Company proposes that capital investments used for establishing rates for FY 2017 be those investments in electric distribution infrastructure assets that the Company projects will be placed into service during the applicable fiscal year. The Company has used its capital budget to identify the relevant projects that would be part of

the FY 2017 Electric ISR Plan. The capital budget also provides the Company's rationale regarding the need for and benefit of performing that work to provide safe and reliable service to its customers.

### **Section 3: Vegetation Management**

Section 3 of this proposal contains the Company's VM O&M expense for FY 2017, a discussion of the nature of the work the Company expects to perform, and the expected benefits of such work. Under the Company's proposed Plan, the O&M expense associated with VM activities is the amount the Company expects to expend for FY 2017. This estimated amount is subject to true-up to actual VM O&M expense.

### **Section 4: Inspection and Maintenance Program**

The Company has also estimated the O&M expense associated with the I&M program for FY 2017. Section 4 of this proposal provides details of the proposed I&M program for FY 2017. As with the other projected spending provided in this proposed Plan, this estimated amount will be subject to true-up to actual I&M O&M expense.

### **Section 5: Electric Revenue Requirement**

As noted above, Section 5 provides a description of how the Company proposes to calculate the revenue requirement based on the projected incremental net infrastructure investment and the total annual VM and I&M O&M. This section includes a description of the revenue requirement model that will be used to support the final revenue requirement. The

calculation includes the pre-tax rate of return on rate base approved by the PUC in Docket No. 4323, the Company's last general rate case.

### **Section 6: Rate Design**

Once the revenue requirement is calculated, it will then be appropriately allocated to the Company's rate classes. The rate design in this proposal is consistent with the Amended Settlement Agreement in Docket No. 4323, which the PUC approved on December 20, 2012. The rate design and a summary of proposed rates are presented in Section 6. The following provisions will apply for purposes of rate design:

- The adjusted revenue requirement associated with the incremental net capital investments will be allocated to rate classes based upon the allocation of rate base to each rate class, as approved in the allocated cost of service in Docket No. 4323. For non-demand-based rate classes, the allocated adjusted revenue requirement will be divided by the applicable fiscal year forecasted kWh deliveries for each rate class, arriving in a per-kWh factor unique to each rate class. For demand-based rate classes, the allocated adjusted revenue requirement will be divided by estimated billing demand based on a historical load factor applied to the applicable fiscal year forecasted kWh deliveries for each rate class, resulting at a per-kW factor unique to each rate class.
- The revenue requirement associated with the VM and I&M programs will be allocated to rate classes based upon the allocation of O&M expenses contained in the approved

allocated cost of service in Docket No. 4323. For all rate classes except Rates B-62/G-62, the allocated revenue requirement will be divided by the applicable forecasted kWh deliveries for each rate class, arriving at a per-kWh factor unique to each rate class. For Rates B-62/G-62, the allocated revenue requirement will be divided by estimated billing demand based on a historical load factor applied to the applicable forecasted kWh deliveries for each rate class, resulting in a per-kWh factor for the rate class.

### **Section 7: Bill Impacts**

The bill impacts associated with the proposed rates are presented in Section 7.



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## **Section 2**

### **Electric Capital Investment Plan FY 2017 Electric ISR Plan**

## **Electric Capital Investment Plan FY 2017 Proposal**

### **Background**

The Company<sup>4</sup> developed its proposed Electric ISR Plan to meet its obligation to provide safe, reliable, and efficient electric service for customers at reasonable costs. The Plan includes capital investment needed to (1) meet state and federal regulatory requirements applicable to the electric system; (2) repair failed or damaged equipment; (3) address load growth/migration; (4) maintain reliable service; and (5) sustain asset viability through targeted investments driven primarily by condition.

As shown below in Chart 1a, the Company met both its SAIFI and SAIDI performance metrics in Calendar Year (CY) 2014, with SAIFI of 0.78 against a target of 1.05 and SAIDI of 54.06 minutes, against a target of 71.9 minutes. The Company's annual service quality targets are based on a calendar year and measured excluding major event days.<sup>5</sup> A comparison of reliability performance in CY 2014 relative to that of previous years demonstrates that the Company's performance has shown a downward (improving) trend over the past several years and that CY 2014 performance was similar to CY 2013, with major event days excluded. The

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<sup>4</sup> The Company delivers electricity to 486,465 Rhode Island customers in a service area that encompasses approximately 1,076 square miles in 38 Rhode Island cities and towns. To provide this service, the Company owns and maintains 5,225 miles of overhead and 1,103 miles of underground distribution and sub-transmission circuit in a network that includes 94 sub-transmission lines and 390 distribution feeders. The Company relies on 66 distribution substations that house 134 power transformers and 823 substation circuit breakers to deliver power to its customers. The Company's electric delivery assets also include 280,612 distribution poles, 4,252 manholes, and 77,540 overhead (pole-mounted) and underground (pad-mounted or in vault) transformers.

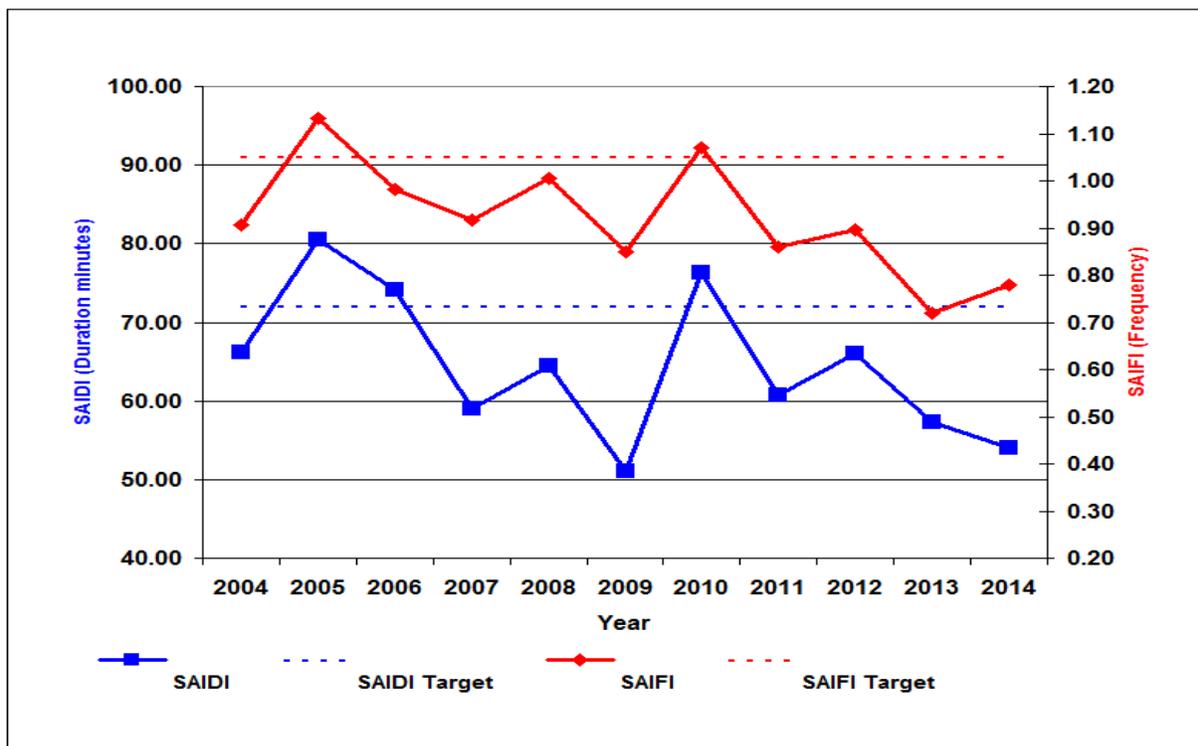
<sup>5</sup> A Major Event Day (MED) is defined as a day in which the daily System Average Interruption Duration Index (SAIDI) exceeds a MED threshold value (5.64 minutes for 2014). For purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began. Statistically, days having a daily system SAIDI greater than the MED are days on which the energy delivery system experiences stress beyond that normally expected, such as during severe weather.

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Plan focuses on the underlying drivers of reliability during the entire year, and including major event days can skew that analysis significantly for the small number of days a year that would be major event days. For example, including major event days would underestimate the day-to-day drivers of reliability due to substation or underground equipment, because, typically, overhead equipment is most impacted by major event days, which are usually weather driven events. In CY 2014, no days were categorized as major event days.

**Chart 1a**  
**RI Reliability Performance**  
**Regulatory Criteria (Excluding Major Event Days)**

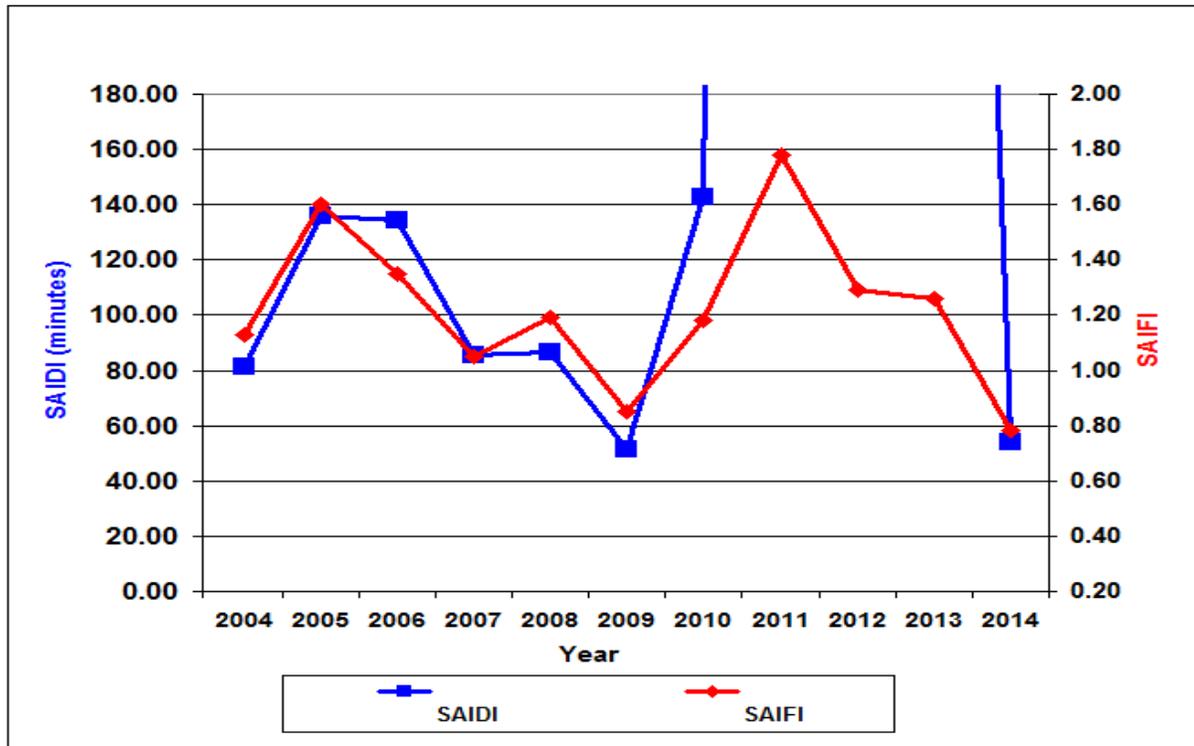


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For informational purposes, Chart 1b below shows reliability performance from CY 2004 to CY 2014, including major event days.

**Chart 1b**  
**RI Reliability Performance**  
**Regulatory Criteria (Including Major Event Days)**

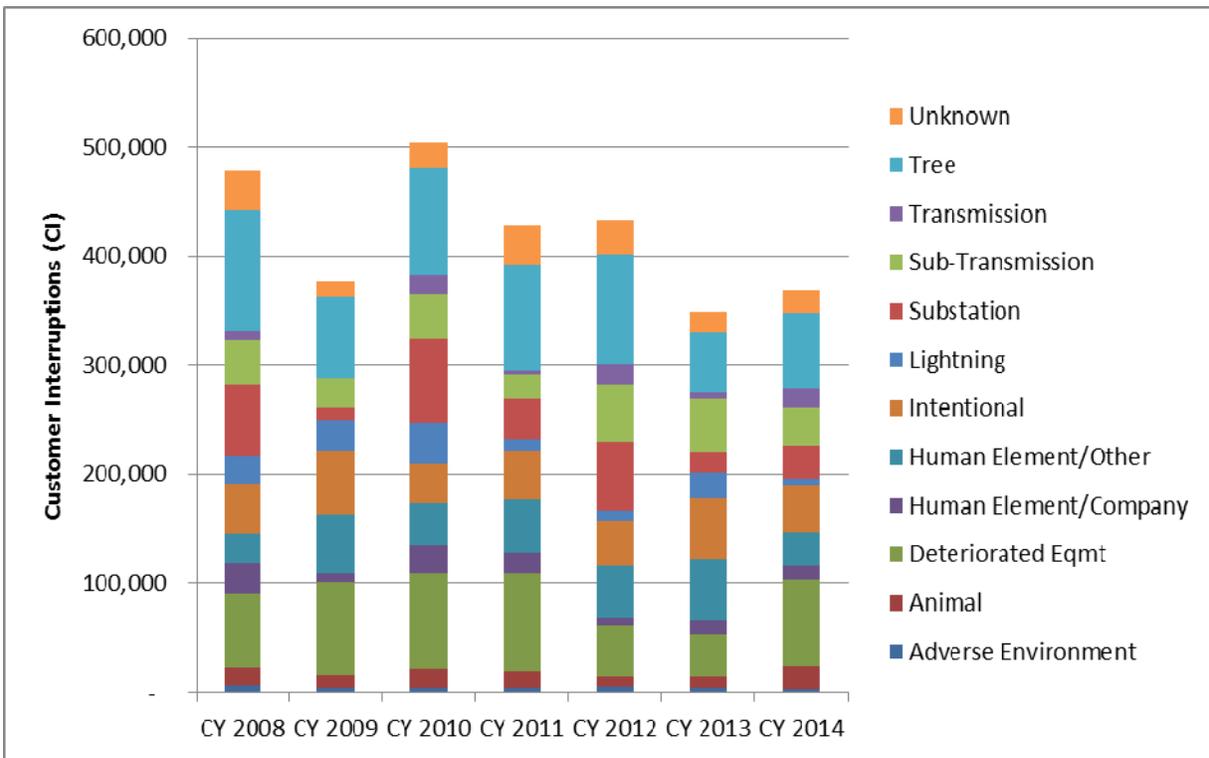


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Chart 2 below shows the customers interrupted by cause for calendar year (CY) 2008 through 2014 with major event days excluded. Chart 2A shows the same information in tabular form.

**Chart 2**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Excluded**  
**By Calendar Year (2008-2014)**



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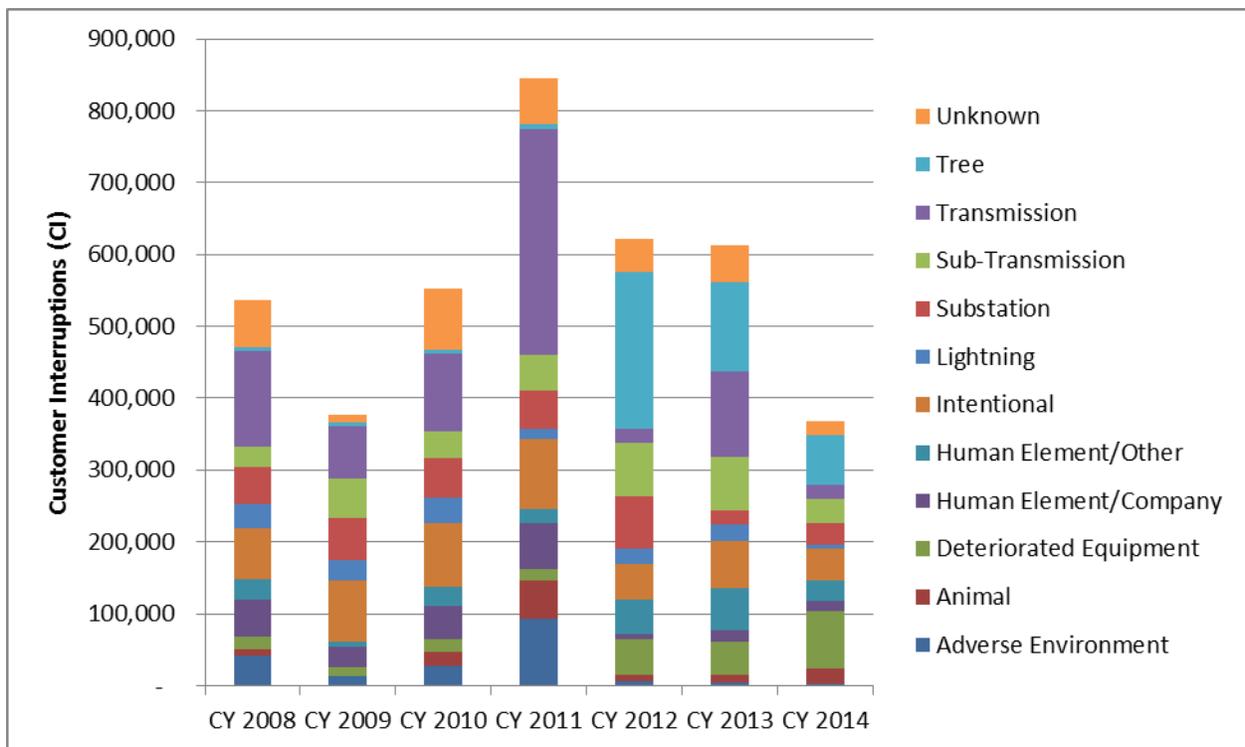
**Chart 2A**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Excluded**  
**By Calendar Year (2008-2014)**

Cause	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014
Adverse Environment	5,910	3,926	3,800	4,444	4,778	4,318	3,220
Animal	16,977	11,769	18,021	15,547	9,912	10,324	21,247
Deteriorated Equipment	67,114	85,047	87,768	89,743	47,301	39,131	79,260
Human Element/Company	28,298	8,450	26,047	18,455	7,043	13,481	13,259
Human Element/Other	27,607	54,275	36,999	48,650	47,404	54,719	29,908
Intentional	44,887	58,356	37,743	44,526	40,927	55,927	43,132
Lightning	25,987	27,874	36,859	11,044	9,362	23,310	5,745
Substation	65,704	10,713	77,189	37,086	63,397	18,882	30,888
Sub-Transmission	40,845	28,046	40,034	22,524	51,972	48,902	33,556
Transmission	8,721	25	18,438	2,973	19,099	5,958	18,284
Tree	109,214	74,116	97,807	97,485	100,459	55,056	70,277
Unknown	37,501	13,545	23,962	36,065	32,176	19,008	19,657
<b>Grand Total</b>	<b>478,765</b>	<b>376,142</b>	<b>504,667</b>	<b>428,542</b>	<b>433,830</b>	<b>349,016</b>	<b>368,433</b>

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Chart 3 below shows the customers interrupted by cause for calendar year 2008 through 2014 with major event days included. Chart 3A shows the same information in tabular form.

**Chart 3**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Included**  
**By Calendar Year (2008-2014)**



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**Chart 3A**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Included**  
**By Calendar Year (2008-2014)**

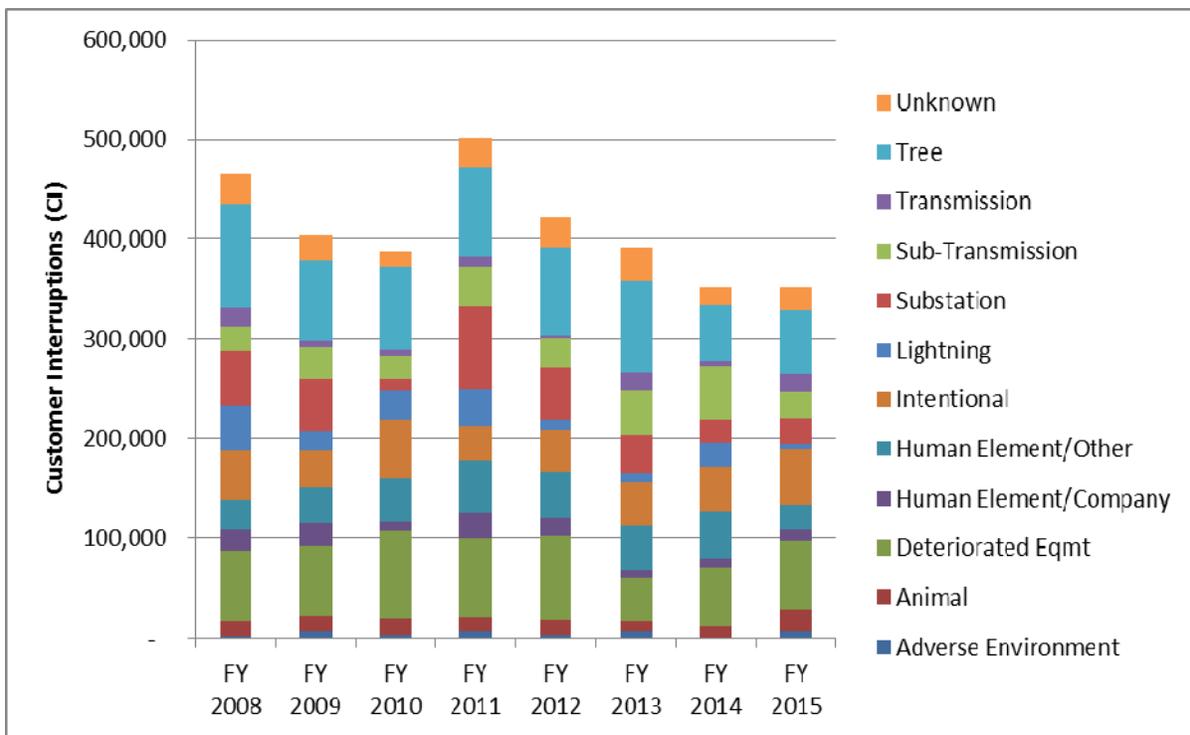
Cause	CY 2008	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	CY 2014
Adverse Environment	41,843	13,545	28,101	93,160	5,416	4,486	3,220
Animal	8,721	25	18,438	52,795	9,912	10,326	21,247
Deteriorated Equipment	16,977	11,769	18,031	15,952	48,891	46,390	79,260
Human Element/Company	51,279	28,046	46,082	63,381	7,335	15,549	13,259
Human Element/Other	28,298	8,450	26,067	20,423	47,404	58,321	29,908
Intentional	71,485	85,047	88,643	97,210	49,950	66,252	43,132
Lightning	34,386	27,874	36,859	15,111	21,002	23,310	5,745
Substation	51,720	58,356	54,349	51,741	74,256	18,882	30,888
Sub-Transmission	27,616	54,275	36,999	50,780	74,296	74,786	33,556
Transmission	132,780	74,116	107,610	314,416	19,112	119,638	18,284
Tree	5,926	3,926	5,303	5,569	217,931	122,661	70,277
Unknown	65,718	10,713	86,482	64,889	45,626	52,953	19,657
<b>Grand Total</b>	<b>536,749</b>	<b>376,142</b>	<b>552,964</b>	<b>845,427</b>	<b>621,131</b>	<b>613,554</b>	<b>368,433</b>

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Although service quality for the Company is based on calendar year, spending for the ISR is based on the Company’s fiscal year (April 1 to March 31). Charts 4 and 4A below provide the reliability data as presented in Charts 2 and 2A by fiscal year through FY 2015 (ending March 31, 2015).

**Chart 4**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Excluded**  
**By Fiscal Year (2008-2015)**



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**Chart 4A**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Excluded**  
**By Fiscal Year (2008-2015)**

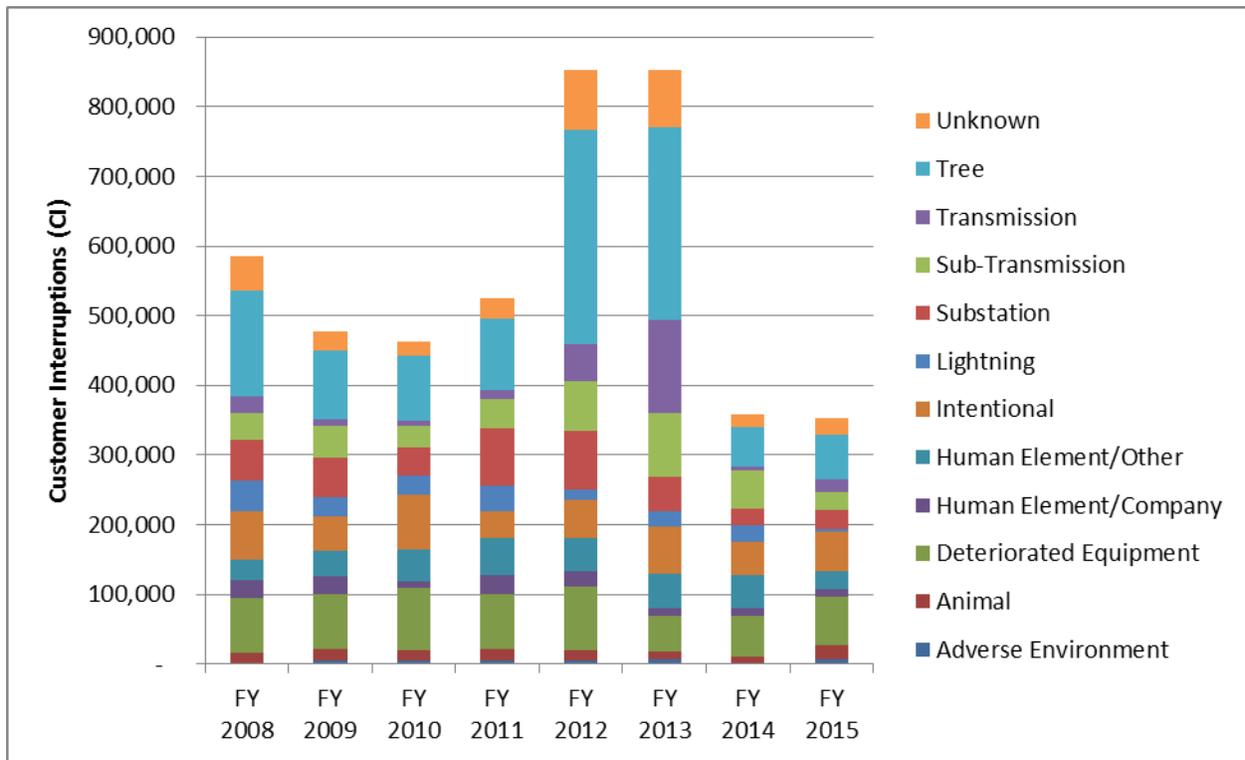
<b>Cause</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
Adverse Environment	1,673	5,651	4,018	5,992	3,674	6,584	811	6,786
Animal	15,103	16,303	14,751	15,335	15,008	9,864	10,098	21,232
Deteriorated Equipment	71,336	69,296	88,655	78,009	84,052	43,196	59,239	68,992
Human Element/Company	20,633	24,393	8,846	27,305	17,722	8,500	9,304	11,507
Human Element/Other	28,547	35,531	44,248	51,837	46,171	45,152	48,008	25,659
Intentional	50,735	36,569	59,581	33,987	41,879	42,989	44,451	55,268
Lightning	44,176	19,577	27,874	36,883	11,098	9,362	23,882	5,234
Substation	55,282	53,391	12,120	82,926	51,866	38,492	23,243	26,527
Sub-Transmission	24,298	31,628	22,243	39,770	29,805	44,084	53,550	26,191
Transmission	20,176	6,000	7,093	11,370	2,973	19,099	4,568	18,284
Tree	104,023	79,977	83,311	88,714	88,474	90,726	56,964	63,009
Unknown	29,583	26,146	15,807	29,629	29,163	34,143	18,501	23,529
<b>Grand Total</b>	<b>465,565</b>	<b>404,462</b>	<b>388,547</b>	<b>501,757</b>	<b>421,885</b>	<b>392,191</b>	<b>352,619</b>	<b>352,218</b>

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Charts 5 and 5A below provide the reliability data as presented in Charts 3 and 3A by fiscal year through FY 2015 (ending March 31, 2015).

**Chart 5**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Included**  
**By Fiscal Year (2008-2015)**



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**Chart 5A**  
**Rhode Island Customer Interrupted by Cause**  
**Major Event Days Included**  
**By Fiscal Year (2008-2015)**

<b>Cause</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
Adverse Environment	1,724	5,655	5,249	6,046	4,891	7,390	811	6,786
Animal	15,103	16,385	14,761	15,335	15,413	9,866	10,098	21,232
Deteriorated Equipment	78,512	77,776	89,517	79,854	91,605	52,045	59,239	68,992
Human Element/Company	25,703	27,056	8,866	27,305	21,087	10,860	9,652	11,507
Human Element/Other	28,737	35,540	45,842	51,837	48,301	48,754	48,008	25,659
Intentional	69,276	49,731	78,878	38,999	53,916	69,063	48,219	55,268
Lightning	44,182	28,002	27,874	36,883	15,087	21,002	23,882	5,234
Substation	58,404	55,863	39,553	82,926	84,611	49,351	23,243	26,527
Sub-Transmission	38,740	46,619	31,528	41,963	70,662	92,292	55,492	26,191
Transmission	23,694	8,721	7,093	11,370	52,795	134,182	4,568	18,284
Tree	152,101	98,498	93,107	102,553	308,183	275,792	56,964	63,009
Unknown	49,341	27,276	19,946	30,267	86,950	81,538	18,501	23,529
<b>Grand Total</b>	<b>585,517</b>	<b>477,122</b>	<b>462,214</b>	<b>525,338</b>	<b>853,501</b>	<b>852,135</b>	<b>358,677</b>	<b>352,218</b>

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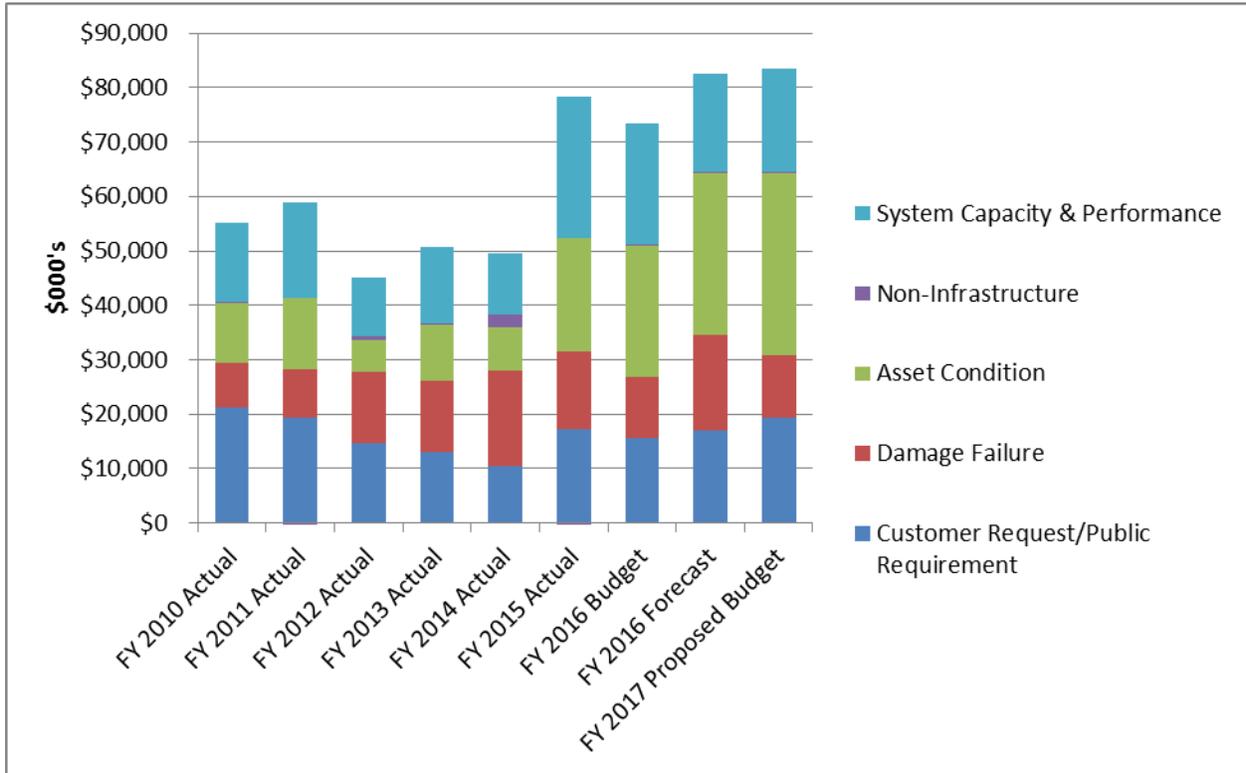
Although reliability in FY 2015 was better than any of the prior seven fiscal years, trees and deteriorated equipment were the top two drivers affecting customers, accounting for 37% of all interruptions in FY 2015. It is, therefore, critical that the Company continue to invest in its infrastructure and vegetation management programs to provide reliable electric delivery service to customers.

As shown in Chart 6 below, the Company plans to invest approximately \$83.4 million to maintain the safety and reliability of its electric delivery infrastructure in FY 2017, covering the period from April 1, 2016 through March 31, 2017. Chart 7 shows the same information in tabular form. This spending level is approximately 14% higher than the Company's FY 2016 ISR budget of \$73.3 million. The increase is primarily driven by the Asset Condition category, as discussed in more detail in section 2. The largest single driver of this increase is the South Street substation asset replacement project, which accounts for approximately \$15.4 million in capital expenditures.

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**Chart 6**  
**Capital Spend by Category**



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**Chart 7**  
**Capital Spend by Category**  
**(\$000)**

Spending Rationale	FY 2010 Actual	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Budget	FY 2016 Forecast <sup>1</sup>	FY 2017 Proposed Budget
Customer Request/Public Requirement <sup>2</sup>	\$21,172	\$19,312	\$14,631	\$13,075	\$10,410	\$17,138	\$15,647	\$17,061	\$19,451
Damage Failure	\$8,345	\$9,031	\$13,194	\$12,993	\$17,515	\$14,374	\$11,177	\$17,552	\$11,467
Asset Condition	\$10,941	\$13,065	\$5,831	\$10,320	\$8,071	\$20,905	\$24,053	\$29,609	\$33,280
Non-Infrastructure	\$151	(\$847)	\$706	\$267	\$2,269	(\$346)	\$275	\$286	\$275
System Capacity & Performance	\$14,596	\$17,454	\$10,795	\$13,995	\$11,249	\$25,972	\$22,148	\$18,000	\$18,968
<b>Total Capital Investment in Systems</b>	<b>\$55,205</b>	<b>\$58,015</b>	<b>\$45,157</b>	<b>\$50,650</b>	<b>\$49,514</b>	<b>\$78,043</b>	<b>\$73,300</b>	<b>\$82,508</b>	<b>\$83,441</b>

<sup>1</sup> Forecast based on July 2015 Forecast File

<sup>2</sup> Previously called Statutory/Regulatory

Because a portion of the proposed capital spending in FY 2017 is for projects (mainly substation projects like the South Street indoor substation replacement project) that will be completed over multiple years, the Company anticipates that only part of that spending will be placed into service in FY 2017. Likewise, a portion of the capital to be placed in service in FY 2017 will also reflect the capital spending for similar multiyear projects that commenced in prior years. In Docket No. 4473, the PUC directed the Company to provide additional detail in support of the proposed investment for multi-year projects classified as major projects. On August 7, 2015, the Company met with the Division and its consultant. During that meeting, the Company provided the Division with additional detailed information on major multi-year projects included in the FY 2017 Plan. A summary of information regarding these major multi-year projects is included in Attachment 4. This information varies from the information the

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Company presented at the August 7, 2015 meeting because the Company continues to refine the project cash flows based on best information available throughout the development of the ISR.

Chart 8 below provides actual and forecasted Plant-in-Service from FY 2012, when the ISR was first implemented, through the proposed FY 2017 Plan. Four metal-clad substation retirement projects, Kent County substation, and portions of the Chase Hill and Aquidneck projects are expected to be placed in service under the proposed FY 2017 Plan.

**Chart 8**

Spending Rationale	Plant-in-Service						
	FY 2012 Actual	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Proposed	FY 2016 Forecast	FY 2017 Proposed
Customer Request/Public Requirement	\$15,144,000	\$11,261,897	\$13,844,844	\$18,443,062	\$16,611,000	\$17,719,000	\$19,971,001
Damage Failure	\$13,628,000	\$12,172,707	\$16,928,183	\$3,803,602	\$11,299,000	\$15,947,000	\$11,424,899
Asset Condition	\$13,019,000	\$6,638,163	\$14,639,889	\$28,094,392	\$25,354,000	\$19,166,000	\$26,481,178
Non-Infrastructure	\$60,000	\$112,879	\$1,989,798	\$345,779	\$277,000	\$58,000	\$271,000
System Capacity & Performance	\$9,799,000	\$14,145,495	\$8,726,837	\$25,970,206	\$23,934,000	\$20,015,000	\$20,330,017
<b>Total Plant-in-Service</b>	<b>\$51,650,000</b>	<b>\$44,331,141</b>	<b>\$56,129,551</b>	<b>\$76,657,041</b>	<b>\$77,475,000</b>	<b>\$72,905,000</b>	<b>\$78,478,095</b>

<sup>1</sup> Forecast based on FY 2016 Second Quarter Report

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## Summary of Investment Plan by Key Driver

Chart 9 below summarizes the planned spending level for each of the key driver categories of the Electric ISR Plan proposed for FY 2017.

**Chart 9**  
**Proposed FY 2017 Capital Spending by Key Driver Category**  
**(\$000)**

Spending Rationale	FY 2017 Proposed Budget	Percentage (%)
Customer Request/Public Requirement	\$19,451	23.3%
Damage Failure	\$11,467	13.7%
Subtotal Non-Discretionary	\$30,918	37.1%
Asset Condition	\$33,280	39.9%
Non-Infrastructure	\$275	0.3%
System Capacity & Performance	\$18,968	22.7%
Subtotal Discretionary	\$52,523	62.9%
<b>Total Capital Investment in Systems</b>	<b>\$83,441</b>	<b>100%</b>

As shown in Chart 9, \$19.5 million or 23% of the spending for capital projects in FY 2017 is necessary to meet customer requests and public requirements. Such investments arise from the Company's regulatory, governmental, or contractual obligations, such as responding to new customer service requests, transformer and meter purchases and installations, outdoor lighting requests and service, and facility relocations related to public works projects requested by cities and towns as well as the Rhode Island Department of Transportation (RIDOT).

Overall, the scope and timing of this work is defined by those who are external to the Company.

The need to immediately repair failed and damaged equipment totals approximately \$11.5 million, or 14%, of the Company's proposed capital investment in FY 2017. These projects are required to restore the electric distribution system to its original configuration and

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capability following damage from storms, vehicle accidents, vandalism, and other unplanned causes.

The Company considers the investment required to comply with customer requests, statutory and regulatory requirements, and fix damaged or failed equipment as mandatory and non-discretionary in terms of scope and timing. Together, these items total approximately \$30.9 million, or 37%, of the proposed capital investment in FY 2017.

The Company also has minimal discretion to address load constraints caused by the existing and growing and/or shifting demands of customers. Investments to address these issues account for 72% of the investment dollars categorized as system capacity and performance, or 16% of the total proposed capital budget in FY 2017. These investments are required to ensure that the electric network has sufficient capacity to meet the existing and growing and/or shifting demands of customers and to maintain the requisite power quality required by customers. Generally, projects in this category address loading conditions on substation transformers and distribution feeders to comply with the Company's system and capacity loading policy and are designed to reduce degradation of equipment service lives due to thermal stress. These types of projects are also designed to provide appropriate degrees of system configuration flexibility to limit adverse reliability impacts of large contingencies.

The Company has more discretion regarding the timing of the other categories and closely monitors the risk associated with delaying such projects due to the potential impact of the consequences of the failure of equipment or systems. The reliability, asset condition, and non-infrastructure projects that the Company will pursue in FY 2017 have been chosen to minimize

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the likelihood of reliability issues and other problems due to under investment in the overall system.

Investments that are required to maintain reliable service to customers accounted for 28% of the system capacity and performance category, or 6% of the total proposed capital budget in FY 2017. This category includes investment to improve the overall performance of the network. These reliability enhancements include the expansion of the Company's remote monitoring and control capability and smaller localized enhancements identified by the Company's field operations personnel. Together with load relief projects, these system capacity and performance projects total approximately \$19.0 million, or 23%, of the proposed capital budget in FY 2017.

Projects necessary based on the condition of the infrastructure assets account for \$33.3 million or 40%, of the proposed capital spending in FY 2017. These projects have been identified to reduce the risk and consequences of unplanned asset failures based on their present condition. The focus of the asset condition assessment is to identify specific susceptibilities (failure modes) and develop alternatives to avoid such failure modes. The investments required to address these situations are essential, and the Company schedules these investments to minimize the potential for reliability issues. Moreover, the large number of aged assets in the Company's service area requires the Company to develop strategies to replace assets if their condition impairs reliable and safe service to customers. Experience with assets that have poor operating characteristics in the field has led the Company to develop strategies to remove such equipment. The investments made in these assets are prioritized based on their likelihood of failure along with consequences of such an event.

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The non-infrastructure category of investment is for those capital expenditures that do not fit into one of the above-mentioned categories but which are necessary to run the electric system, such as general and telecommunications equipment. In total, capital spending for non-infrastructure projects will account for \$275,000 which is less than 1% of the proposed capital budget in FY 2017.

The Company considers the investment required to comply with asset condition, non-infrastructure, and system capacity & performance as discretionary in terms of scope and timing. Together, these items total approximately \$52.5 million, or 63%, of the proposed capital investment in FY 2017.

**Development of the Annual Capital Plan**

Each year, the Company develops an Annual Work Plan, which is designed to achieve the Company's overriding performance objectives: safety, reliability, efficiency, and environmental responsibility. The Annual Work Plan represents a compilation of proposed spending for programs and individual capital projects. Programs and projects are categorized by the following spending categories: Customer Requests/Public Requirements, Damage/Failure, System Capacity and Performance, Non-Infrastructure, and Asset Condition. The proposed spending forecasts for each program or project include the latest cost estimates for in-progress projects and initial estimates for newly proposed projects.

Once the mandatory budget level has been established for the Customer Request/Public Requirements and Damage/Failure spending rationales, programs and projects in the other categories (i.e., System Capacity and Performance and Asset Condition spending rationales) are

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reviewed for inclusion in the spending plan. A risk score is assigned to each project based upon the estimated probability that a system event will occur and the consequences of the event, including the impact on customers and the public. The project risk score takes into account key performance areas such as safety, reliability, and environmental, while also accounting for criticality. Plan inclusion/exclusion for any given project is based on several different factors, including, but not limited to: new project or in-progress status, risk score, scalability, and resource availability. In addition, when it can be accomplished, the bundling of work and/or projects is analyzed to optimize the total cost and outage planning. The objective is to establish a capital portfolio that optimizes investments in the system based upon the measure of risk or improvement opportunity associated with a project. Historical and forward-looking checks are made by spending rationale to identify any deviations from expected or historical trends.

The portfolio is presented to the Company's senior executives, approved by the Jurisdictional President for Rhode Island, and ultimately goes to the Board as part of the entire United States plan for review and approval. The budget amount is approved on the basis that it provides the resources necessary to meet the business objectives set for that year. Company management is responsible for managing the approved budget.

The capital plan for FY 2017 presented in this Plan represents the Company's best information regarding the investments it will need to make to sustain the safe, reliable, and efficient operation of the electric system. As described above, some of the projects are already in-progress or will soon be in-progress. Estimates for those projects are quite refined. Other projects are at earlier stages in the project evolution process. The budgets for those projects are,

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accordingly, less refined and are more susceptible to change.<sup>6</sup> As previously noted, the Company has endeavored to increase the number of projects targeted for construction in FY 2017 plan that have Project Grade estimates at the time of this filing. Increasing the maturity of the projects in the FY 2017 ISR Plan should result in fewer variances to the FY 2017 ISR budget. The capital plan is continuously reviewed during the year for changes in assumptions, constraints, project delays, accelerations, outage coordination, permitting/licensing/agency approvals, system operations, performance, safety, updated estimates, and customer-driven needs that may arise. Based on those changes, the capital plan is updated throughout the current year.

As stated above, the result of the budgeting process is the approval of a total dollar amount for capital spending in the budget year. In addition to this planning and budgeting process, specific approval must be obtained for any strategy, program, or project within the Annual Work Plan. Approval is obtained through a Delegation of Authority (DOA) requirement prior to proceeding with project work, including engineering and construction. Each project must receive the appropriate level of management authorization prior to the start of any work. Approval authority is administered in accordance with the Company's DOA governance policy, with projects over \$1.0 million requiring a Project Sanction Paper (PSP). A PSP is written by the sponsor and details many aspects of the project including:

- Project background, description, and drivers
- Business issues and the analysis of alternative courses of action

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<sup>6</sup> National Grid defines three levels of estimate grade accuracy – Conceptual = +50/-25%, Planning = +25/-25%, and Project = +10/-10%. Each project transitions through these estimate grades as engineering and design is refined.

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- Cost analysis of the proposed project
- Project schedule, milestones, and implementation plan

Once an approved project (greater than \$1.0 million) is completed, the project manager is responsible for preparing closure papers, which present information on a number of factors, including a discussion of whether, and to what extent, project deliverables were achieved and lessons learned as a result of project implementation.

Projects under \$1.0 million are authorized online, and the project sponsor must provide relevant information regarding the cost and justification of the proposed project.

Capital projects are authorized for construction following preliminary engineering. Reauthorization is required if the project cost is expected to exceed the approved estimate plus an approved variance range identified in the project spending plan. Any reauthorization request must include the original authorized amount, the variance amount, the reasons for the variance, and the details and costs of the variance drivers, as well as the estimated impact on the current year's spending. Project spending is monitored monthly against authorized levels by the project management and program management groups. Exception reports covering actual or forecasted project spending greater than authorized amounts are reviewed monthly.

The Company includes certain reserve line items in its spending plan by budget category to allocate funds for projects whose scope and timing have not yet been determined. In some cases, historical trends are used to develop the appropriate reserve levels, especially reserves related to non-discretionary categories that will address emergent, customer or generator requirements, damaged or failed equipment, or regulatory mandates. The Company manages budgetary reserves and emergent projects within the overall budget as part of its investment

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planning and current year spending management processes. There are no discretionary reserves in either the proposed FY 2017 plan or the FY 2018, FY 2019, and FY 2020 proposed budgets. The discretionary reserves in FY 2021 will be replaced with specific projects as the Long Term Studies are progressed.

### **Description of Large Programs and Projects**

Attachment 1 to this section provides spending detail on major project categories that supports the proposed level of capital spending by key driver shown on Chart 9. Attachment 2 contains a more detailed breakdown of the spending totals by project to the extent that such detail is currently available.

### **Customer Request/Public Requirements**

As shown in Attachment 1, the Company has set a budget of \$19.5 million to meet its Customer Request/Public requirements in FY 2017. This is approximately 24% higher than the FY 2016 budget of \$15.6 million, and \$4.8 million, or 32% higher than the actual costs incurred by the Company in this category in FY 2015.

Approximately 48% of the Customer Request/Public Requirement budget is required to establish electric delivery service to new customers, both commercial and residential. The Company currently expects to spend approximately \$9.3 million for this category of work in FY 2017. Importantly, the actual and proposed spending in this category is net of contributions in aid of construction (CIAC) that are received from customers. The proposed FY 2017 budget is approximately \$1.6 million greater than the FY 2016 budget. The increase is predominately

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driven by an increase in new business commercial-specific projects. The largest specific project in this category is the Liquefied Natural Gas (LNG) plant on Terminal Road in Providence, Rhode Island. Although the proposed FY 2017 budget is only \$0.7 million, this is net of the CIAC the Company expects to collect in FY 2017.

Approximately 20% of the Customer Request/Public Requirement budget is required for public projects. The Company currently expects to spend approximately \$3.8 million for this category of work in FY 2017. This is approximately \$2.2 million higher than the FY 2016 budget due to an expected increase in Rhode Island Department of Transportation (RIDOT) projects and the relocation of company assets due to the airport expansion project.

**The following projects are included in this category:**

- Relocating/adding Company assets due to road or bridge-work
- Moving assets such as poles to accommodate a new driveway or other similar customer requests
- Construction as requested by the telephone company, public authorities, towns, municipalities, RIDOT, and other similar entities
- Required environmental expenditures

The Company anticipates spending approximately \$0.2 million to facilitate third-party attachments. Spending to enable third-party attachments is highly variable year-to-year based on the timing of contributions from third parties and the cost to ensure that the Company's assets meet the standards required to enable the attachments. Third-party customers do not reimburse

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the Company for costs the Company incurs to ensure that the Company's assets meet the standards required to enable attachments. Therefore, this work may result in additional costs for the Company.

Also included in this spending rationale are distributed generation costs associated with connecting Block Island to the mainland through the Block Island Transmission System (BITS). The BITS requires changes at the Wakefield substation. The scope of work for the changes necessary at the Wakefield substation is currently under development. The Company has budgeted \$0.5 million for these upgrades in FY 2017.

Since much of the construction work in the customer requests and public requirements category is variable and requested on short notice, to account for emergent projects, the Company sets budget reserves for the work under this category based on previous experience. Since the Company is reimbursed for a portion of this spending, the budget reserves represent the capital the Company expects to spend, net of CIACs and other reimbursements.

### **Damage/Failure**

The Company is proposing an \$11.5 million budget for FY 2017 for non-discretionary costs to replace equipment that unexpectedly fails or becomes damaged. This budget is approximately 3% more than the \$11.2 million budget for FY 2016, and \$1.7 million, or 17% more than the actual Damage/Failure costs incurred by the Company in FY 2015. Because the work in this category is unplanned by nature, the Company sets this budget based on multi-year historic trends, which have risen due to increased identification of work identified by local Operations. A portion of the Damage/Failure budget allows for larger project work that will

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arise within the current year as well as carryover projects from the prior fiscal year where the final restoration of the plant-in-service will not be complete until FY 2017 (e.g. failed substation transformer). As in FY 2016, the budget set for FY 2017 also includes capital spending to address issues that have been identified for immediate repair as part of the I&M program described in Section 4.

The Damage/Failure portion of the Company's capital plan has three major components:

- *Damage/Failure Blanket Projects* – These projects are for relatively small substation and/or line failures or those whose size is unknown at the time of the failure. The budget for FY 2017 is built on the assumption of flat failure rates along with inflation assumptions. The Company currently expects to spend approximately \$8.9 million for this category work in FY 2017.
- *Damage/Failure Reserve for Specific Projects* – This is a reserve to address larger failures that require capital expenditures in excess of \$100,000. The reserve is built on recent historic trends of such items and allows the Company to complete unplanned work without having to halt work on projects that are planned to stay on target with the overall capital budget. The Company currently expects to spend approximately \$1.1 million for this category work in FY 2017.
- *Major Storms* – Each year, the Company carries a budgeted project for major storm activity that affects the Company's assets. While the actual spend in this category may

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vary greatly, this reserve, based on average trends over the past several years, allows the Company to avoid removing other planned work from the capital program when replacement of assets due to weather is required. The Company currently expects to spend approximately \$1.5 million for this category work in FY 2017.

**Asset Condition**

The Company is proposing a \$33.3 million budget for FY 2017 to replace assets that must be replaced to maintain reliability performance. This level is approximately 38% higher than the \$24.1 million budget for FY 2016, and \$13.9 million, or 72% higher than the actual Asset Condition costs incurred by the Company in FY 2015. This increase is driven primarily by the South Street asset replacement project, which has a FY 2017 budget of \$15.4 million. In the FY 2016 ISR, the Company proposed a FY 2017 funding level of \$35.1 million budget for Asset Condition category, of which South Street was \$7.3 million. As a result of the increase to South Street, the Company re-phased the schedules of several Asset Condition projects to FY 2018 and beyond in order to achieve the \$33.3 million budget for the FY 2017 ISR.

Attachment 3 contains charts illustrating the current age profiles for distribution poles, distribution service transformers, metalclad substations, substation batteries, substation power transformers, and substation breakers and reclosers. Age is not a perfect indicator of asset condition, and, in general, the Company makes asset replacement decisions factoring in asset condition, rather than asset age. Nonetheless, reviewing asset age is a method to demonstrate how current spending levels are improving or maintaining overall asset condition. Attachment 3 also includes charts that detail how current spending levels are expected to improve asset age for

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metalclad substations and batteries. Unlike other categories of assets, age is used as a primary indicator of asset condition for metal clad substations and batteries. For metalclad substations, continuing with current spending levels for 10 years, the average age of this asset will move from 47 years to 25 years. For substation batteries, continuing with current spending levels for 10 years, the average age of this asset will move from 7 years to 5 years. The Company is currently developing the analysis for other asset categories.

**The key asset condition budget categories are as follows:**

- *South Street Substation* – This is another new significant multi-year project, as shown in Attachment 4. The South Street Substation is a major 115/11 kV supply substation serving downtown Providence and the surrounding area. The South Street Substation replacement is driven by asset condition concerns. Specific asset condition issues exist for the transformers, breakers, switches, feeder reactors, and the battery system. The building layout precludes the implementation of modern installation standards, which would allow the Company to replace original equipment. Additionally, spare parts for the protection components are obsolete and unavailable. Therefore, these parts would be irreplaceable in the event of a failure. Lastly, maintenance work often requires customized, site-specific repairs, which may be costly and time-consuming. The Company proposes to spend approximately \$15.4 million on the South Street Substation in FY 2017.

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- *Southeast Substation* – This project is required to address asset condition concerns at the Pawtucket No. 1 substation. The Pawtucket No. 1 substation consists of a four-story brick building constructed in 1907 with an indoor substation and an outdoor switchyard. The indoor substation includes breakers and relays with condition issues and structures with clearance issues. In addition, the building has structural issues. Electrically, Pawtucket No. 1 station is located and serves half of its load on the west side of the Seekonk River. The other half of the Pawtucket No. 1 load is located on the east side of the river. While the asset conditions indicate the need for a station rebuild of Pawtucket No. 1, the Southeast station site, located on the east side of the river, creates an opportunity to split the load, improve overall capacity, and avoid the capacity and operational constraints created by the river.<sup>7</sup> As shown in Attachment 4, this is a significant multi-year project. At this time, the Company anticipates capital spending in FY 2017 of approximately \$25,000 to progress scope development.
- *Memorial Blvd Cable Relocation* – This project replaces two 1965 vintage 25kV direct buries cables in the north shoulder of Memorial Boulevard in Newport by installing a 3,500 foot manhole and duct system and two new cables in the roadway. Heavy rainfall has caused erosion along the existing cable location, and the cable is exposed in two areas. Permanent restoration is not possible without disturbing the Easton Pond Dam and Moat system and fixing the adjacent drainage system. To avoid this disturbance, a new

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<sup>7</sup> The Southeast substation is currently a metalclad substation proposed for retirement (see Substation Metalclad Switchgear Replacement Strategy and Program). Upon completion of the Southeast metalclad retirement project, the Southeast site becomes an optimal location to address the Pawtucket No.1 substation issues.

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installation in the roadway is required. The Company proposes to spend approximately \$0.5 million on this project in FY 2017.

- *Flood Mitigation Projects* – As discussed in previous Electric ISR Plans, major flooding occurred on the Pawtuxet River, Pawcatuck River, Blackstone River, and Hunt River from March 30 through April 1, 2010, which resulted in substations located in those areas being de-energized because of excessive water levels. The impacted areas represented a significant health and safety risk to personnel, reliability impacts to customers, and significant damage to mechanical, electrical, control, and communications equipment in these substations and their control houses. On June 29, 2012, the Company filed its Rhode Island Flood Mitigation Plan<sup>8</sup> with the PUC. The FY 2014 Electric ISR Plan identified certain changes to the June 2012 Flood Mitigation Plan regarding the Sockanossett and Warwick Mall substations. The flood mitigation work for the Sockanossett substation will remain deferred. A recently completed area capacity study recommends transmission expansion that would eliminate the need for the Sockanossett substation and associated flood mitigation work. A Warwick Mall flood mitigation project has been progressed based on previous year's refined estimates to raise a portion of the station equipment.

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<sup>8</sup> Rhode Island Flood Mitigation Plan, Docket No. 4307.

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In FY 2017, the Company proposes to spend approximately \$0.2 million at Hope Substation for final engineering, procurement of equipment, permitting, and licensing. This is in support of construction activities that will occur in FY 2018.

The flood mitigation for Westerly substation will be deferred until FY 2018. The flood mitigation for the Hunt River substation will be addressed by the capacity project at Kent County, which is discussed in the System Capacity and Performance section. The flood mitigation work for the Riverside Substation has been completed. This work was performed under a blanket project because the Company estimated that this project would be under \$100,000.

- *Inspection & Maintenance Program* – This program has both capital and O&M components. The proposed capital spending in FY 2017 is \$2.5 million. Section 4 includes additional details regarding the capital and O&M components of the I&M program.
- *Strategy to Replace Distribution Substation Batteries* – The Company has more than 80 battery systems in its distribution substations, and these systems play a significant role in the safe and reliable operation of substations. The batteries and chargers in these systems provide DC power for protection, control, and communications within the substation, as well as communication between the substation and the Company’s operational control center. One goal of the Company’s strategy is to replace batteries that are 20 years or

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older. Another goal is to ensure that battery systems meet the current operating requirements and perform their designed functions. The Company proposes to spend \$0.4 million in FY 2017 to implement this strategy.

- *Dyer Street Replace Indoor Substation* – The purpose of this project is to replace the existing indoor substation at Dyer Street in Providence. In FY 2017, the Company proposes to spend approximately \$25,000 to progress scope development. As shown in Attachment 4, this is a multi-year project with capital spending in future fiscal years.
- *The Substation Metalclad Switchgear Replacement Strategy and Program* – This program is another important strategy to improve the reliability of substations. This strategy addresses metalclad switchgears that have known operating issues or are of the same type and manufacturer as equipment that has failed at another location. Solutions typically include replacement of the equipment. In some cases, system configurations allow load to be transferred from these stations in a cost-effective manner, allowing the metalclad equipment to be retired and removed. Presently, there are 44 metalclad switchgear units in Rhode Island operating between 4kV and 23kV. Of the 44 units, 31 units were installed prior to 1971. Several design factors with older vintage metalclad switchgear stations contribute to bus and/or component failures. These factors include:

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- *Moisture Sealing Systems* – Moisture and water contribute to most of the metalclad switchgear and buss failures. Gaskets and caulking of enclosures deteriorate over time, allowing rain and melting snow to enter.
- *Ventilation* – Metalclad interiors can reach high temperatures in the summer even if ventilation systems are working correctly. High temperatures degrade the lubrication in breaker mechanisms and other moving parts and can cause failure of electronic controls and relays.
- *Insulation* – Voids in insulation, which eventually lead to failure of the insulation when stressed at high voltages, are apparent in earlier vintage switchgear.

The FY 2017 budget includes engineering and construction work on Hyde Avenue, Daggett Avenue, Front Street, and Southeast projects, all located in Pawtucket. This work will begin in FY 2016. The four construction projects for FY 2017 are substation retirements that will utilize system configurations to covert load to higher voltages in a cost effective manner and remove the station. Although these costs have increased on these projects, retiring these assets is still more cost effective than replacing them.

Engineering is complete on the Lee Street and Cottage Street projects; however construction on these stations will occur in FY 2018 and FY 2019 to achieve the overall \$33.3 million asset condition budget in FY 2017. The Company expects to spend approximately \$2.3 million on this program in FY 2017.

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- *Network Arc Flash Program* – This program addresses the requirements of the National Electrical Safety Code’s (NESC) Part 4: Work Rules for the Operation of Electric Supply and Communication Lines and Equipment. A 2012 revision to this part of the NESC requires an arc flash hazard analysis for work assignments on facilities operating under 1000 volts. The Company completed its analysis and determined issues concerning certain maintenance activities on its 480V spot network systems. This strategy will mitigate the calculated incident energy levels by installing engineering controls such as primary switches. The Company expects to address all of its 480V spot networks by FY 2021. The program was delayed one year in FY 2016 to review the scope, which resulted in the elimination of secondary switch requirements, and operability of the new switches, which resulted in the use of a different primary switch. The Company expects to spend approximately \$0.6 million on this program in FY 2017.
- *The Relay Replacement Strategy* – This strategy will replace relays, relay packages, communication packages, and control houses that have operational issues or are obsolete and no longer supported by the manufacturer. A certain percentage of the electro-mechanical and solid state relay population is currently demonstrating a trend of decreasing reliability. The attempt to keep these relays in working order is thwarted by a lack of spare parts and knowledge base due to the fact that they are obsolete. The primary intent of the strategy is to replace those relays that have a higher probability of failure. The protection afforded by relays is critical to safety and the stability of the electric system. The relays are designed to protect high-value system assets from the

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effects of system faults and to quickly isolate system disturbances so that no additional damage can occur, while ensuring continued safe and reliable operation of the system.

The strategy represents a multi-year plan to replace transformer and under frequency relays that have been identified using the criteria mentioned above. Initially, the Company planned to complete this strategy in FY 2016. However, construction activities will continue into FY 2017 and FY 2018 due to the alignment of projects based on priority within the portfolio. At this time, the Company anticipates completing this strategy in FY 2018. The Company proposes to spend \$0.7 million to implement this strategy in FY 2017.

- *The Substation Circuit Breaker and Recloser Strategy and Program* – This program targets obsolete and unreliable breaker facilities. The Company has approximately 817 distribution substation circuit breakers and reclosers in substations that it maintains, refurbishes, and replaces as necessary. Units with obsolete technology, such as air magnetic interruption, have been specifically identified for replacement. Additionally, where cost-effective and where conditions warrant, the Company bundles work and replaces disconnects, control cable, and other equipment associated with these circuit breakers. The Company proposes to spend approximately \$1.2 million to implement this strategy in FY 2017.
- *Substation Transformer Replacement Strategy* – This strategy supports the substation transformer asset replacement program, which allows National Grid to rank its substation

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transformers in terms of health and risk and to identify those transformers that are most critical to the system so that the transformers are properly prioritized for asset replacement. The primary purpose of this strategy is to purchase spare transformers and proactively replace transformers that have a high likelihood of failure due to asset condition issues. The transformers at Lafayette Substation #30, located in North Kingstown, and West Cranston #21 are in the FY 2017 plan. The Company proposes to spend \$1.0 million on this strategy in FY 2017.

- *Underground Cable Strategy* – The goal of this strategy is to replace primary underground cable that is in poor condition or has a poor operating history. The Company’s present underground cable replacement program is a combination of reactive fix on fail replacement in the Damage/Failure spending rationale and proactive replacement in the Asset Condition spending rationale based on type of construction, asset condition, and failure history for a specific or similar asset. Reactive fix on failure replacement, which the Company considers mandatory spending, often evolves into proactive replacement of an entire circuit or a localized portion of a circuit, which is considered discretionary spending. Discretionary spending for proactive replacement can be further categorized by that work justified by the need to eliminate repeated in-service failures, work justified by anticipated end-of-life based on historic performance or industry experience, and work made necessary by other operational issues. Candidate projects are reviewed and re-prioritized throughout the year as required by changing system needs and events. Examples of distribution cables currently being planned for

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replacement include the 1109A, 1111, 79F1, 54K21, and portions of the network secondary cable system. The Company proposes to spend approximately \$2.5 million to continue to implement this strategy in FY 2017.

- *URD Cable Strategy* – This strategy applies to Underground Residential Development (URD) and Underground Commercial Development (UCD) cables sized #2 and 1/0 and does not apply to mainline or supply cables. It sets forth the approach for replacing or rehabilitating (through cable injection) these cables. This strategy supports the current method for handling cable failures by fixing immediately upon failure and offers options for managing cables that have sustained multiple failures. Although interruptions on #2 and 1/0 cables do not significantly influence Company level service quality metrics, they can have significant localized impacts on effected neighborhoods. For URDs with at least three cable failures within the last three years, two options are considered for addressing repeated failures: cable rehabilitation through insulation injection or cable replacement. Insulation injection is identified as the preferred solution for direct buried Cross Linked Polyethylene (XLPE) cables in a loop fed arrangement. The overall condition of the primary and neutral cables and installation specifics will determine if insulation injection is a viable option. The Company proposes to spend approximately \$2.5 million to continue implementing this strategy in FY 2017.
- *Blanket Projects* – In addition to specific projects, the Company also has asset replacement blanket projects that were established to ensure that a mechanism is in place

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to initiate, monitor, and report on work under \$100,000 in value. The amount of funding in the blanket project is reviewed and approved each year based on historical trends in the volume of work required, input from local Operations, and a forecasted impact of inflation on material and labor rates. The current year spending in the project is monitored on a monthly basis. The blankets provide local field engineering and operations with the control accounts to facilitate timely resolution of asset condition issues (i.e. deteriorated equipment). The budgets for the substation and line blanket projects total \$2.8 million in FY 2017.

**System Capacity and Performance**

The Company is proposing a \$19.0 million budget for FY 2017 for System Capacity and Performance projects. This level is approximately 14% lower than the \$22.1 million budget for FY 2016, and \$2.8 million, or 13% lower than the actual Asset Condition costs the Company incurred in FY 2015. This budget is close to the proposed FY 2017 budget that was included in the Company's FY 2016 ISR Plan. The System Capacity and Performance category is comprised of Load Relief and Reliability projects. The Load Relief projects account for \$13.7 million or 72% of the proposed System Capacity and Performance spending in FY 2017. The remaining 28% is made up of Reliability projects, which have a proposed FY 2017 spending budget of \$5.3 million.

These Load Relief projects were identified as part of the Company's annual capacity planning process, which is conducted each year to identify thermal capacity constraints, maintain

adequate delivery voltage, and assess the capability of the network to respond to contingencies that might occur.

**The capacity planning process includes the following tasks:**

- Review of historic loading on each sub-transmission line, substation transformer, and distribution feeder;
- Weather adjustment of recent actual peak loads;
- Econometric forecast of future peak demand growth;
- Analysis of forecasted peak loads vis-à-vis equipment ratings; and
- Consideration of system flexibility in response to various contingency scenarios;
- Development of system enhancement project proposals.

The Company has developed a multi-step top down/bottom up process to forecast the loading on these assets to identify the need for capacity expansion projects. First, the Company uses an econometric model to forecast summer and winter peak loads. The explanatory variables in this model include historical and forecasted economic conditions at the county level<sup>9</sup>, historical peak load data, and a forecast of weather conditions based on historical data from several weather stations.

The Company uses this model to simulate the historical and forecasted peak demand for areas of the state under a normal and extreme weather scenario. The normal weather scenario assumes the same normal peak-producing weather for each year of the forecast. The extreme

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<sup>9</sup> This data and forecasts are provided by Moody's Economy.com.

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weather scenario assumes an upper bound peak demand under a given set of economic conditions. Based on the historical experience, there is a 5% probability that actual peak-producing weather will be equal to or more extreme than the extreme weather scenario.

The forecast of peak load incorporates the energy efficiency (EE) savings achieved through 2013 since these savings would be reflected in the historical data used by the model. The Company subtracts forecasted incremental EE savings beyond the amounts achieved through 2013 from the load forecast.

The growth rates, which include the impact of distributed generation resources, are applied to each of the substations and feeders within the area. Distribution planners then adjust forecasts for specific substations and feeders to account for known spot load additions or subtractions, as well as for any planned load transfers due to system reconfigurations. The planners use the forecasted peak loads for each feeder/substation under the extreme weather scenario to perform planning studies and to determine if the thermal capacity of its facilities is adequate.

Individual project proposals are identified to address planning criteria violations. At a conceptual level, these project proposals are prioritized and submitted for inclusion in future capital work plans. Projects in the load relief program are typically new or upgraded substations and distribution feeder mainline circuits. Other projects in this program are designed to improve the switching flexibility of the network, improve voltage profile, or to release capacity via improved reactive power support.

The Company has developed guidelines for the consideration of non-wires alternatives in the distribution planning process. The goal of these guidelines is to develop a combination of

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wires and non-wires alternatives that solve capacity deficiencies in a cost-effective manner, factoring in the potential benefits and risks. As part of this process, the Company would conduct analyses at a level of detail commensurate with the scale of the problems and the cost of potential solutions. In Docket No. 4296 (2012), the Company proposed a pilot non-wires alternative project to the PUC. The proposed pilot was designed to test the capabilities of targeted energy efficiency applications to defer distribution investment.<sup>10</sup>

**Some of the most significant Load Relief Projects for FY 2017 include:**

- *Aquidneck Island Projects* – The southern portion of Aquidneck Island is supplied by a highly utilized supply and distribution system. This 23kV supply system and 4.16kV distribution system has limited capacity to supply load growth and new spot loads, and it is becoming increasingly challenging to supply large spot loads in southern Middletown and in the City of Newport. The Aquidneck Island Projects proposed budget for FY 2017 is \$2.9 million. Below are details on the specific Aquidneck Island projects with proposed spending in FY 2017.
- *Newport Substation* – This project will involve the construction of a new 69/13.8 kV substation and all related distribution line work to develop five new 13.8 kV feeders to provide load relief to the City of Newport. The completion of this project will provide thermal relief to overloaded feeders and supply lines in the City of Newport and improve the overall reliability to Aquidneck Island. The installation of new 13.8

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<sup>10</sup> On October 15, 2015, a detailed System Reliability Procurement Plan update will be provided.

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- kV feeders and conversion of 4 kV load to the new station improves the reliability of the 23 kV supply and 13.8 kV distribution systems during contingencies. This Plan supports the retirement of Bailey Brook and Vernon substations to address reliability, asset condition and environmental concerns with the most economical solution. The Company proposes to spend \$2.1 million on this project in FY 2017.
- *Jepson Substation* – This project will involve building a new substation in Middletown, RI (Jepson Substation). The substation will consist of two power transformers supplying six 13.8 kV feeders and two power transformers supplying three 23 kV supply lines. The Company proposes to complete final engineering and initiate down payments for long lead items in FY 2017. The Company proposes to spend \$0.7 million on this project in FY 2017.
  - *Proposed Chase Hill Substation (formerly Hopkinton Substation)* – This project will involve construction of a new 115/12.47 kV substation in the Town of Hopkinton to provide thermal relief to area distribution feeders, transformers, and supply lines and support projected growth in the area. A number of distribution circuits, transformers, and supply lines are projected above their normal and emergency ratings. This project will also support retirement of the Ashaway substation. Land has been acquired to house this substation and detailed engineering has begun. As described in the Asset Condition section, the Chase Hill Substation project alternative analysis has been re-evaluated and

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the scope has been reduced. The proposed budget for the Chase Hill Substation for FY 2017 is \$3.7 million.

- *Substation EMS/RTU (SCADA) Additions Program* – The Company is proposing to expand the EMS/RTU program to improve reliability performance, increase operational effectiveness, and provide data for asset expansion or operational studies. Subject to resource planning and other project constraints, targeted substations include: Natick #29, Harrison #32, Warwick #52, Apponaug #3, Coventry #54, Knightsville #66, Hopkins Hill #63, Rochambeau Ave. #37, Davisville #84, and Clarkson Street #32. The Company proposes to spend approximate \$1.3 million for this program in FY 2017.
- *Kent County – Install Second Transformer and One-New Feeder* – This project is required to mitigate load at risk for loss of the Kent County substation transformer and to address flooding and environmental risks that currently exist at Hunt River substation. Kent County substation has a single transformer supplying four distribution feeders. It supplies approximately 9,400 customers with a peak load of 42 MW. Upon contingency, approximately 27 MW of load (or approximately 6,000 customers) would be un-served until a spare or mobile transformer is installed, resulting in an exposure of 696 MWh. To address flood issues at the Hunt River substation, this project installs a new feeder at Kent County substation. Hunt River substation is located in the flood plain adjacent to the Hunt River and is located within a wellhead protection area that supplies drinking water to the Towns of East Greenwich and North Kingstown and the City of Warwick.

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The additional feeder at Kent County provides capacity to retire the Hunt River substation, addressing the flood issues in a cost effective manner when compared to station reconstruction. The Company proposes to spend \$1.9 million on this project in FY 2017.

- *Kilvert Street* – This project involves the installation of a second transformer and two new feeders. This project is required to mitigate load at risk in the cities of Cranston and Warwick for loss of the Kilvert Street substation transformer and to provide thermal relief to area distribution feeders, transformers, and supply lines. Kilvert Street substation has a single 115/13.2 kV, 33/44/55 MVA transformer supplying four distribution feeders. Loss of the Kilvert Street transformer would result in an initial outage of 29 MW of load. Approximately 14 MW of load can be transferred to other area substations through feeder ties leaving 15 MW of load un-served until a spare or mobile transformer is installed. This results in a load at-risk exposure of 400 MWh. The majority of substation work on this project has been completed. A small distribution line project to convert a single section of line is all that remains. However, due to budgetary restraints, and the non-criticalness of this project at this time, this project has been deferred out of FY 2017. Currently, the Company proposes to spend \$0.1 million on this project in FY 2017.
- *Proposed New London Ave Substation (formerly West Warwick Substation)* – This project involves the construction of a new 115/12.47 kV substation in the City of

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Warwick to provide thermal relief to area distribution feeders, transformers, and supply lines and support projected growth in the area. A number of distribution circuits, transformers, and supply lines are projected above their normal and emergency ratings in the City of Warwick and Towns of West Warwick, Scituate, and West Greenwich. Land has been acquired to house this substation and engineering will be conducted for the new site. The Company proposes to spend \$4.1 million on this project in FY 2017.

- *Distribution Line Transformer Strategy* – This annual program mitigates unplanned outage/failure risks due to overloads and asset condition of distribution line transformers. There are approximately 68,000 overhead distribution transformers on the Company’s distribution system. Transformer loading is reviewed annually using reports generated by the Company’s Geographical Information System (GIS). Transformers with calculated demands exceeding load limits specified in the applicable construction standard are investigated, and overloaded installations are addressed by replacement with larger units or load is relieved via installation of a second transformer. The physical condition of distribution line transformers is evaluated on a five-year cycle as part of the Inspection and Maintenance Strategy. Poor-condition units are replaced based on inspection results. The strategy is in addition to replacements that are performed during customer-service upgrades, public requirements projects, and system-improvement projects. The main benefit of this strategy is the maximization of asset utilization and sustained reliability performance. This strategy is funded at \$0.5 million in FY 2017.

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- *Flood Contingency Plan* – The concerns raised by the floods experienced in 2010 prompted a study to identify substations at risk of flooding across all of National Grid’s service territory. This study used Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) to determine whether a substation was within a flood zone, and additional on-site surveys were conducted at locations where potential flooding could occur. As a baseline, the study used the 100-year flood plain (the elevation and regional cover at which there is a 1% probability that flood waters will reach). This was compared to the base elevation of equipment or critical buildings within a substation to determine how deeply equipment or buildings would be submerged during a 100-year flood. Notably, the 100-year flood plain and the FIRM information, is frequently updated by FEMA. Updates typically result in a predicted flood water elevation rise.

Flood barriers will be installed around 12 substation yards so that main points of entry and egress are still available unless significant flooding is anticipated. The flood barriers at each substation will be installed considering their possible 100 year flood levels. The scope of work also includes other materials that will be purchased and put in place as supplemental flood risk reducing elements. These items include pumps, plugs, and generators to displace water inside the substation from general rainfall and leaks in the flood barriers. The FY 2017 budget for this program is approximately \$0.4 million, which will be used to progress engineering and permitting activities.

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- *Recloser Communication Upgrade* – The purpose of this project is to update the communications on 220 overhead line reclosers currently installed on the Rhode Island distribution system. The existing 2G cellular radio technology will no longer be supported by the communication company after 2016, which will eliminate remote operation, monitoring, and data collection capability. The Company proposes to replace all 2G and 3G units with new radios that will communicate via a 4G cellular network. In FY 2017, the Company proposes to spend approximately \$0.6 million to replace the 220 units.
- *Quonset Substation Expansion* – Area load growth in the vicinity of the Quonset substation is expected to create normal loading issues and exacerbate contingency loading issues. The Quonset Point Area Study, completed in April 2014, recommends expansion of the existing Quonset Substation to provide the necessary capacity to resolve the projected overload and the load at risk. The comprehensive study identified a number of asset condition issues at the Quonset substation, which the recommended plan will also address. The Company proposes to spend approximately \$1.1 million on this project in FY 2017.
- *Volt/Var Management Project* – The Company has historically managed the voltage profile of its distribution feeders utilizing voltage regulators and capacitor banks with independent local controls. Therefore, the Company is generally able to keep the range of voltages provided to customers along the circuit within the required +/- 5% range. The

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intent of this project is to flatten and lower the feeder voltage profile through the use of additional voltage monitors along the feeder and centralized control of the regulating devices. The Company believes that this will benefit customers by reduced kWh usage. Projects completed by other utilities have shown energy savings of approximately 3%. Upon completion of the project, the Company will evaluate the enhanced benefits of centralized control schemes on its system.

To develop the scope of work for this project, a comprehensive study was conducted in two phases focusing on traditional Volt/Var management and an advanced Volt/Var management, which includes a two-way communication network and centralized control schemes. Through a request for proposal (RFP) process, the Company requested proposals for Advanced Volt/Var management schemes, and Utilidata, a Rhode Island based company, was selected as the preferred vendor to provide the necessary integrated control system. The project is currently in construction, and the Company proposes a \$0.9 million budget to complete this program in FY 2017. This budget includes distribution substation, line communications, and information systems necessary to complete the project based on the Company's best estimates at this time. The Company is currently in the process of obtaining bids for the required telecommunications and information systems work required for this project. In addition, the Volt/Var project will have ongoing O&M costs for maintaining network and telecommunications components, servers, hardware and software licensing. At this time, the Company does not have a

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final cost estimate for this ongoing maintenance cost, but expects it to be approximately \$0.3 million annually.

- *Blanket projects* – In addition to specific projects, the Company also has three blanket projects that were established to ensure that a mechanism is in place to initiate, monitor, and report on work under \$100,000 in value. The amount of funding in the blanket project is reviewed and approved each year based on the results of the previous annual capacity planning and reliability reviews, historical trends in the volume of work required, and a forecasted impact of inflation on material and labor rates. The current year spending in the project is monitored on a monthly basis. The substation and line load relief blankets provide O&M services and local field engineering with the control accounts to facilitate timely resolution of system and equipment loading and reliability issues. These blanket projects are used to respond to issues such as overloaded sections of wire/cable or step-down transformers, the installation of feeder voltage regulators and capacitors, and minor work necessary to facilitate the reallocation of load on existing circuits. The reliability blanket also provides local field engineering with the control accounts to facilitate timely resolution of historical and new reliability issues that emerge. The budgets for these three blankets total approximately \$1.3 million in FY 2017.

**Recovery of Electric ISR Plan Capital Investment – Capital Placed-in-Service**

In previous Electric ISR Plan filings, the Company calculated the revenue requirement based on the Company's projected capital amounts to be placed into service plus associated Cost of Removal (COR). To develop its Capital Placed-In-Service figure for this filing, the Company has used estimated timing of in-service dates for capital spending being placed into service during FY 2017. Each year, as part of the Company's annual reconciliation, the revenue requirement related to discretionary in-service amounts is trued-up based on the lesser of allowed discretionary capital spending or actual capital investment placed into service on a cumulative basis since the inception of the Electric ISR Plan in April 2011. The discretionary categories include the Asset Condition, Non-Infrastructure, and System Capacity and Performance categories. Because of the multi-year nature of certain projects, current and prior year(s) capital spending was included in the plant-in-service amount when a project is placed into service during the fiscal year. Similarly, the capital portion of a project included in a fiscal year's spending plan that will be placed into service in future fiscal periods was included in subsequent revenue requirement calculations during that project's in-service year.

Charts 11 below provides details regarding the total FY 2017 amounts for Capital Spending, Plant-in-Service, and COR that have been used in the development of the FY 2017 Electric ISR Plan revenue requirement.

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**Chart 11**  
**Proposed FY 2017 Capital Spending, Plant-in-Service, and COR**  
**(\$000)**

Spending Rationale	Proposed Capital Spending FY 2017	Proposed New Capital Placed-in-Service FY 2017	Estimated COR	New Capital Placed-in-Service + COR
Customer Request/Public Requirement	\$19,451	\$19,971	\$1,924	\$21,895
Damage Failure	\$11,467	\$11,425	\$2,832	\$14,257
Subtotal Non-Discretionary	\$30,918	\$31,396	\$4,756	\$36,151
Asset Condition	\$33,280	\$26,481	\$3,990	\$30,471
Non-Infrastructure	\$275	\$271	\$0	\$271
System Capacity & Performance	\$18,968	\$20,330	\$1,055	\$21,385
Subtotal Discretionary	\$52,523	\$47,082	\$5,045	\$52,127
<b>Total Plant-in-Service</b>	<b>\$83,441</b>	<b>\$78,478</b>	<b>\$9,800</b>	<b>\$88,278</b>

\* Previously called Statutory/Regulatory

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**Attachment 1**  
**FY 2017 Capital Spending by Key Driver Category and Budget Classification**  
**(\$000)**

Spending Rationale	Budget Classification	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Budget	FY 2016 Forecast	FY 2017 Proposed Budget
Customer Requests/Public Requirements	3rd Party Attachments	(\$910)	\$464	\$223	\$141	\$305	\$154	\$362	\$155
	Distributed Generation	\$0	\$0	(\$675)	\$195	\$0	\$645	\$524	\$529
	Land and Land Rights	\$281	\$185	\$128	\$94	\$179	\$167	\$193	\$187
	Meters - Dist	\$2,215	\$1,497	\$1,455	\$835	\$1,824	\$1,775	\$2,767	\$2,170
	New Business - Commercial	\$4,287	\$3,391	\$3,722	\$4,957	\$3,924	\$4,213	\$5,155	\$5,577
	New Business - Residential	\$3,530	\$2,833	\$2,886	\$3,593	\$2,870	\$3,500	\$4,705	\$3,728
	Outdoor Lighting - Capital	\$411	\$495	\$488	\$758	\$533	\$711	\$300	\$541
	Public Requirements	\$1,539	\$1,135	(\$1,231)	\$4,234	\$1,418	\$1,602	\$1,554	\$3,814
Transformers & Related Equipment	\$3,278	\$3,075	\$3,415	\$2,331	\$3,634	\$2,880	\$1,502	\$2,750	
<b>Customer Requests/Public Requirements Total</b>		<b>\$14,631</b>	<b>\$13,075</b>	<b>\$10,410</b>	<b>\$17,138</b>	<b>\$14,687</b>	<b>\$15,647</b>	<b>\$17,062</b>	<b>\$19,451</b>
Damage/Failure	Damage/Failure	\$8,331	\$9,574	\$7,795	\$11,228	\$8,816	\$10,177	\$14,210	\$8,867
	Major Storms - Dist	\$4,863	\$3,419	\$9,720	\$3,146	\$1,000	\$1,000	\$3,342	\$2,600
<b>Damage/Failure Total</b>		<b>\$13,194</b>	<b>\$12,993</b>	<b>\$17,515</b>	<b>\$14,374</b>	<b>\$9,816</b>	<b>\$11,177</b>	<b>\$17,552</b>	<b>\$11,467</b>
Asset Condition	Asset Replacement	\$5,604	\$9,767	\$6,984	\$14,011	\$11,807	\$16,748	\$24,051	\$30,770
	Asset Replacement - I&M (NE)	\$227	\$553	\$1,086	\$6,681	\$7,040	\$6,705	\$5,473	\$2,510
	Safety	\$0	\$0	\$0	\$213	\$514	\$600	\$85	\$0
<b>Asset Condition Total</b>		<b>\$5,831</b>	<b>\$10,320</b>	<b>\$8,070</b>	<b>\$20,905</b>	<b>\$19,361</b>	<b>\$24,053</b>	<b>\$29,609</b>	<b>\$33,280</b>
Non-Infrastructure	Corporate/Admin/General	\$645	\$118	\$890	(\$1,245)	\$0	\$0	\$0	\$0
	General Equipment - Dist	\$61	\$149	\$191	\$395	\$102	\$100	\$99	\$100
	Telecommunications Capital - Dist	\$0	\$0	\$1,188	\$504	\$175	\$175	\$187	\$175
<b>Non-Infrastructure Total</b>		<b>\$706</b>	<b>\$267</b>	<b>\$2,269</b>	<b>(\$346)</b>	<b>\$277</b>	<b>\$275</b>	<b>\$286</b>	<b>\$275</b>
System Capacity & Performance	Load Relief	\$6,012	\$8,837	\$6,619	\$22,762	\$19,052	\$19,318	\$14,492	\$13,679
	Reliability	\$2,799	\$2,554	\$3,723	\$3,210	\$2,707	\$2,830	\$3,508	\$5,289
	Reliability - Feeder Hardening	\$1,984	\$2,564	\$907	\$0	\$0	\$0	\$0	\$0
<b>System Capacity &amp; Performance Total</b>		<b>\$10,795</b>	<b>\$13,955</b>	<b>\$11,249</b>	<b>\$25,972</b>	<b>\$21,759</b>	<b>\$22,148</b>	<b>\$18,000</b>	<b>\$18,968</b>
<b>Grand Total</b>		<b>\$45,157</b>	<b>\$50,610</b>	<b>\$49,514</b>	<b>\$78,043</b>	<b>\$65,900</b>	<b>\$73,300</b>	<b>\$82,509</b>	<b>\$83,441</b>

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**Attachment 2**  
**FY 2017 Project Detail for Capital Spending**  
**(\$000)**

Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget	
Customer Requests/Public Requi	New Business - Commercial	C046977	Reserve for New Business Commercial	1,500	
		C051203	LNG Plant Svc Terminal Rd Prv DLine	441	
		C051204	LNG Plant Svc Terminal Rd Prv DSub	256	
		COS0011	Ocean St-Dist-New Bus-Comm Blanket	3,380	
		<b>New Business - Commercial Total</b>			<b>5,577</b>
	Public Requirements		C012179	DOTR-Repl Great Island Bridge No499	102
			C020711	DOTR-Repl Capron Rd Bridge No. 792	170
			C035087	DOTR-Apponaug Circulator Imprv Warw	154
			C046970	Reserve for Public Requirements Uni	409
			C047039	DOTR-East Main Rd, Portsmouth	170
			C048599	DOTR-Putnam Pike/Money Hill Rd	68
			C050422	Admrl St 9J1 Line Relocation	170
			C050687	DOTR-Hi Haz Int/Ramps C2 New port Co	85
			C050921	DOTR-Hi Haz IntersectionsBristol Co	85
			C051783	DOTR-E.Providence Bridges 471&472	85
			C052069	DOTR-Providence-Allens Av Arterial	85
			C052268	DOTR-Central St Bridge No.449	9
			C054787	DOTR-Richmond: Kingston Rd Br # 403	77
			C054830	DOTR-Carolina Bridges 54,55&56	77
			C056850	RIAC TF Green Runway Expansion	865
			CD00567	DOTR-East Main Rd, Turnpike Av-Hedl	80
			CD00646	DOTR-Douglas Pike/Branch Pike Traff	80
			CD01066	DOTR-Union Village Railroad Bridge	34
				COS0013	Ocean St-Dist-Public Require Blankt
		<b>Public Requirements Total</b>			<b>3,814</b>
	New Business - Residential		C046978	Reserve for New Business Residentia	105
			COS0010	Ocean St-Dist-New Bus-Resid Blanket	3,623
	<b>New Business - Residential Total</b>			<b>3,728</b>	
Transformers & Related Equipment		CN04920	Narragansett Transformer Purchases	2,750	
	<b>Transformers &amp; Related Equipment Total</b>			<b>2,750</b>	
Meters - Dist		CN04904	Narragansett Meter Purchases	1,500	
		COS0004	Ocean St-Dist-Meter Blanket	670	
	<b>Meters - Dist Total</b>			<b>2,170</b>	
Outdoor Lighting - Capital		COS0012	Ocean St-Dist-St Light Blanket	541	
	<b>Outdoor Lighting - Capital Total</b>			<b>541</b>	
Block Island		C046386	BITS Wakefield Sub Upgrades (D-Sub)	519	
	<b>Block Island Total</b>			<b>519</b>	
Land and Land Rights - Dist		COS0009	Ocean St-Dist-Land/Rights Blanket	187	
	<b>Land and Land Rights - Dist Total</b>			<b>187</b>	
3rd Party Attachments		COS0022	Ocean St-Dist-3rd Party Atttch Blnkt	155	
	<b>3rd Party Attachments Total</b>			<b>155</b>	
Distributed Generation		C051909	PS&I Dist Gen RI	10	
	<b>Distributed Generation Total</b>			<b>10</b>	
<b>Customer Requests/Public Requirements Total</b>				<b>19,451</b>	

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Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget
Damage/Failure	Damage/Failure	COS0002	Ocean St-Dist-Subs Blanket	624
		COS0014	Ocean St-Dist-Damage&Failure Blankt	8,243
	<b>Damage/Failure Total</b>			<b>8,867</b>
	<b>Major Storms - Dist</b>	C022433	OSD Storm Cap Confirm Program Proj	1,500
	<b>Major Storms - Dist Total</b>			<b>1,500</b>
	<b>Reserves</b>	C046986	Reserve for Damage/Failure Unidenti	100
		C051608	Reserve for Damage/Failure Substati	1,000
	<b>Reserves Total</b>			<b>1,100</b>
<b>Damage/Failure Total</b>				<b>11,467</b>

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Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget
<b>Asset Condition</b>	<b>South St Station Rebuild</b>	C051212	South St repl indoor subst D-SUB	10,553
		C051213	South St repl indoor subst D-LINE	4,807
	<b>South St Station Rebuild Total</b>			<b>15,360</b>
	<b>Blanket Projects</b>	COS0017	Ocean St-Dist-Asset Replace Blanket	2,605
		COS0026	OS-Dist-Substation Asset Repl Blnk	200
	<b>Blanket Projects Total</b>			<b>2,805</b>
	<b>Asset Replacement - I&amp;M (NE)</b>	C014326	I&M - OS D-Line UG Work From Insp	110
		C026281	I&M - OS D-Line OH Work From Insp	2,400
	<b>Asset Replacement - I&amp;M (NE) Total</b>			<b>2,510</b>
	<b>UG Cable</b>	C055359	RI UG Cable Repl Program - Fdr 79F1	979
		C055360	RI UG Cable Repl Program - Fdr 2J8	390
		C055367	RI UG Cable Repl Program Fdr 54K21	741
		C055369	RI UG Cable Repl Program Fdr 54K23	380
		C055392	RI UG Cable Repl Program - Secondar	10
	<b>UG Cable Total</b>			<b>2,500</b>
	<b>URD</b>	C047375	IRURD Mystery Farms Estates	938
		C047377	IRURD Wethersfield Commons	437
		C047378	IRURD Willow brook	62
		C047379	IRURD Wood Estates Ph II	196
		C047389	IRURD Stone Ridge Acres	43
		C047398	IRURD Wionkheige	493
		C047829	IRURD High Haw k	22
		C049237	IRURD Phase 2 Wethersfield Comm.	213
		C049291	IRURD Wood Estates Phase 2	24
		C049356	IRURD Silver Maple Phase 2	17
		C049462	IRURD Stone Ridge Acres Phase 2	85
		C050070	IRURD Placeholder RI	(567)
		C050299	IRURD Eastw ard Look	43
		C052964	IRURD Rollingw ood	209
		C056947	IRURD Juniper Hills WWarwick	21
		C057921	IRURD-Robin Hills Estates	80
		C058042	IRURD-Brookridge Estates.	80
C058045	IRURD-Tockw otton Farm_TF Road.	16		
C058285	IRURD Case Farm Estates URD	60		
C058287	IRURD Ferncliffe Farms URD	30		
	<b>URD Total</b>			<b>2,500</b>

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Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget
	<b>Metalclad Replacement</b>	C049910	Southeast Sub MC Retirement (DLine)	880
		C050006	Hyde Ave MC Retirement (D-Line)	255
		C050017	Daggett Ave MC Retirement (D-Line)	850
		C050778	Front St Sub MC Retirement (D-Line)	300
	<b>Metalclad Replacement Total</b>			<b>2,285</b>
	<b>Substation Breakers &amp; Reclosers</b>	C032278	OS ARP Breakers & Reclosers	1,175
	<b>Substation Breakers &amp; Reclosers Total</b>			<b>1,175</b>
	<b>Substation Transformers</b>	C026058	OS ARP Spare Substation Transforme.	538
		C051824	Lafayette Sub Transformer Replaceme	99
		C055844	W Cranston Transformer #2 Replaceme	319
	<b>Substation Transformers Total</b>			<b>956</b>
	<b>Relay Replacements</b>	C035586	Relay Replacement Strategy Co 49DxT	669
		C049354	NEC Relay Replacement Co.49- SG157	77
	<b>Relay Replacements Total</b>			<b>746</b>
	<b>Network Arc Flash</b>	CD01257	Distribution Secondary Network Arc	598
	<b>Network Arc Flash Total</b>			<b>598</b>
	<b>Memorial Blvd_Cable Relocation</b>	C046398	Memorial Blvd Easton's Beach inst d	532
	<b>Memorial Blvd_Cable Relocation Total</b>			<b>532</b>
	<b>Other Asset Replacement</b>	C025815	OS ARP Insul, SensDev, Surge Arrest	250
		C051198	Abandoned Equipment Removal	10
		C062633	HMI RI Replacements	189
	<b>Other Asset Replacement Total</b>			<b>449</b>
	<b>Battery Replacement</b>	C032019	Batts/Chargers NE South OS RI	245
		C033843	BatteryRplStrategyCo49DxT	167
	<b>Battery Replacement Total</b>			<b>411</b>
	<b>Flood - Hope Substation</b>	C046697	Hope Substation Flood Restoration	221
	<b>Flood - Hope Substation Total</b>			<b>221</b>
	<b>RAPR</b>	C048969	RI RAPR ARP	182
	<b>RAPR Total</b>			<b>182</b>
	<b>Indoor Sub Replacement</b>	C051205	Dyer St replace indoor subst D-SUB	13
		C051211	Dyer St replace indoor subst D-LINE	12
	<b>Indoor Sub Replacement Total</b>			<b>25</b>
	<b>New Southeast Sub</b>	C053657	Southeast Substation (D-Sub)	13
		C053658	Southeast Substation (D-Line)	12
	<b>New Southeast Sub Total</b>			<b>25</b>
<b>Asset Condition Total</b>				<b>33,280</b>

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Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget
Non-Infrastructure	Telecommunications	C040644	Telecom Small Capital Work - RI	175
	<b>Telecommunications Total</b>			<b>175</b>
	General Equipment	COS0006	Ocean St-Dist-Genl Equip Blanket	100
	<b>General Equipment Total</b>			<b>100</b>
<b>Non-Infrastructure Total</b>				<b>275</b>

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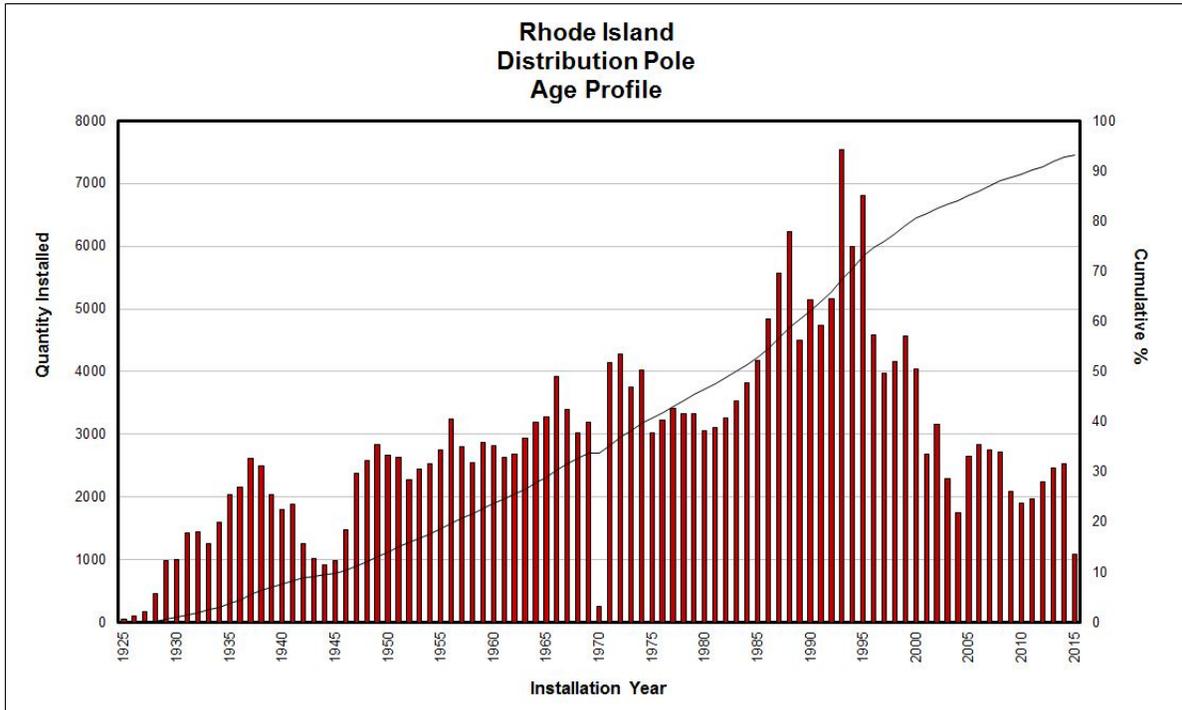
Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget
<b>System Capacity &amp; Performance</b>	<b>New London Ave Substation #150</b>	C028920	New London Ave (D-Sub)	2,435
		C028921	New London Ave (D-Line)	1,655
	<b>New London Ave Substation #150 Total</b>			<b>4,090</b>
	<b>Chase Hill (Hopkinton) &amp; Related</b>	C024175	Chase Hill Sub (D_Line)	1,700
		C024176	Chase Hill Sub (D-Sub)	1,990
	<b>Chase Hill (Hopkinton) &amp; Related Total</b>			<b>3,690</b>
	<b>Aquidneck Island (includes former Jepson</b>	C015158	New port Substation (D-Sub)	1,028
		C024159	New port 69kV Line 63 (D-Line)	230
		C028628	New port SubTrans & Dist Conversion	884
		C054054	Jepson Substation (D-Line)	372
		CD00656	Jepson Substation (D-Sub)	368
	<b>Aquidneck Island (includes former Jepson &amp; New port projects) Total</b>			<b>2,882</b>
	<b>Kent County</b>	CD01101	Kent County 2nd Transformer (D-Sub)	1,750
		CD01104	Kent County 2nd Transformer (D-Line)	190
	<b>Kent County Total</b>			<b>1,940</b>
	<b>EMS</b>	C049679	Harrison #32 - EMS Expansion	105
		C049680	Rochambeau Ave - EMS Expansion	14
		C049681	Clarkson - EMS Expansion	303
		C049682	Warwick 52 - EMS Expansion	261
		C049699	Knightsville 66 - EMS Expansion	12
		C049705	Apponaug- EMS Expansion	7
		C049800	Coventry #54 - EMS Expansion	190
		C050698	Davisville #84 - EMS Expansion	209
		C050699	Hopkins Hill #63 - EMS Expansion	18
		CD00528	EMS Expansion - Natick 29 Substatio	176
	<b>EMS Total</b>			<b>1,295</b>
	<b>Blanket Projects</b>	COS0015	Ocean St-Dist-Reliability Blanket	798
		COS0016	Ocean St-Dist-Load Relief Blanket	380
		COS0025	OS-Dist-Substation LR/Rel Blnkt	100
	<b>Blanket Projects Total</b>			<b>1,278</b>
	<b>Quonset Sub</b>	C053646	Quonset Sub Expansion (D-Sub)	784
		C053647	Quonset Sub Expansion (D-Line)	297
	<b>Quonset Sub Total</b>			<b>1,081</b>
	<b>Volt/Var</b>	C046352	Volt Var Dline RI Pilot Project	752
		C053111	Volt Var - IT/IS	100
	<b>Volt/Var Total</b>			<b>852</b>

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Spending Rationale	Budget Classification	Project #	Project Description	FY 2017 Proposed Budget
	Other Reliability	C065470	Recloser Communication Upgrade - RI	600
	<b>Other Reliability Total</b>			<b>600</b>
	OH Line Tranformer Replacement Program	C005505	IE - OS Dist Transformer Upgrades	475
	<b>OH Line Tranformer Replacement Program Total</b>			<b>475</b>
	Other Flood	C059882	Flood Contingency Plan NECO - D	350
	<b>Other Flood Total</b>			<b>350</b>
	Other Load Relief	C013967	PS&I Activity - Rhode Island	290
	<b>Other Load Relief Total</b>			<b>290</b>
	Kilvert St - DSub	C036522	Kilvert St 87 - Install TB#2	146
	<b>Kilvert St - DSub Total</b>			<b>146</b>
<b>System Capacity &amp; Performance Total</b>				<b>18,968</b>
<b>Grand Total</b>				<b>83,441</b>

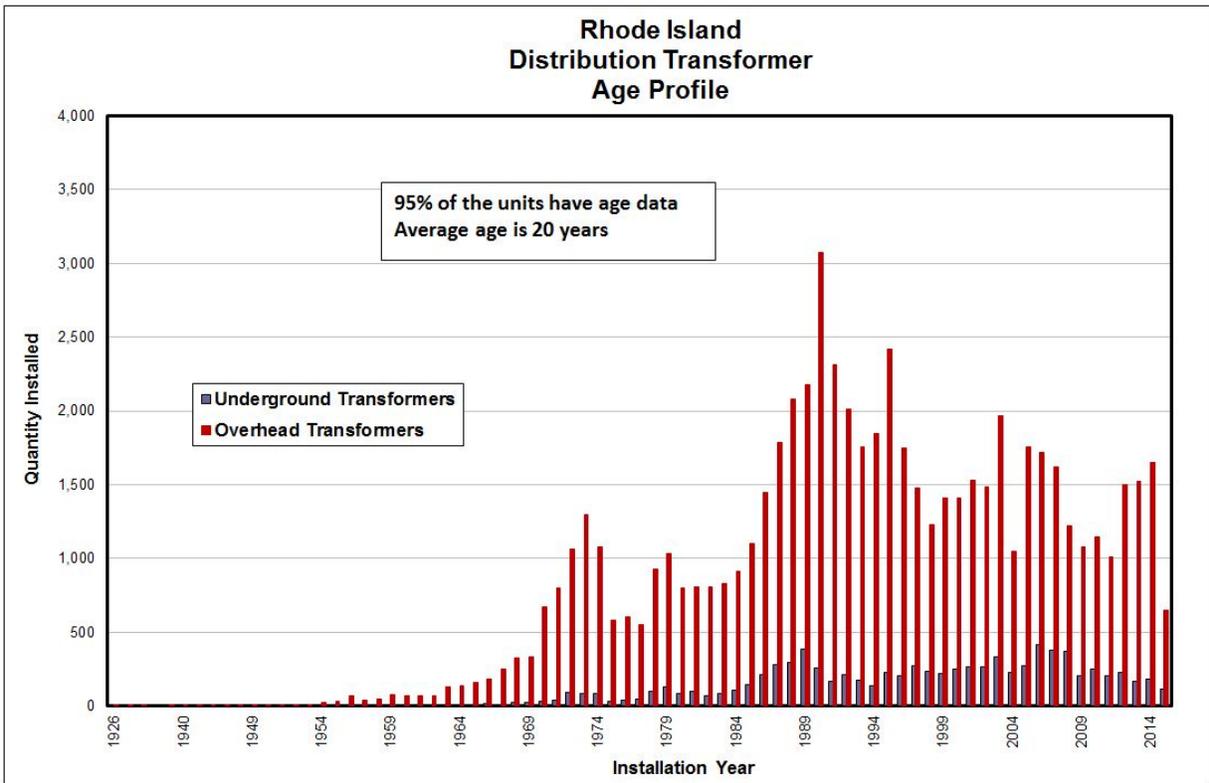
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**Attachment 3**  
**Rhode Island Distribution Poles Age Profile**



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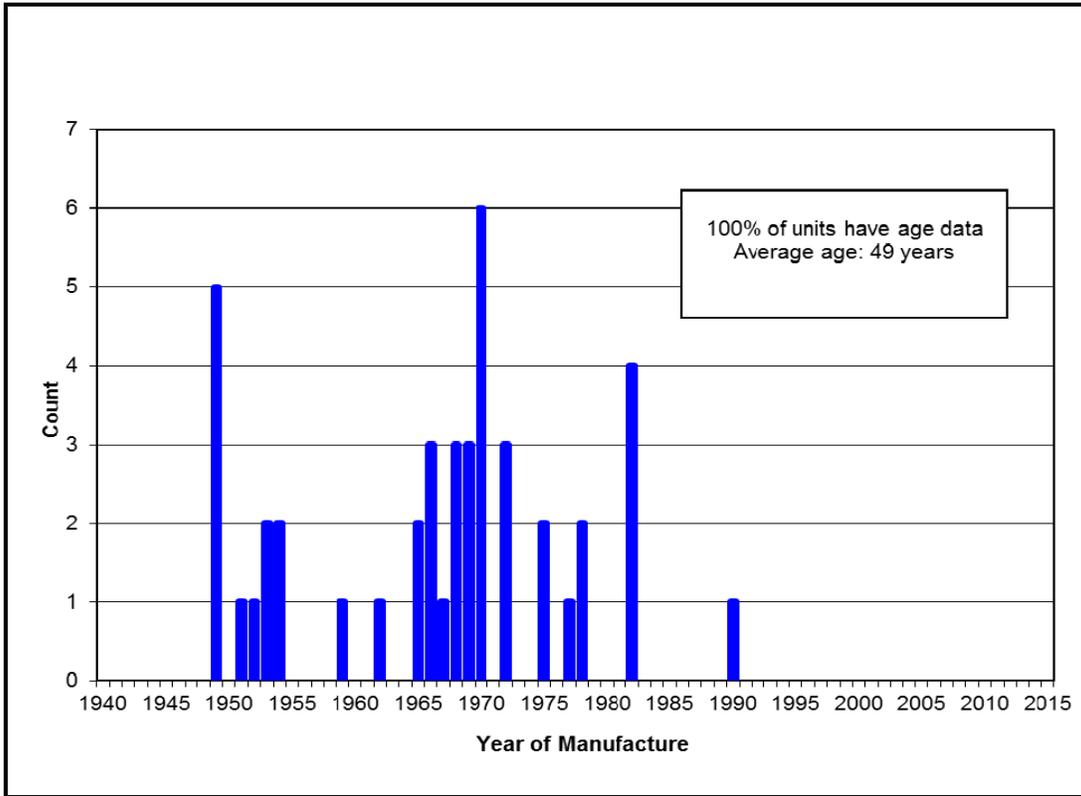
**Rhode Island Distribution Transformers Age Profile**



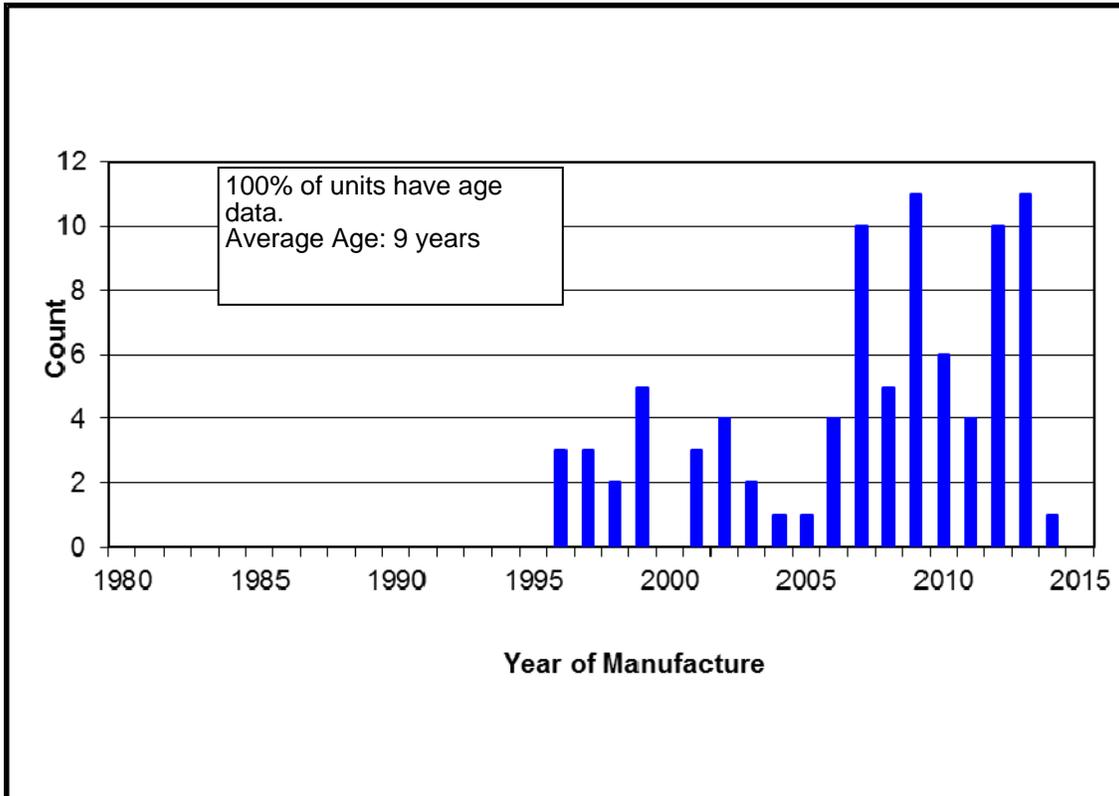
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**Rhode Island Metalclad Switchgear Age Profile**



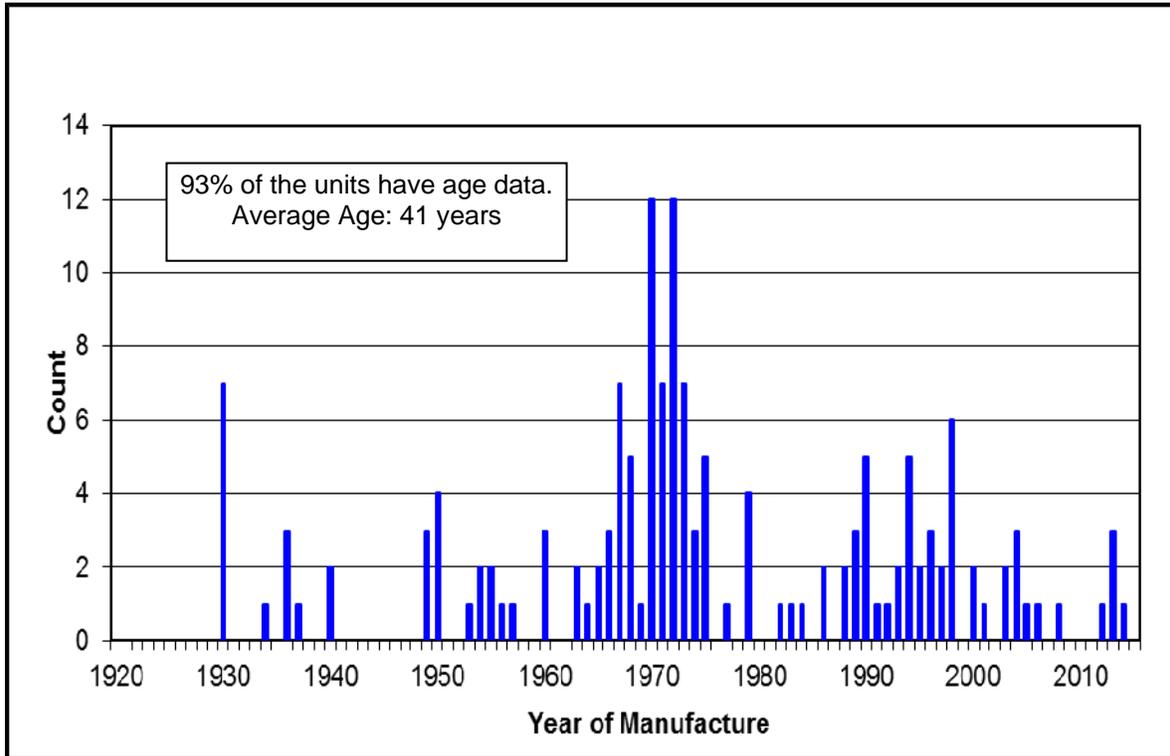
**Rhode Island Substation Battery Age Profile**



The Narragansett Electric Company  
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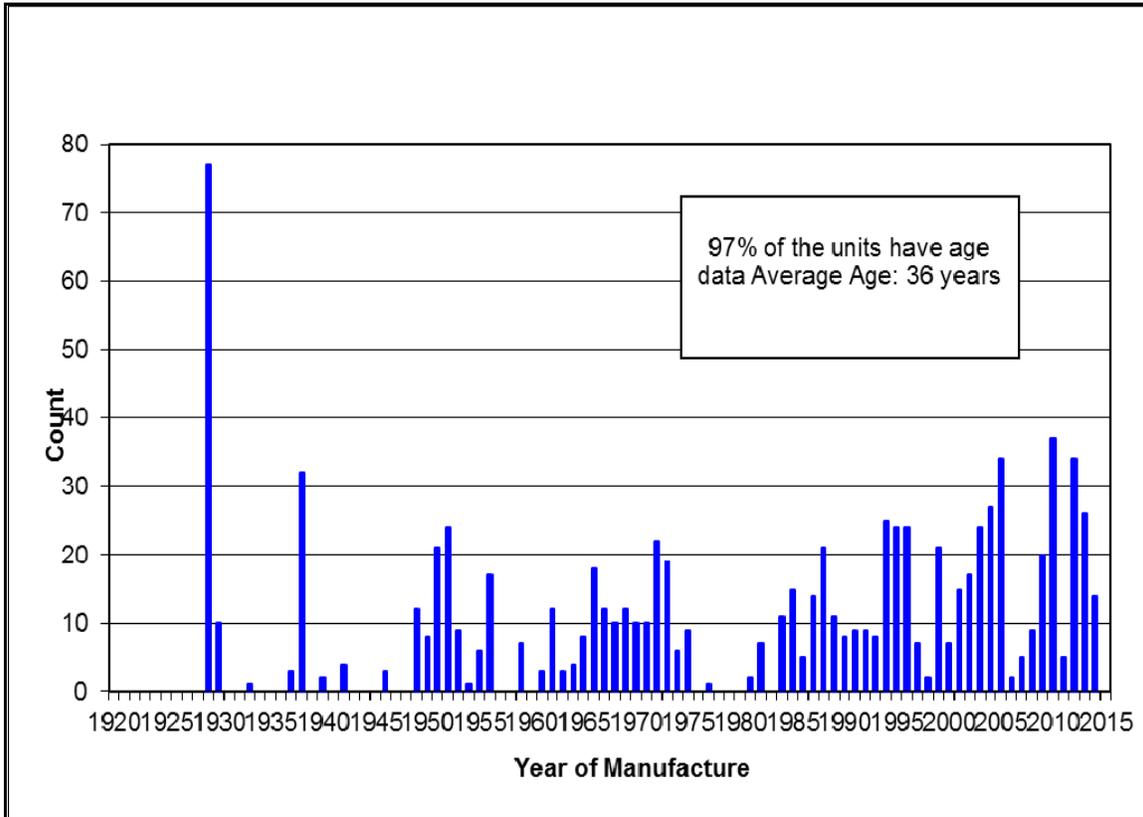
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**Rhode Island Substation Power Transformer Age Profile**



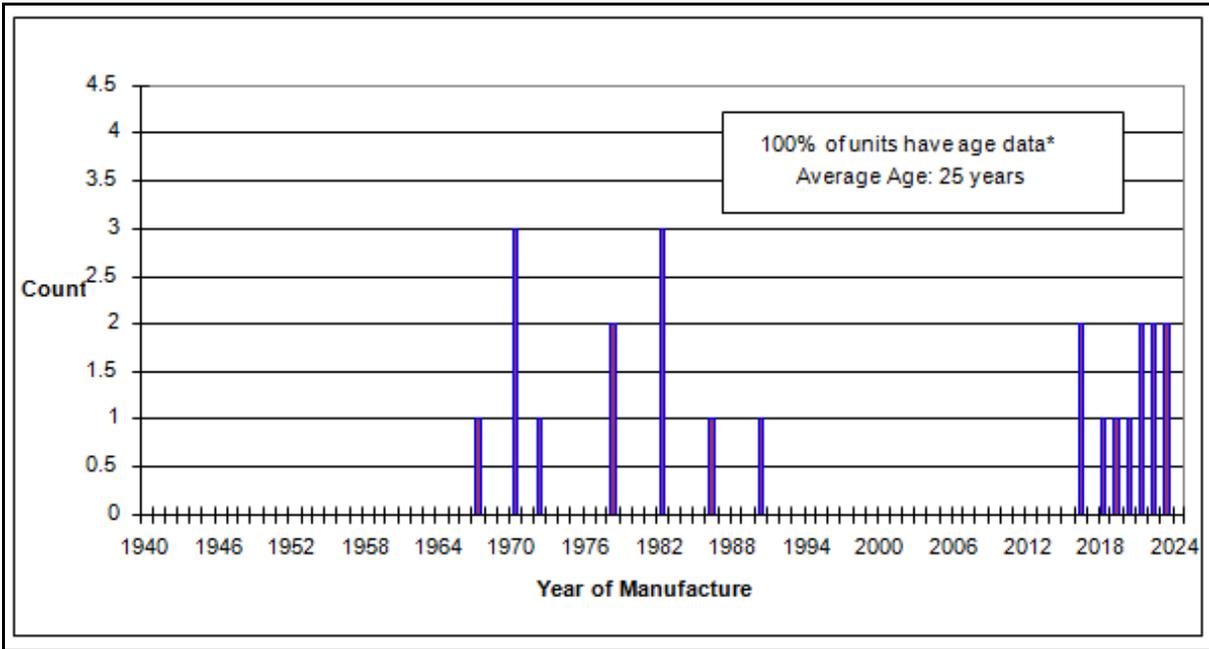
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**Rhode Island Circuit Breaker and Recloser Age Profile**



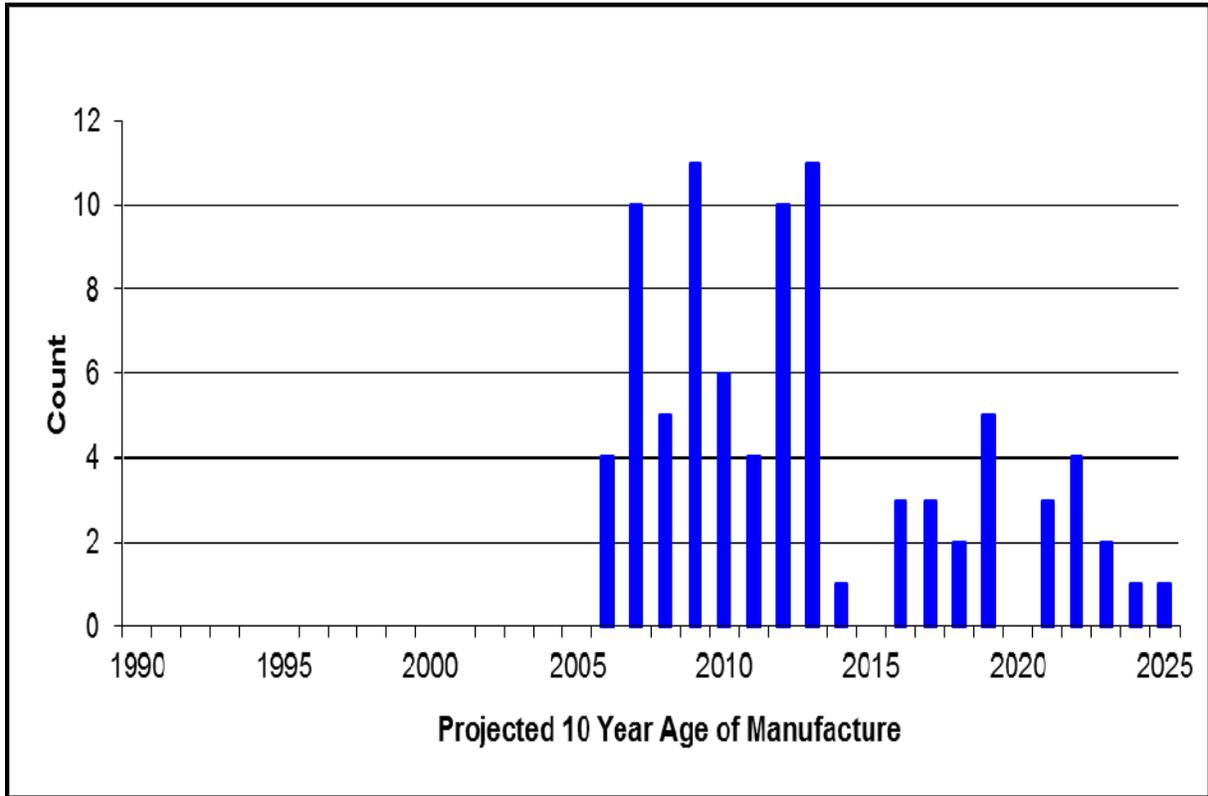
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**Rhode Island Metalclad Switchgear Projected 10 Year Age Profile**



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**Rhode Island Substation Battery Projected 10 Year Age Profile**



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**Attachment 4**  
**Additional Detailed on Major Multi-Year Projects included in the FY 2017 Plan**

**RHODE ISLAND**  
**FY2017-2021 Distribution Electric Capital Plan**

		Values					
ISR Spending Rationale	budget_classification	FY16 Budget	FY17 Budget	FY18 Budget	FY19 Budget	FY20 Budget	FY21 Budget
<b>Customer Requests/Public Requirements</b>	3rd Party Attachments	154	155	158	162	166	170
	Distributed Generation	645	529	10	10	10	10
	Land and Land Rights	167	187	193	199	205	212
	Meters - Dist	1,775	2,170	2,242	2,314	2,387	2,461
	New Business - Commercial	4,213	5,577	8,097	5,297	5,320	5,491
	New Business - Residential	3,500	3,728	3,851	3,978	4,109	4,119
	Outdoor Lighting - Capital	711	541	553	565	578	591
	Public Requirements	1,602	3,814	2,042	2,076	2,111	2,147
	Regulatory Requirement	-	-	-	-	-	-
	Transformers & Related Equipment	2,880	2,750	2,890	3,030	3,180	3,340
<b>Customer Requests/Public Requirements Total</b>		<b>15,647</b>	<b>19,451</b>	<b>20,036</b>	<b>17,631</b>	<b>18,066</b>	<b>18,541</b>
<b>Damage/Failure</b>	Damage/Failure	10,177	9,967	11,141	11,421	11,706	11,996
	Major Storms - Dist	1,000	1,500	1,550	1,600	1,650	1,700
<b>Damage/Failure Total</b>		<b>11,177</b>	<b>11,467</b>	<b>12,691</b>	<b>13,021</b>	<b>13,356</b>	<b>13,696</b>
<b>Asset Condition</b>	Asset Replacement	16,748	30,173	35,239	32,534	31,917	29,410
	Asset Replacement - I&M (NE)	6,705	2,510	2,615	2,720	7,125	7,400
	Reliability	-	-	-	-	-	-
	Safety	600	598	514	250	261	-
<b>Asset Condition Total</b>		<b>24,053</b>	<b>33,280</b>	<b>38,368</b>	<b>35,504</b>	<b>39,303</b>	<b>36,810</b>
<b>Non-Infrastructure</b>	Corporate/Admin/General	-	-	-	-	-	-
	General Equipment - Dist	100	100	110	115	120	125
	Telecommunications Capital - Dist	175	175	175	175	175	175
<b>Non-Infrastructure Total</b>		<b>275</b>	<b>275</b>	<b>285</b>	<b>290</b>	<b>295</b>	<b>300</b>
<b>System Capacity &amp; Performance</b>	Asset Replacement	-	-	20	-	100	-
	Load Relief	19,318	15,726	21,329	24,160	15,362	14,561
	Reliability	2,830	3,243	2,271	4,394	3,518	6,092
<b>System Capacity &amp; Performance Total</b>		<b>22,148</b>	<b>18,968</b>	<b>23,620</b>	<b>28,554</b>	<b>18,980</b>	<b>20,653</b>
<b>Grand Total</b>		<b>73,300</b>	<b>83,441</b>	<b>95,000</b>	<b>95,000</b>	<b>90,000</b>	<b>90,000</b>



ISR Spending Rationale	ISR Category	Is the Full Current Estimate Project Grade? (yes/no)	Total Current Estimate (Distribution)	Initial Estimate at time of First Sanction	Estimated Construction Start	Estimated Construction End	Estimated Financial Closure	Pre-FY16 Actual Capital Spend	FY2016 Actual Capital Spend (EMT)	Total-to-Date Actual Capital Spend	Current Cost FY16 (6-6)	Total FY16 ISR Budget Budget	PRELIMINARY FY2017 Capital Budget (9-22-15)	Net Adjustments	UPDATED FY2017 Capital Budget	UPDATED FY2018 Capital Budget	UPDATED FY2019 Capital Budget	UPDATED FY2020 Capital Budget	UPDATED FY2021 Capital Budget	
System Capacity & Performance	Aquidneck Island (includes former Jepson & New Chase Hill (Hopkinton) & Related Kent County New London Ave Substation #150 Quonset Sub Highland Drive Kilvert St - DSub Kilvert St - DLine Johnston Sub Clarke St East Bay Study	NO NO NO NO YES NO YES YES	53,585 17,768 3,025 15,391 6,104 16,723 3,205 3,631 8,138 2,639	53,585 2,850 3,630 2,900 4,520 6,124 2,260 2,820 4,594 1,340	Dec-2015 Aug-2015 Apr-2016 Apr-2016 Mar-2015 Sep-2015 Nov-2015 Oct-2013 Oct-2013 Nov-2014	Nov-2020 Jul-2017 Nov-2017 Apr-2018 Jan-2018 Aug-2016 Jul-2016 May-2016 Apr-2016 Nov-2015	Jul-2021 Dec-2017 Feb-2018 Apr-2018 May-2018 Feb-2017 Nov-2016 Oct-2016 Oct-2015 Mar-2016	1,577 4,646 561 1,265 426 14,862 1,291 2,345 4,153 1,117	753 1,039 68 582 345 14,382 513 204 335 1,051	2,340 5,686 630 1,848 1,867 14,382 1,686 2,549 4,500 2,168	1,496 4,300 190 832 480 1,200 1,100 1,081 342 1,532	2,050 4,300 1,940 4,300 1,081 1,200 1,100 - - 250	2,882 3,626 1,940 4,900 1,081 1,200 146 - - - 84	(1,245) - - (300) - - - - - - - -	2,882 3,626 1,940 5,000 1,081 1,200 146 - - - -	7,225 2,100 - 5,000 2,532 - - - - - -	16,687 2,100 - 2,930 - - - - - - -	11,600 - - 2,930 - - - - - - -	11,600 - - - - - - - - - -	1,200 - - - - - - - - - -
<b>Subtotal - Major System Capacity &amp; Performance Projects</b>											<b>11,371</b>	<b>18,074</b>	<b>15,374</b>	<b>(1,645)</b>	<b>13,829</b>	<b>19,912</b>	<b>22,737</b>	<b>14,000</b>	<b>9,660</b>	
	Volt/Var Storm Hardening OH Line Transformer Replacement Program Blanket Projects Other Load Relief Other Reliability Other Flood Reserves	NO	4,913	3,523	Aug-2014	Sep-2016	Feb-2017	2,320	1,234	3,554	1,599	1,464	852	-	852	-	1,100	1,350	1,350	
<b>System Capacity &amp; Performance Total</b>											<b>17,309</b>	<b>22,148</b>	<b>20,663</b>	<b>(1,695)</b>	<b>18,968</b>	<b>23,620</b>	<b>28,554</b>	<b>18,980</b>	<b>20,653</b>	
Asset Condition	South St Station Rebuild Eldred Substation Rebuild New Southeast Sub Langworthy Substation Rebuild (flood) Memorial Blvd. Cable Relocation Flood - Hope Substation Flood - Pontiac Flood - Warwick Mall Sub Flood - Westerly	NO YES NO YES NO YES YES NO	55,365 3,674 18,600 1,805 1,430 410 3,347 850 8,000	18,240 2,857 18,600 2,095 1,430 1,142 1,710 4,594 9,160	Jan-2016 Jan-2014 May-2016 Nov-2013 Oct-2015 Apr-2017 Apr-2014 Apr-2017 May-2018	Jan-2019 Apr-2015 Feb-2020 Sep-2014 Apr-2016 Sep-2017 Jun-2015 Dec-2017 Jan-2022	Feb-2019 Sep-2015 Dec-2020 Sep-2015 Apr-2016 Sep-2017 Jan-2016 Dec-2017 Jan-2022	117 3,411 - 1,804 33 54 2,262 228 8	2,715 35 - 49 2 142 1,199 64 0	2,831 3,446 - 1,853 36 186 3,461 292 8	7,084 - - 49 824 612 1,261 70 0	4,560 - - - 730 412 1,090 24 0	20,096 - - - 532 221 1,090 - - 650	(4,736) - - - - - - - - -	15,360 - - - - - - - - -	20,632 - - - 532 629 - - - -	6,303 - - - - - - - - -	5,015 - - - - - - - - -	5,015 - - - - - - - - -	
<b>Subtotal - Asset Replacement Projects</b>											<b>9,465</b>	<b>7,721</b>	<b>20,874</b>	<b>(4,736)</b>	<b>16,138</b>	<b>22,691</b>	<b>13,063</b>	<b>14,075</b>	<b>4,460</b>	
	Asset Replacement - 15M (NE) Battery Replacement Indoor Sub Replacement Metalclad Replacement Substation Transformers T-Body Relay Replacements Substation Breakers & Reclosers Network Arc Flash RAPR UG Cable 2 URD Blanket Projects Other Asset Replacement Reserves							2,826 70 - 484 54 129 1,001 592 85 1 910 289 1,319 396	6,200 411 - 179 - 152 1,043 1,072 698 182 998 2,500 2,179 1,073	6,200 411 - 179 - 152 1,043 1,072 698 182 998 2,500 2,179 1,073	2,510 411 - 25 - 956 746 1,175 514 182 2,500 2,500 2,500 2,500	- - - - - 843 - - - - - - - (71)	2,510 200 200 200 200 2,285 956 746 1,100 250 195 2,500 2,500 2,500	2,615 200 200 200 200 2,285 2,417 746 1,100 250 195 2,500 2,500 2,500	2,720 200 2,073 2,440 2,850 450 88 200 261 200 5,100 5,100 3,019 250	7,126 200 2,073 2,440 2,850 450 88 200 261 200 5,100 5,100 3,019 250	7,126 200 2,073 2,440 2,850 450 88 200 261 200 5,100 5,100 3,019 250	7,126 200 2,073 2,440 2,850 450 88 200 261 200 5,100 5,100 3,019 250	7,126 200 2,073 2,440 2,850 450 88 200 261 200 5,100 5,100 3,019 250	
<b>Asset Condition Total</b>											<b>29,810</b>	<b>24,053</b>	<b>37,244</b>	<b>(3,964)</b>	<b>33,280</b>	<b>38,368</b>	<b>35,504</b>	<b>39,303</b>	<b>36,810</b>	
Non-Infrastructure	General Equipment Telecommunications							32 104	96 175	100 175	100 175	110 175	115 175	120 175	125 175	125 175	125 175	125 175		
<b>Non-Infrastructure Total</b>											<b>280</b>	<b>275</b>	<b>275</b>	<b>-</b>	<b>285</b>	<b>285</b>	<b>285</b>	<b>285</b>	<b>300</b>	
Customer Requests/Public Requirements	3rd Party Attachments Block Island Land and Land Rights - Dist Meters - Dist New Business - Commercial New Business - Residential Outdoor Lighting - Capital Public Requirements Transformers & Related Equipment Distributed Generation							91 89 1,879 3,035 2,354 62 1,252 402 185	46 181 4,841 3,500 4,291 331 1,345 1,500 145	137 167 2,170 4,213 3,728 541 1,602 2,880 50	596 187 5,377 3,728 3,881 553 3,814 2,750 10	519 187 5,377 3,728 3,881 553 3,814 2,750 10	- - - - - - - - -	519 193 2,314 5,297 3,978 565 3,814 2,650 10	199 205 2,387 5,491 4,119 591 2,111 3,340 10	205 237 5,491 4,119 591 2,111 3,340 10	205 237 5,491 4,119 591 2,111 3,340 10	205 237 5,491 4,119 591 2,111 3,340 10		
<b>Customer Requests/Public Requirements Total</b>											<b>16,474</b>	<b>15,647</b>	<b>19,451</b>	<b>(900)</b>	<b>19,451</b>	<b>20,036</b>	<b>17,631</b>	<b>18,066</b>	<b>18,541</b>	
Damage/Failure	Damage/Failure Major Storms - Dist Reserves							7,047 2,974 -	13,884 3,520 539	9,177 1,500 1,000	9,177 1,500 1,000	9,267 1,600 1,100	(900) 1,600 1,100	(900) 1,600 1,100	8,367 1,555 1,210	10,441 1,600 1,265	10,441 1,600 1,265	10,441 1,600 1,265		
<b>Damage/Failure Total</b>											<b>17,932</b>	<b>11,177</b>	<b>12,367</b>	<b>(900)</b>	<b>11,467</b>	<b>12,691</b>	<b>13,021</b>	<b>13,356</b>	<b>13,696</b>	
<b>Grand Total</b>											<b>81,604</b>	<b>73,300</b>	<b>90,000</b>	<b>(6,659)</b>	<b>83,441</b>	<b>95,000</b>	<b>90,000</b>	<b>80,000</b>	<b>80,000</b>	

(a) - Since total expected project cost is below \$1M, this item was sanctioned in full online in our PowerPlant system (no sanction paper required).  
Reauthorization will occur if the initial estimate changes above the 10% variance threshold.

ISR Spending Rationale	ISR Category	Project #	Project Description	Approved Capital	Pre FY 2016 Spend	FY16 Actuals (6-MTD)	FY16 Forecast (6-MTD)	FY16 Budget	FY17 Budget	FY18 Budget	FY19 Budget	FY20 Budget	FY21 Budget
Customer Requests/Public Requirements	New Business - Commercial	C046977	Reserve for New Business Commercial	-	-	-	374	400	1,500	1,525	1,550	1,600	1,650
		C048798	1000 Danielle Dr, Burrillville, R	190	146	0	0	-	-	-	-	-	-
		C048981	Nrsville 127W41 New Customer Load	2,579	112	310	1,602	553	-	-	-	-	-
		C051293	LNG Plant Svc Terminal Rd Prv DLine	500	-	14	560	30	441	-	-	-	-
		C051294	LNG Plant Svc Terminal Rd Prv DSub	700	-	-	88	30	256	3,082	144	-	-
		C052709	Ighe to 1425 Cranston St, Cranston	250	120	0	-	-	-	-	-	-	-
		C053266	NW Vlt 122 Kinsley Bldg, Prov.	355	17	261	4	-	-	-	-	-	-
		C054929	Fox Pl, Providence, RI	198	2	25	73	-	-	-	-	-	-
		C055228	Hobbs Brook 2nd Fdr Svc Johnston RI	105	41	43	17	-	-	-	-	-	-
		C055268	AMGEN 35 kv-Second Feeder Service	1,325	33	104	(11)	-	-	-	-	-	-
		C055465	OKONITE COMPANY, Cumberland RI	130	82	35	50	-	-	-	-	-	-
		C055657	RI School of Design, Providence RI	145	(43)	60	60	-	-	-	-	-	-
		C058179	General Dynamics, N Kingstown RI	15	13	244	19	-	-	-	-	-	-
		C061446	NARRAGANSETT INDIAN, Charlestown RI	140	4	80	(20)	-	-	-	-	-	-
		C061667	RI Veterans Home, Bristol RI	250	3	5	(75)	-	-	-	-	-	-
		C061805	RI State House, Providence RI	173	0	12	11	-	-	-	-	-	-
		C061885	JOHNSON & WALES UNIVERSTY	143	(34)	13	1	-	-	-	-	-	-
		C061986	Moses Brown School, Providence RI	252	-	3	5	-	-	-	-	-	-
		COS0011	Ocean St-Dist-New Bus-Comm Blanket	3,851	3,057	1,826	3,228	3,200	3,380	3,490	3,603	3,720	3,841
	<b>New Business - Commercial Total</b>			<b>11,301</b>	<b>3,556</b>	<b>3,035</b>	<b>5,986</b>	<b>4,213</b>	<b>5,777</b>	<b>6,097</b>	<b>6,297</b>	<b>6,520</b>	<b>6,841</b>
	Public Requirements												
		C008469	DOTR-Reconst Newman Av Bridge EProv	5	2	0	-	-	-	-	-	-	-
		C012118	DOTR-Slatersville Stone Arch Bc773	111	2	5	0	-	-	-	-	-	-
		C012179	DOTR-Repl Great Island Bridge No99	169	11	2	43	93	102	102	-	-	-
		C015403	DOTR-Atwood Av/Plainfield Pike/Inter	140	126	0	0	-	-	-	-	-	-
		C020711	DOTR-Repl Capron Rd Bridge No. 792	20	10	2	-	170	-	-	-	-	-
		C021572	DOTR-N London Av/Howard Av Intersec	65	15	(1)	-	-	-	-	-	-	-
		C027123	Watch Hill OH to UG, Westerly RI	386	185	2	2	-	-	-	-	-	-
		C030804	DOTR-Recon RI3, Traffic Signals Cov	40	26	(25)	-	-	-	-	-	-	-
		C032285	DOTR-Prov Dean St, Cahir St Improv	110	18	(4)	(4)	-	-	-	-	-	-
		C035087	DOTR-Apponaug Circulator Imprv Warw	1,879	767	320	673	616	154	-	-	-	-
		C045656	DOTR-Blackstone River Bikeway Seg8A	50	0	-	170	170	-	-	-	-	-
		C045657	DOTR-Repl Bridges No.475 & 476 E.P.	260	18	-	85	-	-	-	-	-	-
		C045684	Second Beach RI OH-UG conversion	15	5	(43)	90	89	-	-	-	-	-
		C046970	Reserve for Public Requirements Unit	-	-	-	-	(1,816)	409	1,000	1,000	1,000	1,000
		C047039	DOTR-East Main Rd, Portsmouth	50	9	0	0	170	170	-	-	-	-
		C047075	DOTR-Blackstone River Bikeway Seg8C	50	6	-	170	170	-	-	-	-	-
		C048599	DOTR-Punnam Pike/Money Hill Rd	147	12	0	68	-	68	-	-	-	-
		C048717	DOTR-SMain/W/Main Int Recon	40	21	3	172	85	-	-	-	-	-
		C050419	DOTR-Woonasquett-Harriet Av/Bridge#500	160	22	93	83	-	-	-	-	-	-
		C050422	Admrl St 911 Line Relocation	199	-	-	8	-	170	85	-	-	-
		C050687	DOTR-Hi Haz Int/Ramps C2 Newport Co	40	3	-	170	85	-	-	-	-	-
		C050921	DOTR-Hi Haz Intersections/Bristol Co	40	10	0	170	85	-	-	-	-	-
		C051783	DOTR-E Providence Bridges 471&472	100	-	-	-	170	85	-	-	-	-
		C051892	DOTR-N Prov-1R Woonasquett Av	40	1	5	5	-	-	-	-	-	-
		C052069	DOTR-Providence-Allens Av Arterial	40	0	0	0	85	85	-	-	-	-
		C052268	DOTR-Central St Bridge No.449	50	3	-	9	-	9	-	-	-	-
		C053666	RI DOT Billing for Closed Projects	100	-	(43)	-	-	-	-	-	-	-
		C054045	DOTR-HarrisAV#510TobeyST#509	40	1	(5)	(5)	-	-	-	-	-	-
		C054787	DOTR-Richmond: Kingston Rd Br # 403	150	2	0	0	-	77	-	-	-	-
		C054788	ValleySub 102 NERC CIP v3.25	250	14	22	6	-	-	-	-	-	-
		C054828	DOTR-Arterial Impr to Warwick Av	100	4	-	77	77	-	-	-	-	-
		C054830	DOTR-Carolina Bridges 54.55&56	100	2	-	-	-	77	-	-	-	-
		C058850	RIAC TF Green Runway Expansion	1,728	(173)	232	(1,004)	-	865	-	-	-	-
		C057773	DOTR-Coventry/FlatRiverRd VictoryHw	140	7	5	5	-	-	-	-	-	-
		C058539	General Dynamics System reconfig	15	5	2	1	-	-	-	-	-	-
		C058939	DOTR-Prov/Vaduct Br NB-Smith St Br	40	1	-	0	-	-	-	-	-	-
		C061525	Westminster St Bridge 506 - Retcons	240	183	57	72	-	-	-	-	-	-
		C062012	DOTR-W Greenwich-Victory Hwy Br#589	220	-	2	1	-	-	-	-	-	-
		C062014	DOTR-Barrington&Warren Bike Path Br	220	-	2	1	-	-	-	-	-	-
		C062187	DOTR-Scutuate/HopeVillageStreetscape	190	-	0	-	-	-	-	-	-	-
		C063105	DOTR-TivertonRoundaboutStafford/Hurs	370	-	1	-	-	-	-	-	-	-
		CD00076	DOTR-Atwells Avenue Bridge No. 975.	40	83	2	16	64	-	-	-	-	-
		CD00135	I-195 Contract 14 - Providence	5,021	4,401	36	48	-	-	-	-	-	-
		CD00160	DOTR-Prov Downtown Circulation Impr	50	23	3	3	-	-	-	-	-	-
		CD00189	DOTR-Central Bridge No. 182 Replace	250	80	51	40	-	-	-	-	-	-
		CD00229	DOTR-Statewide Hi Haz Int/Ramps W.S	41	16	9	2	-	-	-	-	-	-
		CD00246	DOTR-Bartons Corner Bridge No. 518	146	4	(7)	(7)	-	-	-	-	-	-
		CD00373	Watch Hill UG Phase 2	15	34	44	16	173	-	-	-	-	-
		CD00409	DOTR-Improvements to Division St, E	202	102	0	0	-	-	-	-	-	-
		CD00567	DOTR-East Main Rd, Turnpike Av-Head	41	1	-	-	80	80	-	-	-	-
		CD00646	DOTR-Douglas Pike/Branch Pike Traff	30	5	-	80	80	-	-	-	-	-
		CD00786	I-195 Contract 15 - Providence	1,429	1,385	36	46	-	-	-	-	-	-
		CD00790	DOTR-Providence-Harbour Junction Br	40	7	0	40	-	-	-	-	-	-
		CD01066	DOTR-Union Village Railroad Bridge	216	3	-	34	34	-	-	-	-	-
		CD01080	NBC Seakonk CSO Interceptor	800	(67)	14	14	-	-	-	-	-	-
		CD01205	DOTR-Hussey Memorial Bridge No. 011	84	4	0	62	-	-	-	-	-	-
		COS0013	Ocean St-Dist-Public Require Blankt	1,159	1,089	409	845	828	1,009	1,042	1,076	1,111	1,147
	<b>Public Requirements Total</b>			<b>17,673</b>	<b>8,469</b>	<b>1,274</b>	<b>1,861</b>	<b>1,602</b>	<b>3,814</b>	<b>2,042</b>	<b>2,076</b>	<b>2,111</b>	<b>2,147</b>
	New Business - Residential												
		C046978	Reserve for New Business Residentia	-	-	-	115	100	105	110	115	120	-
		C054005	SHARPE BUILDING ASSC-Foundry Bld 4	305	66	208	124	-	-	-	-	-	-
		COS0010	Ocean St-Dist-New Bus-Resid Blanket	4,522	3,655	2,146	3,487	3,400	3,623	3,741	3,863	3,989	4,119
	<b>New Business - Residential Total</b>			<b>4,827</b>	<b>3,721</b>	<b>2,354</b>	<b>3,728</b>	<b>3,500</b>	<b>3,728</b>	<b>3,851</b>	<b>3,978</b>	<b>4,109</b>	<b>4,119</b>
	Transformers & Related Equipment												
		CN04920	Narragansett Transformer Purchases	2,880	2,488	402	2,000	2,880	2,750	2,890	3,030	3,180	3,340
	<b>Transformers &amp; Related Equipment Total</b>			<b>2,880</b>	<b>2,488</b>	<b>402</b>	<b>2,000</b>	<b>2,880</b>	<b>2,750</b>	<b>2,890</b>	<b>3,030</b>	<b>3,180</b>	<b>3,340</b>
	Meters - Dist												
		CN04904	Narragansett Meter Purchases	1,180	(24)	1,423	2,170	1,180	1,500	1,550	1,600	1,650	1,700
		COS0004	Ocean St-Dist-Meter Blanket	863	635	338	635	595	670	692	714	737	761
		CRSE 109	Meter Work-RI	-	2	118	118	-	-	-	-	-	-

	<b>Meters - Dist Total</b>			2,043	612	1,879	2,923	1,775	2,170	2,242	2,314	2,387	2,461
	Outdoor Lighting - Capital	COS0012	Ocean St-Dist-St Light Blanket	1,066	476	62	420	711	541	553	565	578	591
	Outdoor Lighting - Capital Total			1,066	476	62	420	711	541	553	565	578	591
	Block Island	C033592	PS&I for Block Island Interconnect	590	8	1	-	-	-	-	-	-	-
		C046386	BITS Wakefield Sub Upgrades (D-Sub)	600	83	44	595	595	519	-	-	-	-
	Block Island Total			1,190	91	46	595	595	519	-	-	-	-
	Land and Land Rights - Dist	COS0009	Ocean St-Dist-Land/Rights Blanket	167	165	89	184	167	187	193	199	205	212
	Land and Land Rights - Dist Total			167	165	89	184	167	187	193	199	205	212
	3rd Party Attachments	COS0022	Ocean St-Dist-3rd Party Atch Blnk	180	267	212	425	154	155	158	162	168	170
	3rd Party Attachments Total			180	267	212	425	154	155	158	162	168	170
	Distributed Generation	C045555	DG Svc to Terra (RI-243)	191	-	(0)	(0)	-	-	-	-	-	-
		C047495	DG Svc OCI Solar RI-233	985	216	2	1	-	-	-	-	-	-
		C051496	Toray Plastics (12.5MW GT)	930	526	102	102	-	-	-	-	-	-
		C051909	PS&I Dist Gen RI	55	(25)	(63)	(57)	50	10	10	10	10	10
		C058281	DG Svc to Terra Johnston, RI	230	(67)	138	96	-	-	-	-	-	-
		C061669	DG Svc to Foster Solar Foster, RI	195	-	20	26	-	-	-	-	-	-
		C061826	DG Svc to Foster Solar Foster, RI	336	-	73	9	-	-	-	-	-	-
		C063146	DG Svc to Brandywick N Smithfield	103	-	(86)	2	-	-	-	-	-	-
	Distributed Generation Total			3,025	650	185	179	50	10	10	10	10	10
	Customer Requests/Public Requirements Total			44,351	20,495	9,537	18,299	15,647	19,451	20,036	17,631	18,066	18,541
	Damage/Failure												
	Damage/Failure	C054323	Franklin Square Breaker Replacement	350	334	14	29	17	-	-	-	-	-
		C054909	Warwick Mall Trf 2 Failure	610	359	1	1	-	-	-	-	-	-
		C056023	Franklin Sq Boiler Replacement	180	154	4	2	-	-	-	-	-	-
		C063246	Franklin Sq Fire Escape Replacement	250	-	218	162	-	-	-	-	-	-
		COS0002	Ocean St-Dist-Subs Blanket	884	960	182	658	660	624	740	757	774	791
		COS0014	Ocean St-Dist-Damage&Failure Blanket	11,305	9,211	6,628	9,928	8,500	8,243	9,245	9,454	9,667	9,885
	Damage/Failure Total			13,879	11,018	7,047	10,760	9,177	8,867	9,986	10,211	10,441	10,676
	Major Storms - Dist	C022433	OSD Storm Cap Confirm Program Proj	1,160	9,307	2,974	893	1,000	1,650	1,650	1,650	1,650	1,700
	Major Storms - Dist Total			1,160	9,307	2,974	893	1,000	1,650	1,650	1,650	1,650	1,700
	Reserves	C046996	Reserve for Damage/Failure Unidenti	-	-	-	539	500	100	105	110	115	120
		C051608	Reserve for Damage/Failure Substat	-	-	-	-	500	1,000	1,050	1,100	1,150	1,200
	Reserves Total			-	-	-	539	1,000	1,100	1,155	1,210	1,265	1,320
	Damage/Failure Total			14,739	20,325	10,022	12,279	11,177	11,467	12,691	13,021	13,556	13,996
	Asset Condition												
	South St Station Rebuild	C051212	South St repl indoor subst D-SUB	27,748	61	2,057	5,298	4,130	10,553	15,989	5,162	2,800	-
		C051213	South St repl indoor subst D-LINE	11,415	45	653	1,618	410	4,643	4,643	1,141	2,215	-
		C055623	South St Sub 11kV Removal	2,581	10	4	1	20	-	-	-	-	-
	South St Station Rebuild Total			41,744	117	2,715	6,918	4,660	15,360	20,632	6,303	5,015	-
	Blanket Projects	COS0017	Ocean St-Dist-Asset Replace Blanket	2,604	1,856	1,319	2,117	1,929	2,605	2,664	2,211	2,789	2,848
		COS0026	OS-Dist-Substation Asset Repl Blnk	300	158	-	53	250	200	220	230	240	240
	Blanket Projects Total			2,904	2,015	1,319	2,170	2,179	2,805	2,884	2,441	3,019	3,088
	Asset Replacement - I&M (NE)	C014326	I&M - OS D-Line UG Work From Insp	151	765	-	-	105	110	115	120	125	150
		C026281	I&M - OS D-Line OH Work From Insp	9,107	16,006	2,806	6,768	6,600	2,400	2,500	2,600	7,000	7,250
	Asset Replacement - I&M (NE) Total			9,258	16,771	2,806	6,768	6,705	2,610	2,615	2,720	7,125	7,400
	UG Cable	C046397	Fdr 1109A - Install Cable Dorrance	470	373	11	-	298	-	-	-	-	-
		C046405	Fdr 1113 Inst Cable Fountain St Pro	320	277	5	5	-	-	-	-	-	-
		C055343	RI UG Cable Placeholder FY19-24	-	-	-	-	-	-	-	2,610	2,800	4,400
		C055357	RI UG Cable Repl Program - Fdr 1111	950	-	668	589	750	-	-	-	-	-
		C055359	RI UG Cable Repl Program - Fdr 79F1	773	3	(3)	58	250	979	-	-	-	-
		C055360	RI UG Cable Repl Program - Fdr 2J8	810	-	-	-	-	390	-	-	-	-
		C055361	RI UG Cable Repl Program - Fdr 1107	-	-	-	-	-	-	-	-	-	-
		C055362	RI UG Cable Repl Program - Fdr 1105	-	-	-	-	-	-	-	-	-	-
		C055363	RI UG Cable Repl Program - Fdr 1127	-	-	-	-	-	-	-	-	-	-
		C055364	RI UG Cable Repl Program - Fdr 13F1	-	-	-	-	-	-	-	-	-	-
		C055365	RI UG Cable Repl Program - Fdr 1113	-	-	-	-	-	-	-	90	-	-
		C055367	RI UG Cable Repl Program Fdr 54K21	800	-	6	58	500	741	-	-	-	-
		C055369	RI UG Cable Repl Program Fdr 54K23	800	-	-	-	-	380	-	-	-	-
		C055370	RI UG Cable Repl Program Fdr 1144	-	-	-	-	-	-	-	-	-	-
		C055371	RI UG Cable Repl Program Fdr 1142	-	-	-	-	-	-	-	280	-	-
		C055392	RI UG Cable Repl Program - Secondary	900	-	222	241	900	10	2,500	2,520	2,300	2,850
		C059679	Fdr 3324 Install Cable Transf Leads	199	-	-	42	-	-	-	-	-	-
	UG Cable Total			5,613	653	910	993	998	2,500	2,500	5,500	5,100	7,250
	URD	C047375	IRURD Mystery Farms Estates	620	33	9	5	938	34	-	-	-	-
		C047377	IRURD Wetherfield Commons	600	153	73	1,496	437	-	-	-	-	-
		C047378	IRURD Willowbrook	80	1	14	15	62	-	-	-	-	-
		C047379	IRURD Wood Estates Ph II	350	70	22	34	196	-	-	-	-	-
		C047389	IRURD Stone Ridge Acres	215	133	34	86	-	43	-	-	-	-
		C047394	IRURD Tanglewood	650	25	-	-	-	-	-	-	-	-
		C047396	IRURD Silver Maple Drive	300	261	-	-	-	-	-	-	-	-
		C047397	IRURD CEDARHURST	575	377	-	-	-	-	-	-	-	-
		C047398	IRURD Wionkheige	700	70	14	10	600	493	-	493	-	-
		C047422	IRURD Maplewood	400	114	68	1,233	1,700	-	-	-	-	-
		C047828	IRURD Westwood Estates	310	99	52	46	-	-	-	-	-	-
		C047829	IRURD High Hawk	600	3	-	-	-	22	22	240	-	-
		C049237	IRURD Phase 2 Wetherfield Comm.	400	-	-	-	-	213	-	-	-	-
		C049291	IRURD Wood Estates Phase 2	700	10	1	1	24	24	119	-	-	-
		C049356	IRURD Silver Maple Phase 2	400	2	-	-	17	340	-	-	-	-
		C049462	IRURD Stone Ridge Acres Phase 2	900	3	0	0	-	85	-	128	-	-
		C050070	IRURD Placeholder RI	-	-	-	-	200	(567)	1,978	794	2,500	3,500
		C050299	IRURD Eastward Look	900	-	-	-	-	43	-	128	-	-
		C052964	IRURD Rollingwood	800	51	1	26	-	21	-	-	-	-
		C056947	IRURD Juniper Hills W/Warwick	150	0	0	0	-	209	-	-	-	-
		C057882	IRURD Chateau Apts URD Rehab	-	-	-	-	-	-	-	-	-	-
		C057921	IRURD Robin Hills Estates	150	-	-	-	-	80	-	150	-	-
		C058042	IRURD Brookridge Estates	184	-	-	-	-	80	-	150	-	-
		C058045	IRURD-Tockwotton Farm, TF Road	36	-	-	-	-	16	-	-	-	-
		C058046	IRURD-Tockwotton Farm, RM Way	30	-	-	-	-	-	-	-	-	-
		C058285	IRURD Case Farm Estates URD	890	-	-	-	-	60	30	150	-	-
		C058287	IRURD Ferncliffe Farms URD	220	-	-	-	-	30	30	150	-	-
		CD00686	IRURD Carriage Drive	950	753	(5)	4	-	-	-	-	-	-

		CD00827	IRURD South Rd Est So. Kingstown	550	454	(4)	(5)	-	-	-	-	-	-	-	-	-	-	-	-
		CD00937	IRURD Village Green Rehab	1,500	1,084	9	(0)	-	-	-	-	-	-	-	-	-	-	-	-
	<b>URD Total</b>			<b>14,177</b>	<b>3,696</b>	<b>289</b>	<b>2,950</b>	<b>2,600</b>	<b>2,500</b>	<b>3,500</b>									
	<b>Metalclad Replacement</b>																		
		C032583	OS ARP Metal Clad MC	-	-	-	-	(370)	-	-	-	-	-	-	-	-	-	-	1,000
		C049910	Southeast Sub MC Retirement (D-Line)	708	110	25	1,282	254	880	-	-	-	-	-	-	-	-	-	-
		C050006	Hyde Ave MC Retirement (D-Line)	710	95	392	1,446	468	255	-	-	-	-	-	-	-	-	-	-
		C050017	Daggett Ave MC Retirement (D-Line)	830	89	30	726	500	850	-	-	-	-	-	-	-	-	-	-
		C050758	Lee St MC Retirement (D-Line)	490	91	20	30	20	-	50	2,250	-	-	-	-	-	-	-	-
		C050760	Cottage St MC Retirement (D-Line)	490	114	14	28	25	-	50	2,750	-	-	-	-	-	-	-	-
		C050778	Front St Sub MC Retirement (D-Line)	240	161	0	170	236	300	-	-	-	-	-	-	-	-	-	-
		C051118	Lee St MC Retirement (D-Sub)	10	9	-	10	1	-	-	-	-	-	-	-	-	-	-	-
		C051126	Cottage St MC Retirement (D-Sub)	10	10	-	1	10	-	-	-	-	-	-	-	-	-	-	-
		C051200	Hyde Ave MC Retirement	-	-	-	-	142	-	-	-	-	-	-	-	-	-	-	-
		C051271	Hyde Ave MC Retirement (D-Sub)	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C051272	Southeast 60 Metalclad - Sub Retirem	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C051273	Front St Metalclad-Sub Retirement	100	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-
		C051274	Daggett Ave MC Retirement (D-Sub)	150	-	-	-	190	-	-	-	-	-	-	-	-	-	-	-
		C056391	Centre St MC Retirement (D-Sub)	-	-	-	-	10	-	-	-	-	-	10	-	-	-	-	-
		C056392	Crossman Retirement (D-Sub)	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-
		C056411	Centre St MC Retirement (D-Line)	-	-	-	-	10	-	-	-	-	-	150	-	-	-	950	-
		C056507	Crossman Retirement (D-Line)	-	-	-	-	-	-	-	-	-	-	125	-	-	-	600	-
		C056570	Hospital Sub MC Replacement (D-Sub)	-	-	-	-	25	-	-	-	-	-	150	-	-	-	1,300	800
		C056571	Kingston 131 - Metalclad Replacemen	-	-	-	-	-	-	-	-	-	-	240	-	-	-	1,000	200
	<b>Metalclad Replacement Total</b>			<b>4,038</b>	<b>681</b>	<b>484</b>	<b>3,684</b>	<b>1,540</b>	<b>2,285</b>	<b>110</b>	<b>5,675</b>	<b>2,850</b>	<b>2,000</b>						
	<b>Substation Breakers &amp; Reclosers</b>	C032278	OS ARP Breakers & Reclosers	1,040	6,136	502	1,171	1,000	1,175	1,100	1,100	1,100	1,200	1,200	1,200	1,200	1,200	1,200	1,200
	<b>Substation Breakers &amp; Reclosers Total</b>			<b>1,040</b>	<b>6,136</b>	<b>502</b>	<b>1,171</b>	<b>1,000</b>	<b>1,175</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,200</b>						
	<b>Substation Transformers</b>																		
		C025903	OS ARP Transformers	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C026058	OS ARP Spare Substation Transforms	1,100	-	-	-	-	-	538	-	-	600	-	-	-	-	-	-
		C051824	Lafayette Sub Transformer Replaceme	514	356	54	459	475	99	700	-	-	-	-	-	-	-	-	-
		C055421	Warwick 52 - Replace TRFs	-	-	-	-	-	-	-	-	-	400	-	-	-	-	450	500
		C055844	W Cranston Transformer #2 Replaceme	-	-	-	-	320	319	1,716	-	-	-	-	-	-	-	-	-
	<b>Substation Transformers Total</b>			<b>1,624</b>	<b>356</b>	<b>54</b>	<b>459</b>	<b>795</b>	<b>956</b>	<b>2,417</b>	<b>1,000</b>	<b>450</b>	<b>500</b>						
	<b>Relay Replacements</b>																		
		C035586	Relay Replacement Strategy Co 49DXT	1,200	2,394	986	885	600	669	74	-	-	-	-	-	-	-	-	-
		C049354	NEC Relay Replacement Co.49- SG157	20	68	15	29	340	77	15	-	-	-	-	-	-	-	-	-
	<b>Relay Replacements Total</b>			<b>1,220</b>	<b>2,463</b>	<b>1,001</b>	<b>914</b>	<b>940</b>	<b>746</b>	<b>88</b>	<b>-</b>								
	<b>Network Arc Flash</b>	CD01257	Distribution Secondary Network Arc	600	1,282	85	54	600	598	514	250	261	-	-	-	-	-	-	-
	<b>Network Arc Flash Total</b>			<b>600</b>	<b>1,282</b>	<b>85</b>	<b>54</b>	<b>600</b>	<b>598</b>	<b>514</b>	<b>250</b>	<b>261</b>	<b>-</b>						
	<b>Memorial Blvd Cable Relocation</b>	C046398	Memorial Blvd Easton's Beach inst d	600	33	2	828	730	532	-	-	-	-	-	-	-	-	-	-
	<b>Memorial Blvd Cable Relocation Total</b>			<b>600</b>	<b>33</b>	<b>2</b>	<b>828</b>	<b>730</b>	<b>532</b>	<b>-</b>									
	<b>Other Asset Replacement</b>																		
		C006644	IE - OS Targeted Pole Replace	30	8,977	4	2	25	-	-	-	-	-	-	-	-	-	-	-
		C020297	Sac AB Repl Prog Phase 7 NEC DXT	1,127	846	1	1	-	-	-	-	-	-	-	-	-	-	-	-
		C023852	Inst Ductline Governor St. Prov.	1,653	1,475	58	-	-	-	-	-	-	-	-	-	-	-	-	-
		C025815	OS ARP Ineul. SensDev. Surge Arrest	290	1,226	32	174	250	250	250	250	250	-	-	-	-	-	-	-
		C030258	ACNW Wind Structural Repairs Prov	970	158	7	514	514	-	-	-	-	-	-	-	-	-	-	-
		C036093	Elmwood#7/Replace 23KV Groun Bank	540	451	-	-	5	-	-	-	-	-	-	-	-	-	-	-
		C041726	Replace HMLs - NEC	-	20	-	-	174	-	19	-	-	-	-	-	-	-	-	-
		C049726	UG Fdrs 1141-1143 Hurr Barrier Prov	300	63	182	202	-	-	-	-	-	-	-	-	-	-	-	-
		C051198	Abandoned Equipment Removal	275	28	1	1	25	10	-	-	-	-	-	-	-	-	-	-
		C051199	Mobile Battery Trailer	88	81	2	0	-	-	-	-	-	-	-	-	-	-	-	-
		C052686	Prov RI Survey/Repl UG sec. cables	525	350	47	55	85	-	-	-	-	-	-	-	-	-	-	-
		C053723	Arctic Substation Retirement	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		C054365	63 Line Improvements	85	10	-	21	-	-	-	-	-	-	-	-	-	-	-	-
		C062633	HML RI Replacements	180	-	50	121	-	189	-	-	-	-	-	-	-	-	-	-
		CD00601	Retire Pawluxet Substation (D-Sub)	150	52	9	8	-	-	-	-	-	-	-	-	-	-	-	-
	<b>Other Asset Replacement Total</b>			<b>6,453</b>	<b>13,724</b>	<b>397</b>	<b>1,105</b>	<b>1,073</b>	<b>449</b>	<b>269</b>	<b>250</b>								
	<b>Battery Replacement</b>																		
		C032019	Batts/Chargers NE South OS RI	258	1,160	70	157	200	245	200	200	200	200	200	200	200	200	200	200
		C033843	BatteryRpl/Stratgy/Co49DXT	1,019	680	-	-	-	167	-	-	-	-	-	-	-	-	-	-
	<b>Battery Replacement Total</b>			<b>1,277</b>	<b>1,840</b>	<b>70</b>	<b>157</b>	<b>200</b>	<b>411</b>	<b>200</b>									
	<b>Flood - Hope Substation</b>	C048697	Hope Substation Flood Restoration	410	54	142	124	612	221	629	-	-	-	-	-	-	-	-	-
	<b>Flood - Hope Substation Total</b>			<b>410</b>	<b>54</b>	<b>142</b>	<b>124</b>	<b>612</b>	<b>221</b>	<b>629</b>	<b>-</b>								
	<b>RAPR</b>	C048969	RI RAPR ARP	188	118	1	-	180	182	195	195	200	-	-	-	-	-	-	-
	<b>RAPR Total</b>			<b>188</b>	<b>118</b>	<b>1</b>	<b>-</b>	<b>180</b>	<b>182</b>	<b>190</b>	<b>195</b>	<b>200</b>	<b>-</b>						
	<b>Indoor Sub Replacement</b>																		
		C051205	Dyer St replace indoor subst D-SUB	-	-	-	-	100	13	150	310	1,798	2,090	-	-	-	-	-	-
		C051211	Dyer St replace indoor subst D-LINE	-	-	-	-	79	12	250	310	275	350	-	-	-	-	-	-
	<b>Indoor Sub Replacement Total</b>			<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>179</b>	<b>25</b>	<b>400</b>	<b>620</b>	<b>2,073</b>	<b>2,440</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	<b>New Southeast Sub</b>																		
		C053657	Southeast Substation (D-Sub)	2,050	-	-	47	25	13	250	1,900	4,100	2,750	-	-	-	-	-	-
		C053658	Southeast Substation (D-Line)	1,600	-	-	47	25	12	150	1,750	2,250	650	-	-	-	-	-	-
		C055683	Pawtucket No 1 (D-Sub)	500	-	-	-	5	-	10									

		C051202	13F1 Elim T-Body Joints Prov	400	14	12	19	-	-	-	-	-	-	-	-	-	-	-
	T-Body Total			1,350	737	129	157	43	-	-	-	-	-	-	-	-	-	-
<b>Asset Condition Total</b>				111,773	59,668	12,251	31,327	24,053	33,280	38,368	35,504	39,303	36,810					
<b>Non-Infrastructure</b>																		
	Telecommunications	D040644	Telecom Small Capital Work - RI	175	358	104	216	175	175	175	175	175	175					
	Telecommunications Total			175	358	104	216	175	175	175	175	175	175					
	General Equipment	C058982	Doble DCU's NEC0	216	210	0	0	-	-	-	-	-	-					
		C0S0006	Ocean St-Dist-Genl Equip Blanket	100	323	31	65	100	100	110	115	120	125					
	General Equipment Total			316	532	32	65	100	100	110	115	120	125					
	Corp/Admin/General	C05360E	CAP OH 5360 RIE1000	-	(63)	(35)	(0)	-	-	-	-	-	-					
	Corp/Admin/General Total			-	(63)	(35)	(0)	-	-	-	-	-	-					
<b>Non-Infrastructure Total</b>				491	(63)	(35)	(0)	275	275	285	290	295	300					
<b>System Capacity &amp; Performance</b>																		
	New London Ave Substation #150	C028920	New London Ave (D-Sub)	2,543	1,108	549	729	2,800	2,435	2,000	1,103	-	-					
		C028921	New London Ave (D-Line)	8,613	158	34	84	3,900	1,655	3,000	1,827	-	-					
		C032002	New London Ave (DxT)	3,746	(1)	1	1	-	-	-	-	-	-					
	New London Ave Substation #150 Total			14,902	1,265	582	814	6,800	4,090	5,000	2,930	-	-					
	Chase Hill (Hopkinton) & Related	C024175	Chase Hill Sub (D-Line)	1,387	706	117	1,471	2,700	2,000	2,100	-	-	-					
		C024176	Chase Hill Sub (D-Sub)	5,177	3,942	921	1,475	2,200	1,990	1,626	-	-	-					
		C034102	Retire Ashaway 43 Substation	-	-	-	-	-	-	-	-	-	-					
		C036233	Hope Valley (D-Sub)	-	-	-	-	-	-	-	-	-	-					
		C036234	Hope Valley (D-Line)	-	-	-	-	-	-	-	-	-	-					
	Chase Hill (Hopkinton) & Related Total			6,564	4,648	1,038	2,946	4,900	3,690	3,626	2,100	-	-					
	Aquidneck Island (includes former Jepson & Newport projects)	C015158	Newport Substation (D-Sub)	1,000	724	185	473	300	1,028	2,000	4,149	-	-					
		C024159	Newport 69kV Line 63 (D-Line)	200	148	4	2	50	230	647	100	-	-					
		C028628	Newport SubTrans & Dist Conversion	3,900	423	181	1,085	1,400	884	2,000	4,620	4,025	-					
		C054052	No Aquidneck Retirement (D-Sub)	50	-	-	-	-	-	-	-	-	-					
		C054054	Jepson Substation (D-Line)	800	-	-	-	50	372	350	3,668	2,200	-					
		C058310	Harrison Sub Improvements (D-Sub)	50	-	-	-	-	-	20	-	-	-					
		C058401	Manton Sub Improvements (D-Sub)	50	-	-	-	-	-	-	-	-	-					
		C058404	Kinston Sub Improvements (D-Sub)	600	-	-	-	-	-	90	-	175	-					
		C058407	South Aquidneck Retirement (D-Sub)	50	-	-	-	-	-	-	-	-	-					
		CD00648	Gate 2 Substation (D-Sub)	1,100	195	302	615	50	-	-	500	-	-					
		CD00651	Bailey Brook Retirement (D-Sub)	50	0	-	-	-	-	-	-	-	-					
		CD00652	Vernon Retirement (D-Sub)	50	0	-	-	-	-	109	-	-	-					
		CD00656	Jepson Substation (D-Sub)	2,100	86	91	50	200	368	2,000	3,650	5,000	1,200					
	Aquidneck Island (includes former Jepson & Newport projects) Total			10,000	1,577	763	2,225	2,050	2,882	7,225	16,687	11,600	1,200					
	Kent County	CD01101	Kent County 2nd Transformer (D-Sub)	855	538	62	160	1,100	1,750	-	-	-	-					
		CD01102	Hunt River Substation Retirement	96	(3)	1	1	10	-	-	-	-	-					
		CD01104	Kent County 2nd Transformer (D-Line)	99	26	5	12	100	190	-	-	-	-					
	Kent County Total			1,050	561	68	173	1,210	1,940	-	-	-	-					
	EMS	C035726	EMS - Narragansett Elec	696	-	-	-	(500)	-	510	1,350	1,350	1,350					
		C049679	Harrison #32 - EMS Expansion	520	23	5	11	147	105	142	-	-	-					
		C049680	Rochambeau Ave - EMS Expansion	20	6	2	10	178	14	168	-	-	-					
		C049681	Clarkson - EMS Expansion	263	107	47	174	92	303	-	-	-	-					
		C049682	Warwick 52 - EMS Expansion	446	143	47	46	155	261	-	-	-	-					
		C049689	Knightsville 66 - EMS Expansion	20	32	-	11	178	12	86	-	-	-					
		C049700	Anthony 64-EMS Exp & Upgrades	20	0	-	-	145	-	-	-	-	-					
		C049705	Aggonaug - EMS Expansion	464	25	18	119	147	7	12	-	-	-					
		C049799	Central Falls - EMS Expansion	378	24	(24)	27	147	-	216	-	-	-					
		C049800	Cowenry #54 - EMS Expansion	163	20	13	7	178	190	211	-	-	-					
		C050698	Davisville #84 - EMS Expansion	473	23	2	98	155	209	6	-	-	-					
		C050699	Hopkins Hill #63 - EMS Expansion	415	123	49	287	147	18	-	-	-	-					
		CD00528	EMS Expansion - Natick 29 Substatio	435	155	150	190	14	176	-	-	-	-					
		CD00529	EMS Expansion - Hospital Sub 146	475	432	26	22	5	-	-	-	-	-					
		CD00530	EMS Expansion - Elmwood Outdoor 7	570	298	254	233	10	-	-	-	-	-					
		CD00533	EMS Expansion - Lincoln Ave 72	1,071	895	157	145	5	-	-	-	-	-					
		CD00526	EMS Add-Peacedale 59 RI	588	598	(1)	1	5	-	-	-	-	-					
		CD00531	EMS Expansion - Division Street 61	592	624	(2)	0	2	-	-	-	-	-					
	EMS Total			7,610	3,528	746	1,382	1,210	1,295	1,350	1,350	1,350	1,350					
	Blanket Projects	C0S0015	Ocean St-Dist-Reliability Blanket	805	834	515	730	660	798	834	853	872						
		C0S0016	Ocean St-Dist-Load Relief Blanket	457	539	136	238	381	398	398	407	416						
		C0S0025	OS-Dist-Substation LR/Ret Blnk	120	-	-	38	100	100	105	115	120						
	Blanket Projects Total			1,382	1,373	651	1,007	1,141	1,278	1,310	1,342	1,375	1,408					
	Duonset Sub	C053646	Duonset Sub Expansion (D-Sub)	2,725	407	462	1,293	400	784	2,344	-	-	-					
		C053647	Duonset Sub Expansion (D-Line)	475	18	83	130	80	297	298	-	-	-					
	Duonset Sub Total			3,200	426	545	1,423	480	1,081	2,532	-	-	-					
	Volt/Var	C046352	Volt Var Dline RI Pilot Project	2,750	1,509	802	881	664	752	-	-	-	-					
		C052708	Volt Var-Substation	207	166	28	41	-	-	-	-	-	-					
		C053111	Volt Var - IT/IS	1,282	397	403	601	800	100	-	-	-	-					
	Volt/Var Total			4,239	2,071	1,234	1,523	1,464	852	-	-	-	-					
	Other Reliability	C005461	FH - OS Feeder Hardening	2,214	18,464	60	9	-	-	-	-	-	-					
		C005524	IE - OS Cutout Replacements	31	7,514	-	-	25	-	-	-	-	-					
		C059663	Cutout Mnted Recloser Program RI	20	9	21	10	-	-	-	-	-	-					
		C065470	Recloser Communication Upgrade - RI	650	-	4	-	600	-	-	-	-	-					
	Other Reliability Total			2,915	25,987	86	19	25	600	-	-	-	-					
	OH Line Transformer Replacement Program	C005505	IE - OS Dist Transformer Upgrades	2,299	8,835	245	581	600	475	650	725	750	775					
	OH Line Transformer Replacement Program Total			2,299	8,835	245	581	600	475	650	725	750	775					
	Other Flood	C059882	Flood Contingency Plan NECO - D	-	-	-	153	-	350	-	1,000	1,200	750					
	Other Flood Total			-	-	-	153	-	350	-	1,000	1,200	750					
	Other Load Relief	C013967	PS&I Activity - Rhode Island	265	2,197	(777)	(108)	250	290	295	300	305	310					
		C024179	Cowenry MTS (Dist Sub)	2,970	2,070	7	14	-	-	-	-	-	-					
		C027222	West Farmum - Rem. Dist. Equipment	550	100	7	-	-	-	-	-	-	-					
		C036167	Manton 69F3 - Upgrade getaway, etc	-	-	-	-	-	-	103	-	-	-					
		C036397																

		CD01093	KENTS CORNER transformer contingenc	590	41	0	228	-	-	-	-	-	-	-	-
<b>Other Load Relief Total</b>				<b>8,488</b>	<b>6,499</b>	<b>204</b>	<b>1,518</b>	<b>1,273</b>	<b>290</b>	<b>398</b>	<b>300</b>	<b>305</b>	<b>310</b>		
Kilvert St - DSub		C036522	Kilvert St 87 - Install TB#2	1,933	1,291	513	1,754	1,100	146	-	-	-	-		
<b>Kilvert St - DSub Total</b>				<b>1,933</b>	<b>1,291</b>	<b>513</b>	<b>1,754</b>	<b>1,100</b>	<b>146</b>						
Providence LT Study		C046415	PROVIDENCE LONG TERM STUDY: D-SUB	-	-	-	-	-	-	-	-	-	-		
		C046421	PROVIDENCE LONG TERM STUDY: D-LINE	-	-	-	-	-	-	-	-	-	-		
<b>Providence LT Study Total</b>															
Highland Drive		CD00972	New Highland Drive Substation - DSu	13,133	12,612	(481)	24	-	-	-	-	-	-		
		CD00978	New Highland Drive Substation - DLi	3,590	2,250	1	23	1,200	-	1,329	-	-	-		
<b>Highland Drive Total</b>				<b>16,723</b>	<b>14,862</b>	<b>(480)</b>	<b>47</b>	<b>1,200</b>		<b>1,329</b>					
East Bay Study		C046726	East Bay Study (D-Sub)	-	-	-	84	-	100	-	470	1,400	3,340		
		C046727	East Bay Study (D-Line)	-	-	-	-	-	100	-	550	1,000	4,520		
<b>East Bay Study Total</b>							<b>84</b>		<b>200</b>		<b>1,020</b>	<b>2,400</b>	<b>7,860</b>		
Storm Hardening		C046383	STORM HARDENING FOR RHODE ISLAND	-	-	-	-	-	-	-	-	-	-		
		C046506	Tunk Hill Road, Scituate RI, Storm	1,850	1,310	77	77	-	-	-	-	-	-		
		C054090	Reconductor Anthony Road, Foster RI	1,165	71	6	7	25	-	-	1,100	-	-		
<b>Storm Hardening Total</b>				<b>3,015</b>	<b>1,381</b>	<b>83</b>	<b>85</b>	<b>25</b>			<b>1,100</b>				
Kilvert St - DLine		C036516	Kilvert St 87 - New Fdr (DLine)	3,831	2,345	204	1,104	-	-	-	-	-	-		
<b>Kilvert St - DLine Total</b>				<b>3,831</b>	<b>2,345</b>	<b>204</b>	<b>1,104</b>								
Other Asset Replacement		C053149	NW Vlt 89 Federal Courthouse, Prov.	250	201	1	0	-	-	-	-	-	-		
<b>Other Asset Replacement Total</b>				<b>250</b>	<b>201</b>	<b>1</b>	<b>0</b>								
Reserves		C046971	Reserve for Reliability Unidentifie	-	-	-	-	-	-	-	-	-	1,500		
		C046972	Reserve for Reliability Unidentifie	-	-	-	-	-	-	-	-	-	1,500		
		C046975	Reserve for Load Relief Unidentifie	-	-	-	-	(700)	-	-	-	-	1,000		
		C046987	Reserve for Load Relief Unidentifie	-	-	-	-	(964)	-	-	-	-	3,000		
<b>Reserves Total</b>								<b>(1,664)</b>					<b>7,000</b>		
Clarke St		C046831	CLARKE 65J12 Feeder Upgrade (D-Sub)	2,194	1,005	797	981	200	-	-	-	-	-		
		C046832	CLARKE St Feeder Upgrades (D-Line)	445	111	255	269	50	-	-	-	-	-		
<b>Clarke St Total</b>				<b>2,639</b>	<b>1,117</b>	<b>1,051</b>	<b>1,249</b>	<b>250</b>							
Johnston Sub		C033535	Johnston Sub 12.47 kV Expansion	4,714	4,163	336	360	-	-	-	-	-	-		
<b>Johnston Sub Total</b>				<b>4,714</b>	<b>4,163</b>	<b>336</b>	<b>360</b>								
<b>System Capacity &amp; Performance Total</b>				<b>95,753</b>	<b>82,131</b>	<b>7,870</b>	<b>18,442</b>	<b>22,148</b>	<b>18,968</b>	<b>23,620</b>	<b>28,554</b>	<b>18,980</b>	<b>20,653</b>		
<b>Grand Total</b>				<b>267,107</b>	<b>183,446</b>	<b>39,781</b>	<b>80,629</b>	<b>73,300</b>	<b>83,441</b>	<b>95,000</b>	<b>95,000</b>	<b>90,000</b>	<b>90,000</b>		

**Exhibit 1 – JJ R & RM  
Section 3  
Vegetation Mgmt.**

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## **Section 3**

### **Vegetation Management Program FY 2017 Electric ISR Plan**

### **Vegetation Management Program FY 2017 Proposal**

The Company's Vegetation Management (VM) Program is an essential component of the Company's plan to maintain the safety and reliability of its electric distribution network. Trees are an important concern for several reasons. Tree contact with the electric distribution system increases the risk of electric shock to the public, slows the restoration of critical infrastructure, and may increase the risk of fire. Trees can also be a significant deterrent to reliability since tree contact with the distribution system during windy/stormy conditions may cause a phase-to-phase fault, which will trip either a line fuse, pole recloser, or a station breaker causing an interruption in service.

As shown in Section 2, Chart 5 above, trees were responsible for approximately 63,000 customer interruptions in FY 2015, which represented approximately 18% of the total interruptions in FY 2015. Although the number of customer interruptions was down from the prior year, tree related interruptions were the second leading cause of interruptions after deteriorated equipment.

The Company has developed a strong VM program, which provides a measure of safety for the public/workforce, favorable operational efficiency, and minimizes the number of customer interruptions due to trees. The Company's VM program includes several different activities, each addressing a different aspect of utility vegetation management.

**Cycle Pruning** – The cycle pruning program is designed to ensure that the vegetation growth along the overhead portion of the Company's distribution network does not interfere with the safe and reliable performance of the electric network. Cycle Pruning includes the scheduling

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of every distribution circuit for pruning on a fixed timeframe or rotation. The pruning work performed is based on a dimension clearance specification. Cycle Pruning is designed to maintain an acceptable clearance between overhead conductors and vegetation to minimize the safety risk to the public and utility workforce. A stable and consistently funded circuit pruning program minimizes the risks of public and worker electrocution as well as wild fire events and is a utility best practice.

Consistent circuit pruning also helps maintain service reliability and supports efficient management of the overhead network. Managing the vegetation along the network helps to avoid interruptions caused by phase-to-phase tree contact and makes the network more accessible to line crews so they can restore power quickly following an interruption. Cycle Pruning also provides crews the clearance necessary to accurately inspect circuits and to more efficiently perform any required maintenance which also helps avoid interruptions. A review of the cycle pruning program from FY 2007 to FY 2015 shows, on average, a 30% improvement in customer interruptions (CI) per circuit in the first year after pruning. With the circuit pruning work in FY 2014, National Grid completed a full four-year cycle on all overhead distribution circuits for the first time due to consistent funding through the ISR process.

The Company continues to recommend a four-year interval as the optimum pruning cycle for the Rhode Island overhead distribution assets based on tree growth rates and the acceptable clearance dimensions obtained at the time of pruning. The total overhead distribution mileage in Rhode Island is approximately 4,932 miles. To maintain a four-year pruning cycle, 1,233 miles need to be pruned each year. After detailed field analysis of the current circuits due at this time,

the FY 2017 plan will require the pruning of 1,196 miles of distribution. The estimated cost for distribution cycle pruning in FY 2017 is \$5.1 million, or approximately \$4,222 per mile.

**Enhanced Hazard Tree Mitigation (EHTM)** - Hazard tree removal, as part of a complete utility vegetation management program, has also become a best industry practice. Full tree and large limb failures have been shown to account for a significant portion of customer interruptions, not only in Rhode Island but also in other states. Using three years of tree-related interruption data for Rhode Island indicates that fallen trees account for 50% of tree-related customer interruptions.

To address this issue, in 2008, the EHTM program was implemented to identify and remove dying or structurally weakened trees and overhanging leads along the three phase sections of distribution circuits. The three-phase portion of the circuit is the most susceptible to tree caused faults and also serves the highest number of customers per exposed mile. Thus, hazard tree removal on three-phase sections of the distribution circuit intuitively provides the highest benefit per hazard tree removal dollar. EHTM uses an industry leading tree risk assessment protocol to identify hazard trees. To improve customer satisfaction and reliability, the Company has expanded its program to look beyond three phase sections on circuits experiencing multiple interruptions.

The purpose of the EHTM program is primarily to provide a reliability benefit. The hazard tree mitigation program targets the mainline portion of the Company's worst performing circuits where tree caused phase-to-phase faults will interrupt the entire population of customers on that circuit. To demonstrate these benefits and to meet the requirements of the FY 2012

Rhode Island Electric ISR Plan<sup>1</sup>, a study of the Company's EHTM program was performed. From FY 2008 to FY 2015, the results show an average improvement of tree-related Customers Interruptions (CI) by circuit of 76% for the first year following project completion, thus demonstrating a significant improvement in customer service reliability on targeted circuits.

Due to the spread of the Emerald Ash Borer throughout the northeast, the Company anticipates that Emerald Ash Borer will become a serious threat throughout Rhode Island. Although the proposed EHTM budget has been reduced by \$50,000, resulting in a total budget of \$950,000 for FY 2017, the Company will continue to identify and remove hazard trees, along with proactively removing Ash trees and developing an inventory to accurately forecast the spread of the Emerald Ash Borer throughout the state.

**Sub-Transmission** – This category includes VM activities for the sub-transmission (Sub-T) right-of-way (ROW) network. Much like distribution cycle pruning, the Sub-T circuits are treated on a four-year cycle, but because of the smaller population, these circuits are not as easily balanced year-to-year. The total cost for the required FY 2017 sub-transmission VM work is \$780,000. The sideline pruning and hazard tree work is the most expensive type of work and is based on a price of approximately \$20,000 per mile for off-road work and \$4,500 per mile for on road work. Floor treatment cost is approximately \$650 per acre. Overall, the Company expects to perform 99 miles of sideline work and 119.66 acres of floor work this fiscal year.

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<sup>1</sup> Electric ISR Plan Vegetation Management Cost Benefit Report, filed September 5, 2012.

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**Chart 1**  
**Sub-Transmission Vegetation Management Miles/Acres**  
**(Includes both Distribution and Transmission Assets)**

Sideline Pruning and Hazard Tree Removal (Miles)					
FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
12.10	28.51	59.52	34.09	82.16	99.00
Floor Treatment (Acres)					
FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
88.67	100.68	222.05	214.97	89.28	119.66

**Police Detail/Flagman** – To safely perform the Cycle Pruning and EHTM, the Company is required to hire police details and flagman. Police detail and flagger costs have recently been a major focus in Electric and Gas ISR proceedings in light of the increase in these costs over the past three years. For FY 2017, police detail costs are estimated to be \$850,000. The Company considers several factors when estimating the police detail budget, including but not limited to, prior years, costs per mile and percent of total budget, as well as the general police detail policies of the specific towns and municipalities where work is to be performed during the fiscal year. Importantly, despite the year-over-year increase in police detail and flagger costs in Rhode Island, as a percentage of the overall tree trimming budget, these costs remain well below similar police detail costs in Massachusetts, which also requires the use of police details. Specifically, in FY 2012 police detail costs in Massachusetts represented 14.6% of the total tree trimming budget for the state. Massachusetts police detail costs increased to 16.1% of the budget in FY 2013, and 17.5% of the budget in FY 2014. By contrast, in Rhode Island, police detail costs represented 5.6% of the tree trimming budget in FY 2012, 9.3% in FY 2013, 9.0% in FY 2014, 8.4% in FY 2015, and 8.4% in 2016.

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It is also important to recognize that police detail and flagger costs are driven primarily by a number of factors outside of the Company's control, including a myriad of municipal requirements, work locations, and the hourly rates set by the municipalities. For example, the number and levels of required details vary by town and by traffic and road conditions. Also, certain towns mandate the use of police officers on a detail and limit or restrict the use of less expensive third-party flaggers. Depending on the town, different factors such as municipal ordinances, requirements in police union contracts or specific safety municipal requirements can play a role in the ability of the Company to manage its total police detail costs budget.

Notwithstanding these factors, the Company has adopted a number of changes to attempt to minimize police detail and flagger costs where possible. This includes removing police detail costs from the Company's Cycle Pruning program vendor bidding process and placing these costs into a separate police detail and flagger budget account. This permits the Company to separately track detail costs, and provides a more accurate historical basis for discussions with municipalities designed to mitigate police and detail costs, where possible. In addition, the VM program police protection processes are now also coordinated with the Company's electric and gas construction departments. The VM program police protection processes are also coordinated with the Company's community relations department so that the Company can discuss police detail requirements with communities and municipalities in advance of performing the work.

Additionally, since much of the Company's tree trimming work is performed by contractors, the Company has added police detail costs to the system used to evaluate overall contractor performance for a fiscal year, thus creating an incentive for contractors to actively

focus on police details. To assist with this effort, the Company has also revised its contracting strategies by placing only one single contractor in each municipality during a given year. This allows each contractor to develop a relationship with each town, and to better address communications with public safety officials.

**Core Activities** – The Company performs several other essential VM activities to efficiently maintain the safety and reliability of the network and to address customer needs. In contrast to Cycle Pruning or EHTM, the Company has very little discretion over the timing of these activities. This work includes responding to customer requests for vegetation-related work due to safety and reliability concerns. It also includes response to requests for interim or spot trimming by circuit patrols in locations where vegetation growth has exceeded normal conditions or where the patrols have identified other vegetation-related reliability concerns. Responding to sporadic emergency calls to remove trees or limbs from wires and to perform vegetation work necessary to restore power to customers is another important core activity performed by forestry crews. Spending for each core activity varies from year-to-year depending on customer calls, weather, and system requirements. Each core activity separately consumes a small and variable proportion of the overall budget. Of note, recently the Company has identified an increase in vine related interruptions in the last two years. To address these vine-related issues, the Company has added an additional \$100,000 to perform additional work for vine control so as to mitigate and to prevent increased customer interruptions. Overall, for FY 2017, the Company expects to spend \$1.2 million for the core activities.

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**Fiscal Year 2017 Vegetation Management Budget**

As detailed in Chart 2 below, the FY 2017 Electric ISR Plan proposes to spend approximately \$8.855 million for VM in FY 2017. This represents a 0.3% decrease from the \$8.884 million requested and approved for FY 2016.

**Chart 2**  
**Vegetation Management Spending**  
 (\$000)

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017 Proposed
Cycle Prune (Base)	\$5,451	\$4,764	\$5,110	\$4,475	\$5,414	\$5,050
Hazard Tree – EHTM	\$806	\$1,198	\$700	1,000	\$1,000	\$950
Sub-T (off & on road)	\$392	\$243	\$639	\$316	\$220	\$780
Police/Flagman Detail	\$461	\$766	\$769	\$650	\$750	\$850
Core Crew (All Other Activities) (incl. Interim/Spot Trim, Customer Requests, Emergency Response, Worst Feeders, etc.)	\$1,066	\$1,276	\$1,312	\$1,285	\$1,500	\$1,225
<b>Total</b>	<b>\$8,176</b>	<b>\$8,247</b>	<b>\$8,530</b>	<b>\$7,726</b>	<b>\$8,884</b>	<b>\$8,855</b>

**Exhibit 1 – JJ R & RM  
Section 4  
I&M Plan**

## **Section 4**

### **Inspection and Maintenance Plan FY 2017 Electric ISR Plan**

## **Inspection and Maintenance Program FY 2017 Proposal**

### **Background**

Consistent with the Company's condition-based asset management approach, the Company has implemented an Inspection and Maintenance (I&M) program to achieve a five-year inspection cycle of the overhead and underground assets. This program is intended to address deteriorated assets to ensure that the distribution and sub-transmission system is safe, reliable, and environmentally sound. Asset replacement prior to failure provides incremental safety benefits for both the public and our employees. In addition to asset replacement, testing for elevated voltage should minimize potential safety issues related to contact voltage on publicly accessible Company-owned distribution and sub-transmission overhead and underground line facilities. Periodic inspection of equipment also provides for the avoidance of potential environmental problems such as insulating fluid leaks/spills from assets such as transformers and capacitor banks. The program is also intended to satisfy section 214 of the National Electric Safety Code (NESC), which outlines inspection of equipment guidelines for electric utilities.

In addition to addressing deteriorated assets, the data collected during the inspections enhances the Company's Asset Management reviews and the development of projects and programs to maintain reliability performance and customer satisfaction. As shown in Section 2, Chart 5, animals, lightning, and deteriorated equipment, caused over 95,000 customer interruptions in FY 2015, accounting for approximately 27% of all customer interruptions in FY 2015. Although the I&M program is not a reliability-based program, the Company believes that

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the I&M program is an essential component to fulfilling its obligation to provide safe, reliable, and cost effective electric delivery service to customers in Rhode Island. The Company has agreed with the Division to assess the costs and benefits of the I&M program on an ongoing basis.

As of the first quarter of FY 2016, the Company has inspected 92% of its overhead distribution system feeders and is on track to finish inspecting 100% of all RI feeders by the end of FY 2016, thus completing the five-year inspection cycle. The Plan for FY 2017 signifies the beginning of the second five-year inspection cycle for all distribution feeders.

To date, the Company has designed 37% of the feeders inspected in the first cycle, and has completed repair work on 19%. In the development of the FY 2016 ISR budget with the Division, the Company reduced the annual capital budget to achieve a ten-year construction cycle. However, due to the necessary funding for large projects like the South Street substation rebuild and to achieve an overall FY 2017 capital budget of \$90.0 million, the I&M budget has been reduced further. The proposed spending for FY 2017 represents a 63% decrease in capital spending and a 61% decrease in O&M spending over the approved FY 2016 budgets. The program budget is not expected to return to FY 2016 levels until FY 2020. Although further extending the construction schedule presents an asset risk, the second five-year inspection cycle that starts in FY 2017 will continue identification of damaged or failing assets (i.e. Level 1 items) that will be replaced, in general, within 90 days.

In addition to continuing overhead distribution system inspections, the FY 2017 I&M program will continue to increase inspections on its overhead sub-transmission system. The goal for sub-transmission assets is to be on a five-year inspection cycle that bundles repair work per

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feeder, similar to the distribution feeder repair work currently being done. To date, the Company has inspected three sub-transmission feeders. The inspections found very limited issues for repair.

The Company will also continue inspections of its manhole-based underground assets through working inspections in FY 2017. Elevated voltage testing of 100% of the Designated Contact Voltage Risk Areas (DCVRA's) designated in Docket No. 4237-A is also a part of the FY 2017 plan.

The Company's proposal for each of the program components is as follows:

- The first five-year cycle for all distribution overhead I&M inspections is expected to be completed by the end of FY 2016. The proposed Plan is designed to start the second five-year inspection cycle and the continuation of repair work for items identified during the initial inspection cycle.
- Sub-transmission overhead I&M inspections will be performed in FY 2017. This work will include inspections, engineering, and limited repairs.
- Underground I&M inspections will continue to be performed as part of normal working inspections.
- Overhead Manual Contact Voltage testing will be performed as part of the cycle inspections.
- Underground Manual Contact Voltage testing will continue on a five-year cycle.
- Street Light Manual Contact Voltage testing will continue on a three-year cycle.
- Mobile Contact Voltage Testing in FY 2017 will test 100% of the DCVRA's.
- Continuation of the development of the Long Term Plan.

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**Fiscal Year 2017 Inspection and Maintenance Budget**

As shown in Chart 1 below, the Company proposes a total I&M program budget of approximately \$4.1 million for FY 2017. The associated capital costs, which are included in the capital budgets provided in Section 2 of this Electric ISR Plan, and the Opex related to Capex costs, which are opex costs necessary to complete the capital construction, are \$2.5 million and \$0.5 million, respectively. The Inspections and Repairs related costs are \$0.8 million, which include a component for a Contact Voltage Program as ordered in Docket No. 4237. Costs to continue the development of the Long Term plan are also included. The total O&M budget for the I&M program is \$1.3 million.

**Chart 1  
 I&M Program Costs**

	<b>Total</b>
<b>Capital Costs*</b>	<b>\$ 2,510,000</b>
<i>Opex Related to Capex</i>	<i>\$ 450,000</i>
<i>Inspections and Repair Related Costs</i>	<i>\$ 816,750</i>
<i>Long Range Plan Study</i>	<i>\$ 25,000</i>
<b>Total Operation and Maintenance Expenses</b>	<b>\$ 1,291,750</b>
<b>Removal Costs</b>	<b>\$ 320,000</b>
<b>Total Program Costs</b>	<b>\$ 4,121,750</b>

\* Capital Costs are included in the total capital cost of \$83.4 million as discussed in Section 2 above.

**Exhibit 1 – JJ R & RO  
Section 5  
Revenue Req.**

## **Section 5**

### Revenue Requirement FY 2017 Electric ISR Plan

**Revenue Requirement  
FY 2017 Proposal**

The attached proposed revenue requirement calculation reflects the revenue requirement related to the Company's proposed investment in its Electric Infrastructure, Safety, and Reliability Plan (the Electric ISR Plan or Plan) for the fiscal year ending March 31, 2017.

As shown on Page 1, Column (b) of Attachment 1 to this Section, the Company's FY 2017 Electric ISR Plan revenue requirement amounts to \$27,270,343 and consists of the following elements: (1) operation and maintenance (O&M) expense associated with the Company's vegetation management (VM) activities, and the Company's Inspection and Maintenance (I&M) program, (2) the Company's capital investment in electric utility infrastructure, and (3) the FY 2017 Property Tax Recovery Adjustment. Lines 1 and 2 of that column reflect the forecasted FY 2017 revenue requirement related to O&M expenses for VM and I&M of \$8,855,000 and \$1,291,750, respectively. As described in Sections 1 and 4 of this Plan, the Electric ISR Plan includes the recovery of O&M inspection and maintenance costs associated with the Company's Contact Voltage Detection and Repair Program (Contact Voltage Program), mandated by R.I.G.L. § 39- 2-25 and approved by the PUC in Docket No. 4237<sup>12</sup>. Contact Voltage Program costs are included in the \$1,291,750 of I&M expenses referred to above. Line 3 includes a reduction of \$163,749 which represents the portion of Contact Voltage Program costs that are being recovered in base rates from Docket No. 4323 and therefore should not be included in the Electric ISR revenue requirement.

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<sup>12</sup> R.I. Gen. Laws § 39-2-25(6)(c).

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The FY 2017 revenue requirement associated with the Company's incremental capital investment in electric utility infrastructure of \$17,287,342 is shown on Line 14, consisting of the \$2,711,630 revenue requirement on FY 2017 proposed incremental ISR capital investment, as calculated on Attachment 1, Page 2, plus the FY 2016, FY 2015, FY 2014, FY 2013, and FY 2012 revenue requirements on incremental ISR capital investment of \$5,428,148, \$2,990,204, \$959,924, \$(1,042,177), and \$441,364 from Pages 4, 6, 8, 11 and 13, respectively and the Property Tax Recovery Adjustment of \$5,798,249 from Page 18. It is important to note that the incremental capital investment for the FY 2017 Electric ISR revenue requirement excludes capital investment embedded in base rates in Docket No. 4323 for FY 2012, 2013 and 2014. Incremental electric capital investment for this purpose is defined as cumulative allowed capital plus cost of removal, less annual depreciation expense embedded in the Company's base rates, net of depreciation expense attributable to general plant. The total annual FY 2017 Electric ISR Plan revenue requirement for both O&M expenses and capital investment is \$27,270,343, as reflected in Column (b) on Line 15, and is equal to the sum of Lines 4 and 14.

For illustration purposes only, Column (c) of Page 1 provides the FY 2018 revenue requirement for the respective vintage year capital investments as calculated on Attachment 1, Pages 2, 4, 6, 8, 11 and 13. It is important to note that these amounts will be trued up to actual investment activity after the conclusion of the FY, with rate adjustments for the revenue requirement differences incorporated in future ISR filings.

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**Operation and Maintenance Expenses**

As previously noted, the Company's FY 2017 Electric ISR Plan revenue requirement includes \$8,855,000 of VM and \$1,291,750 of I&M expenses as shown on Page 1, Lines 1 and 2 in Column (b) of the Attachment. As described above, the Electric ISR Plan I&M component includes the recovery of O&M inspection and maintenance costs associated with the Company's Contact Voltage Program, however the Company's base rates are recovering \$163,749 of voltage monitoring costs, so that amount is being deducted on Line 3 in determining total FY 2017 O&M expenses of \$9,983,001 as shown on Line 4 of the attachment.

**Electric Infrastructure Investment**Incremental Capital Investment

Page 2 of Attachment 1 to this Section calculates the revenue requirement of incremental capital investment associated with the Company's FY 2017 Electric ISR Plan; that is, electric infrastructure investment (net of general plant) incremental to the amounts embedded in the Company's base distribution rates. The proposed capital investment and cost of removal were obtained from the "FY 2017 Proposed Plant in Service" column on Chart 11 of Section 2 of this Plan. The FY 2017 revenue requirement also includes the incremental capital investment associated with the Company's FY 2016, FY 2015, FY 2014, FY 2013, and FY 2012 Electric ISR Plans, excluding investments reflected in rate base in Docket No. 4323 for each of those fiscal years as shown on pages 4, 6, 8, 11 and 13, respectively. Page 15 of Attachment 1 calculates the incremental FY 2012 through FY 2014 ISR capital investment and the related

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incremental cost of removal and incremental retirements for the FY 2017 electric ISR revenue requirement. The calculations on Page 15 compare ISR-eligible capital investment, cost of removal and retirements for FY 2012 through FY 2014, to the corresponding amounts reflected in Docket No. 4323.

For purposes of calculating the capital-related revenue requirement, investments in electric infrastructure have been divided into two categories: (1) nondiscretionary capital investments, which principally represent the Company's commitment to meet statutory and/or regulatory obligations, and (2) discretionary capital investments, which represent all other electric infrastructure-related capital investment falling outside of the specifically defined nondiscretionary categories. This ISR plan limits the amount of eligible discretionary capital investments made since April 1, 2011 to the lesser of cumulative discretionary capital additions, or the cumulative amount of discretionary project spend as agreed to by the Division and as approved by the PUC since the April 1, 2011 effective date of this ISR mechanism. This limitation on discretionary capital investment will be analyzed as a part of the aforementioned annual reconciliation of the proposed ISR investment to actual investment activity after the conclusion of the fiscal year.

**Electric Infrastructure Revenue Requirement**

The revenue requirement calculation on incremental electric infrastructure investment for vintage year FY 2017 is shown on Page 2 of Attachment 1. The revenue requirement calculation incorporates the incremental Electric ISR Plan capital investment, cost of removal and retirements. The calculation on Page 2 begins with the determination of the depreciable net

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incremental capital that will be included in the ISR Plan rate base. Because depreciation expense is affected by plant retirements, retirements have been deducted from the total allowed capital included in ISR Plan rate base in determining depreciation expense. Retirements, however, do not affect rate base as both plant-in-service and the depreciation reserve are reduced by the installed value of the plant being retired and therefore have no impact on net plant. For purposes of calculating the revenue requirement, plant retirements have been estimated based on the percentage of retirements to additions during FY 2015, and have been deducted from the total depreciable capital amount as shown on Lines 4 through 6. Incremental book depreciation expense on Line 15 is computed based on the net depreciable additions, from Line 6 at the 3.40 percent composite depreciation rate as approved in Docket No. 4065<sup>13</sup>, and as shown on Line 12. The Company has assumed a half year convention for the year of installation. Unlike retirements, cost of removal affects rate base but not depreciation expense. Consequently, the cost of removal, as shown on Line 10, is combined with the incremental depreciable amount from Line 9 (vintage year ISR Plan allowable capital additions less non-general plant depreciation expense included in base distribution rates) to arrive at the incremental investment on Line 11 to be included in the rate base upon which the return component of the annual revenue requirement is calculated.

The rate base calculation incorporates net plant from Line 11, and accumulated depreciation and accumulated deferred tax reserves as shown on Lines 16 and 21, respectively. The deferred tax amount arising from the capital investment, as calculated on Lines 17 through

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<sup>13</sup> The PUC did not change depreciation rates in the Company's base rate filing in Docket No. 4323.

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19, equals the difference between book depreciation and tax depreciation on the capital investment, times the effective tax rate, net of any tax net operating losses (NOL). The calculation of tax depreciation is described below. The average rate base is shown on Line 26. This amount is multiplied by the pre-tax rate of return approved by the PUC in Docket No. 4323, as shown on Line 27, to compute the return and tax portion of the incremental revenue requirement, as shown on Line 28. To this, incremental depreciation expense is added on Line 29. The sum of these amounts reflects the annual revenue requirement associated with the capital investment portion of the Company's Electric ISR Plan on Line 31, which is carried forward to Page 1, Line 10, as part of the total Electric ISR Plan revenue requirement. Similar revenue requirement calculations for the vintage FY 2016, FY 2015, FY 2014, FY 2013, and FY 2012 incremental ISR Plan capital investments are shown on Pages 4, 6, 8, 11 & 13, respectively. These capital investment revenue requirement amounts are added to the total O&M expenses on Line 4, Page 1, to derive the total FY 2017 Electric ISR Plan revenue requirement of \$27,270,343, as shown on Line 15, and represents an incremental \$6,068,551 increase from the FY 2016 Electric ISR Plan revenue requirement, as shown on Line 16.

#### Tax Depreciation Calculation

The tax depreciation calculations for FY 2017, FY 2016, FY 2015, FY 2014, FY 2013, and FY 2012 are provided on Pages 3, 5, 7, 9, 12 and 14 of Attachment 1, respectively. The tax depreciation amount assumes that a portion of the capital investment, as shown on Line 1 of those pages, will be eligible for immediate deduction on the Company's corresponding FY federal income tax return. This immediate deductibility is referred to as the capital repairs

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deduction<sup>14</sup>. In addition, plant additions not subject to the capital repairs deduction may be subject to bonus depreciation as shown on Lines 4 through 12 on Pages 7, 9, 12, and 14. The company assumes no bonus depreciation for FY 2016 and 2017. During 2010, Congress passed the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (the Act), which provided for an extension of bonus depreciation. Specifically, the Act provides for the application of 100 percent bonus depreciation for investment constructed and placed into service after September 8, 2010 through December 31, 2011, and then 50 percent bonus depreciation for similar capital investment placed into service after December 31, 2011 through December 2012. The 50 percent bonus depreciation rate was later extended through December 31, 2014.<sup>15</sup>

Finally, the remaining plant additions not deducted as bonus depreciation are then subject to the IRS Modified Accelerated Cost-Recovery System, or MACRS, tax depreciation rate. The amount of depreciation deducted for MACRS is added to the amount of capital repairs deduction plus the bonus depreciation deduction and cost of removal to arrive at total tax depreciation.

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<sup>14</sup> During 2009, the Internal Revenue Service (“IRS”) issued additional guidance, under Internal Revenue Code Section 162, related to certain work considered to be repair and maintenance expense, and eligible for immediate tax deduction for income tax purposes, but capitalized by the Company for book purposes. As a result of this additional guidance, the Company recorded a one-time tax expense for repair and maintenance costs in its FY 2009 federal income tax return filed on December 11, 2009 by National Grid Holdings, Inc. Since that time, the Company has taken a capital repairs deduction on all subsequent FY tax returns. This has formed the basis for the capital repairs deduction assumed in the Company’s revenue requirement. This tax deduction has the effect of increasing deferred taxes and lowering the revenue requirement that customers will pay under the capital investment reconciliation mechanism. The Company’s federal income tax returns are subject to audit by the IRS. If it is determined in the future that the Company’s position on its tax returns on this matter was incorrect, the Company will reflect any related IRS disallowances, plus any associated interest assessed by the IRS, in a subsequent reconciliation filing under the ISR Plan.

<sup>15</sup> The Company anticipates that the IRS will issue further guidance on this issue and, to the extent such guidance differs from the Company’s interpretation of the 2010 Act, will reflect any resulting differences in a subsequent reconciliation filing under the ISR Plan.

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These annual total tax depreciation amounts are carried forward to Line 13 of Attachment 1, Pages 2, 4, 6, 8, and 11 and Line 11 of Attachment 1, Page 13, for the respective years, and incorporated in the deferred tax calculation.

### Federal Net Operating Loss

Tax NOLs are generated when the Company has tax deductions on its income tax returns that exceed its taxable income. This does not mean that the Company is suffering losses in its financial statements; instead the Company's tax NOLs are the result of the significant tax deductions that have been generated in recent years by the bonus depreciation and capital repairs tax deductions. In addition to first-year bonus tax depreciation, the US tax code allows the Company to classify certain costs as repairs expense which the Company takes as an immediate deduction on its income tax return; however these costs are recorded as plant investment on the Company's books. These significant bonus depreciation and capital repairs tax deductions have exceeded the amount of taxable income reported in tax returns filed for FY 2009 to FY 2014, with the exception of FY 2011. NOLs are recorded as non-cash assets on the Company's balance sheet and represent a benefit that the Company and customers will receive when the Company is able to realize actual cash savings when it applies these NOLs against taxable income in the future.

NOLs are an offset to the Company's accumulated deferred income taxes. Accumulated deferred income taxes, which equals the difference between book depreciation and tax depreciation on ISR capital investment, times the effective rate are included as a credit or

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reduction in the calculation of rate base. However, since the Company was not able to fully utilize all of its tax deductions, tax NOLs were recorded which offset a portion of the rate base reduction for accumulated deferred income taxes. These amounts can be found in the FY 2012, FY 2013, and FY 2014 revenue requirement calculations on Pages 8, 11, and 13 respectively. The revenue requirement calculations on FY 2015, FY 2016, and FY 2017 capital investment do not currently include NOLs, and will not until the tax returns for those years are filed and the determination is made that there is NOL to be reflected. Conversely, if the Company is able to utilize any of its currently accumulated NOLs in the future tax years that benefit will be flowed through to customers.

#### Property Tax Recovery Adjustment

The Property Tax Recovery Adjustment is shown on Pages 17 through 19 of Attachment 1. The method used to recover property tax expense under the ISR was modified by the rate case settlement agreement in Docket No. 4323. In determining the base on which property tax expense is calculated for purposes of the ISR revenue requirement, the Company includes an amount equal to the base-rate allowance for depreciation expense and depreciation expense on incremental ISR plant additions in the accumulated reserve for depreciation that is deducted from plant in service. The ISR property tax recovery adjustment also includes the impact of any changes in the Company's effective property tax rates on base-rate embedded property, plus cumulative ISR net additions. Property tax impacts associated with non-ISR plant additions are excluded from the property tax recovery calculation.

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This provision of the settlement agreement became effective for ISR property tax recovery periods subsequent to the January 31, 2014 end of the rate year. The FY 2017 revenue requirement includes \$5,798,249 for the net property tax recovery adjustment.

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Annual Revenue Requirement Summary**

Line No.		As Approved		
		Fiscal Year 2016 (a)	Fiscal Year 2017 (b)	Fiscal Year 2018 (c)
<b><u>Operation and Maintenance (O&amp;M) Expenses:</u></b>				
1	Current Year Vegetation Management (VM)	\$8,884,000	\$8,855,000	
2	Current Year Inspection & Maintenance (I&M)	\$3,333,000	\$1,291,750	
3	Electric Contact Voltage expenses included in R.I.P.U.C. Docket No. 4323	(\$163,749)	(\$163,749)	
4	<b>Total O&amp;M Expense Component of Revenue Requirement</b>	<b>\$12,053,251</b>	<b>\$9,983,001</b>	
<b><u>Capital Investment:</u></b>				
5	Actual Revenue Requirement on Incremental FY 2012 Capital included in ISR Rate Base	\$350,955	\$441,364	\$500,926
6	Actual Revenue Requirement on Incremental FY 2013 Capital included in ISR Rate Base	(\$1,085,364)	(\$1,042,177)	(\$990,973)
7	Actual Revenue Requirement on Incremental FY 2014 Capital included in ISR Rate Base	\$582,943	\$959,924	\$889,260
8	Actual Revenue Requirement on FY 2015 Capital included in ISR Rate Base	\$3,453,202	\$2,990,204	\$2,885,149
9	Forecasted Annual Revenue Requirement on FY 2016 Capital included in ISR Rate Base	\$2,789,692	\$5,428,148	\$5,131,178
10	Forecasted Annual Revenue Requirement on FY 2017 Capital included in ISR Rate Base	\$0	\$2,711,630	\$5,282,288
11	Subtotal	\$6,091,427	\$11,489,093	\$13,697,827
12	FY 2016 Property Tax Recovery Adjustment	\$3,057,115		
13	FY 2017 Property Tax Recovery Adjustment		\$5,798,249	
14	<b>Total Capital Investment Component of Revenue Requirement</b>	<b>\$9,148,541</b>	<b>\$17,287,342</b>	
15	<b>Total Fiscal Year Revenue Requirement</b>	<b>\$21,201,792</b>	<b>\$27,270,343</b>	
16	<b>Total Incremental Fiscal Year Rate Adjustment</b>		<b>\$6,068,551</b>	

Column (a) - as Approved per R.I.P.U.C. Docket No. 4539

Column (b)

- 1 Projected Vegetation Management
- 2 Projected Inspection & Maintenance
- 4 Line 1 + Line 2 + Line 3
- 5 Page 13 of 22, Line 29
- 6 Page 11 of 22, Line 31
- 7 Page 8 of 22, Line 32
- 8 Page 6 of 22, Line 31
- 9 Page 4 of 22, Line 31
- 10 Page 2 of 22, Line 31
- 11 Sum of lines 5 through 10
- 13 Page 18 of 22, Line 106
- 14 Sum of lines 11 through 13
- 15 Sum of lines 4 + 14
- 16 Current Year Line 15 - Prior Year Line 15

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FY 2017 Revenue Requirement on FY 2017 Actual Incremental Capital Investment

Line No.			Fiscal Year 2017 (a)	Fiscal Year 2018 (b)
<u>Capital Additions Allowance</u>				
<i>Non-Discretionary Capital</i>				
1	Non-Discretionary Additions	Section 2, Page 51, Chart 11	\$31,396,000	\$0
<i>Discretionary Capital</i>				
2	Lesser of Actual Cumulative Discretionary Capital Additions or Spending, or Approved Spending	Section 2, Page 51, Chart 11	\$47,082,000	\$0
3	Total Allowed Capital Included in Rate Base	Line 1 + Line 2	\$78,478,000	\$0
<u>Depreciable Net Capital Included in Rate Base</u>				
4	Total Allowed Capital Included in Rate Base in Current Year	Line 3	\$78,478,000	\$0
5	Retirements	Line 4 * 20.44%	\$16,040,903	\$0
6	Net Depreciable Capital Included in Rate Base	Column (a) = Line 4 - Line 5; Column (b) = Prior Year Line 6	\$62,437,097	\$62,437,097
<u>Change in Net Capital Included in Rate Base</u>				
7	Capital Included in Rate Base	Line 3	\$78,478,000	\$0
8	Depreciation Expense	Per Settlement Agreement Docket No. 4323, excluding General Plant	\$43,031,774	\$0
9	Incremental Depreciable Amount	Column (a) = Line 7 - Line 8; Column (b) = Prior Year Line 9	\$35,446,226	\$35,446,226
10	Total Cost of Removal	Section 2, Page 51, Chart 11	\$9,800,000	\$9,800,000
11	<b>Total Net Plant in Service</b>	<b>Line 9 + Line 10</b>	<b>\$45,246,226</b>	<b>\$45,246,226</b>
<u>Deferred Tax Calculation:</u>				
12	Composite Book Depreciation Rate	As approved per R.I.P.U.C. Docket No. 4323	3.40%	3.40%
13	Tax Depreciation	Page 3 of 22, Line 10	\$29,889,387	\$4,379,298
14	Cumulative Tax Depreciation	Prior Year Line 13 + Current Year Line 14	\$29,889,387	\$34,268,685
15	Book Depreciation	Column (a) = Line 6 * Line 12 * 50%; Column (b) = Line 6 * Line 12	\$1,061,431	\$2,122,861
16	Cumulative Book Depreciation	Prior Year Line 16 + Current Year Line 15	\$1,061,431	\$3,184,292
17	Cumulative Book / Tax Timer	Line 14 - Line 16	\$28,827,956	\$31,084,393
18	Effective Tax Rate		35.00%	35.00%
19	Deferred Tax Reserve	Line 17 * Line 18	\$10,089,785	\$10,879,538
20	Less: FY 2017 Federal NOL		\$0	\$0
21	Net Deferred Tax Reserve	Line 19 + Line 20	\$10,089,785	\$10,879,538
<u>Rate Base Calculation:</u>				
22	Cumulative Incremental Capital Included in Rate Base	Line 11	\$45,246,226	\$45,246,226
23	Accumulated Depreciation	- Line 16	(\$1,061,431)	(\$3,184,292)
24	Deferred Tax Reserve	- Line 21	(\$10,089,785)	(\$10,879,538)
25	Year End Rate Base	Sum of Lines 22 through 24	\$34,095,011	\$31,182,397
<u>Revenue Requirement Calculation:</u>				
26	Average Rate Base	(Prior Year Line 25 + Current Year Line 25) ÷ 2	\$17,047,505	\$32,638,704
27	Pre-Tax ROR		9.68%	9.68%
28	Return and Taxes	Line 26 * Line 27	\$1,650,199	\$3,159,427
29	Book Depreciation	Line 15	\$1,061,431	\$2,122,861
30	Property Taxes			
31	<b>Annual Revenue Requirement</b>	<b>Sum of Lines 28 through 30</b>	<b>\$2,711,630</b>	<b>\$5,282,288</b>

1/ Based on FY2015 actual retirements as a percent of capital investment

2/ Weighted Average Cost of Capital per Settlement Agreement R.I.P.U.C. Docket No. 4323

	Ratio	Rate	Rate	Taxes	Return
Long Term Debt	49.95%	4.96%	2.48%		2.48%
Short Term Debt	0.76%	0.79%	0.01%		0.01%
Preferred Stock	0.15%	4.50%	0.01%		0.01%
Common Equity	49.14%	9.50%	4.67%	2.51%	7.18%
	<u>100.00%</u>		<u>7.17%</u>	<u>2.51%</u>	<u>9.68%</u>

3/ Property taxes calculated on Page 16 through 18 for all vintage years commencing with FY14 and reflected in total on page 1 at Line 13

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Calculation of Tax Depreciation and Repairs Deduction on FY2017 Incremental Capital Investments**

Line No.			Fiscal Year <u>2017</u> (a)	Fiscal Year <u>2018</u> (b)
	<u>Capital Repairs Deduction</u>			
1	Plant Additions	Page 2 of 22, Line 3	\$78,478,000	
2	Capital Repairs Deduction Rate	Per Tax Department	1/ 22.70%	
3	Capital Repairs Deduction	Line 2 * Line 3	<u>\$17,814,506</u>	
	<u>Remaining Tax Depreciation</u>			
4	Plant Additions	Line 1	\$78,478,000	
5	Less Capital Repairs Deductions	Line 3	<u>\$17,814,506</u>	
6	Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line 4 - Line 5	\$60,663,494	\$60,663,494
7	20 YR MACRS Tax Depreciation Rates		3.750%	7.219%
8	Remaining Tax Depreciation	Line 6 * Line 7	<u>\$2,274,881</u>	<u>\$4,379,298</u>
9	Cost of Removal	Page 2 of 22, Line 10	\$9,800,000	
10	Total Tax Depreciation and Repairs Deduction	Lines 3 + Line 8 + Line 9	<u>\$29,889,387</u>	<u>\$4,379,298</u>

1/ Capital Repairs percentage is based on a three year average, 2012, 2013 and 2014 of electric property qualifying for the repairs deduction as a percentage of total annual plant additions.

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FY 2017 Revenue Requirement on FY 2016 Actual Incremental Capital Investment

Line No.			Fiscal Year 2016 (a)	Fiscal Year 2017 (b)	Fiscal Year 2018 (c)
<b>Capital Additions Allowance</b>					
<i>Non-Discretionary Capital</i>					
1	Non-Discretionary Additions		\$27,910,000	\$0	\$0
<i>Discretionary Capital</i>					
2	Lesser of Actual Cumulative Discretionary Capital Additions or Spending, or Approved Spending		\$49,565,000	\$0	\$0
3	Total Allowed Capital Included in Rate Base	Line 1 + Line 2	\$77,475,000	\$0	\$0
<b>Depreciable Net Capital Included in Rate Base</b>					
4	Total Allowed Capital Included in Rate Base in Current Year	Line 3	\$77,475,000	\$0	\$0
5	Retirements	Line 4 * 5.88%	\$4,555,530	\$0	\$0
6	Net Depreciable Capital Included in Rate Base	Column (a) = Line 4 - Line 5; Column (b) = Prior Year Line 6	\$72,919,470	\$72,919,470	\$72,919,470
<b>Change in Net Capital Included in Rate Base</b>					
7	Capital Included in Rate Base	Line 3	\$77,475,000	\$0	\$0
8	Depreciation Expense	Per Settlement Agreement Docket No. 4323, excluding General Plant	\$43,031,774	\$0	\$0
9	Incremental Depreciable Amount	Column (a) = Line 7 - Line 8; Column (b) = Prior Year Line 9	\$34,443,226	\$34,443,226	\$34,443,226
10	Total Cost of Removal		\$8,200,000	\$8,200,000	\$8,200,000
11	<b>Total Net Plant in Service</b>	<b>Line 9 + Line 10</b>	<b>\$42,643,226</b>	<b>\$42,643,226</b>	<b>\$42,643,226</b>
<b>Deferred Tax Calculation:</b>					
12	Composite Book Depreciation Rate	As approved per R.I.P.U.C. Docket No. 4065	3.40%	3.40%	3.40%
13	Tax Depreciation	Page 5 of 22, Line 10	\$28,032,632	\$4,323,327	\$3,998,733
14	Cumulative Tax Depreciation	Prior Year Line 13 + Current Year Line 14	\$28,032,632	\$32,355,959	\$36,354,692
15	Book Depreciation	Column (a) = Line 6 * Line 12 * 50%; Column (b) = Line 6 * Line 12	\$1,239,631	\$2,479,262	\$2,479,262
16	Cumulative Book Depreciation	Prior Year Line 16 + Current Year Line 15	\$1,239,631	\$3,718,893	\$6,198,155
17	Cumulative Book / Tax Timer	Line 14 - Line 16	\$26,793,001	\$28,637,066	\$30,156,537
18	Effective Tax Rate		35.00%	35.00%	35.000%
19	Deferred Tax Reserve	Line 17 * Line 18	\$9,377,550	\$10,022,973	\$10,554,788
20	Less: FY 2016 Federal NOL		\$0	\$0	\$0
21	Net Deferred Tax Reserve	Line 19 + Line 20	\$9,377,550	\$10,022,973	\$10,554,788
<b>Rate Base Calculation:</b>					
22	Cumulative Incremental Capital Included in Rate Base	Line 11	\$42,643,226	\$42,643,226	\$42,643,226
23	Accumulated Depreciation	- Line 16	(\$1,239,631)	(\$3,718,893)	(\$6,198,155)
24	Deferred Tax Reserve	- Line 21	(\$9,377,550)	(\$10,022,973)	(\$10,554,788)
25	Year End Rate Base	Sum of Lines 22 through 24	\$32,026,045	\$28,901,360	\$25,890,283
<b>Revenue Requirement Calculation:</b>					
26	Average Rate Base	(Prior Year Line 25 + Current Year Line 25) ÷ 2		\$30,463,703	\$27,395,822
27	Pre-Tax ROR			9.68%	9.68%
28	Return and Taxes	Line 26 * Line 27		\$2,948,886	\$2,651,916
29	Book Depreciation	Line 15		\$2,479,262	\$2,479,262
30	Property Taxes				
31	<b>Annual Revenue Requirement</b>	<b>Sum of Lines 28 through 30</b>	<b>N/A</b>	<b>\$5,428,148</b>	<b>\$5,131,178</b>

1/ Based on FY2014 actual retirements as a percent of capital investment

2/ Weighted Average Cost of Capital per Settlement Agreement R.I.P.U.C. Docket No. 4323

	Ratio	Rate	Rate	Taxes	Return
Long Term Debt	49.95%	4.96%	2.48%		2.48%
Short Term Debt	0.76%	0.79%	0.01%		0.01%
Preferred Stock	0.15%	4.50%	0.01%		0.01%
Common Equity	49.14%	9.50%	4.67%	2.51%	7.18%
	100.00%		7.17%	2.51%	9.68%

3/ Property taxes calculated on Page 17 and 18 for all vintage years commencing with FY14 and reflected in total on page 1 at Line 12

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Calculation of Tax Depreciation and Repairs Deduction on FY2016 Incremental Capital Investments**

Line No.			Fiscal Year <u>2016</u> (a)	Fiscal Year <u>2017</u> (b)	Fiscal Year <u>2018</u> (c)
	<u>Capital Repairs Deduction</u>				
1	Plant Additions	Page 4 of 22, Line 3	\$77,475,000		
2	Capital Repairs Deduction Rate	Per Tax Department	1/ 22.70%		
3	Capital Repairs Deduction	Line 2 * Line 3	<u>\$17,586,825</u>		
	<u>Remaining Tax Depreciation</u>				
4	Plant Additions	Line 1	\$77,475,000		
5	Less Capital Repairs Deductions	Line 3	<u>\$17,586,825</u>		
6	Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line 4 - Line 5	\$59,888,175	\$59,888,175	\$59,888,175
7	20 YR MACRS Tax Depreciation Rates		<u>3.750%</u>	<u>7.219%</u>	<u>6.677%</u>
8	Remaining Tax Depreciation	Line 6 * Line 7	<u>\$2,245,807</u>	<u>\$4,323,327</u>	<u>\$3,998,733</u>
9	Cost of Removal	Page 4 of 22, Line 10	\$8,200,000		
10	Total Tax Depreciation and Repairs Deduction	Lines 3 + Line 8 + Line 9	<u><u>\$28,032,632</u></u>	<u><u>\$4,323,327</u></u>	<u><u>\$3,998,733</u></u>

1/ Capital Repairs percentage is based on a three year average, 2012, 2013 and 2014 of electric property qualifying for the repairs deduction as a percentage of total annual plant additions.

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FY 2017 Revenue Requirement on FY 2015 Actual Incremental Capital Investment

Line No.			Fiscal Year 2015 (a)	Fiscal Year 2016 (b)	Fiscal Year 2017 (c)	Fiscal Year 2018 (d)
<u>Capital Investment Allowance</u>						
1	Non-Discretionary Capital	Page 16 of 22, Line 1	\$22,246,664	\$0	\$0	\$0
<u>Discretionary Capital</u>						
2	Lesser of Actual Cumulative Non-Discretionary Capital Additions or Spending, or Approved Spending	Page 16 of 22, Line 13	\$5,410,377	\$0	\$0	\$0
3	Total Allowed Capital Included in Rate Base	Line 1 + Line 2	\$76,657,041	\$0	\$0	\$0
<u>Depreciable Net Capital Included in Rate Base</u>						
4	Total Allowed Capital Included in Rate Base in Current Year	Line 3	\$76,657,041	\$0	\$0	\$0
5	Retirements		1/ \$15,666,095	\$0	\$0	\$0
6	Net Depreciable Capital Included in Rate Base	Line 4 - Line 5	\$60,990,946	\$60,990,946	\$60,990,946	\$60,990,946
<u>Change in Net Capital Included in Rate Base</u>						
7	Capital Included in Rate Base	Line 3	\$76,657,041	\$0	\$0	\$0
8	Depreciation Expense	Per Settlement Agreement Docket No. 4323, excluding General Plant	43,031,774	-	-	-
9	Incremental Depreciable Amount	Line 7 - Line 8	\$33,625,267	\$33,625,267	\$33,625,267	\$33,625,267
10	Cost of Removal		2/ \$6,988,398	\$6,988,398	\$6,988,398	\$6,988,398
11	<b>Total Net Plant in Service</b>	<b>Line 9 + Line 10</b>	<b>\$40,613,665</b>	<b>\$40,613,665</b>	<b>\$40,613,665</b>	<b>\$40,613,665</b>
<u>Deferred Tax Calculation:</u>						
12	Composite Book Depreciation Rate	As approved per R.I.P.U.C. Docket No. 4065	3.40%	3.40%	3.40%	3.40%
13	Vintage Year Tax Depreciation:					
14	2015 Spend	Page 7 of 22, Line 20	\$47,019,993	\$2,747,004	\$2,540,759	\$2,350,497
15	Cumulative Tax Depreciation	Current Year Line 14	\$47,019,993	\$49,766,997	\$52,307,756	\$54,658,253
16	Book Depreciation	Line 6 * Line 12 * 50%	\$1,036,846	\$2,073,692	\$2,073,692	\$2,073,692
17	Cumulative Book Depreciation	Current Year Line 16	\$1,036,846	\$3,110,538	\$5,184,230	\$7,257,923
18	Cumulative Book / Tax Timer	Line 15 - Line 17	\$45,983,147	\$46,656,459	\$47,123,526	\$47,400,330
19	Effective Tax Rate		35.00%	35.00%	35.00%	35.00%
20	Deferred Tax Reserve	Line 18 * Line 19	\$16,094,101	\$16,329,761	\$16,493,234	\$16,590,116
21	Less: FY 2015 Federal NOL		\$0	\$0	\$0	\$0
22	Net Deferred Tax Reserve	Line 20 + Line 21	\$16,094,101	\$16,329,761	\$16,493,234	\$16,590,116
<u>Rate Base Calculation:</u>						
23	Cumulative Incremental Capital Included in Rate Base	Line 11	\$40,613,665	\$40,613,665	\$40,613,665	\$40,613,665
24	Accumulated Depreciation	-Line 17	(\$1,036,846)	(\$3,110,538)	(\$5,184,230)	(\$7,257,923)
25	Deferred Tax Reserve	-Line 20	(\$16,094,101)	(\$16,329,761)	(\$16,493,234)	(\$16,590,116)
26	Year End Rate Base	Sum of Lines 23 through 25	\$23,482,717	\$21,173,366	\$18,936,201	\$16,765,627
<u>Revenue Requirement Calculation:</u>						
27	Average Rate Base	Current Year Line 26 ÷ 2			\$9,468,100	\$8,382,813
28	Pre-Tax ROR				9.68%	9.68%
29	Return and Taxes	Line 27 * Line 28			\$916,512	\$811,456
30	Book Depreciation	Line 16			\$2,073,692	\$2,073,692
31	<b>Annual Revenue Requirement</b>	<b>Line 29 + Line 30</b>	<b>N/A</b>	<b>N/A</b>	<b>\$2,990,204</b>	<b>\$2,885,149</b>

1/ Actual Retirements

2/ Actual Cost of Removal

3/ Weighted Average Cost of Capital as approved in R.I.P.U.C. Docket No. 4323

	Ratio	Rate	Rate	Taxes	Return
Long Term Debt	49.95%	4.96%	2.48%		2.48%
Short Term Debt	0.76%	0.79%	0.01%		0.01%
Preferred Stock	0.15%	4.50%	0.01%		0.01%
Common Equity	49.14%	9.50%	4.67%	2.51%	7.18%
	<u>100.00%</u>		<u>7.17%</u>	<u>2.51%</u>	<u>9.68%</u>

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Calculation of Tax Depreciation and Repairs Deduction on FY2015 Incremental Capital Investments

Line No.			Fiscal Year <u>2015</u> (a)	Fiscal Year <u>2016</u> (b)	Fiscal Year <u>2017</u> (c)	Fiscal Year <u>2018</u> (d)
	<u>Capital Repairs Deduction</u>					
1	Plant Additions	Page 6 of 22, Line 3	\$76,657,041			
2	Capital Repairs Deduction Rate	Per Tax Department 1/	21.05%			
3	Capital Repairs Deduction	Line 1 * Line 2	\$16,136,307			
	<u>Bonus Depreciation</u>					
4	Plant Additions	Line 1	\$76,657,041			
5	Less Capital Repairs Deduction	Line 3	\$16,136,307			
6	Plant Additions Net of Capital Repairs Deduction	Line 4 - Line 5	\$60,520,734			
7	Percent of Plant Eligible for Bonus Depreciation	Per Tax Department	99.00%			
8	Plant Eligible for Bonus Depreciation	Line 6 * Line 7	\$59,915,527			
9	Bonus Depreciation Rate (April 2014 - December 2014)	1 * 75% * 50%	37.50%			
10	Bonus Depreciation Rate (January 2015 - March 2015)	1 * 25% * 50%	0.00%			
11	Total Bonus Depreciation Rate	Line 9 + Line 10	37.50%			
12	Bonus Depreciation	Line 8 * Line 11	\$22,468,323			
	<u>Remaining Tax Depreciation</u>					
13	Plant Additions	Line 1	\$76,657,041			
14	Less Capital Repairs Deduction	Line 3	\$16,136,307			
15	Less Bonus Depreciation	Line 12	\$22,468,323			
16	Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line 13 - Line 14 - Line 15	\$38,052,411	\$38,052,411	\$38,052,411	\$38,052,411
17	20 YR MACRS Tax Depreciation Rates		3.750%	7.219%	6.677%	6.177%
18	Remaining Tax Depreciation	Line 16 * Line 17	\$1,426,965	\$2,747,004	\$2,540,759	\$2,350,497
19	Cost of Removal	Page 6 of 22, Line 10	\$6,988,398			
20	Total Tax Depreciation and Repairs Deduction	Sum of Lines 3, 12, 18 and 19	\$47,019,993	\$2,747,004	\$2,540,759	\$2,350,497

1/ Capital Repairs percentage is based on a three year average 2010, 2011, and 2012 of electric property qualifying for the repairs deduction as a percentage of total annual plant additions

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d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
FY 2017 Revenue Requirement on FY 2014 Actual Incremental Capital Investment

Line No.		Fiscal Year 2014 (a)	Fiscal Year 2015 (b)	Fiscal Year 2016 (c)	Fiscal Year 2017 (d)	Fiscal Year 2018 (e)
<b>Capital Investment Allowance</b>						
1	Non-Discretionary Capital	\$6,923,860				
2	Discretionary Capital Lesser of Actual Cumulative Non-Discretionary Capital Additions or Spending, or Approved Spending	\$6,400,406				
3	Total Allowed Capital Included in Rate Base	\$13,324,266	-	-	-	-
<b>Depreciable Net Capital Included in Rate Base</b>						
4	Total Allowed Capital Included in Rate Base in Current Year	\$13,324,266	-	-	-	-
5	Retirements	1/ (\$4,165,367)				
6	Net Depreciable Capital Included in Rate Base	\$17,489,633	17,489,633	17,489,633	17,489,633	17,489,633
<b>Change in Net Capital Included in Rate Base</b>						
7	Capital Included in Rate Base	\$13,324,266	-	-	-	-
8	Depreciation Expense	2/ 7,173,397	\$0	\$0	\$0	\$0
9	Incremental Depreciable Amount	\$6,150,869	\$6,150,869	\$6,150,869	\$6,150,869	\$6,150,869
10	Total Cost of Removal	(\$887,841)	(887,841)	(887,841)	(887,841)	(887,841)
11	<b>Total Net Plant in Service</b>	<b>\$5,263,028</b>	<b>\$ 5,263,028</b>	<b>\$ 5,263,028</b>	<b>\$ 5,263,028</b>	<b>\$ 5,263,028</b>
<b>Deferred Tax Calculation:</b>						
12	Composite Book Depreciation Rate	As approved per R.I.P.U.C. Docket No. 4065	3.40%	3.40%	3.40%	3.40%
13	Vintage Year Tax Depreciation:					
14	2014 Spend	Page 9 of 22, Line 20	\$8,191,776	318,360	294,457	272,407
15	Cumulative Tax Depreciation	Current Year Line 14	\$8,191,776	8,510,136	8,804,593	9,077,000
16	Book Depreciation	Line 6 * Line 12 * 50%	\$297,324	594,648	594,648	594,648
17	Cumulative Book Depreciation	Current Year Line 16	\$297,324	891,971	1,486,619	2,081,266
18	Cumulative Book / Tax Timer	Line 15 - Line 17	\$7,894,452	\$ 7,618,165	\$ 7,317,974	\$ 6,995,734
19	Effective Tax Rate		35.00%	35.00%	35.00%	35.00%
20	Deferred Tax Reserve	Line 18 * Line 19	\$2,763,058	\$ 2,666,358	\$ 2,561,291	\$ 2,448,507
21	Less: FY 2014 Federal NOL		(\$1,200,808)	(\$1,200,808)	(\$1,200,808)	(\$1,200,808)
22	Net Deferred Tax Reserve	Line 20 + Line 21	\$1,562,250	\$1,465,550	\$1,360,483	\$1,247,699
<b>Rate Base Calculation:</b>						
23	Cumulative Incremental Capital Included in Rate Base	Line 11	\$5,263,028	\$ 5,263,028	\$ 5,263,028	\$ 5,263,028
24	Accumulated Depreciation	-Line 17	(\$297,324)	(891,971)	(1,486,619)	(2,081,266)
25	Deferred Tax Reserve	-Line 20	(\$1,562,250)	(\$1,465,550)	(\$1,360,483)	(\$1,247,699)
26	Year End Rate Base	Sum of Lines 23 through 25	\$3,403,454	\$ 2,905,507	\$ 2,415,926	\$ 1,934,063
<b>Revenue Requirement Calculation:</b>						
27	Average Rate Base	Col (a) = Line 26 * Page 22 of 22, Line 16, Col (b) = (Prior Year Line 26 + Current Year Line 26)/2			\$ 2,174,995	\$ 1,696,712
28	Pre-Tax ROR				9.68%	9.68%
29	Return and Taxes	Line 27 * Line 28			210,539	164,242
30	Book Depreciation	Line 16			594,648	594,648
31	Property Taxes				154,737	130,371
32	<b>Annual Revenue Requirement</b>	<b>Sum of Lines 29 through 31</b>	<b>N/A</b>	<b>N/A</b>	<b>\$ 959,924</b>	<b>\$ 889,260</b>

1/ Actual Retirements

2/ Depreciation Expense has been prorated for 2 months (February - March 2014)

3/ Weighted Average Cost of Capital as approved in R.I.P.U.C. Docket No. 4323

	Ratio	Rate	Rate	Taxes	Return
Long Term Debt	49.95%	4.96%	2.48%		2.48%
Short Term Debt	0.76%	0.79%	0.01%		0.01%
Preferred Stock	0.15%	4.50%	0.01%		0.01%
Common Equity	49.14%	9.50%	4.67%	2.51%	7.18%
	100.00%		7.17%	2.51%	9.68%

4/ FY 2017 effective property tax rate of 4.10% per Page 18 of 22, Line 76(h)

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Calculation of Tax Depreciation and Repairs Deduction on FY2014 Incremental Capital Investments

Line No.			Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year
			2014 (a)	2015 (b)	2016 (c)	2017 (d)	2018 (e)
<u>Capital Repairs Deduction</u>							
1	Plant Additions	Page 8 of 22, Line 3	\$13,324,266				
2	Capital Repairs Deduction Rate	Per Tax Department	1/ 34.46%				
3	Capital Repairs Deduction	Line 1 * Line 2	\$4,591,542				
<u>Bonus Depreciation</u>							
4	Plant Additions	Line 1	\$13,324,266				
5	Less Capital Repairs Deduction	Line 3	\$4,591,542				
6	Plant Additions Net of Capital Repairs Deduction	Line 4 - Line 5	\$8,732,724				
7	Percent of Plant Eligible for Bonus Depreciation	Per Tax Department	99.00%				
8	Plant Eligible for Bonus Depreciation	Line 6 * Line 7	\$8,645,397				
9	Bonus Depreciation Rate (April 2013 - December 2013)	1 * 75% * 50%	37.50%				
10	Bonus Depreciation Rate (January 2014 - March 2014)	1 * 25% * 50%	12.50%				
11	Total Bonus Depreciation Rate	Line 9 + Line 10	50.00%				
12	Bonus Depreciation	Line 8 * Line 11	\$4,322,699				
<u>Remaining Tax Depreciation</u>							
13	Plant Additions	Line 1	\$13,324,266				
14	Less Capital Repairs Deduction	Line 3	\$4,591,542				
15	Less Bonus Depreciation	Line 12	\$4,322,699				
16	Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line 13 - Line 14 - Line 15	\$4,410,025	4,410,025	4,410,025	4,410,025	4,410,025
17	20 YR MACRS Tax Depreciation Rates		3.750%	7.219%	6.677%	6.177%	5.713%
18	Remaining Tax Depreciation	Line 16 * Line 17	\$165,376	\$ 318,360	\$ 294,457	\$ 272,407	\$ 251,945
19	Cost of Removal	Page 8 of 22, Line 10	(\$887,841)				
20	Total Tax Depreciation and Repairs Deduction	Sum of Lines 3, 12, 18 and 19	\$8,191,776	\$ 318,360	\$ 294,457	\$ 272,407	\$ 251,945

1/ Capital Repairs percentage is based on the FY 2014 tax return.

**The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
True-up for Capital Repairs and Bonus Depreciation Deduction and Correction to Weighted Average Rate Base on FY 2014 Capital  
Investments**

<u>Line</u> <u>No.</u>			
	<u>Update Capital Repairs Rate and Bonus Depreciation and Correct Weighted Average Rate Base in FY 2014 Revenue Requirement on FY 2014 Capital Investment</u>		
1	FY 2014 Revenue Requirement using estimated capital repairs deduction rate of 18.60% and estimated bonus depreciation rate of 37.50% and no NOL		\$442,553
2	FY 2014 Revenue Requirement using weighted average rate base, actual capital repairs deduction rate of 34.46%, actual bonus depreciation rate of 50.00% and NOL of \$1,200,808	Page 8 of 22, Line 32(a)	<u>\$373,851</u>
3	Change in revenue requirement	Line 2 - Line 1	(\$68,702)
4	Less: NOL impact	Page 21 of 22, Line 5	(\$27,000)
5	True up Amount	Line 3 + Line 4	<u><u>(\$95,702)</u></u>

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FY 2017 Revenue Requirement on FY 2013 Actual Incremental Capital Investment

Line No.		Fiscal Year 2013 (a)	Fiscal Year 2014 (b)	Fiscal Year 2015 (c)	Fiscal Year 2016 (d)	Fiscal Year 2017 (e)	Fiscal Year 2018 (f)
	<u>Capital Additions Allowance</u>						
	<u>Non-Discretionary Capital</u>						
1	Non-Discretionary Additions	(\$5,184,396)	\$0	\$0	\$0	\$0	\$0
	<u>Discretionary Capital</u>						
2	Lesser of Actual Discretionary Capital Additions or Spending or Approved Spending	(\$1,850,463)	\$0	\$0	\$0	\$0	\$0
3	Total Allowed Capital Included in Rate Base in Current Year	Line 1 + Line 2	\$0	\$0	\$0	\$0	\$0
	<u>Depreciable Net Capital Included in Rate Base</u>						
4	Total Allowed Capital Included in Rate Base in Current Year	Line 3	\$0	\$0	\$0	\$0	\$0
5	Retirements	\$5,838,935	\$0	\$0	\$0	\$0	\$0
6	Net Depreciable Capital Included in Rate Base	Column (a) = Line 4 - Line 5; Columns (b), (c), & (d) = Prior Year Line 6	(\$12,873,794)	(\$12,873,794)	(\$12,873,794)	(\$12,873,794)	(\$12,873,794)
	<u>Change in Net Capital Included in Rate Base</u>						
7	Capital Included in Rate Base	Line 3	\$0	\$0	\$0	\$0	\$0
8	Depreciation Expense	As approved per R.I.P.U.C. Docket No. 4065, excluding general plant	\$0	\$0	\$0	\$0	\$0
9	Incremental Depreciable Amount	Column (a) = Line 7 - Line 8; Columns (b), (c) & (d) = Prior Year Line 9	(\$7,034,859)	(\$7,034,859)	(\$7,034,859)	(\$7,034,859)	(\$7,034,859)
10	Total Cost of Removal		(\$1,895,059)	(\$1,895,059)	(\$1,895,059)	(\$1,895,059)	(\$1,895,059)
11	<b>Total Net Plant in Service</b>	<b>Line 9 + Line 10</b>	<b>(\$8,929,918)</b>	<b>(\$8,929,918)</b>	<b>(\$8,929,918)</b>	<b>(\$8,929,918)</b>	<b>(\$8,929,918)</b>
	<u>Deferred Tax Calculation:</u>						
12	Composite Book Depreciation Rate	As approved per R.I.P.U.C. Docket No. 4065	3.40%	3.40%	3.40%	3.40%	3.40%
13	Tax Depreciation	Page 7 Line 20	(\$5,970,630)	(\$221,954)	(\$205,290)	(\$189,917)	(\$175,651)
14	Cumulative Tax Depreciation	Prior Year Line 17 + Current Year Line 16	(\$5,970,630)	(\$6,192,584)	(\$6,397,874)	(\$6,587,791)	(\$6,763,442)
15	Book Depreciation	Column (a) = Line 6 * Line 12 * 50%; Columns (b), (c) & (d) = Line 6 * Line 12	(\$218,854)	(\$437,709)	(\$437,709)	(\$437,709)	(\$437,709)
16	Cumulative Book Depreciation	Prior Year Line 16 + Current Year Line 15	(\$218,854)	(\$656,563)	(\$1,094,272)	(\$1,531,981)	(\$1,969,690)
17	Cumulative Book / Tax Timer	Line 14 - Line 16	(\$5,751,776)	(\$5,536,021)	(\$5,303,602)	(\$5,055,810)	(\$4,793,752)
18	Effective Tax Rate		35.00%	35.00%	35.00%	35.00%	35.00%
19	Deferred Tax Reserve	Line 17 * Line 18	(\$2,013,121)	(\$1,937,607)	(\$1,856,261)	(\$1,769,533)	(\$1,677,813)
20	Less: FY 2013 Federal NOL		(\$2,342,381)	(\$2,342,381)	(\$2,342,381)	(\$2,342,381)	(\$2,342,381)
21	Net Deferred Tax Reserve	Line 19 + Line 20	(\$4,355,503)	(\$4,279,989)	(\$4,198,642)	(\$4,111,915)	(\$4,020,195)
	<u>Rate Base Calculation:</u>						
22	Cumulative Incremental Capital Included in Rate Base	Line 11	(\$8,929,918)	(\$8,929,918)	(\$8,929,918)	(\$8,929,918)	(\$8,929,918)
23	Accumulated Depreciation	- Line 16	\$218,854	\$656,563	\$1,094,272	\$1,531,981	\$1,969,690
24	Deferred Tax Reserve	- Line 19	\$4,355,503	\$4,279,989	\$4,198,642	\$4,111,915	\$4,020,195
25	Year End Rate Base	Sum of Lines 20 through 22	(\$4,355,561)	(\$3,993,366)	(\$3,637,003)	(\$3,286,022)	(\$2,940,033)
	<u>Revenue Requirement Calculation:</u>						
26	Average Rate Base	(Prior Year Line 23 + Current Year Line 23) ÷ 2				(\$3,113,027)	(\$2,769,341)
27	Pre-Tax ROR					9.68%	9.68%
28	Return and Taxes	Line 24 * Line 25				(\$301,341)	(\$268,072)
29	Book Depreciation	Line 15				(\$437,709)	(\$437,709)
30	Property Taxes					(\$303,127)	(\$285,192)
31	<b>Annual Revenue Requirement</b>	<b>Sum of Lines 26 through 28</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>(\$1,042,177)</b>	<b>(\$990,973)</b>

1/ Column (a) - FY 2013 Electric ISR Reconciliation Filing R.I.P.U.C. Docket No. 4307

Weighted Average Cost of Capital as approved in R.I.P.U.C. Docket No. 4323

	Ratio	Rate	Rate	Taxes	Return
2/ Long Term Debt	49.95%	4.96%	2.48%		
Short Term Debt	0.76%	0.79%	0.01%		0.01%
Preferred Stock	0.15%	4.50%	0.01%		0.01%
Common Equity	49.14%	9.50%	4.67%	2.51%	7.18%
	<u>100.00%</u>		<u>7.17%</u>	<u>2.51%</u>	<u>9.68%</u>

3/ FY 2017 effective property tax rate of 4.10% per Page 18 of 22, Line 76(h)

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Calculation of Tax Depreciation and Repairs Deduction on FY2013 Incremental Capital Investments

		Fiscal Year 2013 (a)	Fiscal Year 2014 (b)	Fiscal Year 2015 (c)	Fiscal Year 2016 (d)	Fiscal Year 2017 (e)	Fiscal Year 2018 (f)
<u>Capital Repairs Deduction</u>							
1	Plant Additions	Page 6 Line 3	(\$7,034,859)				
2	Capital Repairs Deduction Rate	1/	12.59%				
3	Capital Repairs Deduction	Line 2 * Line 3	(\$885,689)				
<u>Bonus Depreciation</u>							
4	Plant Additions	Line 1	(\$7,034,859)				
5	Less Capital Repairs Deduction	Line 3	(\$885,689)				
6	Plant Additions Net of Capital Repairs Deduction	Line 4 - Line 5	(\$6,149,170)				
7	Percent of Plant Eligible for Bonus Depreciation		100.00%				
8	Plant Eligible for Bonus Depreciation	Line 6 * Line 7	(\$6,149,170)				
9	Bonus Depreciation Rate (April 2012 - December 2012)	1 * 75% * 50%	37.50%				
10	Bonus Depreciation Rate (January 2013 - March 2013)	1 * 25% * 50%	12.50%				
11	Total Bonus Depreciation Rate	Line 9 + Line 10	50.00%				
12	Bonus Depreciation	Line 8 * Line 11	(\$3,074,585)				
<u>Remaining Tax Depreciation</u>							
13	Plant Additions	Line 1	(\$7,034,859)				
14	Less Capital Repairs Deduction	Line 3	(\$885,689)				
15	Less Bonus Depreciation	Line 12	(\$3,074,585)				
16	Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line 13 - Line 14 - Line 15	(\$3,074,585)	(\$3,074,585)	(\$3,074,585)	(\$3,074,585)	(\$3,074,585)
17	20 YR MACRS Tax Depreciation Rates		3.750%	7.219%	6.677%	6.177%	5.713%
18	Remaining Tax Depreciation	Line 16 * Line 17	(\$115,297)	(\$221,954)	(\$205,290)	(\$189,917)	(\$175,651)
19	Cost of Removal	Page 6 Line 10	(\$1,895,059)				
20	Total Tax Depreciation and Repairs Deduction	Sum of Lines 3, 12, 18, 19	(\$5,970,630)	(\$221,954)	(\$205,290)	(\$189,917)	(\$175,651)

1/ Capital Repairs percentage is based on the FY 2013 tax return.

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FY 2017 Revenue Requirement on FY 2012 Actual Incremental Capital Investment

Line No.		Fiscal Year 2012 (a)	Fiscal Year 2013 (b)	Fiscal Year 2014 (c)	Fiscal Year 2015 (d)	Fiscal Year 2016 (e)	Fiscal Year 2017 (f)	Fiscal Year 2018 (g)
<u>Capital Additions Allowance</u>								
<i>Non-Discretionary Capital</i>								
1	Non-Discretionary	(\$4,019,686)	\$0	\$0	\$0	\$0	\$0	\$0
<i>Discretionary Capital</i>								
2	Lesser of Actual Discretionary Capital Additions or Spending or Approved Spending	\$4,163,942	\$0	\$0	\$0	\$0	\$0	\$0
3	Total Allowed Capital Included in Rate Base	Line 1 + Line 2	\$144,256	\$0	\$0	\$0	\$0	\$0
<u>Depreciable Net Capital Included in Rate Base</u>								
4	Total Allowed Capital Included in Rate Base in Current Year	Line 3	\$144,256	\$0	\$0	\$0	\$0	\$0
5	Retirements		\$19,938	\$0	\$0	\$0	\$0	\$0
6	Net Depreciable Capital Included in Rate Base	Column (a) = Line 4 - Line 5; Columns (b), (c), (d) & (e) = Prior Year Line 6	\$124,318	\$124,318	\$124,318	\$124,318	\$124,318	\$124,318
<u>Change in Net Capital Included in Rate Base</u>								
7	Incremental Depreciable Amount	Column (a) = Line 4, Columns (b), (c), (d) & (e) = Prior Year Line 7	\$144,256	\$144,256	\$144,256	\$144,256	\$144,256	\$144,256
8	Cost of Removal		(\$771,131)	(\$771,131)	(\$771,131)	(\$771,131)	(\$771,131)	(\$771,131)
9	<b>Total Net Plant in Service</b>	<b>Line 7 + Line 8</b>	<b>(\$626,875)</b>	<b>(\$626,875)</b>	<b>(\$626,875)</b>	<b>(\$626,875)</b>	<b>(\$626,875)</b>	<b>(\$626,875)</b>
<u>Deferred Tax Calculation:</u>								
10	Composite Book Depreciation Rate	As approved per R.I.P.U.C. Docket No. 4065	3.40%	3.40%	3.40%	3.40%	3.40%	3.40%
11	Tax Depreciation	Page 9 Line 20	(\$654,965)	\$2,107	\$1,949	\$1,803	\$1,667	\$1,542
12	Cumulative Tax Depreciation	Prior Year Line 12 + Current Year Line 11	(\$654,965)	(\$652,858)	(\$650,909)	(\$649,107)	(\$647,439)	(\$645,897)
13	Book Depreciation	Column (a) = -Line 6 * Line 10 * 50%; Columns (b), (c), (d) & (e) = Line 6 * Line 10	(\$2,113)	(\$4,227)	(\$4,227)	(\$4,227)	(\$4,227)	(\$4,227)
14	Cumulative Book Depreciation	Prior Year Line 14 + Current Year Line 13	(\$2,113)	(\$6,340)	(\$10,567)	(\$14,794)	(\$19,021)	(\$23,247)
15	Cumulative Book / Tax Timer	Line 12 - Line 14	(\$652,852)	(\$646,518)	(\$640,342)	(\$634,313)	(\$628,419)	(\$622,650)
16	Effective Tax Rate		35.00%	35.00%	35.00%	35.00%	35.00%	35.00%
17	Deferred Tax Reserve	Line 15 * Line 16	(\$228,498)	(\$226,281)	(\$224,120)	(\$222,009)	(\$220,000)	(\$218,125)
18	Less: FY 2013 Federal NOL		(\$4,310,461)	(\$4,310,461)	(\$4,310,461)	(\$4,310,461)	(\$4,310,461)	(\$4,310,461)
19	Net Deferred Tax Reserve	Line 17 + Line 18	(\$4,538,959)	(\$4,536,742)	(\$4,534,581)	(\$4,532,470)	(\$4,530,367)	(\$4,528,266)
<u>Rate Base Calculation:</u>								
20	Cumulative Incremental Capital Included in Rate Base	Line 9	(\$626,875)	(\$626,875)	(\$626,875)	(\$626,875)	(\$626,875)	(\$626,875)
21	Accumulated Depreciation	Line * Line 20	\$2,113	\$6,340	\$10,567	\$14,794	\$19,021	\$23,247
22	Deferred Tax Reserve	- Line 17	\$4,538,959	\$4,536,742	\$4,534,581	\$4,532,470	\$4,530,367	\$4,528,266
23	Year End Rate Base	Sum of Lines 18 through 20	\$3,914,197	\$3,916,207	\$3,918,273	\$3,920,389	\$3,922,512	\$3,924,638
<u>Revenue Requirement Calculation:</u>								
24	Average Rate Base	(Prior Year Line 21 + Current Year Line 21) ÷ 2					\$4,860,516	\$5,474,028
25	Pre-Tax ROR						9.68%	9.68%
26	Return and Taxes	Line 22 * Line 23					\$470,498	\$529,886
27	Book Depreciation	Line 19					(\$4,227)	(\$4,227)
28	Property Taxes						(\$24,907)	(\$24,733)
29	<b>Annual Revenue Requirement</b>	<b>Sum of Lines 24 through 26</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>\$441,364</b>	<b>\$500,926</b>

1/ Column (a) - FY 2012 Electric ISR Reconciliation Filing R.I.P.U.C. Docket No. 4218.  
2/ Weighted Average Cost of Capital per Settlement Agreement R.I.P.U.C. Docket No. 4323

	Ratio	Rate	Rate	Taxes	Return
Long Term Debt	49.95%	4.96%	2.48%		2.48%
Short Term Debt	0.76%	0.79%	0.01%		0.01%
Preferred Stock	0.15%	4.50%	0.01%		0.01%
Common Equity	49.14%	9.50%	4.67%	2.51%	7.18%
	<u>100.00%</u>		<u>7.17%</u>	<u>2.51%</u>	<u>9.68%</u>

3/ FY 2017 effective property tax rate of 4.10% per Page 18 of 22, Line 76(h)

The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
Calculation of Tax Depreciation and Repairs Deduction on FY2012 Incremental Capital Investments

Line No.		Fiscal Year 2012 (a)	Fiscal Year 2013 (b)	Fiscal Year 2014 (c)	Fiscal Year 2015 (d)	Fiscal Year 2016 (e)	Fiscal Year 2017 (f)	Fiscal Year 2018 (g)
<u>Capital Repairs Deduction</u>								
1	Plant Additions	Page 3 Line 3						
2	Capital Repairs Deduction Rate	Per Tax Department	1/	21.05%				
3	Capital Repairs Deduction	Line 2 * Line 3		\$30,366				
<u>Bonus Depreciation</u>								
4	Plant Additions	Line 1		\$144,256				
5	Less Capital Repairs Deduction	Line 3		\$30,366				
6	Plant Additions Net of Capital Repairs Deduction	Line 4 - Line 5		\$113,890				
7	Percent of Plant Eligible for Bonus Depreciation	Per Tax Department	2/	85.00%				
8	Plant Eligible for Bonus Depreciation	Line 6 * Line 7		\$96,807				
9	Bonus Depreciation Rate (April 2011 - December 2011)	1 * 75% * 100%		75.00%				
10	Bonus Depreciation Rate (January 2012 - March 2012)	1 * 25% * 50%		12.50%				
11	Total Bonus Depreciation Rate	Line 9 + Line 10		87.50%				
12	Bonus Depreciation	Line 8 * Line 11		\$84,706				
<u>Remaining Tax Depreciation</u>								
13	Plant Additions	Line 1		\$144,256				
14	Less Capital Repairs Deduction	Line 3		\$30,366				
15	Less Bonus Depreciation	Line 12		\$84,706				
16	Remaining Plant Additions Subject to 20 YR MACRS Tax Depreciation	Line 13 - Line 14 - Line 15		\$29,184	\$29,184	\$29,184	\$29,184	\$29,184
17	20 YR MACRS Tax Depreciation Rates			3.750%	7.219%	6.677%	6.177%	5.713%
18	Remaining Tax Depreciation	Line 16 * Line 17		\$1,094	\$2,107	\$1,949	\$1,803	\$1,667
19	Cost of Removal	Page 3 Line 8		(\$771,131)				
20	Total Tax Depreciation and Repairs Deduction	Sum of Lines 3, 12, 18, 19		(\$654,965)	\$2,107	\$1,949	\$1,803	\$1,667

1/ Per Docket 4307 FY 2013 Electric ISR Reconciliation Filing at Attachment WRR-1, Page 8, Line 2

2/ Since not all property additions qualify for bonus depreciation and because a project must be started after the beginning of the bonus period, January 1, 2008, an estimate of 85% is used rather than 100%.

**The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
FY 2012 - 2014 Incremental Capital Investment Summary**

Line No.		Actual Fiscal Year 2012 (a)	Actual Fiscal Year 2013 (b)	Fiscal Year 2014 (c)
<b><u>Capital Investment</u></b>				
1	ISR - Eligible Capital Investment	\$48,946,456	\$44,331,141	\$56,129,551
2	ISR - Eligible Capital Additions included in Rate Base per R.I.P.U.C. Docket No. 4323	\$48,802,200	\$51,366,341	\$42,805,284
3	Incremental ISR Capital Investment	\$144,256	(\$7,035,200)	\$13,324,267
<b><u>Cost of Removal</u></b>				
4	ISR - Eligible Cost of Removal	\$5,807,869	5,179,941	\$5,007,992
5	ISR - Eligible Cost of Removal in Rate Base per R.I.P.U.C. Docket No. 4323	\$6,579,000	\$7,075,000	\$5,895,833
6	Incremental Cost of Removal	(\$771,131)	(\$1,895,059)	(\$887,841)
<b><u>Retirements</u></b>				
7	ISR - Eligible Retirements/Actual	\$7,740,446	14,255,714	\$ 3,299,874
8	ISR - Eligible Retirements/Estimated	\$7,720,508	\$8,416,779	\$7,465,242
9	Incremental Retirements	\$19,938	\$5,838,935	(\$4,165,367)

**The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
FY 2015 Capital Investment**

Line No.			<u>Actuals</u>
			(a)
	<b><u>Non-Discretionary Capital</u></b>		
	<b>Total Allowed Non-Discretionary Capital Included in Rate Base</b>		
1	<b>Current Year</b>	Attachment JHP-1, Page 3, Table 1	<b><u>\$22,246,664</u></b>
	<b><u>Discretionary Capital</u></b>		
2	Cumulative FY 2012 - FY 2014 Discretionary Capital <b>ADDITIONS</b>	Docket No. 4382 FY14 Reconciliation Sch. WRR-1 Page 7 of 11, Line 4; Col (b) = Att. JLG-1, Page 4 of 24, Table 1	\$69,131,503
3	FY 2015 Discretionary Capital <b>ADDITIONS</b>	Attachment JHP-1, Page 3, Table 1	<u>\$54,410,377</u>
4	Cumulative Actual Discretionary Capital Additions	Line 2 + Line 3	\$123,541,880
5	Cumulative FY 2012 - FY 2014 Discretionary Capital <b>SPENDING</b>	Docket No. 4382 FY14 Reconciliation Att. JLG-1, Page 7 of 24, Table 3	\$92,544,086
6	FY 2015 Discretionary Capital <b>SPENDING</b>	Attachment JHP-1, Page 5, Table 3	<u>\$51,956,455</u>
7	Cumulative Actual Discretionary Capital Spending	Line 5 + Line 6	\$144,500,541
			<b>As Approved in Docket No. 4473</b>
8	Cumulative FY 2012 - FY 2014 Approved Discretionary Capital <b>SPENDING</b>	Docket No. 4382 FY14 Proposal Sch. WRR-1, Page 7 of 11, Line 5	\$86,189,150
9	FY 2015 Approved Discretionary Capital <b>SPENDING</b>	Attachment JHP-1, Page 5, Table 3	<u>\$41,547,000</u>
10	Cumulative Actual Approved Discretionary Capital Spending	Line 8 + Line 9	\$127,736,150
			<b>Total Allowed</b>
11	Cumulative Allowed Discretionary Capital Included in Rate Base	Lesser of Line 4, Line 7, or Line 10	\$123,541,880
12	Prior Year Cumulative Allowed Discretionary Capital Included in Rate Base	Docket No. 4307 FY13 Reconciliation Filing Att. WRR-1, Page 7, Line 27	<u>\$69,131,503</u>
13	<b>Total Allowed Discretionary Capital Included in Rate Base Current Year</b>	Line 11 - Line 12	<b><u>\$54,410,377</u></b>
14	<b>Total Allowed Capital Included in Rate Base Current Year</b>	Line 1 + Line 13	<b><u>\$76,657,041</u></b>

The Narragansett Electric Company  
d/b/a National Grid  
FY 2017 ISR Property Tax Recovery Adjustment  
(000s)

The Narragansett Electric Company  
d/b/a National Grid  
FY 2017 Electric Infrastructure, Safety, and Reliability Plan  
Section 5: Revenue Requirement  
Attachment 1  
Page 17 of 22

<u>Line</u>	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)			
	<u>RY End</u>	<u>ISR Additions</u>	<u>Non-ISR Add's</u>	<u>Total Add's</u>	<u>Bk Depr (1)</u>	<u>Retirements</u>	<u>COR</u>	<u>End of FY14</u>			
1	Plant In Service	\$1,358,470	\$9,335	\$1,885	\$11,220		\$550	\$1,370,240			
2											
3	Accumulated Depr	\$611,570				\$7,498	\$550	(\$835) \$618,783			
4											
5	Net Plant	\$746,900						\$751,457			
6											
7	Property Tax Expense	\$29,743						\$27,502			
8											
9	Effective Prop tax Rate	3.98%						3.66%			
10											
11											
12	<u>Effective tax Rate Calculation</u>	<u>End of FY14</u>	<u>ISR Additions</u>	<u>Non-ISR Add's</u>	<u>Total Add's</u>	<u>Bk Depr (1)</u>	<u>Retirements</u>	<u>COR</u>	<u>End of FY15</u>		
13											
14	Plant In Service	\$1,370,240	\$76,657	\$5,801	\$82,458		(\$15,666)	\$1,437,032			
15											
16	Accumulated Depr	\$618,783				\$46,522	(\$15,666)	(\$6,988) \$642,650			
17											
18	Net Plant	\$751,457						\$794,382			
19											
20	Property Tax Expense	\$27,502						\$32,549			
21											
22	Effective Prop tax Rate	3.66%						4.10%			
23											
24											
25		<u>End of FY15</u>	<u>ISR Additions</u>	<u>Non-ISR Add's</u>	<u>Total Add's</u>	<u>Bk Depr (1)</u>	<u>Retirements</u>	<u>COR</u>	<u>End of FY16</u>		
26											
27	Plant In Service	\$1,437,032	\$77,475	\$4,013	\$81,488		(\$4,556)	\$1,513,964			
28											
29	Accumulated Depr	\$642,650				\$48,965	(\$4,556)	(\$8,200) \$678,860			
30											
31	Net Plant	\$794,382						\$835,105			
32											
33	Property Tax Expense	\$32,549						\$33,321			
34											
35	Effective Prop tax Rate	4.10%						3.99%			
36											
37											
38											
39		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(i)	(j)	(k)
40	<b>Property Tax Recovery Calculation</b>										
41		<u>Cumulative Increm. ISR Prop. Tax for FY14</u>			<u>Cumulative Increm. ISR Prop. Tax for FY15</u>			<u>Cumulative Increm. ISR Prop. Tax for FY16</u>			
42		2 mos									
43	ISR Additions		\$9,335				\$76,657			\$77,475	
44	Book Depreciation: base allowance on ISR eligible plant		(\$7,173)				(\$43,032)			(\$43,032)	
45	Book Depreciation: current year ISR additions		(\$324)				(\$1,037)			(\$1,240)	
46	COR		\$835				\$6,988			\$8,200	
47											
48	Net Plant Additions		\$2,672				\$39,577			\$41,404	
49											
50	RY Effective Tax Rate		3.98%				3.98%			3.98%	
51	ISR Property Tax Recovery on FY 2014 vintage investment			\$106				\$105		\$91	
52	ISR Property Tax Recovery on FY 2015 vintage investment							\$1,576		\$1,493	
53	ISR Property Tax Recovery on FY 2016 vintage investment									\$1,649	
54	ISR Property Tax Recovery on FY 2017 vintage investment										
55											
56	ISR Year Effective Tax Rate	3.66%				4.10%			3.99%		
57	RY Effective Tax Rate	3.98%	-0.32%			3.98%	0.12%		3.98%	0.01%	
58	RY Effective Tax Rate 2 mos for FY 2014		-0.05%								
59	RY Net Plant times 2 mo rate	\$746,900	-0.05%	(\$401)		\$746,900 * 0.12%		\$861	\$746,900 * 0.01%	\$58	
60	FY 2014 Net Adds times ISR Year Effective T.	\$2,672	-0.32%	(\$9)		\$2,632 * 0.12%		\$3	\$2,296 * 0.01%	\$0	
61	FY 2015 Net Adds times ISR Year Effective Tax rate					\$39,577 * 0.12%		\$46	\$37,503 * 0.01%	\$3	
62	FY 2016 Net Adds times ISR Year Effective Tax rate								\$41,404 * 0.01%	\$3	
63	FY 2017 Net Adds times ISR Year Effective Tax rate										
64				(\$410)				\$910		\$64	
65											
66											
67	Total ISR Property Tax Recovery			(\$304)				\$2,590		\$3,298	

The Narragansett Electric Company  
d/b/a National Grid  
FY 2017 ISR Property Tax Recovery Adjustment (continued)<sup>1</sup>  
(000s)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	<u>End of FY16</u>	<u>ISR Additions</u>	<u>Non-ISR Add's</u>	<u>Total Add's</u>	<u>Bk Depr (1)</u>	<u>Retirements</u>	<u>COR</u>	<u>End of FY17</u>
68 Plant In Service	\$1,513,964	\$78,478	\$3,550	\$82,028		(\$16,041)		\$1,579,951
69								
70 Accumulated Depr	\$678,860				\$51,395	(\$16,041)	(\$9,800)	\$704,413
71								
72 Net Plant	\$835,105							\$875,538
73								
74 Property Tax Expense	\$33,321							\$35,875
75								
76 Effective Prop tax Rate	3.99%							4.10%
77								
78								
79	(a)	(b)	(c)					
80								
81	<u>Cumulative Increm. ISR Prop. Tax for FY17</u>							
82								
83 ISR Additions		\$78,478						
84 Book Depreciation: base allowance on ISR eligible plant		(\$43,032)						
85 Book Depreciation: current year ISR additions		(\$1,061)						
86 COR		<u>\$9,800</u>						
87								
88 Net Plant Additions		\$44,185						
89								
90 RY Effective Tax Rate		<u>3.98%</u>						
91 ISR Property Tax Recovery on FY 2014 vintage investment			\$78					
92 ISR Property Tax Recovery on FY 2015 vintage investment			\$1,411					
93 ISR Property Tax Recovery on FY 2016 vintage investment			\$1,550					
94 ISR Property Tax Recovery on FY 2017 vintage investment			\$1,760					
95								
96 ISR Year Effective Tax Rate		4.10%						
97 RY Effective Tax Rate		3.98%	0.12%					
98 RY Effective Tax Rate 2 mos for FY 2014								
99 RY Net Plant times 2 mo rate	\$746,900	* 0.12%	\$861					
100 FY 2014 Net Adds times ISR Year Effective T.	\$1,960	* 0.12%	\$2					
101 FY 2015 Net Adds times ISR Year Effective T.	\$35,429	* 0.12%	\$41					
102 FY 2016 Net Adds times ISR Year Effective T.	\$38,924	* 0.12%	\$45					
103 FY 2017 Net Adds times ISR Year Effective T.	\$44,185	* 0.12%	<u>\$51</u>					
104			<u>\$999</u>					
105								
106 Total ISR Property Tax Recovery			<u>\$5,798</u>					

The Narragansett Electric Company  
d/b/a National Grid  
FY 2017 ISR Property Tax Recovery Adjustment (continued)2  
(000s)

Line Notes

1(a)-9(h)	Per FY 2014 Electric ISR Reconciliation Filing R.I.P.U.C. Docket No. 4382	67(k)	Sum of Lines 51(k) through 53(k) + Line 64(k)
		68(b)	Page 2, Line 3
14(a)-22(h)	Per FY 2015 Electric ISR Reconciliation Filing R.I.P.U.C. Docket No. 4473	68(c)	FY 2017 forecasted in service amount
27(b)	Page 4, Line 3	68(h)	68(a) + 68(d) + 68(f)
27(c)	FY 2016 forecasted in service amount	70(e)	Rate Year depr allowance of \$44,986 * (Line 1(d)+1(f)* comp depr rate of 3.40%) + (Line 14(d)+14(f)* comp depr rate of 3.40%) + (Line , 27(d)+27(f)*comp depr rate of 3.40%) + (Line 68(d) +68(f)*comp depr rate of 3.40%*50%)
27 (h)	27(a) + 27(d) + 27(f)	70(g)	Page 2, Line 10
29(e)	Rate Year depr allowance of \$44,986 * (Line 1(d)+1(f)* comp depr rate of 3.40%) + (Line 14(d)+14(f)* comp depr rate of 3.40%) + (Line , 27(d)+27(f)*comp depr rate of 3.40%*50%)	70(h)	Sum of Line 70(a) through 70(g)
29(g)	Page 4, Line 10	72(h)	Line 68(h) - Line 70(h)
29(h)	Sum of Line 29(a) through 29(g)	74(a)	Line 33(h)
31(h)	Line 27(h) - Line 29(h)	74(h)	Line 72(h) * Line 76(h)
33(a)	Line 20(h)	76(h)	Line 74(h) / 721(h)
33(h)	Line 31(h) * Line 35(h)	83(b)	Line 68(b)
35(h)	Line 33(h) / 31(h)	84(b)	Page 2, Line 8
43(a) - 67(c)	Per FY 2014 Electric ISR Reconciliation R.I.P.U.C. Docket No. 4382	85(b)	Page 2, Line 15
43(e) - 67(g)	Per FY 2015 Electric ISR Reconciliation R.I.P.U.C. Docket No. 4473	86(b)	-Line 70(g)
43(j)	Line 27(b)	88(b)	Sum of Lines 83(b) through 86(b)
44(j)	Page 4, Line 8	90(b)	Line 9(a)
45(j)	Page 4, Line 15	91(c)	Line 90(b) * Line 100(a)
46(j)	-Line 29(g)	92(c)	Line 90(b) * Line 101(a)
48(j)	Sum of Lines 43(j) through 46(j)	93(c)	Line 90(b) * Line 102(a)
50(j)	Line 9(a)	94(c)	Line 88(b) * Line 90(b)
51(k)	Line 50(j) * Line 60(i)	97(b)	Line 96(a) - Line 97(a)
52(k)	Line 50(j) * Line 61(i)	100(a)	((Lines 43(b)+44(b)+46(b)) - ((Line 43(b)+ Line 1(f)) * 3.4% composite deprn rate * 50% * 2/12) - ((Line 43(b)+Line 1(f)) * 3.4%) - ((Line 43(b)+Line 1(f)) * 3.4%)
53(k)	Line 50(j) * Line 48(j)	101(a)	((Lines 43(f)+44(f)+46(f)) - ((Line 43(f)+ Line 14(f)) * 3.4% composite deprn rate * 50% ) - ((Line 43(f)+Line 14(f)) *3.4%) - ((Line 43(f)+Line 14(f)) * 3.4%)
57(j)	Line 56(i) - Line 57(i)	102(a)	((Lines 43(j)+44(j)+46(j)) - ((Line 43(j)+ Line 27(f)) * 3.4% composite deprn rate * 50% ) - ((Line 43(j)+Line 27(f)) *3.4%) - ((Line 43(j)+Line 27(f)) * 3.4%)
60(i)	((Lines 43(b)+44(b)+46(b)) - ((Line 43(b)+ Line 1(f)) * 3.4% composite deprn rate * 50% * 2/12) - ((Line 43(b)+Line 1(f)) * 3.4%) - ((Line 43(b)+Line 1(f)) * 3.4%)	103(a)	Line 88(b)
61(i)	((Lines 43(f)+44(f)+46(f)) - ((Line 43(f)+ Line 14(f)) * 3.4% composite deprn rate * 50% ) - ((Line 43(f)+Line 14(f)) *3.4%) - ((Line 43(f)+Line 14(f)) * 3.4%)	99(b)-103(b)	Line 97(b)
62(i)	Line 48(j)	99(c)	Line 99(a) * Line 99(b)
59(j)-62(j)	Line 57(j)	100(c)	Line 100(a) * Line 100(b)
59(k)	Line 59(i) * Line 59(j)	101(c)	Line 101(a) * Line 101(b)
60(k)	Line 60(i) * Line 60(j)	102(c)	Line 102(a) * Line 102(b)
61(k)	Line 61(i) * Line 61(j)	103(c)	Line 103(a) * Line 103(b)
62(k)	Line 62(i) * Line 62(j)	104(c)	Sum of Line 99(c) through 103(c)
64(k)	Sum of Lines 59(k) through 62(k)	106(c)	Sum of Lines 91(c) through 94(c) + Line 104(c)

The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
Deferred Income Tax ("DIT") Provisions and Net Operating Losses ("NOL")

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
						CY 2011	CY 2012	Jan-2013	Feb 13 - Jan 14	
1 Total Base Rate Plant DIT Provision						\$15,856,458	\$ 5,546,827	\$ 521,151	\$(1,967,911)	
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
2 Total Base Rate Plant DIT Provision						\$13,279,050	\$ 4,353,286	\$(1,639,926)	\$ -	\$ -
3 Incremental FY 12	\$ (228,498)	\$ (226,281)	\$ (224,120)	\$ (222,009)	\$ (219,947)	\$ (228,498)	\$ 2,217	\$ 2,161	\$ 2,110	\$ 2,063
4 Incremental FY 13		\$(2,013,121)	\$(1,937,607)	\$(1,856,261)	\$(1,769,533)		\$(2,013,121)	\$ 75,514	\$ 81,347	\$ 86,727
5 Incremental FY 14			\$ 2,763,058	\$ 2,770,421	\$ 2,769,418			\$ 2,763,058	\$ 7,363	\$ (1,003)
6 FY 2015				\$15,226,743	\$15,464,460				\$15,226,743	\$ 237,717
7 FY 2016					\$ 9,377,550					\$ 9,377,550
8 TOTAL Plant DIT Provision	\$ (228,498)	\$(2,239,402)	\$ 601,331	\$15,918,894	\$25,621,948	\$13,050,552	\$ 2,342,382	\$ 1,200,808	\$15,317,563	\$ 9,703,054
9 NOL						\$ 4,310,461	\$11,442,811	\$19,452,677	TBD	TBD
10 Lesser of NOL or DIT Provision						\$ 4,310,461	\$ 2,342,382	\$ 1,200,808	TBD	TBD

1(f) Per Dkt 4323 Compliance filing Attachment 1, Page 64 of 71, Line 19(e) less Line 19(a)  
 1(g)-1(i) Per Dkt 4323 Compliance filing Attachment 1, Page 70 of 71, Lines 32, 42, and 48  
 3(a)-7(e) ADIT per vintage year ISR revenue requirement calculations  
 3(f) -7(j) Year over year change in ADIT shown in Cols (a) through (e)

**The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
True-Up for FY 2012, FY 2013 and FY 2014 Net Operating Losses ("NOL")**

	(a)	(b)	(c)	(d)	(e)
	Revenue Requirement Year				
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1 Return on Rate Base	9.30%	9.84%	9.68%	9.68%	9.68%
	Vintage Capital Investment Year				
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
2 Lesser of NOL or DIT Provision	\$ 4,310,461	\$ 2,342,382	\$ 1,200,808	TBD	TBD
	(a)	(b)	(c)	(d)	(e)

Revenue Requirement Increase due to NOL

	Revenue Requirement Year				
Vintage Capital Investment Year	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
3 FY 2012	\$ 200,436	\$ 424,149	\$ 417,253	\$ 417,253	\$ 417,253
4 FY 2013	\$ -	\$ 115,245	\$ 226,743	\$ 226,743	\$ 226,743
5 FY 2014	\$ -	\$ -	\$ 27,000	\$ 116,238	\$ 116,238
6 TOTAL	<b>\$ 200,436</b>	<b>\$ 539,395</b>	<b>\$ 670,996</b>	<b>\$ 760,233</b>	<b>\$ 760,233</b>
7 <b>Total FY 2012 through FY 2014 revenue requirement impact recovered over 3 years</b>					<b>\$ 1,410,826</b>
8 <b>Recovery per year</b>					<b>\$ 470,275</b>

1(a) Per Docket No. 4065

1(b)-(c) Per vintage year revenue requirement calculations at Page 11 of 22, and Page 8 of 22, respectively

2 Per Page 20 of 22, Line 10

3 Line 2(a) \* Line 1(a) \* 50%; Line 2(a) \* Line 1(b); Line 2(a) \* Line 1(c); Line 2(a) \* Line 1(d); Line 2(a) \* Line 1(e)

4 Line 2(b) \* Line 1(b) \* 50%; Line 2(b) \* Line 1(c); Line 2(b) \* Line 1(d); Line 2(b) \* Line 1(e)

5 Line 2(c) \* Line 1(c) \* Page 16, Line 16 (f); Line 2(c) \* Line 1(d); Line 2(c) \* Line 1(e)

6 Sum of Lines 3 through 5

7 Line 6(a) + Line 6(b) + Line 6(c)

8 Line 7(e) /3

**The Narragansett Electric Company  
d/b/a National Grid  
Electric Infrastructure, Safety, and Reliability (ISR) Plan  
ISR Additions February and March 2014**

<u>Line No.</u>	<u>Month No.</u>	<u>Month</u>	<u>FY 2014 Plant Additions</u> (a)	<u>In Rates</u> (b)	<u>Not In Rates</u> (c) = (a) - (b)	<u>Weight</u> (d)	<u>Weighted Average</u> (f) = (d) * (c)	
1								
2	1	Apr-13	4,677,463	4,280,528	396,934	0.958	380,395	
3	2	May-13	4,677,463	4,280,528	396,934	0.875	347,317	
4	3	Jun-13	4,677,463	4,280,528	396,934	0.792	314,240	
5	4	Jul-13	4,677,463	4,280,528	396,934	0.708	281,162	
6	5	Aug-13	4,677,463	4,280,528	396,934	0.625	248,084	
7	6	Sep-13	4,677,463	4,280,528	396,934	0.542	215,006	
8	7	Oct-13	4,677,463	4,280,528	396,934	0.458	181,928	
9	8	Nov-13	4,677,463	4,280,528	396,934	0.375	148,850	
10	9	Dec-13	4,677,463	4,280,528	396,934	0.292	115,772	
11	10	Jan-14	4,677,463	4,280,528	396,934	0.208	82,695	
12	11	Feb-14	4,677,463	-	4,677,463	0.125	584,683	
13	12	Mar-14	4,677,463	-	4,677,463	0.042	194,894	
14		Total	<u>\$56,129,551</u>	<u>\$42,805,284</u>	<u>\$13,324,267</u>		<u>\$3,095,026</u>	
15	<b>Total February &amp; March 2014</b>					<b>\$ 9,354,925</b>		
16	<b>FY2014 Weighted Average Incremental Rate Base Percentage</b>							<u><b>23.23%</b></u>

Column (a) Page 15 of 22, Line 1(c)  
Column (b) Page 15 of 22, Line 2(c)  
Line 15 = Line 12(c) + Line 13(c)  
Line 16 = Line 14(f)/Line 14(c)

**Exhibit 1 – JJ R & RM**

**Section 8**

**Tcvg'Fgud p**

## **Section 6**

### Rate Design FY 2017 Electric ISR Plan

The Narragansett Electric Company  
Infrastructure, Safety and Reliability Plan Factors Calculations - Summary  
Summary of Proposed Factors  
(for the 12 months beginning April 1, 2016)

Line No.		Residential <u>A16 / A60</u> (a)	Small Commercial & Industrial <u>C-06</u> (b)	General Commercial & Industrial <u>G-02</u> (c)	Large Demand <u>B32</u> (d)	Large Demand <u>G32</u> (e)	Optional Large Demand <u>B62</u> (f)	Optional Large Demand <u>G62</u> (g)	Street Lighting <u>S05 / S10 / S14</u> (h)	Electric Propulsion <u>X-01</u> (i)
(1)	O&M Factor per kWh	\$0.00156	\$0.00163	\$0.00118	\$0.00074	\$0.00074	n/a	n/a	\$0.01140	\$0.00122
(2)	O&M Factor per kW	n/a	n/a	n/a	\$0.04	n/a	\$0.03	\$0.31	n/a	n/a
(3)	CapEx kWh Charge	\$0.00297	\$0.00279	n/a	n/a	n/a	n/a	n/a	\$0.01375	\$0.00233
(4)	CapEx kW Charge	n/a	n/a	\$0.71	\$0.07	\$0.72	\$0.05	\$0.50	n/a	n/a
(5)	Base Distribution kW Charge - Back-up Rates	n/a	n/a	n/a	\$0.70	n/a	\$0.30	n/a	n/a	n/a

Line Description:

- (1) Page 2, Line (6); Column (d) applicable to supplemental kWh deliveries only
- (2) Column (d) per Page 4, Column (a), Line (4), applicable to backup service only  
Column (f) per Page 4, Column (b), Line (4)  
Column (g) per Page 2, Column (f), Line (8)
- (3) Page 3, Line (6)
- (4) Columns (c), (e) and (g) per Page 3, Line (8)  
Column (d) per Page 4, Column (a), Line (6), applicable to backup service only  
Column (f) per Page 4, Column (b), Line (6)
- (5) Column (d) per Page 4, Column (a), Line (8), applicable to backup service only  
Column (f) per Page 4, Column (b), Line (8)

The Narragansett Electric Company  
d/b/a National Grid  
FY 2017 Electric Infrastructure, Safety, and Reliability Plan  
Section 6: Rate Design  
Page 3 of 5

The Narragansett Electric Company  
FY17 Proposed Operations & Maintenance Factors  
(for the 12 months beginning April 1, 2016)

Line No.	Total (a)	Residential A16 / A60 (b)	Small Commercial & Industrial C-06 (c)	General Commercial & Industrial G-02 (d)	Large Demand B32 / G32 (e)	Optional Large Demand B62 / G62 (f)	Street Lighting S05/ S10 / S14 (g)	Electric Propulsion X-01 (h)
(1) FY2017 Forecasted Vegetation Management (VM) and Inspection & Maintenance (I&M) O&M Expense	\$9,983,001							
(2) Operating & Maintenance Expense - Rate Year Allowance (\$000s)	\$35,640	\$17,115	\$3,503	\$5,508	\$5,438	\$1,306	\$2,668	\$102
(3) Percentage of Total	100.00%	48.02%	9.83%	15.45%	15.26%	3.66%	7.49%	0.29%
(4) Allocated Vegetation Management (VM) and Inspection & Maintenance (I&M) O&M Expense	\$9,983,001	\$4,794,025	\$981,214	\$1,542,827	\$1,523,220	\$365,819	\$747,325	\$28,571
(5) Forecasted kWh - April 2016 through March 2017	7,609,060,643	3,065,917,589	601,237,481	1,297,568,314	2,054,251,445	501,276,997	65,517,525	23,291,291
(6) Vegetation Management (VM) and Inspection & Maintenance (I&M) O&M Expense Charge per kWh		\$0.00156	\$0.00163	\$0.00118	\$0.00074	n/a	\$0.01140	\$0.00122
(7) Forecasted kW - April 2016 through March 2017						1,179,563		
(8) Vegetation Management (VM) and Inspection & Maintenance (I&M) O&M Expense Charge per kW		n/a	n/a	n/a	n/a	\$0.31	n/a	n/a

Line Description:

- (1) per Section 5: Attachment 1, page 1, line 4, column (b)
- (2) per R.I.P.U.C. 4323, Compliance Attachment 3A, (Schedule HSG-1), page 4, line 72
- (3) Line (2) ÷ Line (2) Total Column
- (4) Line (1) Total Column x Line (3)
- (5) per Company forecasts
- (6) Line (4) ÷ Line (5), truncated to 5 decimal places
- (7) per Company forecasts
- (8) Line (4) ÷ Line (7), truncated to 2 decimal places

The Narragansett Electric Company  
d/b/a National Grid  
FY 2017 Electric Infrastructure, Safety, and Reliability Plan  
Section 6: Rate Design  
Page 4 of 5

The Narragansett Electric Company  
FY 17 Proposed CapEx Factors  
(for the 12 months beginning April 1, 2016)

Line No.	Total (a)	Residential A16 / A60 (b)	Small Commercial & Industrial C-06 (c)	General Commercial & Industrial G-02 (d)	Large Demand B32 / G32 (e)	Optional Large Demand B62 / G62 (f)	Street Lighting S05/ S10 / S14 (g)	Electric Propulsion X-01 (h)
(1) Proposed FY2016 Capital Investment Component of Revenue Requirement	\$17,287,342							
(2) Total Rate Base (\$000s)	\$561,738	\$296,490	\$54,542	\$82,460	\$77,651	\$19,545	\$29,286	\$1,764
(3) Percentage of Total	100.00%	52.78%	9.71%	14.68%	13.82%	3.48%	5.21%	0.31%
(4) Allocated Proposed Revenue Requirement	\$17,287,342	\$9,124,394	\$1,678,519	\$2,537,686	\$2,389,695	\$601,494	\$901,280	\$54,274
(5) Forecasted kWh - April 2016 through March 2017	7,609,060,643	3,065,917,589	601,237,481	1,297,568,314	2,054,251,445	501,276,997	65,517,525	23,291,291
(6) Proposed CapEx Factor - kWh charge		\$0.00297	\$0.00279	n/a	n/a	n/a	\$0.01375	\$0.00233
(7) Forecasted kW - April 2016 through March 2017				3,570,320	3,311,233	1,179,563		
(8) Proposed CapEx Factor - kW Charge		n/a	n/a	\$0.71	\$0.72	\$0.50	n/a	n/a

Line Description:

- (1) per Section 5: Attachment 1, page 1, Line (14), Column (b)
  - (2) per R.I.P.U.C. 4323, Compliance Attachment 3A, (Schedule HSG-1), Page 2, Line (10)
  - (3) Line (2) ÷ Line (2) Total Column
  - (4) Line (1) Total Column x Line (3)
  - (5) per Company forecasts
  - (6) For non demand-based rate classes, Line (4) ÷ Line (5), truncated to 5 decimal places
  - (7) per Company forecasts
  - (8) For demand-based rate classes, Line (4) ÷ Line (7), truncated to 2 decimal places
- Note: charges apply to kW>10 for rate class G-02 and kW>200 for rate class B32/G32

The Narragansett Electric Company  
Calculation of Operations & Maintenance and CapEx Factors and Base Distribution Charge for Back-up Service Rates

Line No.	Large Demand <u>B32</u> (a)	Optional Large Demand <u>B62</u> (b)
<u>Operations &amp; Maintenance Factors</u>		
(1)		
Allocated Vegetation Management (VM) and Inspection & Maintenance (I&M) O&M Expense	\$1,523,220	\$365,819
(2)		
Forecasted kW - April 2016 through March 2017	3,311,233	1,179,563
(3)		
Vegetation Management (VM) and Inspection & Maintenance (I&M) O&M Expense Charge per kW	\$0.46	\$0.31
(4)		
Discounted O&M kW Factor effective 4/01/2016	\$0.04	\$0.03
<u>CapEx Factors</u>		
(5)		
Proposed CapEx kW Factor Charge effective 4/01/2016	\$0.72	\$0.50
(6)		
Discounted CapEx kW Factor Charge effective 4/1/2016	\$0.07	\$0.05
<u>Base Distribution Charge</u>		
(7)		
Base Distribution kW Charge (before 90% discount) per most recent rate case	\$6.96	\$2.99
(8)		
Discounted Base Distribution kW Factor Charge effective 4/1/2016	\$0.70	\$0.30
(9)		
Sum of O&M and CapEx Factors and Base Distribution Charge for Back-up Service Rates	<u>\$0.81</u>	<u>\$0.38</u>

Line Description:

- (1) Page 2, Line (4)
- (2) per Company Forecasts
- (3) Line (1) ÷ Line (2), truncated to 2 decimal places
- (4) Line (3) x .10, truncated to two decimal places
- (5) Page 3, Line (8)
- (6) Line (5) x .10, truncated to two decimal places
- (7) per R.I.P.U.C. 4323 Compliance Attachment 3D, (Schedule JAL-4), Page 5, Line (36) and Page 6, Line (14), Column (b)
- (8) Line (7) x .10, truncated to two decimal places
- (9) Line (4) + Line (6) + Line (8)

**Exhibit 1 – JJ R & RM**  
**"Section 9**  
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## **Section 7**

### **Bill Impacts FY 2017 Electric ISR Plan**

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to A-16 Rate Customers

Monthly kWh	Present Rates			Proposed Rates			Increase/(Decrease)		Percentage of Customers
	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total	
150	\$34.17	\$16.26	\$17.91	\$34.35	\$16.26	\$18.09	\$0.18	0.5%	13.7%
300	\$62.18	\$32.52	\$29.66	\$62.55	\$32.52	\$30.03	\$0.37	0.6%	17.5%
400	\$80.85	\$43.35	\$37.50	\$81.34	\$43.35	\$37.99	\$0.49	0.6%	11.8%
500	\$99.53	\$54.19	\$45.34	\$100.14	\$54.19	\$45.95	\$0.61	0.6%	10.8%
600	\$118.21	\$65.03	\$53.18	\$118.94	\$65.03	\$53.91	\$0.73	0.6%	9.4%
700	\$136.89	\$75.87	\$61.02	\$137.75	\$75.87	\$61.88	\$0.86	0.6%	7.7%
1,200	\$230.28	\$130.06	\$100.22	\$231.74	\$130.06	\$101.68	\$1.46	0.6%	15.0%
2,000	\$379.71	\$216.77	\$162.94	\$382.15	\$216.77	\$165.38	\$2.44	0.6%	14.1%

Present Rates

Customer Charge		\$5.00
RE Growth Factor		\$0.17
LIHEAP Charge		\$0.73
Transmission Energy Charge	kWh x	\$0.02348
Distribution Energy Charge (1)	kWh x	\$0.04164
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.10405

Proposed Rates

Customer Charge		\$5.00
RE Growth Factor		\$0.17
LIHEAP Charge		\$0.73
Transmission Energy Charge	kWh x	\$0.02348
Distribution Energy Charge (2)	kWh x	\$0.04281
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.10405

Note (1): includes the current CapEx Factor of 0.153¢/kWh and the current O&M Factor of 0.183¢/kWh

Note (2): includes the proposed CapEx Factor of 0.297¢/kWh and the proposed O&M Factor of 0.156¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to A-60 Rate Customers

Monthly kWh	Present Rates			Proposed Rates			Increase/(Decrease)		Percentage of Customers
	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total	
150	\$26.85	\$16.26	\$10.59	\$27.04	\$16.26	\$10.78	\$0.19	0.7%	10.7%
300	\$52.77	\$32.52	\$20.25	\$53.13	\$32.52	\$20.61	\$0.36	0.7%	23.2%
400	\$70.03	\$43.35	\$26.68	\$70.52	\$43.35	\$27.17	\$0.49	0.7%	14.9%
500	\$87.31	\$54.19	\$33.12	\$87.92	\$54.19	\$33.73	\$0.61	0.7%	12.2%
600	\$104.59	\$65.03	\$39.56	\$105.32	\$65.03	\$40.29	\$0.73	0.7%	9.6%
700	\$121.86	\$75.87	\$45.99	\$122.72	\$75.87	\$46.85	\$0.86	0.7%	7.3%
1,200	\$208.24	\$130.06	\$78.18	\$209.70	\$130.06	\$79.64	\$1.46	0.7%	12.3%
2,000	\$346.44	\$216.77	\$129.67	\$348.87	\$216.77	\$132.10	\$2.43	0.7%	9.8%

Present Rates

Customer Charge		\$0.00
RE Growth Factor		\$0.17
LIHEAP Charge		\$0.73
Transmission Energy Charge	kWh x	\$0.02348
Distribution Energy Charge (1)	kWh x	\$0.02817
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.10405

Proposed Rates

Customer Charge		\$0.00
RE Growth Factor		\$0.17
LIHEAP Charge		\$0.73
Transmission Energy Charge	kWh x	\$0.02348
Distribution Energy Charge (2)	kWh x	\$0.02934
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.10405

Note (1): includes the current CapEx Factor of 0.153¢/kWh and the current O&M Factor of 0.183¢/kWh

Note (2): includes the proposed CapEx Factor of 0.297¢/kWh and the proposed O&M Factor of 0.156¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to C-06 Rate Customers

Monthly kWh	Present Rates			Proposed Rates			Increase/(Decrease)		Percentage of Customers
	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total	
250	\$52.68	\$23.40	\$29.28	\$52.92	\$23.40	\$29.52	\$0.24	0.5%	35.2%
500	\$93.92	\$46.80	\$47.12	\$94.40	\$46.80	\$47.60	\$0.48	0.5%	17.0%
1,000	\$176.38	\$93.59	\$82.79	\$177.34	\$93.59	\$83.75	\$0.96	0.5%	19.0%
1,500	\$258.85	\$140.39	\$118.46	\$260.29	\$140.39	\$119.90	\$1.44	0.6%	9.8%
2,000	\$341.33	\$187.19	\$154.14	\$343.24	\$187.19	\$156.05	\$1.91	0.6%	19.1%

Present Rates

Customer Charge		\$10.00
RE Growth Factor		\$0.26
LIHEAP Charge		\$0.73
Transmission Energy Charge	kWh x	\$0.02072
Distribution Energy Charge (1)	kWh x	\$0.03763
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Proposed Rates

Customer Charge		\$10.00
RE Growth Factor		\$0.26
LIHEAP Charge		\$0.73
Transmission Energy Charge	kWh x	\$0.02072
Distribution Energy Charge (2)	kWh x	\$0.03855
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Note (1): includes the current CapEx Factor of 0.150¢/kWh and the current O&M Factor of 0.200¢/kWh

Note (2): includes the proposed CapEx Factor of 0.279¢/kWh and the proposed O&M Factor of 0.163¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-02 Rate Customers

Hours Use: 200

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
20	4,000	\$747.10	\$374.38	\$372.72	\$749.29	\$374.38	\$374.91	\$2.19	0.3%
50	10,000	\$1,733.53	\$935.94	\$797.59	\$1,744.16	\$935.94	\$808.22	\$10.63	0.6%
100	20,000	\$3,377.60	\$1,871.88	\$1,505.72	\$3,402.29	\$1,871.88	\$1,530.41	\$24.69	0.7%
150	30,000	\$5,021.65	\$2,807.81	\$2,213.84	\$5,060.40	\$2,807.81	\$2,252.59	\$38.75	0.8%

Present Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (1)	kW x	\$5.23
Distribution Energy Charge (3)	kWh x	\$0.00765
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Proposed Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (2)	kW x	\$5.56
Distribution Energy Charge (4)	kWh x	\$0.00735
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

- Note (1): Includes the current CapEx Factor of \$0.38/kW  
 Note (2): Includes the proposed CapEx Factor of \$0.71/kW  
 Note (3): includes the current O&M Factor of 0.148¢/kWh  
 Note (4): includes the proposed O&M Factor of 0.118¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-02 Rate Customers

Hours Use: 300

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
20	6,000	\$989.97	\$561.56	\$428.41	\$991.53	\$561.56	\$429.97	\$1.56	0.2%
50	15,000	\$2,340.72	\$1,403.91	\$936.81	\$2,349.79	\$1,403.91	\$945.88	\$9.07	0.4%
100	30,000	\$4,591.97	\$2,807.81	\$1,784.16	\$4,613.53	\$2,807.81	\$1,805.72	\$21.56	0.5%
150	45,000	\$6,843.22	\$4,211.72	\$2,631.50	\$6,877.28	\$4,211.72	\$2,665.56	\$34.06	0.5%

Present Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (1)	kW x	\$5.23
Distribution Energy Charge (3)	kWh x	\$0.00765
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232

Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Proposed Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (2)	kW x	\$5.56
Distribution Energy Charge (4)	kWh x	\$0.00735
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232

Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Note (1): Includes the current CapEx Factor of \$0.38/kW  
 Note (2): Includes the proposed CapEx Factor of \$0.71/kW  
 Note (3): includes the current O&M Factor of 0.148¢/kWh  
 Note (4): includes the proposed O&M Factor of 0.118¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-02 Rate Customers

Hours Use: 400

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
20	8,000	\$1,232.84	\$748.75	\$484.09	\$1,233.78	\$748.75	\$485.03	\$0.94	0.1%
50	20,000	\$2,947.91	\$1,871.88	\$1,076.03	\$2,955.41	\$1,871.88	\$1,083.53	\$7.50	0.3%
100	40,000	\$5,806.34	\$3,743.75	\$2,062.59	\$5,824.78	\$3,743.75	\$2,081.03	\$18.44	0.3%
150	60,000	\$8,664.79	\$5,615.63	\$3,049.16	\$8,694.16	\$5,615.63	\$3,078.53	\$29.37	0.3%

Present Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (1)	kW x	\$5.23
Distribution Energy Charge (3)	kWh x	\$0.00765
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Proposed Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (2)	kW x	\$5.56
Distribution Energy Charge (4)	kWh x	\$0.00735
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Note (1): Includes the current CapEx Factor of \$0.38/kW  
 Note (2): Includes the proposed CapEx Factor of \$0.71/kW  
 Note (3): includes the current O&M Factor of 0.148¢/kWh  
 Note (4): includes the proposed O&M Factor of 0.118¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-02 Rate Customers

Hours Use: 500

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
20	10,000	\$1,475.72	\$935.94	\$539.78	\$1,476.03	\$935.94	\$540.09	\$0.31	0.0%
50	25,000	\$3,555.09	\$2,339.84	\$1,215.25	\$3,561.03	\$2,339.84	\$1,221.19	\$5.94	0.2%
100	50,000	\$7,020.72	\$4,679.69	\$2,341.03	\$7,036.03	\$4,679.69	\$2,356.34	\$15.31	0.2%
150	75,000	\$10,486.34	\$7,019.53	\$3,466.81	\$10,511.03	\$7,019.53	\$3,491.50	\$24.69	0.2%

Present Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (1)	kW x	\$5.23
Distribution Energy Charge (3)	kWh x	\$0.00765
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Proposed Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (2)	kW x	\$5.56
Distribution Energy Charge (4)	kWh x	\$0.00735
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Note (1): Includes the current CapEx Factor of \$0.38/kW  
 Note (2): Includes the proposed CapEx Factor of \$0.71/kW  
 Note (3): includes the current O&M Factor of 0.148¢/kWh  
 Note (4): includes the proposed O&M Factor of 0.118¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-02 Rate Customers

Hours Use: 600

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
20	12,000	\$1,718.60	\$1,123.13	\$595.47	\$1,718.29	\$1,123.13	\$595.16	(\$0.31)	0.0%
50	30,000	\$4,162.28	\$2,807.81	\$1,354.47	\$4,166.65	\$2,807.81	\$1,358.84	\$4.37	0.1%
100	60,000	\$8,235.10	\$5,615.63	\$2,619.47	\$8,247.29	\$5,615.63	\$2,631.66	\$12.19	0.1%
150	90,000	\$12,307.91	\$8,423.44	\$3,884.47	\$12,327.91	\$8,423.44	\$3,904.47	\$20.00	0.2%

Present Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (1)	kW x	\$5.23
Distribution Energy Charge (3)	kWh x	\$0.00765
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Proposed Rates

Customer Charge		\$135.00
RE Growth Factor		\$2.46
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.02
Transmission Energy Charge	kWh x	\$0.00894
Distribution Demand Charge-xcs 10 kW (2)	kW x	\$5.56
Distribution Energy Charge (4)	kWh x	\$0.00735
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4.00%
Standard Offer Charge	kWh x	\$0.08985

Note (1): Includes the current CapEx Factor of \$0.38/kW

Note (2): Includes the proposed CapEx Factor of \$0.71/kW

Note (3): includes the current O&M Factor of 0.148¢/kWh

Note (4): includes the proposed O&M Factor of 0.118¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-32 Rate Customers

Hours Use: 200

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
200	40,000	\$6,049.49	\$3,336.25	\$2,713.24	\$6,042.82	\$3,336.25	\$2,706.57	(\$6.67)	-0.1%
750	150,000	\$22,618.24	\$12,510.94	\$10,107.30	\$22,776.58	\$12,510.94	\$10,265.64	\$158.34	0.7%
1,000	200,000	\$30,149.49	\$16,681.25	\$13,468.24	\$30,382.82	\$16,681.25	\$13,701.57	\$233.33	0.8%
1,500	300,000	\$45,211.99	\$25,021.88	\$20,190.11	\$45,595.33	\$25,021.88	\$20,573.45	\$383.34	0.8%
2,500	500,000	\$75,336.99	\$41,703.13	\$33,633.86	\$76,020.33	\$41,703.13	\$34,317.20	\$683.34	0.9%

Present Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (1)	kW x	\$4.10
Distribution Energy Charge (3)	kWh x	\$0.00759
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (2)	kW x	\$4.42
Distribution Energy Charge (4)	kWh x	\$0.00743
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx Factor of \$0.40/kW  
 Note (2): Includes the proposed CapEx Factor of \$0.72/kW  
 Note (3): includes the current O&M Factor of 0.090¢/kWh  
 Note (4): includes the proposed O&M Factor of 0.074¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-32 Rate Customers

Hours Use: 300

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
200	60,000	\$8,280.74	\$5,004.38	\$3,276.36	\$8,270.74	\$5,004.38	\$3,266.36	(\$10.00)	-0.1%
750	225,000	\$30,985.43	\$18,766.41	\$12,219.02	\$31,131.26	\$18,766.41	\$12,364.85	\$145.83	0.5%
1,000	300,000	\$41,305.74	\$25,021.88	\$16,283.86	\$41,522.41	\$25,021.88	\$16,500.53	\$216.67	0.5%
1,500	450,000	\$61,946.36	\$37,532.81	\$24,413.55	\$62,304.70	\$37,532.81	\$24,771.89	\$358.34	0.6%
2,500	750,000	\$103,227.62	\$62,554.69	\$40,672.93	\$103,869.28	\$62,554.69	\$41,314.59	\$641.66	0.6%

Present Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (1)	kW x	\$4.10
Distribution Energy Charge (3)	kWh x	\$0.00759
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (2)	kW x	\$4.42
Distribution Energy Charge (4)	kWh x	\$0.00743
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx Factor of \$0.40/kW

Note (2): Includes the proposed CapEx Factor of \$0.72/kW

Note (3): includes the current O&M Factor of 0.090¢/kWh

Note (4): includes the proposed O&M Factor of 0.074¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-32 Rate Customers

Hours Use: 400

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
200	80,000	\$10,511.99	\$6,672.50	\$3,839.49	\$10,498.66	\$6,672.50	\$3,826.16	(\$13.33)	-0.1%
750	300,000	\$39,352.62	\$25,021.88	\$14,330.74	\$39,485.95	\$25,021.88	\$14,464.07	\$133.33	0.3%
1,000	400,000	\$52,461.99	\$33,362.50	\$19,099.49	\$52,661.99	\$33,362.50	\$19,299.49	\$200.00	0.4%
1,500	600,000	\$78,680.74	\$50,043.75	\$28,636.99	\$79,014.07	\$50,043.75	\$28,970.32	\$333.33	0.4%
2,500	1,000,000	\$131,118.24	\$83,406.25	\$47,711.99	\$131,718.24	\$83,406.25	\$48,311.99	\$600.00	0.5%

Present Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (1)	kW x	\$4.10
Distribution Energy Charge (3)	kWh x	\$0.00759
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (2)	kW x	\$4.42
Distribution Energy Charge (4)	kWh x	\$0.00743
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx Factor of \$0.40/kW  
 Note (2): Includes the proposed CapEx Factor of \$0.72/kW  
 Note (3): includes the current O&M Factor of 0.090¢/kWh  
 Note (4): includes the proposed O&M Factor of 0.074¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-32 Rate Customers

Hours Use: 500

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
200	100,000	\$12,743.24	\$8,340.63	\$4,402.61	\$12,726.58	\$8,340.63	\$4,385.95	(\$16.66)	-0.1%
750	375,000	\$47,719.80	\$31,277.34	\$16,442.46	\$47,840.63	\$31,277.34	\$16,563.29	\$120.83	0.3%
1,000	500,000	\$63,618.24	\$41,703.13	\$21,915.11	\$63,801.58	\$41,703.13	\$22,098.45	\$183.34	0.3%
1,500	750,000	\$95,415.12	\$62,554.69	\$32,860.43	\$95,723.45	\$62,554.69	\$33,168.76	\$308.33	0.3%
2,500	1,250,000	\$159,008.86	\$104,257.81	\$54,751.05	\$159,567.20	\$104,257.81	\$55,309.39	\$558.34	0.4%

Present Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (1)	kW x	\$4.10
Distribution Energy Charge (3)	kWh x	\$0.00759
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (2)	kW x	\$4.42
Distribution Energy Charge (4)	kWh x	\$0.00743
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx Factor of \$0.40/kW

Note (2): Includes the proposed CapEx Factor of \$0.72/kW

Note (3): includes the current O&M Factor of 0.090¢/kWh

Note (4): includes the proposed O&M Factor of 0.074¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-32 Rate Customers

Hours Use: 600

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
200	120,000	\$14,974.49	\$10,008.75	\$4,965.74	\$14,954.49	\$10,008.75	\$4,945.74	(\$20.00)	-0.1%
750	450,000	\$56,086.99	\$37,532.81	\$18,554.18	\$56,195.32	\$37,532.81	\$18,662.51	\$108.33	0.2%
1,000	600,000	\$74,774.49	\$50,043.75	\$24,730.74	\$74,941.16	\$50,043.75	\$24,897.41	\$166.67	0.2%
1,500	900,000	\$112,149.49	\$75,065.63	\$37,083.86	\$112,432.83	\$75,065.63	\$37,367.20	\$283.34	0.3%
2,500	1,500,000	\$186,899.49	\$125,109.38	\$61,790.11	\$187,416.16	\$125,109.38	\$62,306.78	\$516.67	0.3%

Present Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (1)	kW x	\$4.10
Distribution Energy Charge (3)	kWh x	\$0.00759
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$825.00
RE Growth Factor		\$17.78
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.40
Transmission Energy Charge	kWh x	\$0.00930
Distribution Demand Charge - > 200 kW (2)	kW x	\$4.42
Distribution Energy Charge (4)	kWh x	\$0.00743
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx Factor of \$0.40/kW

Note (2): Includes the proposed CapEx Factor of \$0.72/kW

Note (3): includes the current O&M Factor of 0.090¢/kWh

Note (4): includes the proposed O&M Factor of 0.074¢/kWh

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-62 Rate Customers

Hours Use: 200

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
3,000	600,000	\$104,120.63	\$50,043.75	\$54,076.88	\$104,933.13	\$50,043.75	\$54,889.38	\$812.50	0.8%
5,000	1,000,000	\$161,487.29	\$83,406.25	\$78,081.04	\$162,841.46	\$83,406.25	\$79,435.21	\$1,354.17	0.8%
7,500	1,500,000	\$233,195.63	\$125,109.38	\$108,086.25	\$235,226.88	\$125,109.38	\$110,117.50	\$2,031.25	0.9%
10,000	2,000,000	\$304,903.96	\$166,812.50	\$138,091.46	\$307,612.29	\$166,812.50	\$140,799.79	\$2,708.33	0.9%
20,000	4,000,000	\$591,737.29	\$333,625.00	\$258,112.29	\$597,153.96	\$333,625.00	\$263,528.96	\$5,416.67	0.9%

Present Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (1)	kW x	\$3.54
Distribution Energy Charge	kWh x	\$0.00120
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232

Gross Earnings Tax 4%

Standard Offer Charge kWh x \$0.08007

Proposed Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (2)	kW x	\$3.80
Distribution Energy Charge	kWh x	\$0.00120
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kW x	\$0.00232

Gross Earnings Tax 4%

Standard Offer Charge kWh x \$0.08007

Note (1): Includes the current CapEx kW Charge of \$0.23/kW and the current O&M kW Charge of \$0.32/kW

Note (2): Includes the proposed CapEx kW Charge of \$0.50/kW and the proposed O&M kW Charge of \$0.31/kW

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-62 Rate Customers

Hours Use: 300

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
3,000	900,000	\$136,583.13	\$75,065.63	\$61,517.50	\$137,395.63	\$75,065.63	\$62,330.00	\$812.50	0.6%
5,000	1,500,000	\$215,591.46	\$125,109.38	\$90,482.08	\$216,945.63	\$125,109.38	\$91,836.25	\$1,354.17	0.6%
7,500	2,250,000	\$314,351.87	\$187,664.06	\$126,687.81	\$316,383.12	\$187,664.06	\$128,719.06	\$2,031.25	0.6%
10,000	3,000,000	\$413,112.29	\$250,218.75	\$162,893.54	\$415,820.63	\$250,218.75	\$165,601.88	\$2,708.34	0.7%
20,000	6,000,000	\$808,153.96	\$500,437.50	\$307,716.46	\$813,570.63	\$500,437.50	\$313,133.13	\$5,416.67	0.7%

Present Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (1)	kW x	\$3.54
Distribution Energy Charge	kWh x	\$0.00120
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (2)	kW x	\$3.80
Distribution Energy Charge	kWh x	\$0.00120
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx kW Charge of \$0.23/kW and the current O&M kW Charge of \$0.32/kW

Note (2): Includes the proposed CapEx kW Charge of \$0.50/kW and the proposed O&M kW Charge of \$0.31/kW

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-62 Rate Customers

Hours Use: 400

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
3,000	1,200,000	\$169,045.63	\$100,087.50	\$68,958.13	\$169,858.13	\$100,087.50	\$69,770.63	\$812.50	0.5%
5,000	2,000,000	\$269,695.63	\$166,812.50	\$102,883.13	\$271,049.79	\$166,812.50	\$104,237.29	\$1,354.16	0.5%
7,500	3,000,000	\$395,508.13	\$250,218.75	\$145,289.38	\$397,539.38	\$250,218.75	\$147,320.63	\$2,031.25	0.5%
10,000	4,000,000	\$521,320.63	\$333,625.00	\$187,695.63	\$524,028.96	\$333,625.00	\$190,403.96	\$2,708.33	0.5%
20,000	8,000,000	\$1,024,570.63	\$667,250.00	\$357,320.63	\$1,029,987.29	\$667,250.00	\$362,737.29	\$5,416.66	0.5%

Present Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (1)	kW x	\$3.54
Distribution Energy Charge	kWh x	\$0.00120
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (2)	kW x	\$3.80
Distribution Energy Charge	kWh x	\$0.00120
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx kW Charge of \$0.23/kW and the current O&M kW Charge of \$0.32/kW

Note (2): Includes the proposed CapEx kW Charge of \$0.50/kW and the proposed O&M kW Charge of \$0.31/kW

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-62 Rate Customers

Hours Use: 500

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
3,000	1,500,000	\$201,508.13	\$125,109.38	\$76,398.75	\$202,320.63	\$125,109.38	\$77,211.25	\$812.50	0.4%
5,000	2,500,000	\$323,799.80	\$208,515.63	\$115,284.17	\$325,153.96	\$208,515.63	\$116,638.33	\$1,354.16	0.4%
7,500	3,750,000	\$476,664.38	\$312,773.44	\$163,890.94	\$478,695.63	\$312,773.44	\$165,922.19	\$2,031.25	0.4%
10,000	5,000,000	\$629,528.96	\$417,031.25	\$212,497.71	\$632,237.29	\$417,031.25	\$215,206.04	\$2,708.33	0.4%
20,000	10,000,000	\$1,240,987.29	\$834,062.50	\$406,924.79	\$1,246,403.96	\$834,062.50	\$412,341.46	\$5,416.67	0.4%

Present Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (1)	kW x	\$3.54
Distribution Energy Charge	kWh x	\$0.00120
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (2)	kW x	\$3.80
Distribution Energy Charge	kWh x	\$0.00120
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232
Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx kW Charge of \$0.23/kW and the current O&M kW Charge of \$0.32/kW

Note (2): Includes the proposed CapEx kW Charge of \$0.50/kW and the proposed O&M kW Charge of \$0.31/kW

Calculation of Monthly Typical Bill  
Total Bill Impact of Proposed  
Rates Applicable to G-62 Rate Customers

Hours Use: 600

Monthly Power		Present Rates			Proposed Rates			Increase/(Decrease)	
kW	kWh	Total	Standard Offer	Delivery	Total	Standard Offer	Delivery	Amount	% of Total
3,000	1,800,000	\$233,970.63	\$150,131.25	\$83,839.38	\$234,783.13	\$150,131.25	\$84,651.88	\$812.50	0.3%
5,000	3,000,000	\$377,903.96	\$250,218.75	\$127,685.21	\$379,258.13	\$250,218.75	\$129,039.38	\$1,354.17	0.4%
7,500	4,500,000	\$557,820.63	\$375,328.13	\$182,492.50	\$559,851.88	\$375,328.13	\$184,523.75	\$2,031.25	0.4%
10,000	6,000,000	\$737,737.29	\$500,437.50	\$237,299.79	\$740,445.63	\$500,437.50	\$240,008.13	\$2,708.34	0.4%
20,000	12,000,000	\$1,457,403.96	\$1,000,875.00	\$456,528.96	\$1,462,820.63	\$1,000,875.00	\$461,945.63	\$5,416.67	0.4%

Present Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (1)	kW x	\$3.54
Distribution Energy Charge	kWh x	\$0.00120
Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kWh x	\$0.00232

Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Proposed Rates

Customer Charge		\$17,000.00
RE Growth Factor		\$347.07
LIHEAP Charge		\$0.73
Proposed Transmission Demand Charge	kW x	\$3.22
Transmission Energy Charge	kWh x	\$0.01247
Distribution Demand Charge (2)	kW x	\$3.80
Distribution Energy Charge	kWh x	\$0.00120
Proposed Transition Energy Charge	kWh x	(\$0.00201)
Energy Efficiency Program Charge	kWh x	\$0.00983
Renewable Energy Distribution Charge	kW x	\$0.00232

Gross Earnings Tax		4%
Standard Offer Charge	kWh x	\$0.08007

Note (1): Includes the current CapEx kW Charge of \$0.23/kW and the current O&M kW Charge of \$0.32/kW

Note (2): Includes the proposed CapEx kW Charge of \$0.50/kW and the proposed O&M kW Charge of \$0.31/kW



**PRE-FILED DIRECT TESTIMONY**

**OF**

**AMY S. TABOR**

**December 8, 2015**

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III. ISR Plan Revenue Requirement.....2

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your full name and business address.**

3 A. My name is Amy S. Tabor, and my business address is 40 Sylvan Road, Waltham,  
4 Massachusetts 02451.

5

6 **Q. Please state your position.**

7 A. I am a Senior Analyst of New England Revenue Requirements in the Regulation and  
8 Pricing department of National Grid USA Service Company, Inc. (Service Company).  
9 Service Company provides engineering, financial, administrative, and other technical  
10 support to subsidiary companies of National Grid USA (National Grid). My current  
11 duties include revenue requirements responsibilities for National Grid's electric and gas  
12 distribution activities in New England, including the electric operations of The  
13 Narragansett Electric Company d/b/a National Grid (Narragansett or the Company).

14

15 **Q. Please describe your education and professional experience.**

16 A. In 2000, I received a Bachelor of Science degree in Business Management from Salem  
17 State University. I worked at Oliver Wyman Company from 2000 to 2007 as an AP  
18 Coordinator, AP Supervisor, and Senior Accountant. From 2007 to 2013 I worked for  
19 Randstad as a Senior Accountant. In April of 2013 I joined National Grid as a Senior  
20 Analyst - the position I hold today.

21

1 **Q. Have you previously filed testimony or testified before the Rhode Island Public**  
2 **Utilities Commission (PUC)?**

3 A. Yes, I testified in previous Electric Infrastructure, Safety and Reliability (ISR)  
4 proceedings. I testified in Docket No. 4473 in the FY 2015 Electric ISR Reconciliation  
5 Filing, and as part of the FY 16 Electric ISR Plan in Docket No. 4539.

6  
7 **II. PURPOSE OF TESTIMONY**

8 **Q. What is the purpose of your testimony?**

9 A. The purpose of my testimony is to sponsor Section 5 of the Fiscal Year (FY) 2017  
10 Electric ISR Plan, which describes the calculation of the Company's revenue requirement  
11 for FY 2017 in Attachment 1 of that section. This revenue requirement is based on the  
12 Electric ISR Plan operation and maintenance (O&M) expenses and capital investment  
13 described in the testimony of Mr. Jim Patterson and Mr. Ryan Moe.

14  
15 **III. ISR PLAN REVENUE REQUIREMENT**

16 **Q. Please summarize the revenue requirement for the Company's FY 2017 Electric**  
17 **ISR Plan.**

18 A. As shown on Page 1, Column (b) of the Attachment 1, the Company's FY 2017 Electric  
19 ISR Plan revenue requirement totals \$27,270,343 and includes the following elements:  
20 (1) operation and maintenance (O&M) expense associated with the Company's  
21 vegetation management (VM) activities and the Company's Inspection and Maintenance  
22 (I&M) Program, both totaling \$9,983,001, (2) the FY 2017 revenue requirement

1 associated with the Company's incremental capital investment in electric utility  
2 infrastructure of \$ 17,287,342, which includes the \$2,711,630 revenue requirement on FY  
3 2017 proposed incremental ISR capital investment, plus the FY 2016, FY 2015, FY 2014,  
4 FY 2013, and FY 2012 revenue requirements on incremental ISR capital investment of  
5 \$5,428,148, \$2,990,204, \$959,924, (\$1,042,177), and \$441,364, and the Property Tax  
6 Recovery Adjustment of \$5,798,249. Importantly, these amounts will be trued up to  
7 actual O&M and capital investment activity after the conclusion of the fiscal year, with  
8 rate adjustments for the revenue requirement differences incorporated in future ISR  
9 filings.

10  
11 For illustration purposes only, Column (c), Page 1 of Attachment 1 provides the FY 2018  
12 revenue requirement. A detailed description of the calculation of the Company's revenue  
13 requirement for FY 2017 can be found in Section 5 of the 2017 Electric ISR Plan.

14  
15 **Q. Does this conclude your testimony?**

16 **A.** Yes, it does.

**"Testimony of  
"Cf co "MEtct{**

**PRE-FILED DIRECT TESTIMONY**

**OF**

**ADAM S. CRARY**

**December 8, 2015**

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VI. Conclusion ..... 10

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your full name and business address.**

3 A. My name is Adam S. Crary, and my business address is 40 Sylvan Road, Waltham,  
4 Massachusetts 02451.

5  
6 **Q. By whom are you employed and in what capacity?**

7 A. I am a Senior Analyst for Electric Pricing, New England in the Regulation and Pricing  
8 Department of National Grid USA Service Company, Inc. This department provides  
9 rate-related support to The Narragansett Electric Company d/b/a National Grid (National  
10 Grid or Company).

11  
12 **Q. Please describe your educational background and training.**

13 A. In 1995, I graduated from Berklee College of Music in Boston, MA with a Bachelor of  
14 Music degree.

15  
16 **Q. Please describe your professional experience?**

17 A. For approximately eight years between 2000 and 2014, I was employed by Computer  
18 Sciences Corporation as a Pricing Analyst for their Managed Hosting and Cloud  
19 Computing business divisions, respectively. I began my employment as a Senior Pricing  
20 Analyst with National Grid in June 2014.

21

1 **Q. Have you previously testified before Rhode Island Public Utilities Commission**  
2 **(PUC)?**

3 A. Yes. I submitted Pre-Filed Direct Testimony under RIPUC Docket No. 4566 (FY 2015)  
4 Electric Revenue Decoupling Mechanism Reconciliation Filing), and was sworn in as a  
5 direct witness to address a question regarding bill impacts under RIPUC Docket No. 4473  
6 (FY15 ISR Reconciliation).

7

8 **Q. What is the purpose of your testimony?**

9 A. The purpose of my testimony is to describe the calculation of the Capital Expenditures  
10 and O&M factors resulting from the Company's FY 2017 Infrastructure, Safety and  
11 Reliability (ISR) Plan proposed in this filing and to provide the customer bill impacts of  
12 the proposed rate changes.

13

14 **II. INFRASTRUCTURE, SAFETY AND RELIABILITY PROVISION**

15 **Q. Please describe the Company's ISR Plan tariff provision.**

16 A. The Company's ISR Provision, RIPUC No. 2118<sup>1</sup>, describes the process for establishing  
17 and implementing annual rate adjustments designed to recover the costs associated with  
18 the electric ISR Plan. The tariff consists of two separate mechanisms: (1) an  
19 Infrastructure Investment Mechanism (IIM) designed to recover the costs associated with  
20 incremental capital investment; and (2) an Operation and Maintenance Mechanism

---

<sup>1</sup>The current ISR Provision became effective on February 1, 2013.

1 (O&MM) designed to recover certain annual Operation and Maintenance (O&M)  
2 expenses pertaining to Inspection and Maintenance (I&M) and Vegetation Management  
3 (VM) activities.

4  
5 **A. INFRASTRUCTURE INVESTMENT MECHANISM**

6 **Q. Please describe the operation of the IIM.**

7 A. The IIM provides for the recovery of incremental annual capital investment through  
8 CapEx Factors. In conjunction with the filing of the annual electric ISR Plan by  
9 January 1 of each year, the Company proposes CapEx Factors for each rate class  
10 designed to recover the cumulative revenue requirement associated with the estimated  
11 and actual fiscal year capital investment commencing with the Company's fiscal year  
12 ending March 31. The proposed CapEx Factors become effective for consumption on  
13 and after April 1 of each year upon PUC approval.

14  
15 **Q. How are the CapEx Factors designed?**

16 A. First, the cumulative revenue requirement approved by the PUC, which will reflect both  
17 an estimate of incremental capital investment for the upcoming fiscal year plus the  
18 cumulative prior years' actual incremental capital investment, is allocated to each of the  
19 Company's rate classes based upon the rate base allocator. The rate base allocator is the  
20 percentage of total rate base allocated to each rate class taken from the most recent  
21 proceeding before the PUC that contained an allocated cost of service study.

1 Next, unit charges for each rate class will be developed from the allocated revenue  
2 requirement. For non-demand rate classes, a per kWh charge is calculated by dividing  
3 the cumulative rate class revenue requirement by the forecasted kWh deliveries for each  
4 rate class for the period during which the rates will be in effect. For demand-based rate  
5 classes, Rate G-02, Rates G-32/B-32, and Rates G-62/B-62, the CapEx Factors are per  
6 kW charges and are calculated by dividing the allocated cumulative revenue requirement  
7 for each rate class by the forecasted kW billing demand.

8  
9 **Q. Why is the cumulative revenue requirement allocated using a rate base allocator?**

10 A. The cumulative revenue requirement associated with incremental capital investment is  
11 allocated in a manner that is similar to the way the revenue requirement on capital  
12 investment would be allocated if an allocated cost of service study were performed.  
13 Since capital investment is primarily related to plant in service, which forms the largest  
14 part of rate base, allocating the incremental capital using the most recently approved rate  
15 base allocator is an appropriate way to spread the revenue requirement to each of the rate  
16 classes.

17  
18 **Q. Are the cumulative revenue requirement, which contains, in part, an estimate of  
19 incremental capital investment, and revenue generated from the CapEx Factors  
20 subject to reconciliation?**

21 A. Yes. The Company submits a filing by August 1 of each year (the Reconciliation Filing)

1 in which the Company proposes CapEx Reconciling Factors to become effective for the  
2 twelve months beginning October 1. In the Reconciliation Filing, the Company  
3 compares the actual cumulative revenue requirement to actual billed revenue generated  
4 from the CapEx Factors for the applicable reconciliation period and any over or under  
5 recovery of the actual cumulative revenue requirement is credited to or recovered from  
6 customers through the CapEx Reconciling Factors. The amount approved for recovery or  
7 crediting through the CapEx Reconciling Factors is also subject to reconciliation with  
8 actual amounts billed through the CapEx Reconciling Factors and any difference  
9 reflected in future CapEx Reconciling Factors.

10  
11 **B. OPERATION AND MAINTENANCE MECHANISM**

12 **Q. Please describe the operation of the O&MM.**

13 A. The O&MM provides for the recovery of O&M budgeted expense associate with the  
14 Company's I&M and VM activities. The O&M Factors for each rate class are designed  
15 to recover the sum of the annual forecasted I&M expense and forecasted VM expense for  
16 the upcoming fiscal year as approved by the PUC in the Company's annual electric ISR  
17 Plan Filing.

18  
19 **Q. How are the O&M Factors designed?**

20 A. To determine the revenue to be collected from each rate class through the O&M Factors,  
21 the forecasted I&M and VM expense is allocated to each of the Company's rate classes

1 based upon the O&M allocator derived from allocated distribution O&M expense (i.e.,  
2 FERC accounts 580-598). This distribution O&M allocator is the percentage of total  
3 distribution O&M expense allocated to each rate class taken from the most recent  
4 proceeding before the PUC that contained an allocated cost of service study.  
5 Once the rate class O&M revenue requirement has been determined, per unit rates are  
6 developed for each rate class. For Rates G-62/B-62, the O&M Factor is in the form of a  
7 demand, or per kW, charge and is calculated by dividing the allocated O&M expense for  
8 the combined rate class by the forecasted kW billing demand. For all other rate classes, a  
9 per kWh charge is developed by dividing the allocated O&M expense by the forecasted  
10 kWh deliveries for each rate class for the period during which the rates will be in effect.  
11

12 **Q. Why are the I&M and VM expenses allocated using a distribution O&M allocator?**

13 A. As with the allocation of the revenue requirement on capital investment, the O&M  
14 expense is allocated in a manner that is similar to the way these costs would be allocated  
15 if an allocated cost of service study were performed. Therefore, the distribution O&M  
16 allocator derived from the allocated cost of service study approved in the Company's last  
17 base rate proceeding is used to spread these costs to each of the rate classes.  
18

19 **Q. Regarding Rates G-02 and B-32/G-32, why are the CapEx Factors designed as  
20 demand (per kW) charges and the O&M Factors as per kWh charges?**

21 A. The current distribution charges for Rates G-02 and B-32/G-32 include both demand and

1 kWh charges. The designs of the CapEx and O&M Factors for these rate classes are  
2 intended to not significantly change the relationship between the existing charges and  
3 will ensure that customers within the class that have differing usage characteristics will  
4 not experience significantly different bill impacts.

5  
6 **Q. Regarding Rate B-62/G-62, why are both the CapEx Factor and the O&M Factor**  
7 **designed as demand (per kW) charges?**

8 A. Presently, the distribution charges for Rate B-62/G-62 includes only a demand charge,  
9 and the CapEx and O&M Factors maintain that design.

10  
11 **Q. Are the O&M Factors subject to reconciliation?**

12 A. Yes. In the Company's annual ISR Reconciliation Filing, the Company proposes an  
13 O&M Reconciling Factor to become effective for the twelve months beginning October  
14 1. The Company compares the actual I&M and VM O&M expense to actual billed  
15 revenue generated from the O&M Factors for the applicable reconciliation period, and  
16 any over or under recovery of actual expense is credited to or recovered from customers  
17 through the O&M Reconciling Factor. The O&M Reconciling Factor is a uniform per  
18 kWh charge applicable to all rate classes. The amount approved for recovery or crediting  
19 through the O&M Reconciling Factor is subject to reconciliation with actual amounts  
20 billed through the O&M Reconciling Factor and any difference reflected in future O&M  
21 Reconciling Factors.

1 **III. PROPOSED FACTORS**

2 **A. CAPEX FACTORS**

3 **Q. Please describe the calculation of the proposed CapEx Factors.**

4 A. The CapEx Factors are designed to recover the cumulative revenue requirement related to  
5 incremental capital investments through the end of FY 2017. The cumulative revenue  
6 requirement of \$17,287,342<sup>2</sup> is developed in the testimony of Company Witness Amy S.  
7 Tabor. The cumulative revenue requirement is allocated to the rate classes based on the  
8 total rate base allocator, consistent with the provisions of the general base rate proceeding  
9 Settlement Agreement in Docket No. 4323, and the factors are designed as I've described  
10 above using forecasted billing units for the period April 1, 2016 through March 31, 2017.  
11 The calculation of the proposed CapEx Factors is set forth in the ISR Plan, Section 6,  
12 page 3.

13  
14 **B. O&M FACTORS**

15 **Q. Please describe the calculation of the proposed O&M Factors.**

16 A. The proposed O&M Factors are designed to recover forecasted O&M expense associated  
17 with I&M and VM activities for FY 2017. As developed in the testimony of Ms. Tabor,  
18 these expenses total \$9,983,001<sup>3</sup>. The Company has allocated these O&M expenses  
19 using an allocator based on distribution O&M from the allocated cost of service study  
20 consistent with the provisions of the general base rate proceeding Settlement Agreement

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<sup>2</sup> See Section 5: Attachment 1, Page 1, Line 14, column (b) of the ISR Plan.

<sup>3</sup> See Section 5: Attachment 1, Page 1, Line 4, column (b) of the ISR Plan.

1 in Docket No. 4323, which the Company believes maintains consistency in how these  
2 costs would be reflected in base rates. O&M Factors are designed as I describe above.  
3

4 **Q. Is the Company providing a summary of all proposed factors?**

5 A. Yes. The Summary of Proposed Factors is presented in Section 6, page 1.  
6

7 **IV. BILL IMPACTS**

8 **Q. Has the Company prepared monthly bill impacts illustrating the effect of the**  
9 **proposed ISR Factors?**

10 A. Yes. The monthly bill impacts for each rate class are shown on Section 7 of the ISR Plan.  
11 For a residential customer receiving Standard Offer Service and using 500 kWh per  
12 month, implementation of the proposed ISR factors will result in a monthly bill increase  
13 of \$0.61, or 0.6%.  
14

15 **V. SUMMARY OF RETAIL DELIVERY RATES**

16 **Q. Is the Company including a revised Summary of Retail Delivery Rates tariff,**  
17 **R.I.P.U.C. No. 2095, in this filing?**

18 A. No, the Company is not revising this tariff at this time. The Company will submit its  
19 annual reconciliation filing in February 2016 and will propose additional rate changes for  
20 effect, April 1, 2016. Therefore, the Company will submit a compliance filing following  
21 the PUC's decision in both the reconciliation filing docket and this docket that will

1 include the Summary of Retail Delivery rates tariff reflecting all of the approved rate  
2 changes for effect, April 1, 2016.

3

4 **VI. CONCLUSION**

5 **Q. Does this conclude your testimony?**

6 **A.** Yes, it does.