Thomas R. Teehan
Senior Counsel

December 20, 2010

VIA HAND DELIVERY & ELECTRONIC MAIL

Rhode Island Public Utilities Commission
c/o Luly Massaro
89 Jefferson Boulevard
Warwick, RI 02888

RE: National Grid's Proposed FY 2012 Gas Infrastructure, Safety, and Reliability Plan

Dear Ms. Massaro:

On behalf of National Grid[1], I have enclosed ten (10) copies of the Company's proposed Gas Infrastructure, Safety, and Reliability Plan (the "Gas ISR Plan" or "Plan") for fiscal year 2012 [2]. National Grid consulted with the Rhode Island Division of Public Utilities and Carriers ("Division") to develop this proposed Gas ISR Plan, which is designed to enhance the safety and reliability of the Company's Rhode Island natural gas delivery system.

The ISR Plan is designed to protect and improve the gas delivery system through proactively replacing leak-prone gas mains and services, upgrading the system's pressure regulating systems, responding to emergency leak situations, and addressing conflicts that arise out of public works projects. The Plan is intended to achieve these safety and reliability goals through a cost-effective, coordinated work plan. The level of work that the Plan provides will sustain and enhance the safety and reliability of the Rhode Island gas pipeline infrastructure and directly benefit all Rhode Island gas customers.

The Plan includes a description of the categories of work the Company proposes to perform in fiscal year 2012 as well as the proposed targeted spending levels for each work category. Along with this cover letter and a copy of the Plan, this filing includes the pre-filed direct testimony of three witnesses: Ms. Susan Fleck, whose testimony describes the Plan, its component programs and associated spending levels; Mr. William R. Richer, whose testimony explains the Company's revenue requirement calculation; and Mr. John F. Nestor, III, whose testimony describes the rate design and the terms of an illustrative tariff. The proposed Plan would account for a total incremental rate adjustment of approximately $2.1 million. The annual bill impact on an average residential heating customer using 922 therms per year would be an increase of $7.47, or approximately 0.4 percent.

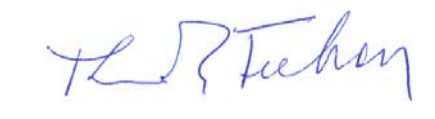
As the first annual gas capital spending plan to be developed under Rhode Island's new law promoting a safe and reliable gas delivery system, this Plan presents a unique opportunity to facilitate and encourage investment in our gas utility infrastructure and enhance its ability to provide safe, reliable, and

[1] The Narragansett Electric Company d/b/a National Grid (hereinafter referred to as "National Grid" or the "Company").
[2] The Gas ISR Plan is submitted in compliance with the provisions of R.I.G.L. §39-1-27.7.1.

efficient gas service to customers. The Company has worked with the Division to reach agreement on this Plan, which it now submits to the Rhode Island Public Utilities Commission for review and approval.

Thank you for your attention to this transmittal. If you have any questions, please feel free to contact me at (401) 784-7667.

Very truly yours,



Thomas R. Teehan

Enclosure

cc: Steve Scialabba
Leo Wold, Esq.
James Lanni

National Grid

The Narragansett Electric Company

Gas Infrastructure, Safety, and Reliability Plan FY 2012 Proposal

December 17, 2010

Submitted to:
Rhode Island Public Utilities Commission
Docket No._____

Submitted by:

nationalgrid

Testimony of
Susan L. Fleck

THE NARRAGANSETT ELECTRIC COMPANY
d/b/a NATIONAL GRID
R.I.P.U.C. DOCKET NO. _____
RE: FY 2012 GAS INFRASTRUCTURE,
SAFETY, AND RELIABILITY PLAN

DIRECT TESTIMONY

OF

SUSAN L. FLECK

December 17, 2010

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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR FULL NAME, BUSINESS ADDRESS, AND TITLE.

A. My name is Susan Fleck. My business address is 40 Sylvan Road, Waltham, MA. I am Vice President of Engineering Standards and Policy with responsibilities that relate to the Rhode Island gas operations of The Narragansett Electric Company ("National Grid" or the "Company").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND TRAINING.

A. I received a Bachelor of Science degree in Civil Engineering from Carnegie-Mellon University in 1980. In 1989, I received an M.B.A. with a finance concentration from Boston College. From 1980 to 1981, I worked as an engineer for Columbia Gas Transmission Company in the Measurement and Regulation department. In 1981, I joined The Brooklyn Union Gas Company as an Engineer, where I remained until 1982. From 1982 to 1985, I was employed by Consolidated Edison Company as an Associate Engineer in the Gas Operations Department. In 1985, I joined Boston Gas Company ("Boston Gas") as a Measurement and Design Engineer. I remained with Boston Gas through the end of 2000, progressing through numerous positions including the following: Superintendent Distribution Administration, Director Distribution System Planning, Group Leader Distribution System Design, Construction Engineer, Vice President Engineering and Gas Control, and Vice President Engineering and Environmental Management. Following the acquisition of Boston Gas by KeySpan

Corporation ("KeySpan"), I relocated to New York and was named Vice President NYC Gas Operations for KeySpan Energy Delivery New York. Following the acquisition of KeySpan by National Grid plc in August of 2007, I returned to New England and was named to my current position.

Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?

A. Yes. I am a member of the American Gas Association. I am also a member of the American Society of Civil Engineers.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE RHODE ISLAND PUBLIC UTILITIES COMMISSION ("COMMISSION")?

A. Yes. I have submitted written testimony and have testified before the Commission in National Grid's last gas rate case (Docket No. 3943).

Q. PLEASE BRIEFLY DESCRIBE YOUR CURRENT AREAS OF RESPONSIBILITY FOR NATIONAL GRID.

A. In my position as Vice President of Engineering Standards and Policy, I have several areas of responsibility. First, I am responsible for ensuring Gas Operations' compliance with all state and federal codes and standards related to gas pipeline safety. This includes responsibility for reporting and other communications with regulatory agencies. Second, I am responsible for review, development, and communications of all internal company policies, codes, and standards related to gas pipeline safety. Third, I am responsible for

material specifications and review of material failures. Finally, I am responsible for coordination of National Grid's research and development activities that relate to gas pipeline safety.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe The Narragansett Electric Company d/b/a National Grid's ("National Grid" or the "Company") proposed Infrastructure Safety and Reliability Plan for Fiscal Year ("FY") 2012 ("ISR Plan" or the "Plan"). [1] This Plan sets out targeted capital investments that are designed to proactively replace aging leak-prone portions of the delivery system, upgrade the system's pressure regulating systems, respond to emergency leak situations, and address conflicts that arise out of public works projects. The level of work that the Plan provides will sustain and enhance the safety and reliability of the Rhode Island gas pipeline infrastructure and directly benefit all Rhode Island gas customers.

Specifically, my testimony will address the work to be done under the proposed ISR Plan and the anticipated capital investments associated with that work. Mr. William R. Richer

[1] Pursuant to newly enacted law, the Company is required to annually file an infrastructure , safety and reliability spending plan with the Commission for review and approval. (R.I.G.L. §39-1-27.7.1). In addition to budgeted spending, the annual ISR Plan is to contain a reconcilable allowance for the anticipated capital investments and other spending for the upcoming fiscal year. Because the Company's FY 2012 runs from April 1, 2011 through March 31, 2012, the proposed ISR Plan would be for effect April 1, 2011.

is providing testimony on the calculation of the revenue requirement impact associated with the Company's proposed FY 2012 ISR Plan and Mr. John F. Nestor, III, is providing testimony relative to the proposed annual rate reconciliation mechanism required under the new statute, as well as with respect to the bill impacts of the proposed capital investments under the 2012 Plan.

III. OVERVIEW

Q. HOW WAS THE ISR PLAN PREPARED?

A. The Company and the Division have worked together in good faith to produce and agree on a proposed ISR Plan that will allow the Company to meet state and federal safety and reliability requirements and to maintain its gas distribution system in a safe and reliable condition. The cooperative focus and analysis that has gone into developing this ISR Plan should improve the safety and reliability of the Company's gas system for the immediate and long-term benefit of Rhode Island's natural gas customers.

Q. WHAT IS THE ISR PLAN DESIGNED TO DO?

A. The ISR Plan is designed to address leak-prone service lines and mains by replacing and protecting those parts of the delivery system in a manner that prioritizes work on a risk-based approach. It provides for immediate main replacement in emergency situations throughout the plan year, and also provides for required work related to public works projects. In addition, the Plan includes spending on system automation and upgrades to

the system that allow for the effective control of system pressures, as well as to address reliability issues including those that arose out of recent flooding situations in Rhode Island. The Company is submitting a Plan that is designed to accomplish those goals. The Division has expressed its agreement to the proposed spending plan and to the reasonableness of the Company's calculation of the revenue requirement, proposed tariff provisions, and rate design that are included in the Plan document.

Q. ARE YOU SPONSORING ANY ATTACHMENTS THROUGH YOUR TESTIMONY?

A. The proposed FY 2012 Gas ISR Plan document is attached as Exhibit 1 to my testimony. It is organized as follows:

Section 1 – Introduction and Summary

Section 2 – Gas Capital Investment Plan (including major categories of work)

Section 3 – Revenue Requirement Calculation

Section 4 – Illustrative Tariff

Section 5 – Rate Design

Section 6 – Bill Impacts [2]

[2] As noted above, Mr. Richer is testifying to and sponsoring the revenue requirement calculation included in Section 3. Mr. Nestor is testifying to and sponsoring the tariff, rate design and bill impacts outlined in Sections 4-6 respectively.

Q. PLEASE DESCRIBE NATIONAL GRID'S RHODE ISLAND GAS OPERATIONS.

A. In Rhode Island, National Grid distributes natural gas to approximately 250,000 Rhode Island residential and commercial-and-industrial customers in 33 cities and towns. The Company owns, operates and maintains over 3,000 miles of gas mains and over 186,000 services in the state.

Q. WHAT TYPES OF INFRASTRUCTURE, SAFETY AND RELIABILITY WORK DOES THE PROPOSED ISR PLAN INCLUDE?

A. The Plan seeks not only to maintain the system, but also to proactively upgrade its condition to head off problems before they arise. A safe and reliable gas delivery system in Rhode Island is essential to the health, safety, and well-being of its citizens and is foundational to maintaining a healthy economy and continuing to attract new residents and businesses. The Commission embarked on a course of addressing Rhode Island's aging gas infrastructure in 2008, with the establishment of the Accelerated Replacement Plan ("ARP"). In addition to the type of infrastructure safety, and reliability work currently performed under the ARP, the ISR Plan contains spending related to safety and reliability for public works, mandated programs, and reliability programs. Included in the ISR Plan document is a description of the Company's proposed budget for capital investments for FY 2012 (ISR Plan, Section 2, Attachment 1) and a capital forecast for FY 2011 through FY 2016 (ISR Plan, Section 2, Attachment 2).

Q. HOW DOES THE PROPOSED FY 2012 GAS ISR PLAN COMPARE TO THE ARP THAT THE COMMISSION AUTHORIZED IN DOCKET 3943?

A. In Docket 3943, the Commission approved the ARP to address targeted portions of the Company's gas delivery system: high-pressure bare-steel inside services, bare steel mains, and small diameter cast-iron mains. The ARP allowed for recovery of capital investments associated with approved work under an annual plan. The ISR Plan includes those categories of safety and reliability capital investments that were the target of the ARP. Moreover, as provided in the new law, the ISR Plan is broader than the ARP and includes other safety and reliability activities. If approved for FY 2012, for effect April 1, 2012, that ARP category of work will be subsumed into the annual ISR plan approved by the Commission. Thus, the Company would not be filing a separate ARP plan for FY 2012.

IV. CAPITAL INVESTMENT PLAN

Q. WHAT LEVELS OF SPENDING ARE PROPOSED IN THE ISR PLAN?

A. For FY 2012, the Company proposes capital investments totaling $60.55 million, of which $53.42 million is included for recovery in the proposed ISR Plan. The Company is excluding from the proposed Plan the remaining $7.129 million for growth spending. The ISR Plan is broken down into categories of programs designed to maintain the safety and reliability of the Company's gas delivery infrastructure. For each program category in the Plan, the Company proposes the following levels of spending, which includes the

cost of equipment removal:

- $29.66 million for programs that are currently part of the ARP, including proactive Main Replacement and Service Replacement programs;
- $1.0 million for Reactive Main Replacement;
- $1.75 million for Public Works programs;
- $9.19 million for Mandated programs, including capital leak repairs, meter replacements, and cathodic protection;
- $11.82 million for Gas System Reliability, including work relative to System Automation and Gas Control, Pressure Regulating Facilities (including Heater Program, and Control Line Integrity work), System Reliability Enhancement, Water Intrusion Program, and Valve installation/replacement program.

Q. WHAT ARE THE MAJOR CATEGORIES OF WORK THAT MAKE UP THE ISR PLAN?

A. The ISR Plan is comprised of five program components: (1) main replacement and service replacement, (2) reactive main replacement, (3) public works, (4) mandated programs, and (5) reliability programs.

1. <u>Main Replacement Program and Service Replacement Program</u>

Q. WHAT SAFETY AND RELIABILITY ISSUES ARE THE MAIN REPLACEMENT PROGRAM AND THE SERVICE REPLACEMENT PROGRAM DESIGNED TO ADDRESS?

A. This category of capital investment addresses the types of concerns that have been the subject of the ARP. The value and need for targeted spending on the replacement of leak-prone gas main and services was well-documented and has been accepted by both the Division and the Commission in the Company's recent gas base distribution rate case (Docket No. 3943). In that proceeding, the Commission made a finding that historic pipeline replacement rates were not keeping up with Rhode Island's aging gas distribution infrastructure and that infrastructure replacement is in the interest of ratepayers and the public as a whole. (Order No.19563 at 48-49.) The Commission went on to approve the Company's proposed ARP, which was supported by the Division, to fund targeted leak-prone small-diameter cast iron gas mains, bare steel gas mains, and bare steel high-pressure inside services. For FY 2012, consistent with the Commission's findings, the Company forecasts spending $25.75 million on its main replacement program and $3.9 million on the service replacement program for a total spend of $29.66 million on these two programs. This program, which incorporates the goals of the ARP, includes the replacement of approximately 45 miles of leak-prone main and the replacement of approximately 2,125 high-risk services.

Q. WHAT PORTION OF THE COMPANY'S GAS DELIVERY SYSTEM IS COMPRISED OF SMALL DIAMETER CAST IRON MAINS, BARE STEEL MAIN AND HIGH-PRESSURE BARE-STEEL INSIDE SERVICES?

A. The Company has approximately 674 miles of unprotected steel mains, consisting of 423 miles of bare unprotected steel mains and 251 miles of unprotected coated steel mains. The Company has 885 miles of cast iron mains (770 miles of which is eight inches or less in diameter). In addition, the Company has about 15,000 high-pressure bare-steel inside services.

Q. IS THERE A SPECIFIC PROCESS IN PLACE TO PRIORITIZE REPLACEMENT PROJECTS?

A. Yes. Prioritization of leak-prone facilities is accomplished through an eight-step process, which includes: (1) data collection; (2) calculation of a main's deterioration factor; (3) calculation of an incident probability factor to estimate the public safety incident probability; (4) calculation of a risk factor representing the product of the likelihood of an event and the potential consequence of that event; (5) calculation of a preliminary prioritization factor; (6) adjustment of the prioritization based on consideration of relevant circumstances; (7) consideration of other qualification factors; and (8) evaluation to determine whether the replacement will have any impact on existing cathodic protection systems. Engineering judgment and field knowledge and experience are also applied to both the prioritization and determination of the segment length to be replaced

based on the pressure, diameter, dates of failures, surrounding areas, and similar factors.

Q. HOW MANY MILES OF LEAK-PRONE GAS MAIN HAS THE COMPANY REPLACED SINCE FY 2007?

A. The number of miles of leak-prone gas mains replaced has increased from 10 miles in FY 2007 to 31 miles under the ARP in FY 2010, and is projected to be 40 miles in FY 2011.

Q. PLEASE PROVIDE A COMPARISON OF THE LEAK RATES FOR NATIONAL GRID'S RHODE ISLAND GAS MAINS WITH THE LEAK RATES OF OTHER GAS SYSTEMS IN THE NORTHEAST.

A. Normalizing U.S. Department of Transportation ("DOT") annual leak data in order to compare the Company's leak rates on mains to other regional gas distribution companies indicates that in 2008 the Company's leak rates on mains were higher than regional companies under each of the three methods used to calculate leak rates on mains.

Q. HOW DOES THE LEAK-PER-MILE MEASURE CORRELATE TO THE SUCCESS OF A REPLACEMENT PROGRAM?

A. Although the number of leaks per mile is an important indicator for system safety and reliability, the leaks-per-mile metric does not take into account other critical factors such as the non-linear nature of the corrosion process of steel pipe, the age of the inventory, and the complex leak mechanisms for cast iron. Moreover, an increasing number of leaks per mile should not be assumed to mean that the replacement program has not

targeted the correct pipe for replacement. An increasing leak rate may simply signify that leaks on leak-prone facilities are increasing faster than leaks can be eliminated through replacement activities.

Q. WHAT SPENDING LEVELS DOES THE ISR PLAN INCLUDE FOR ITS PROPOSED MAIN REPLACEMENT AND SERVICE REPLACEMENT PROGRAMS FOR FY 2012?

A. In its FY 2012 ISR Plan, the Company proposes a spending level of $25.75 million for the Main Replacement Program and $3.906 million for the Service Replacement Program.

Q. WILL THE COMPANY PREPARE A PRIORITIZED LIST OF PIPE PROJECTS IN ADVANCE OF THE FY 2012 CONSTRUCTION SEASON?

A. Yes. In advance of the construction season, the Company will prepare a prioritized list of pipe replacement projects to be completed during the fiscal year.

Q. UNDER THE CURRENT ARP, THE COMPANY PROVIDES THE COMMISSION AND THE DIVISION WITH PERIODIC PROGRESS REPORTS AND UPDATED PROJECT LISTS. WILL THE COMPANY CONTINUE TO PROVIDE PERIODIC REPORTS?

A. Yes. Under the ISR Plan, the Company will provide quarterly reports on the progress of its pipeline and service replacement work to both the Commission and the Division. In

light of the fact that circumstances that arise during the fiscal year may require reasonable deviations from the planned work, the Company will also include an explanation of any significant deviations in its quarterly report. Additionally, at the time of the Company's annual rate and rate adjustment filing the Company will provide an annual report on the prior year's activities.

2. <u>Reactive Main Replacement</u>

Q. PLEASE DESCRIBE THE WORK INCLUDED IN THE REACTIVE MAIN REPLACEMENT PROGRAM.

A. This category of work consists of emergency main replacements due to leaks or other unplanned work where main condition dictates immediate replacement. An example would be a main break resulting from external forces such as a frost heave or a third-party contractor. This type of work clearly must be addressed as it arises. Reactive Main Replacements account for approximately 1 ½ miles of emergency main replacements annually.

Q. WHAT IS THE PROPOSED LEVEL OF SPENDING FOR THIS EMERGENCY MAIN REPLACEMENT WORK FOR FY 2012?

A. The Company proposes to include $1 million in Reactive Main Replacement. This amount is based on historical levels.

3. Public Works

Q. WHAT ARE THE TYPES OF WORK THAT WOULD BE PERFORMED UNDER THE ISR PLAN AS PUBLIC WORKS PROGRAMS?

A. The purpose of the Public Works program is to address existing gas infrastructure conflicts that arise in the course of public works projects. Recently, capital expenditures for mains have increased because of municipal roadway resurfacing and associated drainage work likely to be funded by the 2009 American Resource and Recovery Act. While the primary purpose of Public Works spending is to address direct conflicts with existing gas infrastructure, Public Works spending provides the opportunity to coordinate other system improvement work, such as replacement of leak-prone pipe, system reliability upgrades, internal sealing and lining projects, elimination of redundant main, and regulator station upgrades.

Q. IN WHAT CIRCUMSTANCES DO PUBLIC WORKS PROJECTS PROVIDE ADDITIONAL OPPORTUNITIES TO COST-EFFECTIVELY IMPROVE THE DELIVERY SYSTEM'S SAFETY AND RELIABILITY?

A. There are two kinds of municipal work projects that provide additional opportunities to cost-effectively improve the delivery system's safety and reliability: (1) municipal projects that require the Company to take some action on its own facilities to accommodate the project, and (2) municipal projects that do not require action by the Company, but provide an opportunity for the Company to coordinate its mains replacement activities so that

duplication of street excavation, restoration and paving costs may be avoided and community disruption minimized. Given these considerations, the Company attempts to coordinate main replacement projects with municipal projects where possible because of potential cost savings and customer satisfaction issues, as well as anticipated avoidance of performing work on public roadways that were recently improved and may be subject to a municipal restriction on further construction activities. Thus, municipal work affords the Company an opportunity to replace additional leak-prone pipe and reduce paving costs by coordinating the Company's main replacement work with these planned public works construction projects. As described above in the discussion on main and service replacement programs, National Grid has an ongoing plan to replace targeted mains on a risk-based approach. Integration of that work with the public works process yields increased system reliability, system integrity, improved customer satisfaction, and optimized capital spending through coordination with planned public works projects.

Q. WHAT DOES THE COMPANY DO TO EFFECTIVELY TRACK AND COORDINATE ITS REPLACEMENT WORK WITH PUBLIC WORKS PROJECTS?

A. The Company will rely on effective liaison activity to track and coordinate multiple public works projects. Specifically, it must be recognized that, while municipal schedules and plans change due largely to funding, other factors also contribute to the scheduling of these projects (e.g. political, demand maintenance, etc.). Municipal

changes in projects can and do create additional work in developing and coordinating the Company's planning and budgeting processes. Using the Company's five-year work planning process, the Company can provide some flexibility in scheduling, coordinating, and engineering projects in concert with municipal public works initiatives. For FY 2012, the proposed plan incorporates $1.75 million in spending under the Public Works category.

4. Mandated Programs

Q. WHAT DOES THE COMPANY INCLUDE IN THE CATEGORY OF MANDATED PROGRAMS?

A. These are programs that the Company mandates in order to comply with federal and state gas pipeline safety or metering requirements or to address discreet safety and reliability issues involving its system. For FY 2012, the proposed plan contains $9.19 million for Mandated Programs, which fall into three categories: (1) cathodic protection for existing steel-coated mains, (2) gas meter replacement, and (3) capital leak repairs.

Q. PLEASE DESCRIBE THE COMPANY'S CATHODIC PROTECTION PROGRAM AND EXPLAIN THE NEED TO CATHODICALLY PROTECT PRE-1971 STEEL MAINS.

A. The U.S. DOT has established regulations relative to the safety and integrity of natural gas pipelines. Since 1971, the DOT has required the cathodic protection of all new

buried steel gas facilities. 49 C.F.R. §192. The Company's Cathodic Protection Program adds cathodic protection to existing coated steel main installed prior to 1971. Cathodic protection effectively extends the service life of buried steel facilities and can prolong replacement by twenty years or more. National Grid has standardized a process used to determine the cost effectiveness of cathodically protecting steel pipe installed prior to 1971. For FY 2012, National Grid is targeting adding cathodic protection to ten miles of pre-1971 pipe with projected spending of $455,000.

Q. WHAT IS THE TOTAL NUMBER OF METERS REPLACEMENTS THAT THE COMPANY WILL PERFORM IN FY 2012?

A. For FY 2012, total meter replacements are projected to be in the range of 22,000.

Q. OF THAT TOTAL NUMBER OF METER REPLACEMENTS, WHAT PORTION WILL RESULT IN CAPITAL COSTS UNDER THE ISR PLAN DURING FY 2012?

A. Of that projected amount, many meters will be removed, reconditioned, tested, and placed back in service. A subset of those meters, however, cannot be placed back in service and must be replaced with new meters. For instance, of the 22,358 meters replacements in FY 2010, some 4,409 resulted in new meter purchases. The capital costs for the Meter Replacement Program are for the procurement of those new meters to replace the ones that can no longer be placed back in service. The proposed Plan seeks to

recover approximately $2.366 million in capital investments related to the Meter Replacement Program.

Q. WHAT TYPES OF GAS LEAKS ARE ADDRESSED BY THE CAPITAL LEAK REPAIR PROGRAM?

A. The Capital Leak Repair Program addresses leaking gas services, as well as extending the useful life of cast iron mains through the encapsulation of leaking cast iron joints. For FY 2012, the Plan projects approximately 1,800 capital leak repairs as a result of cast iron joint encapsulation.

5. Reliability

Q. WHAT TYPE OF ACTIVITIES DOES THE ISR PLAN INCLUDE AS RELIABILITY PROGRAMS, AND WHAT IS THE PROPOSED SPENDING LEVEL FOR THOSE PROGRAMS?

A. The ISR Plan includes Reliability programs to address system automation and control, system pressure regulating facilities (including heaters and control line integrity), system reliability enhancement, water intrusion projects, LNG facilities, and primary valve installation and/or replacements. The proposed FY 2012 Gas ISR Plan contains $11.82 million in spending for Reliability.

Q. PLEASE DESCRIBE IN SUMMARY FORM THE MAJOR COMPONENTS OF THE RELIABILITY PROGRAM SPENDING ACTIVITIES THAT ARE FOUND IN THE ISR PLAN.

A. Reliability work found in the ISR Plan can be segregated into six major program categories: (1) System Automation and Control, (2) Pressure Regulating Facilities, (3) System Reliability Enhancement, (4) Water Intrusion, (5) LNG Facilities, and Valve Installation and Replacement.

1. <u>System Automation and Control</u>

Q. WHAT IS THE PURPOSE OF THE SYSTEM AUTOMATION AND CONTROL PROGRAM?

A. The primary purpose of this program is to meet the new DOT code requirements aimed at modernizing system data and telemetry recording and increasing the level of system automation and control, thereby reducing the potential for human error. *See* 49 CFR §192, Docket ID 2007-27954. These new code provisions contain the following pipeline safety requirements: (a) Control Room Management/Human Factors, (b) modernization of the Company's system data and telemetry recording, and (c) increasing the level of system automation and control.

National Grid's ability to provide safe and reliable service is governed to a large extent by the Company's ability to maintain adequate pressure in its gas mains. To accomplish this task, National Grid has 205 pressure regulator stations disbursed throughout its

Rhode Island gas service territory. While a limited number of these regulator stations have full system telemetry and control capability, most do not. In addition to monitoring and controlling the regulator stations, National Grid must also monitor system end points to ensure that adequate system pressures are being maintained in remote areas under a variety of operating conditions. Increased monitoring of these system low points minimizes the amount of system reinforcement necessary to support system load thereby reducing capital requirements and maximizing the operational efficiency of the gas transmission and distributions system. National Grid is proposing implementation of a system automation and control program that would address approximately 20 percent of its pressure regulating facilities and add select end-point monitoring. This will result in the installation of control and monitoring equipment at approximately 36 regulator stations. Under the ISR Plan, projected FY 2012 spending for System Automation and Control is $1.5 million.

2. <u>Pressure Regulating Facilities</u>

Q. WHAT FUNCTIONS DO PRESSURE REGULATING FACILITIES PERFORM WITHIN THE GAS DELIVERY SYSTEMS?

A. Pressure regulating facilities have been designed to reliably control system pressures and maintain continuity of supply during normal and critical gas demand periods. A facility includes both pressure regulating piping and equipment as well as control lines, and may also include a heater or a scrubber. Each station has specific requirements for flows and

pressures based on the anticipated needs of the station.

Q. DURING FY 2012, WHAT SYSTEM RELIABILITY WORK IS THE COMPANY PROPOSING FOR ITS PRESSURE REGULATING FACILITIES?

A. Based on condition-based assessments, the ISR Plan proposes a budget of $4.5 million to accomplish the following work at pressure regulating facilities during FY2012:

a. Rebuild Tidewater, Warren/Bristol and Tiverton Take Stations;

b. Rebuild Providence Regulator Station RIS-024;

c. Replace Burrillville Take Station Heater;

d. Replace Obsolete Regulators;

e. Install second by-pass valve at Low Pressure Stations;

f. Install Intrusion Alarms; and

g. Upgrade Station Control Lines.

3. <u>System Reliability Enhancement Program</u>

Q. PLEASE DESCRIBE THE TYPES OF PROJECTS THAT FALL UNDER THE SYSTEM RELIABILITY ENHANCEMENT PROGRAM.

A. The System Reliability Enhancement Program identifies projects that support system reliability through standardization and simplification of system operations (e.g., system up-ratings and de-ratings and regulator elimination), integration of systems (e.g. tie-ins) and new supply sources (e.g. take stations). The program also includes projects designed

to address reliability issues (e.g. flooding of critical regulator/take stations) that surfaced during the Spring 2010 flooding.

Q. WHAT SYSTEM RELIABILITY ENHANCEMENT PROJECTS ARE BEING PROPOSED FOR FY 2012?

A. For FY 2012, the ISR Plan includes $3.1 million of spending on regulator relocation and four uprating projects in Westerly. Similar work will be identified, as appropriate, for East Providence (i.e. Dey Street Take Station) and Cumberland (i.e. Ann & Hope Way low-pressure district regulator), and targeted for construction over the 2012-15 timeframe.

4. <u>Water Intrusion Program</u>

Q. What system reliability issues does the Water Intrusion Program address?

A. The Water Intrusion Program addresses recurring customer outages resulting from water intrusion into low-pressure distribution systems through the replacement of existing leak-prone pipe. National Grid is proposing spending $800,000 on water intrusion projects during FY12.

Q. ARE THERE ANY SPECIFIC WATER INTRUSION PROJECTS THAT HAVE ALREADY BEEN IDENTIFIED FOR FY 2012?

A. The Company has identified the following FY 2012 Water Intrusion projects:

1. Canal Street, Westerly
   Scope: Transfer existing Low Pressure services (10 customers) to adjacent 99 psig main and abandon 700 feet of Low Pressure, Cast Iron main Leak Prone Main

2. Linden Street, Westerly
   Scope: Replace existing three-inch Low Pressure, Bare Steel Leak Prone Main with new four-inch Plastic main and extend main to connect to existing four-inch Plastic 60 psig main. Total pipe footage is approximately 710 feet (8 customers).

3. Lewis Lane, Pauline Street and Niles Street, Westerly
   Scope: Replace 1,350ft of existing three-inch and four-inch Low Pressure Bare Steel Leak Prone Main with new four-inch Plastic main. In addition, uprate a short segment of existing plastic main and connect to existing 21psig system on High Street. (15 customers)

4. Arcadia Avenue, Eldorado Street, Park View Blvd., Minola Street, Fairlawn Street, Piedmont Street, LaGrange Street, Lakeside Avenue, Cranston
   Scope: Replace 2,140 feet of existing six-inch low-pressure, cast-iron, leak-prone main with new six-inch plastic main. (86 customers)

5. <u>LNG Facilities</u>

Q. WHAT TYPE OF UPGRADES ARE NEEDED ON THE COMPANY'S LNG FACILITIES?

A. The ISR Plan includes $1.4 million of spending on upgrades to the Company's LNG facilities. LNG facility upgrades include replacement of aging equipment and infrastructure at the Rhode Island stations. One major project that has been identified is

the replacement of the boil-off compressors at the Exeter facility. Those boil-off compressors were installed in 1972, when the plant was originally constructed.

6. Valve Installation/Replacement

Q. WHAT ROLE DO VALVES PLAY IN THE SAFE AND EFFICIENT OPERATIONS OF THE GAS SYSTEM?

A. Valves are used to isolate portions of the gas network to control the flow of gas when required for planned field activities or when unexpected situations occur.

Q. WHAT LEVEL OF INSTALLATION OR REPLACEMENT OF PRIMARY VALVES IS INCLUDED IN THE ISR PLAN?

A. The Company is proposing $510,000 for primary valve installation or replacement during FY 2012.

V. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Company's proposed ISR Plan has been developed to meet its obligation to provide safe, reliable, and efficient gas distribution service for customers at reasonable costs. The ISR Plan includes capital investment spending needed to meet state and federal regulatory requirements and to maintain its distribution infrastructure in a safe and reliable condition. The Plan addresses leak-prone pipe on Rhode Island's aging distribution system with prioritized replacement based on risk assessments. In addition

to being proactive, the Plan addresses unavoidable emergency pipe repairs. It also provides for system upgrades to better control pressure and reliability. Where conflicts arise because of public works projects, the ISR plan allows for relocating gas main, while at the same time the Plan takes advantage of opportunities by coordinating necessary work with public roads projects. The spending levels contained in the Plan are necessary and cost-effective. After cooperative, productive consultation with the Division, the Company submits this agreed-upon ISR Plan to provide a safe and reliable gas delivery system that is in the best interest of its customers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

Exhibit SLF-1
Gas ISR Plan FY2012

National Grid

The Narragansett Electric Company

Gas Infrastructure, Safety, and Reliability Plan FY 2012 Proposal

December 17, 2010

Submitted to:
Rhode Island Public Utilities Commission
Docket No._____

Submitted by:

nationalgrid

Exhibit SLF-1
Section 1
Intro. & Summary

Introduction and Summary
FY 2012 Proposal

National Grid [1] in consultation with the Division of Public Utilities and Carriers ("Division") has developed the following proposed fiscal year ("FY") 2012 gas infrastructure, safety, and reliability ("Gas ISR") plan (the "Gas ISR Plan" or "Plan") in compliance with Rhode Island's recently enacted law providing for an annual gas "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." [2] The proposed Gas ISR Plan addresses capital spending on gas infrastructure and other costs relating to maintaining safety and reliability of the gas distribution system. The proposed Plan that the Company is submitting for its gas distribution operations is the product of a collaborative effort with the Division. The ISR Plan is designed to maintain and upgrade the Company's gas delivery system through proactively replacing leak-prone gas mains and services, upgrading the system's pressure regulating systems, responding to emergency leak situations, and addressing conflicts that arise out of public works projects. The Plan attempts to attain these safety and reliability goals through a cost-effective, coordinated work plan. The level of work that the plan provides will sustain and enhance the safety and reliability of the Rhode Island gas pipeline infrastructure and directly benefit all Rhode Island gas customers. The Company now submits this plan to

[1] The Narragansett Electric Company d/b/a National Grid (hereinafter referred to as "National Grid" or the "Company").
[2] R.I.G.L. §39-1-27.7.1, *An Act Relating to Public Utilities and Carriers – Revenue Decoupling*.

Introduction and Summary
FY 2012 Proposal

the Rhode Island Public Utilities Commission ("Commission") for final review and approval.[3]

This Introduction and Summary presents an overview of the proposed FY 2012 Plan for the statutory categories of costs, the resulting FY 2012 revenue requirement associated with the proposed Gas ISR Plan, an illustrative tariff provision enabling the rate adjustments and mechanism underlying the proposed Gas ISR Plan, an illustrative rate design, and the estimated typical bill impacts resulting from the illustrative rate design.

The proposed Gas ISR Plan describes the Company's multi-year plan upon which its FY 2012 Plan is based, and it describes the system safety and reliability activities and addresses capital investment in utility infrastructure for the upcoming fiscal year. The proposed Plan itemizes the recommended work activities by general category and provides budgets for capital investment.

As envisioned in the legislation, after the end of the fiscal year, the Company would true up the Gas ISR Plan's budgeted levels to actual investment and expenditures and reconcile the revenue requirement associated with the actual investment and expenditures to the revenue billed from the rate adjustments implemented at the beginning of each fiscal year.

[3] Pursuant to R.I.G.L. §39-1-27.7.1(d), the Company and the Division are to work together over the course of 60 days in an attempt to reach an agreement on a proposed plan, which would then be submitted for Commission review and approval.

Introduction and Summary
FY 2012 Proposal

The Company also proposes to file quarterly reports with the Division and Commission on the progress of its Gas ISR programs and, at the time it makes its reconciliation and rate adjustment filing described below, an annual report on the prior fiscal year's activities. The Company is cognizant that, in implementing the Gas ISR Plan in any fiscal year, the circumstances encountered during the year may require reasonable deviations from the original Gas ISR Plan. In such cases, the Company would include an explanation of any significant deviations in its quarterly reports.

The FY 2012 level of capital investment provided in the Company's proposed Gas ISR Plan to maintain the safety and reliability of its gas delivery infrastructure is $53.42 million. A description of the Company's proposed capital investment plan for FY 2012 is provided in Section 2. Section 3 contains the revenue requirement description and calculations. Section 4 contains illustrative Gas ISR tariff provisions while Sections 5 and 6 contain the proposed rate design and a calculation of estimated typical bill impacts, respectively.

Gas Capital Investment Plan

The Company's proposed gas capital investment plan contained in Section 2 summarizes capital investments in terms of the following key categories: Main Replacements and Service Replacements, Reaction Main Replacements, Public Works, Mandated Programs, and Gas System Reliability. Section 2 itemizes the proposed

Introduction and Summary
FY 2012 Proposal

activities by sub-categories and provides budgets for capital investment. The Company proposes that capital investments be recovered in a manner consistent with the calculation of the rate base in Docket No. 3943 and the existing Accelerated Replacement Program ("ARP") rate mechanism. The Company has included its capital budget, identified the relevant projects that would be part of the FY 2012 Gas ISR Plan, and provided its rationale for the need for, and benefit of, performing that work to provide safe and reliable service to its customers. The Company has also provided a five-year capital plan to provide a longer-term approach to infrastructure, safety, and reliability and to demonstrate how the FY 2012 Plan would be incorporated into that longer-term planning approach.

Revenue Requirement

Based upon the estimated amounts for the proposed Plan, the Company has provided a calculation of the proposed revenue requirement resulting from the proposed FY 2012 capital investment plan. Section 3 contains a description of the revenue requirement model and an illustrative calculation for FY 2012. This calculation would form the basis for the Gas ISR rate adjustment, which would become effective April 1, 2011, upon Commission approval. As noted below, the Company proposes to reconcile this rate adjustment as part of its annual Distribution Adjustment Charge ("DAC") filing. The pre-tax rate of return on rate base would be that rate of return approved by the

Introduction and Summary
FY 2012 Proposal

Commission in the Company's last general rate case and, going forward, it would change as the Commission may approve changes to the rate of return in future rate case proceedings. Any change in the rate of return would be applicable on a prospective basis effective on the date on which the change is effective.

Gas Illustrative Tariff

In order to implement the rate mechanisms described in the new legislation for its gas distribution operations, the Company has prepared a draft of a new illustrative tariff provision entitled "Gas Infrastructure, Safety, and Reliability Plan." This illustrative tariff provision is contained in Section 4. The proposed illustrative Gas ISR provision sets out a mechanism for reflecting the Plan's budgeted amounts in rates charged to customers and for reconciling actual capital investment and other costs mutually agreed upon between the Division and the Company to revenue that was billed based on the prior year's projections.

Rate Design

The revenue requirement calculated under the proposed Gas ISR Plan illustrative tariff provision would be appropriately allocated to the Company's rate classes. The Company proposes that, for purposes of rate design, the revenue requirement associated with the capital investment be allocated to rate classes based upon the most recently approved rate base allocator

Introduction and Summary
FY 2012 Proposal

in the Company's last general rate case. For rate classes, the allocated revenue requirement would be divided by the applicable fiscal year forecasted therm deliveries for each rate class, arriving at a per-therm factor unique to each rate class. Other related costs mutually agreed upon between the Division and the Company would be allocated to all rate classes on a consistent per-unit basis. The proposed rate design is contained in Section 5.

Bill Impacts

The estimated typical bill impacts associated with the rate design contained in Section 5 are provided in Section 6. As noted above, because the Company proposes to reconcile the actual capital investment and other expenses approved by the Commission as part of its annual DAC filing, the Company has redesigned its bill impact summary to include both a base DAC rate and an ISR DAC rate. This modification provides a separate break out of the billing impact of the Gas ISR Plan. As shown in Section 6, the bill impact of the Gas ISR Plan for the average residential heating customer for the period April 1, 2011 to October 31, 2011 would be $2.44.[4]

The Company and the Division have worked diligently to arrive at a Gas ISR Plan that meets the goals of the new legislation to provide a safe and reliable gas distribution system for Rhode Island. The creation of the FY 2012 Gas ISR Plan affords the Commission a groundbreaking opportunity to create a system safety and reliability plan that provides safe, reliable, and efficient gas service for customers at reasonable costs.

[4] This bill impact recognizes that the DAC rate will change again in November 2011. The annual bill impact of the Gas ISR Plan for the average residential heating customer for FY 2012 would be $7.47.

Exhibit SLF-1
Section 2
Gas Capital Plan

Gas Capital Investment Plan
FY 2012 Proposal

Background

The Company developed its proposed capital investment plan to meet its obligation to provide safe, reliable, and efficient gas distribution service for customers at reasonable costs.[5] The gas infrastructure, safety, and reliability plan ("Gas ISR Plan") includes capital investment spending needed to meet state and federal regulatory requirements applicable to the gas system and to maintain its distribution infrastructure in a safe and reliable condition. It includes the type of infrastructure safety and reliability work currently contained in the Accelerated Replacement Plan ("ARP") for cast-iron and non-cathodically protected steel mains and non-cathodically protected steel inside services to address the replacement of leak-prone gas main and at-risk services. The plan also contains capital spending related to safety and reliability for public works, mandated programs, and reliability.

As the new legislation recognizes, it is critical that the Company remain vigilant with respect to investing in its infrastructure and have the appropriate and timely cost recovery to do so, in order to continue to provide safe and reliable gas delivery service to customers. To that end, the Company is outlining the proposed FY 2012 Plan[6] identifying the capital spending it expects to place into service during FY 2012.

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5 The Company delivers natural gas to about 250,000 Rhode Island residential and commercial and industrial customers in 33 cities and towns in Rhode Island. To provide this service, the Company owns and maintains over 3,000 miles of mains and over 186,000 services.

6 FY 2012 is defined as the twelve months ending March 31, 2012.

Gas Capital Investment Plan
FY 2012 Proposal

Attachment 1 contains a description of the proposed budget for capital investment plan for FY 2012. Attachment 2 contains a capital forecast for FY 2011 through FY 2016. The ISR Plan proposes to invest a total of $60.55 million, $53.42 million of which would be included in the FY 2012 Gas ISR Plan designed to maintain the safety and reliability of its gas delivery infrastructure. [7] As set forth on Attachment 1, of the $53.42 million that the Company proposes for its FY 2012 Gas ISR Plan spending, the Company proposes the following levels of spending for each category of programs:

- $29.66 million for programs that are currently part of the ARP, including proactive Main Replacement and Service Replacement programs;
- $1.0 million for Reactive Main Replacement;
- $1.75 million for Public Works programs;
- $9.19 million for Mandated programs, including capital leak repairs, meter replacements, and cathodic protection;
- $11.82 million for Gas System Reliability, including work relative to System Automation and Gas Control, Pressure Regulating Facilities (including Heater Program, and Control Line Integrity work), System Reliability Enhancement, Water Intrusion Program, and Valve installation/replacement.

The Company is excluding from the proposed FY 2012 Gas ISR Plan the remaining $7.1 million for growth spending.

[7] From the $60.55 million of total investment, the Company would removed $7.1 million of projected growth capital spending.

Gas Capital Investment Plan
FY 2012 Proposal

The Company proposes to file quarterly reports with the Division and the Commission on the progress of its Gas ISR programs. Under the proposed plan, the Company would file an annual report on the prior fiscal year's activities at the time it makes its reconciliation and rate adjustment filing described in Section 4. In implementing the Gas ISR Plan in any fiscal year, the circumstances encountered during the year may require reasonable deviations from the original Gas ISR Plan developed by the Division and the Company and approved by the Commission. In such cases, the Company would include an explanation of any significant deviations in its quarterly reports.

Description of Large Programs and Projects

The proposed FY 2012 Gas ISR Plan is comprised of several programs that account for the total amount of plan spending for FY 2012. Those programs are described in detail below:

A. Main Replacement Program and Service Replacement Program (Current ARP)

The value and need for targeted spending on the replacement of leak-prone gas main and services is well-documented and has been accepted by both the Division and the Commission. In the Company's recent gas base distribution rate case (RIPUC Docket No. 3943), the Company proposed the accelerated replacement plan ("ARP"), which targeted leak-prone small-diameter cast iron gas mains, bare steel gas mains, and

Gas Capital Investment Plan
FY 2012 Proposal

bare steel high-pressure inside services. The Division supported the ARP in light of the documented growth in leaks in the Rhode Island gas distribution system. The Commission made a finding that historic pipeline replacement rates were not keeping up with Rhode Island's aging gas distribution infrastructure and that infrastructure replacement is in the interest of ratepayers and the public as a whole. (Order No.19563 at 48-49.) For FY 2012, consistent with the Commission's findings, the Company forecasts spending $25.75 million on its main replacement program and $3.9 million on the service replacement program for a total spend of $29.66 million on these two programs.

B. Reactive Main Replacement

The Company proposes to expand its main replacement category to include $1 million in Reactive Main Replacement. This category of work consists of emergency main replacements due to leaks or other unplanned work where main condition dictates immediate replacement. Reactive Main Replacement would account for approximately 1 ½ miles of emergency main replacements.

C. Public Works

The purpose of the Public Works program is to address existing gas infrastructure conflicts, as appropriate, to improve the safety and reliability of the Company's natural gas distribution system in conjunction with public works projects, providing significant

Gas Capital Investment Plan
FY 2012 Proposal

incremental benefits to customers and communities. Capital expenditures for mains have increased because of municipal roadway resurfacing and associated drainage work likely to be funded by the 2009 American Resource and Recovery Act. Municipal work affords the Company an opportunity to replace additional leak-prone pipe and reduce paving costs by coordinating the Company's main replacement work with these planned public works construction projects, while also benefitting customers and communities by improving service delivery and minimizing construction impacts and inconvenience. National Grid has an ongoing plan to replace targeted (integrity-based selections) mains on a risk-based approach. Integration of the Company's Integrity programs with the public works process has yielded increased system reliability, system integrity, and optimized capital spending through coordination with planned public works projects. While the primary purpose of Public Works spending is to address direct conflict with existing gas infrastructure, Public Works spending provides the opportunity to coordinate other system improvement work, such as replacement of leak-prone pipe, system reliability upgrades, internal sealing and lining projects, elimination of redundant main, and regulator station upgrades.

The Company will manage multiple projects to address the dynamic nature of the public work process through effective liaison activity. Specifically, it must be recognized that, while municipal schedules and plans change due largely to funding, other factors also contribute to the scheduling of these projects (e.g. political, demand maintenance,

Gas Capital Investment Plan
FY 2012 Proposal

etc.). Municipal changes in projects can and do create additional work in developing and coordinating the Company's planning and budgeting processes. Using the Company's five-year work planning process, the Company can provide some flexibility in scheduling, coordinating, and engineering projects in concert with municipal public works initiatives. For FY 2012, the proposed plan incorporates $1.75 million in spending under the Public Works category.

D. Mandated Programs

Spending for Mandated Programs falls into three categories: cathodic protection, meter replacement, and capital leak repairs. The Cathodic Protection Program adds cathodic protection to existing coated steel main installed prior to U.S Department of Transportation ("DOT") requirements (pre-1971). In 1971, the Code of Federal Regulations, Part 192, required the cathodic protection of all new buried steel gas facilities. Cathodic protection effectively extends the service life of buried steel facilities (as compared to unprotected buried steel facilities) and can prolong replacement by twenty years or more. National Grid has standardized a process used to determine the cost effectiveness of cathodically protecting steel pipe installed prior to 1971. National Grid is targeting adding cathodic protection to ten miles of pre-1971 pipe during FY 2012 for the purpose of extending the life of the pipe. Capital costs for the Meter Replacement

Gas Capital Investment Plan
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Program are required for the procurement of replacement meters and are included under Mandated Programs. The Capital Leak Repair Program addresses leaking gas services, as well as extending the useful life of cast iron mains through the encapsulation of leaking cast iron joints. For FY 2012, the proposed plan contains $9.19 million for Mandated Programs.

E. Reliability

Reliability spending includes programs to address system automation and control, system pressure regulating facilities (including heaters and control line integrity), system reliability enhancement, water intrusion projects, LNG facilities, and primary valve installation and/or replacements. The proposed FY 2012 Gas ISR Plan contains $11.82 million in spending for Reliability. A summary of each program is provided below:

1. System Automation and Control

The primary purpose of this program is to (a) meet the new DOT code requirements under 49 CFR Part 192, Docket ID 2007-27954, issued on December 3, 2009. These new code provisions contain the following pipeline safety requirements: (a) Control Room Management/Human Factors, (b) modernization of the Company's system data and telemetry recording, and (c) increasing the level of system automation and control. The overall program will

Gas Capital Investment Plan
FY 2012 Proposal

increase the safety, reliability, and efficiency of the gas system and, by extension, the level of service the Company provides to its customers.

National Grid's ability to provide safe and reliable service is governed to a large extent by the Company's ability to maintain adequate pressure in its gas mains. To accomplish this task, National Grid has 205 pressure regulator stations disbursed throughout its Rhode Island gas service territory. While a limited number of these regulator stations have full system telemetry and control capability, most do not. In addition to monitoring and controlling the regulator stations, National Grid must also monitor system end points to ensure that adequate system pressures are being maintained in remote areas under a variety of operating conditions. Increased monitoring of these system low points is exacerbated by the need and desire to minimize the amount of system reinforcement necessary to support system load thereby reducing our capital requirement and to maximize the operational efficiency of the gas transmission and distributions system. National Grid is proposing implementation of a system automation and control program that would address approximately 20 percent of its pressure regulating facilities and adding select end-point monitoring.

Gas Capital Investment Plan
FY 2012 Proposal

2. Pressure Regulating Facilities

The pressure regulating facilities have been designed to reliably control system pressures and maintain continuity of supply during normal and critical gas demand periods. Each station has specific requirements for flows and pressures based on the anticipated needs of the station. A facility includes both pressure regulating piping and equipment as well as control lines, but may also include a heater or a scrubber. A program has been recently initiated to address condition-based assessments. Accepted engineering guidelines provide for design, planning, and operation of these gas distribution facilities. Applicable state and federal codes are followed to help ensure safe and continuous supply of natural gas to our customers and the communities we serve. National Grid's proposed plan would address condition-based assessments and perform the following work at pressure regulating facilities in FY2012:

a. Rebuild Tidewater, Warren/Bristol and Tiverton Take Stations;

b. Rebuild Providence Regulator Station RIS-024;

c. Replace Burrilville Take Station Heater;

d. Replace Obsolete Regulators;

e. Install second by-pass valve at Low Pressure Stations;

f. Install Intrusion Alarms;

g. Upgrade Station Control Lines

Gas Capital Investment Plan
FY 2012 Proposal

3. System Reliability Enhancement Program

The System Reliability Enhancement Program identifies projects that support system reliability through standardization and simplification of system operations (e.g., system up-ratings and de-ratings and regulator elimination), integration of systems (e.g. tie-ins) and new supply sources (e.g. take stations). The program also includes projects designed to address reliability issues (e.g. flooding of critical regulator/take stations) that surfaced during the Spring 2010 flooding. For FY 2012, this includes regulator relocation and four uprating projects in Westerly. Similar work will be identified, as appropriate, for East Providence (i.e. Dey Street Take Station) and Cumberland (i.e. Ann & Hope Way low-pressure district regulator), and targeted for construction over the 2012-15 timeframe. As identified in Attachment 1, National Grid is proposing its System Reliability Enhancement Program plan for FY2012.

4. Water Intrusion Program

The Water Intrusion Program identifies projects that address recurring customer outages resulting from water intrusion into low-pressure distribution systems through the replacement of existing leak-prone pipe. As identified in Attachment 1, National Grid is proposing its Water Intrusion Program plan for FY12.

Gas Capital Investment Plan
FY 2012 Proposal

5. LNG Facilities

LNG facility upgrades include replacement of aging equipment and infrastructure at the Rhode Island stations excluding the Providence facility. One major identified project is the boiloff compressor replacements at the Exeter facility.

6. Valve Installation/Replacement

Valves are used to sectionalize portions of the gas network when required to support both planned and unplanned field activities. Valve replacement is necessary to ensure continued ability to effectively isolate portions of the distribution system as inoperable valves are identified. New valve installations are also occasionally needed to provide the capability to reduce the size of an isolation area where existing valves would result in broader shutdown than desired.

Capital Investment Plan	**FY '12 ($000)**	
Growth o **Mains** o **Services** o **Reinforcement**	**$7,129**	
ARP Program o **Main Replacement** o **Service Replacements**	**$29,656**	o **Includes the replacement of forty five (45) miles of leak prone main and twenty one hundred twenty five (2,125) service replacements currently incorporated as part of the Accelerated Replacement Program (ARP)**
Public Works	**$1,750**	o **Includes all municipal public works projects** o **One specific project being the relocation of 2 1/4 miles of 8" main associated with the RI DOT Downtown Providence development project**
Reactive Main Replacement	**$1,000**	o **Includes approximately 1 1/2 miles of emergency main replacements resulting from leaks or other unplanned work where main condition dictates immediate replacement**
Mandated Programs	**$9,188**	o **Includes all mandated work** o **Approximately 500 emergency service replacements resulting from leaks** o **Approximately 1800 capital leak repairs as a result of cast iron joint encapsulation** o **Meter changes approximately 22,000** o **Mandated corrosion work**
Reliability	**$11,821**	o **Includes the modification to the following Regulator Stations to address condition based assessment considerations:**

Reliability (continued)		o **Rebuild of Tidewater, Tiverton, and Warren/Bristol Take Stations** o **Rebuild Providence Take Station RIS-024** o **Replace Burrilville Take Station Heater** o **Replace obsolete regulators** o **Install second by-pass valve at Low Pressure Stations** o **Install intrusion alarms and upgrade station control lines** o **The following four (4) water intrusion projects (LP to HP conversion) will be completed to address repeat customer outage considerations:** o **Canal St., Westerly** o **Linden St., Westerly** o **Lewis Ln., Westerly** o **Arcadia Ave., Cranston** o **System automation of approximately thirty six (36) regulator stations to install control and monitoring equipment** o **The installation or modification of approximately 19 field measurement points** o **Relocating regulator (RIS-00A) and reconfigure odorization operation in the Westerly station due to flooding concerns. Will also necessitate the uprating of 1850 feet of distribution pipe from 21 psig to 99 psig** o **Elimination of an LP regulator (RBW012)** o **Replace aging compressors at Exeter LNG station**
Total	**$60,545**	

The Narragansett Electric Company
d/b/a National Grid
Gas Infrastructure, Safety, and Reliability Plan
Section 2, Attachment 2
Page 1 of 1

	Capital Forecast ($000)						
Total Plan	**FY11**	**FY12**	**FY13**	**FY14**	**FY15**	**FY16**	**Total**
Growth (including reinforcement)	$ 7,109	$ 7,129	$ 7,568	$ 7,709	$ 7,854	$ 7,854	$ 45,223
Main Replacement Program	$ 22,900	$ 25,750	$ 28,611	$ 28,611	$ 28,611	$ 28,611	$ 163,093
Service Replacements	$ 3,906	$ 3,906	$ 3,906	$ 6,000	$ 6,000	$ 6,000	$ 29,719
Total	$ 26,806	$ 29,656	$ 32,517	$ 34,611	$ 34,611	$ 34,611	$ 192,812
Public works	$ 1,750	$ 1,750	$ 1,785	$ 1,821	$ 1,857	$ 1,857	$ 10,820
Reactive Main Replacement	$ 1,000	$ 1,000	$ 1,020	$ 1,040	$ 1,061	$ 1,061	$ 6,183
Mandated Programs	$ 8,928	$ 9,188	$ 9,367	$ 9,551	$ 9,738	$ 9,738	$ 56,510
Reliability	$ 6,334	$ 11,821	$ 10,949	$ 10,695	$ 11,092	$ 9,745	$ 60,748
Total	$ 51,927	$ 60,545	$ 63,206	$ 65,427	$ 66,212	$ 64,866	$ 372,184

Exhibit 1 - SLF
Docket No. _____
The Narragansett Electric Company
d/b/a National Grid
Gas Infrastructure, Safety, and Reliability Plan
Section 2, Attachment 2
Page 1 of 1

Exhibit SLF-1
Section 3
Rev. Requirement

Revenue Requirement
FY 2012 Proposal

The attached illustrative revenue requirement calculation reflects the revenue requirement associated with the Company's proposed capital investment in the gas utility infrastructure program referred to as the Gas Infrastructure, Safety, and Reliability Plan (the "Gas ISR Plan").

Attachment 1 provides the calculation of the revenue requirement related to incremental non-growth capital investment associated with the Company's Gas ISR Plan; that is, non-growth infrastructure investment (net of general plant) beginning April 1, 2011. Incremental non-growth capital investment for this purpose is intended to represent the net change in rate base for non-growth infrastructure investments during the relevant fiscal year ("FY") and is defined as capital additions plus cost of removal, less annual depreciation expense embedded in the Company's rates (excluding annual depreciation expense in the 2009 Capital Expenditure Tracker Factor[8] net of depreciation expense attributable to general plant). These amounts are shown on Lines 1 through 16.

Because depreciation expense is affected by plant retirements, retirements have been deducted from plant additions in determining depreciation expense. Retirements, however, do not affect rate base as both "plant in service" and "depreciation reserve" are reduced by the installed value of the plant being retired and, therefore, have no impact on net plant. For the purposes of this illustrative example, plant retirements have been

[8] In Docket No. 3943, the Commission approved the Company's proposed rate base, which was based on forecasted additions to plant in service through the end of the rate year, subject to subsequent modifications to reflect any actual lower amount of plant in service. The Capital Expenditure Tracker Factor also accounts for changes in revenue requirement from the ARP.

Revenue Requirement
FY 2012 Proposal

estimated at 6.45 percent of the annual plant additions (based on the 2009 percentage of retirements to additions) and have been deducted from plant additions. The cumulative net depreciable additions shown on Line 5 equals cumulative additions to plant in service less cumulative retirements. Incremental book depreciation expense on Line 26 is computed based on the cumulative net depreciable additions at the 3.38 percent composite depreciation rate as approved in RIPUC Docket No. 3943, as shown on Line 19. Unlike retirements, cost of removal affects rate base but not depreciation expense. Consequently, the cumulative cost of removal on Line 14 is combined with cumulative incremental depreciable amount on Line 11 to derive the cumulative incremental amount on Line 16 used in determining the rate base upon which the annual revenue requirement is calculated.

The cumulative incremental change in rate base on Line 37 includes the cumulative incremental rate base amount from Line 16 adjusted for accumulated depreciation and accumulated deferred tax reserves as shown on Lines 27 and 31, respectively. The deferred tax amount arising from capital investment on Lines 18 - 31 equals the difference between book depreciation and tax depreciation on post-FY 2011 capital investment, times the effective tax rate. The tax depreciation amount assumes that 40 percent of the capital investment will be eligible for immediate deduction on the Company's corresponding FY federal income tax return, as described below.

Revenue Requirement
FY 2012 Proposal

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. This has formed the basis for the 40 percent 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 associated interest assessed by the IRS, in a subsequent reconciliation filing under the Gas ISR Plan.

The average cumulative change in rate base on Line 40 equals the average year-end cumulative change in rate base on Line 37. This amount is multiplied by the pre-tax rate of return in the most recent rate case, in this example the one approved by the Commission in Docket No. 3943 on Line 41 to compute the return portion of the incremental revenue requirement on Line 42. To this, incremental depreciation expense is added on Line 43, as are property taxes on Line 44, which are computed on net plant

Revenue Requirement
FY 2012 Proposal

investment in the year following the investment to coincide with the timing in which property taxes are assessed. The sum of these three amounts reflects the annual revenue requirement of the Company's Gas ISR Plan on Line 45.

National Grid - RI Gas
Illustrative Computation of Capital Adjustment

Line No.				Fiscal Year 2012 (a)	Fiscal Year 2013 (b)
1	Depreciable Net Plant Additions				
2	Plant Additions			$47,660,716	$0
3	Retirements	(Line 1 * Retirements Rate)	1/	$3,074,116	$0
4	Net Depreciable Additions	(Line 1 - Line 2)		$44,586,600	$0
5	Cumulative Net Depreciable Additions	(Prior Year Line 4 + Current Year Line 3)		$44,586,600	$44,586,600
6					
7	Change in Net Plant				
8	Plant Additions	(From Line 1)		$47,660,716	$0
9	Depreciation Expense	(As approved per Docket No. 3943, exluding general plant and 2009 CXT)		$18,443,542	$0
10	Incremental Depreciable Amount	(Line 7 - Line 8)		$29,217,174	$0
11	Cumulative Depreciable Amount	(Prior Year Line 10 + Current Year Line 9)		$29,217,174	$29,217,174
12					
13	Cost of Removal			$5,755,088	$0
14	Cumulative Cost of Removal	(Prior Year Line 14 + Current Year Line 13)		$5,755,088	$5,755,088
15					
16	**Cumulative Incremental Spend**	**(Line 11 + Line 14)**		**$34,972,262**	**$34,972,262**
17					
18	Deferred Tax Calculation:				
19	Composite Book Depreciation Rate	(As approved in Docket No. 3943)		3.38%	3.38%
20	20 YR MACRS Tax Depreciation Rates			3.75%	7.22%
21	Capital Repairs Deduction			48.00%	48.00%
22					
23	Annual Tax Depreciation		2/	$29,561,616	$1,789,126
24	Cumulative Tax Depreciation	(Prior Year Line 24 + Current Year Line 23)		$29,561,616	$31,350,742
25					
26	Book Depreciation	(Prior Year Line 4 * Line 19 * 50%)	2a/	$753,514	$1,507,027
27	Cumulative Book Depreciation	(Prior Year Line 33 + Current Year Line 32)		$753,514	$2,260,541
28					
29	Cumulative Book / Tax Timer	(Line 24 - Line 27)		$28,808,102	$29,090,201
30	Effective Tax Rate			35.000%	35.000%
31	Deferred Tax Reserve	(Line 29 * Line 30)		$10,082,836	$10,181,570
32					
33	Rate Base Calculation:				
34	Cumulative Incremental Spend	(Line 16)		$34,972,262	$34,972,262
35	Accum Depreciation	(Line 27 * -1)		($753,514)	($2,260,541)
36	Deferred Tax Reserve	(Line 31 * -1)		($10,082,836)	($10,181,570)
37	Year End Rate Base	(Sum of Lines 34 through 36)		$24,135,913	$22,530,151
38					
39	Revenue Requirement Calculation:				
40	Average Rate Base	(Line 37/2 for 2012 then, (Prior Year Line 37 + Current Year Line 37)/2)		$12,067,956	$23,333,032
41	Pre-Tax ROR		3/	11.41%	11.41%
42	Return and Taxes	(Line 40 * Line 41)		$1,376,954	$2,662,299
43	Book Depreciation	(Line 26)		$753,514	$1,507,027
44	Property Taxes	(Prior Year Lines 5 plus 14 minus Prior Year Line 26) * Property Tax	4/	$0	$1,522,864
45	**Annual Revenue Requirement**	**(Sum of Lines 37 through 39)**		**$2,130,467**	**$5,692,190**

1/ Assumes 6.45% based on 2009 retirements as a percent of capital spend; to be replaced with actual retirements
2/ (Line 2 x Line 21) + (Line 2 - (Line 2 x Line 21) x Line 20) + Line 13
2a/ (line 5 x Line 19) x 50%
3/ Weighted Average Cost of Capital as approved in Docket No. 3943

	Ratio	Rate	Weighted Rate	Taxes	Pre-tax Return
Long Term Debt	40.63%	7.990%	3.25%		3.25%
Short Term Debt	11.66%	3.910%	0.46%		0.46%
Common Equity	47.71%	10.500%	5.01%	2.70%	7.71%
	100.00%		8.71%	2.70%	11.41%

4/ Property Tax Rate Calculation based on 2009 actual net plant in service and property tax expense applicable to distribution

Plant in Service	571,320,698	
Completed Construction Not Classified	41,766,356	
Total Plant in Service	613,087,054	
Less: Intangible Plant	28,679,000	
Distribution-Plant in Service	584,408,054	584,408,054
Accumulated Depreciation	295,189,100	
Accumulated Depreciation -Intangible Plant	(17,323,010)	
Accumulated Depreciation Distribution-Plant in Service		277,866,091
Distribution-Related Net Plant in Service	306,541,964	306,541,963
Distribution-Related Rate Year Property Tax Expense		9,413,974
Distribution-Related Property Tax Rate		3.07%

Exhibit SLF-1
Section 4
Gas Illus. Tariff

THE NARRAGANSETT ELECTRIC COMPANY
d/b/a NATIONAL GRID
RIPUC NG-GAS No. 101

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The Narragansett Electric Company
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Section 3
Distribution Adjustment Charge
Schedule A, Sheet 3
Third Revision

DISTRIBUTION ADJUSTMENT CLAUSE

2.0 DISTRIBUTION ADJUSTMENT CHARGE:

The distribution adjustment charge will consist of an annual System Pressure factor, an Advanced Gas Technology factor, an Infrastructure, Safety, and Reliability factor, a Low Income Assistance factor, an Environmental Response cost factor, a Pension and Post-retirement Benefits Other than Pensions adjustment factor, a Capital Expenditures Tracker factor, an on-system margin credit factor, a Service Quality Performance factor, a Weather Normalization factor, and a deferred cost factor calculated as follows:

DAC = SP+AGT+ISR+LIAP+ERCF+P&PBOP+CapX-MC-SQP+WN + R

Where:

DAC	Distribution Adjustment Charge applicable to all firm throughput.
SP	System Pressure factor. See Item 3.1 for calculation.
AGT	Advanced Gas Technology factor. See Item 3.2 for calculation.
ISR	Infrastructure, Safety, and Reliability factor. See Schedule B, Item 1.1 for calculation.
LIAP	Low Income Assistance Programs factor. See Item 3.3 for calculation.
ERCF	Environmental Response cost factor. See Item 3.4 for calculation.
P&PBOP	Pension and Post-retirement Benefits Other than Pensions (PBOP) adjustment factor. See Item 3.5 for calculation.
CapX	Capital Expenditures Tracker factor. See Item 3.6 for calculation
MC	On-system margin credits related to Dual-Fuel Customer margins and non-traditional sales and transportation. See Item 3.7 for calculation.

The Narragansett Electric Company
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Section 3
Distribution Adjustment Charge
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DISTRIBUTION ADJUSTMENT CLAUSE

SQP	Service Quality Performance factor. See Item 3.8 for calculation.
WN	Weather Normalization factor related to over-collections or under-collections of distribution revenues due to colder or warmer than normal weather. See Item 3.9 for calculation.
R	Reconciliation of deferred account balance as of October 31. See Item 4.0 for the calculation.

DISTRIBUTION ADJUSTMENT CLAUSE

3.5 P&PBOP Adjustment Factor

The P&PBOP adjustment factor shall recover or refund the prior year's reconciliation of the Company's actual Pension and Post-retirement Benefits Other Than Pension ("PBOP") expenses to the Company's Pension and PBOB expense allowance included in Base rates. The adjustment factor will be computed on an annual basis for the twelve months ended June 30th and will be based on the difference in the Company's actual Pension and PBOP expense for the prior twelve month period ended June 30th and the Company's most recently approved Pension and PBOP expense base rate allowance.

For the period ending June 30, 2009, the computation will be based on eight months.

3.6 Capital Expenditure Tracker Factor -

The Capital Expenditure ("CapX") Tracker Factor will be computed annually and is the mechanism for refunding or collecting from customers the revenue requirement impact associated with variations in capital spending, including the Accelerated Replacement Program ("ARP"), to the extent allowed by the Commission. In compliance with the Commission Order (19710) in Docket No. 3943 (2009), for the fiscal year 2009-2010, the ARP mechanism component of the "CapX" Factor will be based upon the period October 1, 2009 to March 31, 2010 and include a one-time adjustment for the ARP from July 1, 2010 to October 31, 2010. For the fiscal year 2010 to 2011, the ARP mechanism component of the CapX Factor will be based upon the period April 1, 2010 to March 31, 2011. After March 31, 2011, the ARP will sunset and be terminated; provided, however, that any previous cumulative investment recovery under the ARP will continue until the Company's next rate case.

DISTRIBUTION ADJUSTMENT CLAUSE

each DD less than 4,675 (2% warmer than normal), the Company shall debit the Weather Normalization Account at $9,000 per DD.

4.0 DEFERRED DISTRIBUTION ADJUSTMENT COST ACCOUNT:

The Company shall maintain separate Deferred Cost Accounts for AGT costs and revenues, LIAP costs and revenues, Environmental Response costs and revenues, and the On-System credit costs and revenues. Entries shall be made to each of these accounts at the end of each month as follows:

(1) An amount equal to the allowable costs incurred, less revenues collected adjusted for the RIGET and the uncollectible percentage approved in the most recent rate case proceeding;

(2) Credits to costs, and;

(3) Monthly rate based on a monthly rate of the current Bank of America prime interest rate less 200 basis points (2%), multiplied by the arithmetic average of the account's beginning and ending balance after entries for (1) and (2) above.

With respect to Environmental Response Costs, the monthly deferred cost shall be the variance between actual and forecasted monthly firm throughput, multiplied by the ERC Factor.

The Distribution Adjustment Cost Account shall also include an annual reconciliation for the revenues and costs for System Pressure, Environmental Response Costs, On-System Margin Credits, Weather Normalization, Capital Tracker-One Time, Capital Tracker-Revenue Requirement, Pension factor, PBOP factor, ISR factor, and a Previous Reconciliation factor, including a true-up for forecasted revenues and costs.

The Narragansett Electric Company
d/b/a National Grid
RIPUC NG-GAS No. 101

Section 3
Distribution Adjustment Charge
Schedule B, Sheet 6
First Revision

DISTRIBUTION ADJUSTMENT CLAUSE

GAS INFRASTRUCTURE, SAFETY, AND RELIABILITY PLAN

1.0 Gas Infrastructure, Safety, and Reliability Plan:

In compliance with R.I.G.L. Section 39-1-27.7.1, no later than January 1 of each year, the Company shall submit to the Commission a Gas Infrastructure, Safety, and Reliability Plan ("Gas ISR Plan") for the upcoming fiscal year for review and approval within 90 days. The Gas ISR Plan shall include the upcoming fiscal year's forecasted capital investment on its gas distribution system infrastructure and may include any other costs relating to maintaining safety and reliability that have been mutually agreed upon by the Division and the Company.

1.1 Infrastructure, Safety and Reliability Factor:

Each year, beginning April 1, 2011, the Company shall recover through a change in Distribution Adjustment Charge rates the Cumulative Revenue Requirement on the Adjusted Cumulative Non-growth Capital spending as approved by the Commission in the Company's annual gas infrastructure, safety, and reliability filings. For purposes of this section, non-growth capital shall exclude general plant (FERC Accts 389 through 399). Adjusted Cumulative Non-growth Capital Spending shall mean the actual non-growth capital investment since April 1, 2011, plus the forecasted non-growth capital investment for the fiscal year the rate will be in effect. For the purposes of calculating this rate, annual Non-growth Capital Spending will be reduced by the annual depreciation expense net of depreciation expense attributable to general plant that was approved by the Commission in the Company's most recent distribution rate proceeding adjusted, if appropriate, by later proceedings related to capital, resulting in Adjusted Non-growth Capital Spending. In its next base rate proceeding, all accumulated Gas ISR investments will be eligible for inclusion in rate base recovery through the new base rates set in that future proceeding.

Cumulative Revenue Requirements will reflect Adjusted Cumulative Non-Growth Capital Spending, cost of removal, accumulated depreciation, accumulated deferred taxes, property taxes, depreciation expense and include the return on the current fiscal year's average rate base associated with the cumulative Capital Spending at a rate equal to the pre-tax weighted average cost of capital, as approved by the Commission in the most recent distribution rate proceeding. The Company shall allocate the Cumulative Revenue Requirements to its rate classes based on the rate base allocation approved by the Commission

DISTRIBUTION ADJUSTMENT CLAUSE

in the Company's most recent distribution rate proceeding. Any other costs, including Operation and Maintenance expenses mutually agreed upon by the Division and the Company shall be allocated on a per unit basis.

1.2 Infrastructure, Safety and Reliability Factor: Reconciliation Mechanism:

The Company shall include an annual reconciliation mechanism associated with the ISR Factor designed to reconcile the actual Cumulative Revenue Requirements and any associated costs approved for recovery through this mechanism to the actual billed revenue for the prior fiscal year. Beginning in 2012, by August 1 of each year, as supplemented on September 1 of each year, as part of its Distribution Adjustment Charge filing, the Company shall submit a reconciliation factor (either positive or negative) related to the ISR Factor recoveries and actual costs to take effect annually for the twelve months beginning November 1 each year.

Exhibit SLF-1
Section 5
Rate Design

ISR FACTORS

Revenue Requirement	Rate Class	Rate Base Allocator %	Allocation to Rate Class	Throughput dth	ISR Factor dth	ISR Factor therm	Uncollectible	ISR Factor therm
$2,130,467								
	Res-NH	5.07%	$108,026	700,600	$0.1542	0.0154	2.46%	$0.0158
	Res-H	62.89%	$1,339,945	16,981,733	$0.0789	0.0079	2.46%	$0.0081
	Small	8.20%	$174,698	1,915,811	$0.0912	0.0091	2.46%	$0.0093
	Medium	12.50%	$266,213	4,419,867	$0.0602	0.0060	2.46%	$0.0062
	Large LL	5.88%	$125,262	2,335,052	$0.0536	0.0054	2.46%	$0.0055
	Large HL	1.87%	$39,891	1,003,411	$0.0398	0.0040	2.46%	$0.0041
	XL-LL	0.84%	$17,925	821,663	$0.0218	0.0022	2.46%	$0.0023
	XL-HL	2.75%	$58,507	3,931,250	$0.0149	0.0015	2.46%	$0.0015

Exhibit 1 - SLF
The Narragansett Electric Company
d/b/a National Grid
Gas Infrastructure, Safety, and Reliability Plan
Section 5, Attachment 1
Page 1 of 1

Firm and Transportation

Year		2,011	2,011	2,011	2,011	2,011	2,011	2,011	2,011	2,011	2,012	2,012	2,012	
Mon		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
1012		70,493	60,870	46,251	39,370	33,934	33,888	39,380	55,767	68,622	82,328	88,785	80,912	700,600
1247		1,990,787	1,114,772	639,475	404,535	324,025	378,664	506,454	1,164,449	2,054,323	2,767,997	2,942,081	2,694,171	16,981,733
2107		224,723	116,333	61,244	58,320	40,721	20,031	51,998	111,612	219,972	338,715	361,487	310,654	1,915,811
2237		336,898	214,455	138,442	103,745	89,922	92,021	129,567	231,739	299,571	503,105	521,550	478,327	3,139,342
22EN		50,034	27,726	27,854	22,232	26,900	4,746	40,243	60,145	90,385	96,654	102,509	74,538	623,964
2221		58,377	51,880	35,711	23,967	22,905	32,724	16,688	57,569	66,969	93,557	108,958	87,256	656,561
2367		22,501	19,253	14,376	8,455	7,309	15,567	12,001	19,463	21,668	28,921	29,927	29,280	228,722
23EN		58,635	38,431	41,580	32,835	42,113	41,786	51,791	54,584	64,434	70,906	64,179	66,597	627,870
2321		16,958	11,920	10,748	7,608	8,756	9,494	9,731	10,002	13,249	16,358	14,596	17,399	146,819
2496		10,833	8,847	7,313	5,022	6,417	5,936	4,189	7,852	2,046	18,131	17,489	14,048	108,123
24EN		376,346	276,843	274,240	257,648	264,590	303,987	289,930	296,126	337,752	378,583	377,874	371,122	3,805,040
2421		1,830	1,595	1,425	499	1,401	1,085	1,251	1,269	1,385	2,048	2,074	2,224	18,086
3367		106,312	53,466	26,628	14,851	11,748	11,355	23,607	58,419	91,751	143,568	147,348	129,204	818,258
33EN		97,758	38,213	20,405	17,232	20,029	9,808	39,811	81,963	144,778	146,229	156,408	157,077	929,710
3321		83,930	45,184	25,420	3,935	5,355	9,636	14,181	32,993	73,672	101,388	102,025	89,365	587,084
3496		24,008	11,344	15,383	-3,544	1,762	2,395	6,312	16,798	26,694	78,412	37,878	36,567	254,009
34EN		58,306	19,835	31,650	12,580	14,403	-3,525	23,828	45,464	69,745	89,675	104,075	78,549	544,585
3421		1,781	2,912	595	63	32	24	187	2,002	5,962	3,375	3,232	2,904	23,069
70EN		0	0	0	0	0	0	0	0	0	0	0	0	0
														32,109,387

Dth

TOTALS		2011	2011	2011	2011	2011	2011	2011	2011	2011	2012	2012	2012	
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
1,012	Res-NH	70,493	60,870	46,251	39,370	33,934	33,888	39,380	55,767	68,622	82,328	88,785	80,912	700,600
1,247	Res-H	1,990,787	1,114,772	639,475	404,535	324,025	378,664	506,454	1,164,449	2,054,323	2,767,997	2,942,081	2,694,171	16,981,733
2,107	Small	224,723	116,333	61,244	58,320	40,721	20,031	51,998	111,612	219,972	338,715	361,487	310,654	1,915,811
2,237	Medium	336,898	214,455	138,442	103,745	89,922	92,021	129,567	231,739	299,571	503,105	521,550	478,327	3,139,342
22EN	Medium-FT1	50,034	27,726	27,854	22,232	26,900	4,746	40,243	60,145	90,385	96,654	102,509	74,538	623,964
2,221	Medium-FT2	58,377	51,880	35,711	23,967	22,905	32,724	16,688	57,569	66,969	93,557	108,958	87,256	656,561
2,367	Large-HL	22,501	19,253	14,376	8,455	7,309	15,567	12,001	19,463	21,668	28,921	29,927	29,280	228,722
23EN	Large HL-FT1	58,635	38,431	41,580	32,835	42,113	41,786	51,791	54,584	64,434	70,906	64,179	66,597	627,870
2,321	Large HL-FT2	16,958	11,920	10,748	7,608	8,756	9,494	9,731	10,002	13,249	16,358	14,596	17,399	146,819
2,496	XL-HL	10,833	8,847	7,313	5,022	6,417	5,936	4,189	7,852	2,046	18,131	17,489	14,048	108,123
24EN	XL-HL-FT1	376,346	276,843	274,240	257,648	264,590	303,987	289,930	296,126	337,752	378,583	377,874	371,122	3,805,040
2,421	XL-HL-FT2	1,830	1,595	1,425	499	1,401	1,085	1,251	1,269	1,385	2,048	2,074	2,224	18,086
3,367	Large-LL	106,312	53,466	26,628	14,851	11,748	11,355	23,607	58,419	91,751	143,568	147,348	129,204	818,258
33EN	Large-LL-FT1	97,758	38,213	20,405	17,232	20,029	9,808	39,811	81,963	144,778	146,229	156,408	157,077	929,710
3,321	Large-LL-FT2	83,930	45,184	25,420	3,935	5,355	9,636	14,181	32,993	73,672	101,388	102,025	89,365	587,084
3,496	XL-LL	24,008	11,344	15,383	(3,544)	1,762	2,395	6,312	16,798	26,694	78,412	37,878	36,567	254,009
34EN	XL-LL FT1	58,306	19,835	31,650	12,580	14,403	(3,525)	23,828	45,464	69,745	89,675	104,075	78,549	544,585
3,421	XL-LL FT2	1,781	2,912	595	63	32	24	187	2,002	5,962	3,375	3,232	2,904	23,069
70EN	NGV	-	-	-	-	-	-	-	-	-	-	-	-	-
														32,109,387

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The Narragansett Electric Company
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Gas Infrastructure, Safety,
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dth forecast		2011	2011	2011	2011	2011	2011	2011	2011	2011	2012	2012	2012		
Apr 11-Mar 12		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar		
	Res-NH	70,493	60,870	46,251	39,370	33,934	33,888	39,380	55,767	68,622	82,328	88,785	80,912	**700,600**	
	Res-H	1,990,787	1,114,772	639,475	404,535	324,025	378,664	506,454	1,164,449	2,054,323	2,767,997	2,942,081	2,694,171	**16,981,733**	
	Small	224,723	116,333	61,244	58,320	40,721	20,031	51,998	111,612	219,972	338,715	361,487	310,654	**1,915,811**	
	Medium	445,309	294,061	202,007	149,943	139,727	129,491	186,498	349,452	456,925	693,316	733,016	640,121	**4,419,867**	
	Large LL	288,000	136,863	72,453	36,018	37,131	30,799	77,599	173,375	310,201	391,185	405,781	375,646	**2,335,052**	
	Large HL	98,094	69,605	66,704	48,898	58,178	66,847	73,523	84,049	99,351	116,185	108,703	113,275	**1,003,411**	
	XL-LL	84,095	34,091	47,628	9,099	16,197	(1,106)	30,327	64,264	102,401	171,462	145,185	118,020	**821,663**	
	XL-HL	389,009	287,285	282,978	263,168	272,408	311,008	295,370	305,247	341,183	398,762	397,437	387,394	**3,931,250**	
														32,109,387	
		3,590,511	2,113,880	1,418,739	1,009,352	922,322	969,622	1,261,149	2,308,215	3,652,978	4,959,951	5,182,474	4,720,194		**32,109,387**

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RATE DESIGN
Calculation of Rate Class Allocators

		System Total		Res-NH		Res-H		Small		Medium		Large LL		Large HL		XL-LL		XL-HL		
Distribution																				
Demand		$178,374,417		$2,768,983		$102,609,361		$13,862,322		$29,257,386		$15,362,579		$4,999,889		$2,162,329		$7,351,569		$178,374,418
Customer		$105,818,120		$11,669,558		$76,237,861		$9,454,916		$6,236,545		$1,334,485		$313,236		$208,314		$363,205		$105,818,120
Commodity		$817,961		$12,967		$408,499		$53,641		$119,583		$60,228		$23,460		$27,366		$112,217		$817,961
																				$285,010,499
Total Rate Base		$285,010,498		$14,451,508	5.07%	$179,255,721	62.89%	$23,370,879	8.20%	$35,613,514	12.50%	$16,757,292	5.88%	$5,336,585	1.87%	$2,398,009	0.84%	$7,826,991	2.75%	**$285,010,500**
					5.07%		62.89%		8.20%		12.50%		5.88%		1.87%		0.84%		2.75%	**100.00%**
																				100.00%

Res-NH	5.07%
Res-H	62.89%
Small	8.20%
Medium	12.50%
Large LL	5.88%
Large HL	1.87%
XL-LL	0.84%
XL-HL	2.75%
	100.00%

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Exhibit SLF-1
Section 6
Gas Bill Impacts

Rhode Island ISR Plan
Bill Impact by Rate Class
(Average Usage)

Rate Class	Rate Impact April 1, 2011 to Oct 31, 2011	Annual Rate Impact
Res-NH	$1.51	$2.99
Res-NH-LI	$1.51	$2.99
Res-H	$2.44	$7.47
Res-H-LI	$2.44	$7.47
Small	$3.57	$11.80
Medium	$23.86	$67.89
Large LL	$92.90	$317.58
Large HL	$118.37	$239.51
XL-LL	$213.17	$670.36
XL-HL	$221.08	$426.14

National Grid
Rhode Island - Gas

Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

Residential Heating:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
600	$937	$1,026	($88)	-8.6%	$0	($102.58)	$12.87	$1.60	$0.00
664	$1,022	$1,119	($98)	-8.7%	$0	($113.53)	$14.24	$1.77	$0.00
730	$1,108	$1,216	($107)	-8.8%	$0	($124.80)	$15.66	$1.93	$0.00
794	$1,191	$1,307	($117)	-8.9%	$0	($135.79)	$16.97	$2.13	$0.00
857	$1,270	$1,396	($126)	-9.0%	$0	($146.54)	$18.34	$2.29	$0.00
Average Customer **922**	**$1,351**	**$1,486**	**($135)**	**-9.1%**	**$0**	**($157.68)**	**$19.75**	**$2.44**	**$0.00**
987	$1,431	$1,576	($145)	-9.2%	$0	($168.78)	$21.12	$2.63	$0.00
1,051	$1,511	$1,665	($154)	-9.3%	$0	($179.70)	$22.50	$2.80	$0.00
1,114	$1,586	$1,750	($164)	-9.4%	$0	($190.50)	$23.84	$2.96	$0.00
1,180	$1,666	$1,839	($173)	-9.4%	$0	($201.77)	$25.24	$3.14	$0.00
1,247	$1,746	$1,929	($183)	-9.5%	$0	($213.22)	$26.65	$3.33	$0.00

Residential Heating Low Income

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
600	$900	$988	($88)	-8.9%	$0	($102.58)	$12.87	$1.60	$0.00
664	$982	$1,079	($98)	-9.0%	$0	($113.53)	$14.24	$1.77	$0.00
730	$1,066	$1,173	($107)	-9.1%	$0	($124.80)	$15.66	$1.93	$0.00
794	$1,146	$1,263	($117)	-9.2%	$0	($135.79)	$16.97	$2.13	$0.00
857	$1,223	$1,349	($126)	-9.3%	$0	($146.54)	$18.34	$2.29	$0.00
Average Customer **922**	**$1,302**	**$1,437**	**($135)**	**-9.4%**	**$0**	**($157.68)**	**$19.75**	**$2.44**	**$0.00**
987	$1,381	$1,526	($145)	-9.5%	$0	($168.78)	$21.12	$2.63	$0.00
1,051	$1,458	$1,612	($154)	-9.6%	$0	($179.70)	$22.50	$2.80	$0.00
1,114	$1,532	$1,696	($164)	-9.7%	$0	($190.50)	$23.84	$2.96	$0.00
1,180	$1,610	$1,783	($173)	-9.7%	$0	($201.77)	$25.24	$3.14	$0.00
1,247	$1,688	$1,871	($183)	-9.8%	$0	($213.22)	$26.65	$3.33	$0.00

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National Grid
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Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

Residential Non-Heating:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
123	$282	$297	($15)	-5.1%	$0	($18.93)	$2.65	$0.99	$0.00
137	$300	$317	($17)	-5.4%	$0	($21.05)	$2.94	$1.08	$0.00
147	$313	$332	($18)	-5.5%	$0	($22.59)	$3.16	$1.16	$0.00
161	$332	$352	($20)	-5.7%	$0	($24.74)	$3.49	$1.28	$0.00
176	$352	$373	($22)	-5.8%	$0	($27.01)	$3.81	$1.37	$0.00
Average Customer **189**	**$369**	**$392**	**($23)**	**-6.0%**	**$0**	**($29.02)**	**$4.09**	**$1.51**	**$0.00**
202	$386	$411	($25)	-6.1%	$0	($31.01)	$4.36	$1.62	$0.00
217	$406	$433	($27)	-6.2%	$0	($33.29)	$4.69	$1.72	$0.00
231	$424	$453	($29)	-6.3%	$0	($35.47)	$4.98	$1.85	$0.00
241	$437	$467	($30)	-6.4%	$0	($36.99)	$5.18	$1.93	$0.00
256	$457	$489	($32)	-6.5%	$0	($39.29)	$5.50	$2.02	$0.00

Residential Non-Heating Low Income

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
123	$265	$280	($15)	-5.5%	$0	($18.93)	$2.65	$0.99	$0.00
137	$283	$300	($17)	-5.7%	$0	($21.05)	$2.94	$1.08	$0.00
147	$296	$314	($18)	-5.8%	$0	($22.59)	$3.16	$1.16	$0.00
161	$313	$333	($20)	-6.0%	$0	($24.74)	$3.49	$1.28	$0.00
176	$333	$354	($22)	-6.2%	$0	($27.01)	$3.81	$1.37	$0.00
Average Customer **189**	**$349**	**$373**	**($23)**	**-6.3%**	**$0**	**($29.02)**	**$4.09**	**$1.51**	**$0.00**
202	$366	$391	($25)	-6.4%	$0	($31.01)	$4.36	$1.62	$0.00
217	$385	$412	($27)	-6.5%	$0	($33.29)	$4.69	$1.72	$0.00
231	$403	$431	($29)	-6.6%	$0	($35.47)	$4.98	$1.85	$0.00
241	$416	$445	($30)	-6.7%	$0	($36.99)	$5.18	$1.93	$0.00
256	$435	$466	($32)	-6.8%	$0	($39.29)	$5.50	$2.02	$0.00

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Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

C & I Small:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
824	$1,374	$1,495	($121)	-8.1%	$0	($140.88)	$17.66	$2.33	$0.00
916	$1,490	$1,625	($134)	-8.3%	$0	($156.65)	$19.60	$2.59	$0.00
1,003	$1,599	$1,746	($147)	-8.4%	$0	($171.52)	$21.48	$2.84	$0.00
1,092	$1,707	$1,867	($160)	-8.6%	$0	($186.73)	$23.36	$3.09	$0.00
1,179	$1,808	$1,981	($173)	-8.7%	$0	($201.59)	$25.21	$3.31	$0.00
Average Customer **1,269**	**$1,914**	**$2,100**	**($186)**	**-8.9%**	**$0**	**($217.02)**	**$27.16**	**$3.57**	**$0.00**
1,359	$2,018	$2,218	($199)	-9.0%	$0	($232.38)	$29.05	$3.85	$0.00
1,447	$2,120	$2,333	($212)	-9.1%	$0	($247.40)	$30.96	$4.09	$0.00
1,535	$2,222	$2,447	($225)	-9.2%	$0	($262.47)	$32.82	$4.33	$0.00
1,622	$2,322	$2,561	($238)	-9.3%	$0	($277.34)	$34.71	$4.55	$0.00
1,715	$2,430	$2,682	($252)	-9.4%	$0	($293.25)	$36.70	$4.85	$0.00

C & I Medium:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
7,117	$9,112	$10,162	($1,049)	-10.3%	$0	($1,216.98)	$152.29	$15.51	$0.00
7,884	$10,017	$11,179	($1,162)	-10.4%	$0	($1,348.16)	$168.72	$17.18	$0.00
8,649	$10,919	$12,194	($1,275)	-10.5%	$0	($1,478.99)	$185.09	$18.84	$0.00
9,416	$11,823	$13,211	($1,388)	-10.5%	$0	($1,610.14)	$201.54	$20.53	$0.00
10,185	$12,730	$14,232	($1,501)	-10.6%	$0	($1,741.63)	$217.94	$22.20	$0.00
Average Customer **10,950**	**$13,632**	**$15,246**	**($1,614)**	**-10.6%**	**$0**	**($1,872.45)**	**$234.35**	**$23.86**	**$0.00**
11,715	$14,534	$16,261	($1,727)	-10.6%	$0	($2,003.26)	$250.70	$25.54	$0.00
12,484	$15,441	$17,281	($1,840)	-10.6%	$0	($2,134.76)	$267.17	$27.22	$0.00
13,251	$16,345	$18,299	($1,953)	-10.7%	$0	($2,265.92)	$283.58	$28.89	$0.00
14,016	$17,248	$19,314	($2,066)	-10.7%	$0	($2,396.75)	$299.94	$30.55	$0.00
14,783	$18,152	$20,331	($2,179)	-10.7%	$0	($2,527.91)	$316.36	$32.22	$0.00

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Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

C & I LLF Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
37,532	$46,156	$51,711	($5,554)	-10.7%	$0	($6,417.94)	$803.18	$60.38	$0.00
41,573	$50,971	$57,123	($6,152)	-10.8%	$0	($7,109.00)	$889.63	$66.89	$0.00
45,616	$55,788	$62,539	($6,751)	-10.8%	$0	($7,800.32)	$976.20	$73.41	$0.00
49,660	$60,606	$67,955	($7,349)	-10.8%	$0	($8,491.86)	$1,062.73	$79.89	$0.00
53,699	$65,418	$73,365	($7,947)	-10.8%	$0	($9,182.53)	$1,149.16	$86.39	$0.00
Average Customer **57,742**	**$70,235**	**$78,780**	**($8,545)**	**-10.8%**	**$0**	**($9,873.87)**	**$1,235.68**	**$92.90**	**$0.00**
61,785	$75,052	$84,196	($9,144)	-10.9%	$0	($10,565.24)	$1,322.23	$99.41	$0.00
65,824	$79,864	$89,606	($9,741)	-10.9%	$0	($11,255.88)	$1,408.62	$105.90	$0.00
69,868	$84,682	$95,022	($10,340)	-10.9%	$0	($11,947.42)	$1,495.17	$112.42	$0.00
73,911	$89,499	$100,437	($10,938)	-10.9%	$0	($12,638.74)	$1,581.68	$118.91	$0.00
77,952	$94,314	$105,850	($11,536)	-10.9%	$0	($13,329.82)	$1,668.16	$125.43	$0.00

C & I HLF Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
37,970	$42,075	$47,014	($4,939)	-10.5%	$0	($5,828.39)	$812.54	$76.94	$0.00
42,061	$46,453	$51,924	($5,471)	-10.5%	$0	($6,456.37)	$900.09	$85.24	$0.00
46,151	$50,831	$56,834	($6,003)	-10.6%	$0	($7,084.15)	$987.65	$93.53	$0.00
50,240	$55,206	$61,741	($6,535)	-10.6%	$0	($7,711.85)	$1,075.13	$101.81	$0.00
54,329	$59,582	$66,649	($7,067)	-10.6%	$0	($8,339.50)	$1,162.62	$110.10	$0.00
Average Customer **58,418**	**$63,958**	**$71,557**	**($7,599)**	**-10.6%**	**$0**	**($8,967.16)**	**$1,250.16**	**$118.37**	**$0.00**
62,508	$68,336	$76,466	($8,131)	-10.6%	$0	($9,594.97)	$1,337.70	$126.66	$0.00
66,596	$72,711	$81,373	($8,662)	-10.6%	$0	($10,222.51)	$1,425.15	$134.94	$0.00
70,686	$77,087	$86,282	($9,194)	-10.7%	$0	($10,850.31)	$1,512.68	$143.24	$0.00
74,775	$81,463	$91,190	($9,726)	-10.7%	$0	($11,477.97)	$1,600.18	$151.53	$0.00
78,867	$85,843	$96,101	($10,259)	-10.7%	$0	($12,106.08)	$1,687.75	$159.81	$0.00

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C & I LLF Extra-Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
189,450	$202,621	$230,824	($28,203)	-12.2%	$0	($32,395.97)	$4,054.25	$138.57	$0.00
209,855	$224,057	$255,298	($31,241)	-12.2%	$0	($35,885.19)	$4,490.88	$153.49	$0.00
230,255	$245,488	$279,765	($34,278)	-12.3%	$0	($39,373.63)	$4,927.46	$168.42	$0.00
250,655	$266,919	$304,233	($37,315)	-12.3%	$0	($42,862.00)	$5,364.02	$183.34	$0.00
271,059	$288,353	$328,705	($40,352)	-12.3%	$0	($46,351.11)	$5,800.69	$198.26	$0.00
Average Customer **291,462**	**$309,787**	**$353,177**	**($43,390)**	**-12.3%**	**$0**	**($49,839.99)**	**$6,237.28**	**$213.17**	**$0.00**
311,865	$331,221	$377,648	($46,427)	-12.3%	$0	($53,328.92)	$6,673.90	$228.10	$0.00
332,269	$352,655	$402,120	($49,464)	-12.3%	$0	($56,817.99)	$7,110.53	$243.03	$0.00
352,669	$374,086	$426,588	($52,501)	-12.3%	$0	($60,306.41)	$7,547.10	$257.94	$0.00
373,069	$395,517	$451,055	($55,538)	-12.3%	$0	($63,794.76)	$7,983.69	$272.89	$0.00
393,474	$416,953	$475,529	($58,576)	-12.3%	$0	($67,284.06)	$8,420.32	$287.80	$0.00

C & I HLF Extra-Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
184,661	$193,415	$217,665	($24,250)	-11.1%	$0	($28,345.45)	$3,951.74	$143.72	$0.00
204,549	$213,858	$240,720	($26,862)	-11.2%	$0	($31,398.27)	$4,377.36	$159.19	$0.00
224,435	$234,299	$263,772	($29,473)	-11.2%	$0	($34,450.77)	$4,802.93	$174.67	$0.00
244,321	$254,740	$286,825	($32,085)	-11.2%	$0	($37,503.28)	$5,228.47	$190.13	$0.00
264,206	$275,180	$309,876	($34,696)	-11.2%	$0	($40,555.60)	$5,654.02	$205.60	$0.00
Average Customer **284,094**	**$295,623**	**$332,931**	**($37,308)**	**-11.2%**	**$0**	**($43,608.43)**	**$6,079.61**	**$221.08**	**$0.00**
303,982	$316,066	$355,986	($39,919)	-11.2%	$0	($46,661.22)	$6,505.23	$236.57	$0.00
323,867	$336,506	$379,037	($42,531)	-11.2%	$0	($49,713.58)	$6,930.75	$252.05	$0.00
343,753	$356,947	$402,090	($45,142)	-11.2%	$0	($52,766.09)	$7,356.33	$267.50	$0.00
363,639	$377,388	$425,142	($47,754)	-11.2%	$0	($55,818.58)	$7,781.88	$282.99	$0.00
383,527	$397,831	$448,197	($50,365)	-11.2%	$0	($58,871.40)	$8,207.49	$298.47	$0.00

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Testimony of
William R. Richer

THE NARRAGANSETT ELECTRIC COMPANY
d/b/a NATIONAL GRID
R.I.P.U.C. DOCKET NO. _____
RE: FY 2012 GAS INFRASTRUCTURE,
SAFETY, AND RELIABILITY PLAN

DIRECT TESTIMONY

OF

WILLIAM R. RICHER

December 17, 2010

Q. PLEASE STATE YOUR FULL NAME AND BUSINESS ADDRESS.

A. My name is William R. Richer and my business address is 40 Sylvan Road, Waltham, Massachusetts 02451.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am the Director of Gas Revenue Requirements for National Grid USA Service Company, Inc. ("Service Company").

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. In 1985, I earned a Bachelor of Science degree in Accounting from Northeastern University. During my schooling, I interned at the certified public accounting firm Pannell Kerr Forster in Boston, Massachusetts as a staff auditor and continued with this firm after my graduation. In February 1986, I joined Price Waterhouse in Providence, Rhode Island where I worked as a staff auditor and senior auditor. During this time, I earned my certified public accountants license in the State of Rhode Island. In June 1990, I joined National Grid (then New England Electric System) in the Service Company (then known as New England Power Service Company) as a supervisor of Plant Accounting. Since that time, I have held various positions within the Service Company, including Manager of Financial Reporting, Principal Rate Department Analyst, Manager of General Accounting, and Director of Accounting Services until my promotion to Assistant Controller in 2005. I attained my present position in 2009.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE RHODE ISLAND PUBLIC UTILITIES COMMISSION ("COMMISSION")?

A. Yes. I recently filed testimony with this Commission in Docket No. 4196 supporting the calculation of The Narragansett Electric Company d/b/a National Grid's ("National Grid" or the "Company") gas earnings subject to the Earning Sharing Mechanism and in support of the pension and PBOP expenses in the Company's 2010 Distribution Adjustment Charge ("DAC") filing. I also filed similar testimony in Docket No. 4077 in support of the Company's 2009 annual DAC filing. I also testified before this Commission in Docket No. 2090 on revenue requirements in a base rate proceeding for the Company.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to describe the calculation of the Company's revenue requirement for fiscal year ("FY") 2012 in support of the Company's Infrastructure, Safety and Reliability ("ISR") Plan ("ISR Plan") as described in the testimony of Ms. Susan Fleck.

Q. ARE THERE ANY ATTACHMENTS TO YOUR TESTIMONY?

A. Yes, I am sponsoring the following Attachment:

- WRR-1-ISR Revenue Requirement Calculation

Q. PLEASE DESCRIBE HOW THE REVENUE REQUIREMENT FOR THE COMPANY'S FY 2012 ISR PLAN WAS DEVELOPED.

A. The Company first identified the revenue requirement related to incremental non-growth capital investment associated with the Company's ISR Plan (non-growth infrastructure investment net of general plant) beginning April 1, 2011. Incremental non-growth capital investment for this purpose represents the net change in rate base for non-growth infrastructure investments during the relevant fiscal year. It is defined as capital additions plus cost of removal, less annual depreciation expense embedded in the Company's rates (excluding annual depreciation expense in the 2009 Capital Tracker), net of depreciation expense attributable to general plant. These amounts are shown on Lines 1 through 16 of Attachment WRR-1.[1]

Q. HOW WERE DEPRECIATION EXPENSE AND PLANT REQUIREMENTS HANDLED IN THE DEVELOPMENT OF THE REVENUE REQUIREMENT?

A. Because depreciation expense is affected by plant retirements, retirements have been deducted from plant additions in determining depreciation expense. Retirements, however, do not affect rate base as both 'plant in service' and 'depreciation reserve' are reduced by the installed value of the plant being retired and therefore have no impact on net plant. For the purposes of the calculation of the revenue requirement, plant retirements have been estimated at 6.45 percent of the annual plant additions (based on

[1] Because the ISR Plan is cumulative, Attachment WRR-1 also includes a calculation of a projected revenue requirement for FY 2013 to demonstrate how future ISR Plans would be addressed.

the 2009 percentage of retirements to additions) and have been deducted from plant additions. The cumulative net depreciable additions as shown on Line 5 of Attachment WRR-1 equals the cumulative additions to plant-in-service less cumulative retirements. Incremental book depreciation expense on Line 26 of Attachment WRR-1 is computed based on the cumulative net depreciable additions at the 3.38 percent composite depreciation rate as approved in the last rate case, Docket No. 3943. This is displayed on Line 19 of Attachment WRR-1.

Q. PLEASE DESCRIBE HOW THE COST OF REMOVAL WAS HANDLED.

A. Unlike retirements, cost of removal affects rate base but not depreciation expense. Consequently, the cumulative cost of removal on Line 14 of Attachment WRR-1 is combined with cumulative incremental depreciable amount on Line 11 to derive the cumulative incremental amount on Line 16 of Attachment WRR-1 that was used in determining the rate base upon which the annual ISR revenue requirement was calculated.

Q. PLEASE DESCRIBE HOW TAXES WERE HANDLED IN THE DEVELOPMENT OF THE REVENUE REQUIREMENT.

A. The cumulative incremental change in rate base on Line 37 of Attachment WRR-1 includes the cumulative incremental rate base amount from Line 16 adjusted for accumulated depreciation and accumulated deferred tax reserves as shown on Lines 27 and 31, respectively. The deferred tax amount arising from capital investment on Lines

18-31 equals the difference between book depreciation and tax depreciation on post-FY 2011 capital investment, times the effective tax rate. The tax depreciation amount assumes that 48 percent of the capital investment will be eligible for immediate deduction on the Company's corresponding FY federal income tax return.[2]

Q. PLEASE DESCRIBE HOW THE FINAL FY 2012 ISR REVENUE REQUIREMENT WAS DETERMINED.

A. The average cumulative change in rate base on Line 40 of Attachment WRR-1 equals the average year-end cumulative change in rate base on Line 37. This amount is multiplied by the pre-tax rate of return in the most recent rate case, Docket No. 3943, on Line 41 to compute the return portion of the incremental revenue requirement for the FY 2011 ISR Plan on Line 42. To this, incremental depreciation expense is added on Line 43, as are property taxes on Line 44, which are computed on net plant investment in the year following the investment to coincide with the timing in which property taxes are assessed. The sum of these three amounts reflects the annual revenue requirement of the Company's ISR Plan on Line 45 of $2,130,467.

[2] 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. This has formed the basis for the 48 percent 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 associated interest assessed by the IRS, in a subsequent reconciliation filing under the ISR Plan.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Attachment
WRR-1

The Narragansett Electric Company
d/b/a National Grid
Gas Infrastructure, Safety, and Reliability Plan
Section 3, Attachment 1
Page 1 of 1

National Grid - RI Gas
Illustrative Computation of Capital Adjustment

Line No.				Fiscal Year 2012 (a)	Fiscal Year 2013 (b)
1	Depreciable Net Plant Additions				
2	Plant Additions			$47,660,716	$0
3	Retirements	(Line 1 * Retirements Rate)	1/	$3,074,116	$0
4	Net Depreciable Additions	(Line 1 - Line 2)		$44,586,600	$0
5	Cumulative Net Depreciable Additions	(Prior Year Line 4 + Current Year Line 3)		$44,586,600	$44,586,600
6					
7	Change in Net Plant				
8	Plant Additions	(From Line 1)		$47,660,716	$0
9	Depreciation Expense	(As approved per Docket No. 3943, exluding general plant and 2009 CXT)		$18,443,542	$0
10	Incremental Depreciable Amount	(Line 7 - Line 8)		$29,217,174	$0
11	Cumulative Depreciable Amount	(Prior Year Line 10 + Current Year Line 9)		$29,217,174	$29,217,174
12					
13	Cost of Removal			$5,755,088	$0
14	Cumulative Cost of Removal	(Prior Year Line 14 + Current Year Line 13)		$5,755,088	$5,755,088
15					
16	**Cumulative Incremental Spend**	**(Line 11 + Line 14)**		**$34,972,262**	**$34,972,262**
17					
18	Deferred Tax Calculation:				
19	Composite Book Depreciation Rate	(As approved in Docket No. 3943)		3.38%	3.38%
20	20 YR MACRS Tax Depreciation Rates			3.75%	7.22%
21	Capital Repairs Deduction			48.00%	48.00%
22					
23	Annual Tax Depreciation		2/	$29,561,616	$1,789,126
24	Cumulative Tax Depreciation	(Prior Year Line 24 + Current Year Line 23)		$29,561,616	$31,350,742
25					
26	Book Depreciation	(Prior Year Line 4 * Line 19 * 50%)	2a/	$753,514	$1,507,027
27	Cumulative Book Depreciation	(Prior Year Line 33 + Current Year Line 32)		$753,514	$2,260,541
28					
29	Cumulative Book / Tax Timer	(Line 24 - Line 27)		$28,808,102	$29,090,201
30	Effective Tax Rate			35.000%	35.000%
31	Deferred Tax Reserve	(Line 29 * Line 30)		$10,082,836	$10,181,570
32					
33	Rate Base Calculation:				
34	Cumulative Incremental Spend	(Line 16)		$34,972,262	$34,972,262
35	Accum Depreciation	(Line 27 * -1)		($753,514)	($2,260,541)
36	Deferred Tax Reserve	(Line 31 * -1)		($10,082,836)	($10,181,570)
37	Year End Rate Base	(Sum of Lines 34 through 36)		$24,135,913	$22,530,151
38					
39	Revenue Requirement Calculation:				
40	Average Rate Base	(Line 37/2 for 2012 then, (Prior Year Line 37 + Current Year Line 37)/2)		$12,067,956	$23,333,032
41	Pre-Tax ROR		3/	11.41%	11.41%
42	Return and Taxes	(Line 40 * Line 41)		$1,376,954	$2,662,299
43	Book Depreciation	(Line 26)		$753,514	$1,507,027
44	Property Taxes	(Prior Year Lines 5 plus 14 minus Prior Year Line 26) * Property Tax	4/	$0	$1,522,864
45	**Annual Revenue Requirement**	**(Sum of Lines 37 through 39)**		**$2,130,467**	**$5,692,190**

1/ Assumes 6.45% based on 2009 retirements as a percent of capital spend; to be replaced with actual retirements
2/ (Line 2 x Line 21) + (Line 2 - (Line 2 x Line 21) x Line 20) + Line 13
2a/ (line 5 x Line 19) x 50%
3/ Weighted Average Cost of Capital as approved in Docket No. 3943

	Ratio	Rate	Weighted Rate	Taxes	Pre-tax Return
Long Term Debt	40.63%	7.990%	3.25%		3.25%
Short Term Debt	11.66%	3.910%	0.46%		0.46%
Common Equity	47.71%	10.500%	5.01%	2.70%	7.71%
	100.00%		8.71%	2.70%	11.41%

4/ Property Tax Rate Calculation based on 2009 actual net plant in service and property tax expense applicable to distribution

Plant in Service	571,320,698	
Completed Construction Not Classified	41,766,356	
Total Plant in Service	613,087,054	
Less: Intangible Plant	28,679,000	
Distribution-Plant in Service	584,408,054	584,408,054
Accumulated Depreciation	295,189,100	
Accumulated Depreciation -Intangible Plant	(17,323,010)	
Accumulated Depreciation Distribution-Plant in Service		277,866,091
Distribution-Related Net Plant in Service	306,541,964	306,541,963
Distribution-Related Rate Year Property Tax Expense		9,413,974
Distribution-Related Property Tax Rate		3.07%

Testimony of
John F. Nestor, III

DIRECT TESTIMONY

OF

JOHN F. NESTOR, III

December 17, 2010

Table of Contents

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John F. Nestor, III. My business address is 40 Sylvan Road, Waltham, Massachusetts 02451-1120.

Q. PLEASE DESCRIBE YOUR POSITION AND RESPONSIBILITIES.

A. I am a Lead Analyst in the Gas Regulatory and Pricing organization for National Grid. My responsibilities include overseeing the design, implementation and administration of The Narragansett Electric Company d/b/a National Grid's ("National Grid" or the "Company") rates and tariffs for natural gas service in Rhode Island.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I have a Bachelor of Arts in American Studies from Merrimack College, a Masters in Business Administration from Northeastern University, and a Juris Doctorate from Suffolk University Law School. I have been employed by National Grid in my current position since November of 2008. Prior to joining National Grid, I was employed by Verizon Communications ("Verizon") and its predecessor companies for over twenty years as Vice President for Regulatory and State Government Relations, Director of Regulatory Affairs for Massachusetts and Director of Regulatory Planning and Support. I also have been employed as an attorney in private practice and by the Massachusetts Department of Public Utilities ("MDPU") as a utility specialist, Director of

Telecommunications and as regulatory counsel to the Commission. In addition, I served as a legislative assistant in the United States House of Representatives where I had responsibility for matters before the Federal Communications Commission and Federal Power Commission (now FERC).

Q. HAVE YOU PREVIOUSLY TESTIFIED OR APPEARED BEFORE THE RHODE ISLAND PUBLIC UTILITIES COMMISSION ("COMMISSION")?

A. Yes. I have testified in Docket No. 4077 (the 2009 Distribution Adjustment Charge ("DAC") proceeding), Docket No. 4196 (the 2010 DAC proceeding), and Docket No. 4199 (the 2010 Gas Cost Recovery ("GCR") filing). I also have testified or appeared before this Commission and Commission staff ("Staff") in a number of proceedings and dockets during my time with Verizon and with the MDPU concerning rates, tariffs, rules and regulations, and telephone numbering issues.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is (1) to describe how the rate design was established for the Infrastructure, Safety and Reliability ("ISR") mechanism; (2) describe the calculation of the ISR rate factors; and (3) provide the customer bill impacts of the proposed ISR factor rates.

II. RATE DESIGN

Q. PLEASE DESCRIBE HOW THE COMPANY DEVELOPED THE RATE DESIGN FOR THE ISR MECHANISM AND RATES.

A. Since the ISR Plan is intended to provide for the timely recovery of capital investment for the safety and reliability of the Company's Rhode Island gas delivery system, the Company developed its design for the ISR mechanism and rates by beginning with the functional rate base that was approved in the compliance filing in Docket No. 3943. Specifically, the Company utilized the rate base allocation factors developed for the system total for the distribution categories of Demand, Customer, and Commodity that were provided in Attachment NG-Compliance RD-4, page 2 of 4. These rate base allocation factors are set forth in Attachment NG-JFN-1.

Next, the Company utilized the most recently available forecasted throughput for the period April 2011 through March 2012 that had been developed for the Company's 2010 GCR filing (RIPUC Docket No. 4199). That data was compiled by rate class and summarized as set forth in Attachment NG-JFN-2 .[1]

[1] This filing utilizes the most recent extended forecasted throughput for the period April 2011 to March 2012 that was used in the Company's GCR filing approved by the Commission on October 28, 2010. This forecast does not change the overall allocation of the revenue requirement submitted on August 18, 2010, but results in small changes in the ISR factors that shifts some dollars among the Large and XL-HL rate classes.

Finally, the updated revenue requirement of $2,130,467 that was developed in the Direct Testimony of Mr. William R. Richer was then allocated to each rate class based upon the previously noted rate base percentage allocations and forecasted throughput to develop separate rate class ISR factors on a per therm basis. Each rate class ISR factor was then adjusted to reflect the 2.46 percent uncollectible factor approved in Docket No. 3943.

III. ISR RATE FACTORS

Q. WHAT ARE THE ISR RATE FACTORS BEING PROPOSED BY THE COMPANY?

A. The ISR rate factors being proposed by the Company in support of its ISR filing are set forth in the table below and in Attachment NG-JFN-3.

Rate Class	ISR Factor per therm
Res-NH	**$0.0158**
Res-H	**$0.0081**
Small	**$0.0093**
Medium	**$0.0062**
Large LL	**$0.0055**
Large HL	**$0.0041**
XL-LL	**$0.0023**
XL-HL	**$0.0015**

The same factors noted above for Residence Heating and Residence Non-Heating customers would also apply to each of the Low-Income customer rate classes respectively.

Q. HOW IS THE COMPANY PROPOSING TO RECONCILE THESE FACTORS?

A. Consistent with the statute, the Company is proposing that the ISR factors become effective April 1 each year and that they be reconciled in the Company's annual DAC filing, with rates effective November 1. Beginning April 1, 2011, and every April 1 thereafter, for each rate class, the Company will add the ISR rate factor to the DAC rate approved by the Commission in the annual DAC filing. ("Base DAC Rate"). Subsequently, each April 1, new ISR rate factors will be calculated and go into effect. In addition, each November 1, a new Base DAC Rate will be calculated and any over or under recovery of the previous ISR rate factors will be reconciled as part of this Base DAC Rate.

IV. Bill Impacts

Q. WHAT IS THE IMPACT OF THE PROPOSED ISR RATES ON CUSTOMER BILLS?

A. For the average residential heating customer using 922 therms, the ISR rate will result in an annual rate increase of $7.47, or 0.4 percent. For the period April 1, 2011 to the next Base DAC Rate change on November 1, 2011, the ISR rate for the average residential heating customer will be an incremental increase of $2.44 or 0.2 percent. The annual ISR

rate impacts and the incremental rate increase for the period April 1, 2011 to October 31, 2011 for all rate classes are shown on Attachments NG-JFN-4 and NG-JFN-5.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Attachment
NG-JFN-1

		System Total		Res-NH		Res-H		Small		Medium		Large LL		Large HL		XL-LL		XL-HL		
Distribution																				
Demand		$178,374,417		$2,768,983		$102,609,361		$13,862,322		$29,257,386		$15,362,579		$4,999,889		$2,162,329		$7,351,569		$178,374,418
Customer		$105,818,120		$11,669,558		$76,237,861		$9,454,916		$6,236,545		$1,334,485		$313,236		$208,314		$363,205		$105,818,120
Commodity		$817,961		$12,967		$408,499		$53,641		$119,583		$60,228		$23,460		$27,366		$112,217		$817,961
																				$285,010,499
Total Rate Base		$285,010,498		$14,451,508	5.07%	$179,255,721	62.89%	$23,370,879	8.20%	$35,613,514	12.50%	$16,757,292	5.88%	$5,336,585	1.87%	$2,398,009	0.84%	$7,826,991	2.75%	**$285,010,500**
					5.07%		62.89%		8.20%		12.50%		5.88%		1.87%		0.84%		2.75%	**100.00%**
																				100.00%

Res-NH	5.07%
Res-H	62.89%
Small	8.20%
Medium	12.50%
Large LL	5.88%
Large HL	1.87%
XL-LL	0.84%
XL-HL	2.75%
	100.00%

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Attachment
NG-JFN-2

Firm and Transportation

Year		2,011	2,011	2,011	2,011	2,011	2,011	2,011	2,011	2,011	2,012	2,012	2,012	
Mon		**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	
1012		70,493	60,870	46,251	39,370	33,934	33,888	39,380	55,767	68,622	82,328	88,785	80,912	**700,600**
1247		1,990,787	1,114,772	639,475	404,535	324,025	378,664	506,454	1,164,449	2,054,323	2,767,997	2,942,081	2,694,171	**16,981,733**
2107		224,723	116,333	61,244	58,320	40,721	20,031	51,998	111,612	219,972	338,715	361,487	310,654	**1,915,811**
2237		336,898	214,455	138,442	103,745	89,922	92,021	129,567	231,739	299,571	503,105	521,550	478,327	**3,139,342**
22EN		50,034	27,726	27,854	22,232	26,900	4,746	40,243	60,145	90,385	96,654	102,509	74,538	**623,964**
2221		58,377	51,880	35,711	23,967	22,905	32,724	16,688	57,569	66,969	93,557	108,958	87,256	**656,561**
2367		22,501	19,253	14,376	8,455	7,309	15,567	12,001	19,463	21,668	28,921	29,927	29,280	**228,722**
23EN		58,635	38,431	41,580	32,835	42,113	41,786	51,791	54,584	64,434	70,906	64,179	66,597	**627,870**
2321		16,958	11,920	10,748	7,608	8,756	9,494	9,731	10,002	13,249	16,358	14,596	17,399	**146,819**
2496		10,833	8,847	7,313	5,022	6,417	5,936	4,189	7,852	2,046	18,131	17,489	14,048	**108,123**
24EN		376,346	276,843	274,240	257,648	264,590	303,987	289,930	296,126	337,752	378,583	377,874	371,122	**3,805,040**
2421		1,830	1,595	1,425	499	1,401	1,085	1,251	1,269	1,385	2,048	2,074	2,224	**18,086**
3367		106,312	53,466	26,628	14,851	11,748	11,355	23,607	58,419	91,751	143,568	147,348	129,204	**818,258**
33EN		97,758	38,213	20,405	17,232	20,029	9,808	39,811	81,963	144,778	146,229	156,408	157,077	**929,710**
3321		83,930	45,184	25,420	3,935	5,355	9,636	14,181	32,993	73,672	101,388	102,025	89,365	**587,084**
3496		24,008	11,344	15,383	-3,544	1,762	2,395	6,312	16,798	26,694	78,412	37,878	36,567	**254,009**
34EN		58,306	19,835	31,650	12,580	14,403	-3,525	23,828	45,464	69,745	89,675	104,075	78,549	**544,585**
3421		1,781	2,912	595	63	32	24	187	2,002	5,962	3,375	3,232	2,904	**23,069**
70EN		0	0	0	0	0	0	0	0	0	0	0	0	**0**
														32,109,387

Dth TOTALS		2011	2011	2011	2011	2011	2011	2011	2011	2011	2012	2012	2012	
		Apr	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	
1,012	Res-NH	70,493	60,870	46,251	39,370	33,934	33,888	39,380	55,767	68,622	82,328	88,785	80,912	**700,600**
1,247	Res-H	1,990,787	1,114,772	639,475	404,535	324,025	378,664	506,454	1,164,449	2,054,323	2,767,997	2,942,081	2,694,171	**16,981,733**
2,107	Small	224,723	116,333	61,244	58,320	40,721	20,031	51,998	111,612	219,972	338,715	361,487	310,654	**1,915,811**
2,237	Medium	336,898	214,455	138,442	103,745	89,922	92,021	129,567	231,739	299,571	503,105	521,550	478,327	**3,139,342**
22EN	Medium-FT1	50,034	27,726	27,854	22,232	26,900	4,746	40,243	60,145	90,385	96,654	102,509	74,538	**623,964**
2,221	Medium-FT2	58,377	51,880	35,711	23,967	22,905	32,724	16,688	57,569	66,969	93,557	108,958	87,256	**656,561**
2,367	Large-HL	22,501	19,253	14,376	8,455	7,309	15,567	12,001	19,463	21,668	28,921	29,927	29,280	**228,722**
23EN	Large HL-FT1	58,635	38,431	41,580	32,835	42,113	41,786	51,791	54,584	64,434	70,906	64,179	66,597	**627,870**
2,321	Large HL-FT2	16,958	11,920	10,748	7,608	8,756	9,494	9,731	10,002	13,249	16,358	14,596	17,399	**146,819**
2,496	XL-HL	10,833	8,847	7,313	5,022	6,417	5,936	4,189	7,852	2,046	18,131	17,489	14,048	**108,123**
24EN	XL-HL-FT1	376,346	276,843	274,240	257,648	264,590	303,987	289,930	296,126	337,752	378,583	377,874	371,122	**3,805,040**
2,421	XL-HL-FT2	1,830	1,595	1,425	499	1,401	1,085	1,251	1,269	1,385	2,048	2,074	2,224	**18,086**
3,367	Large-LL	106,312	53,466	26,628	14,851	11,748	11,355	23,607	58,419	91,751	143,568	147,348	129,204	**818,258**
33EN	Large-LL-FT1	97,758	38,213	20,405	17,232	20,029	9,808	39,811	81,963	144,778	146,229	156,408	157,077	**929,710**
3,321	Large-LL-FT2	83,930	45,184	25,420	3,935	5,355	9,636	14,181	32,993	73,672	101,388	102,025	89,365	**587,084**
3,496	XL-LL	24,008	11,344	15,383	(3,544)	1,762	2,395	6,312	16,798	26,694	78,412	37,878	36,567	**254,009**
34EN	XL-LL FT1	58,306	19,835	31,650	12,580	14,403	(3,525)	23,828	45,464	69,745	89,675	104,075	78,549	**544,585**
3,421	XL-LL FT2	1,781	2,912	595	63	32	24	187	2,002	5,962	3,375	3,232	2,904	**23,069**
70EN	NGV	-	-	-	-	-	-	-	-	-	-	-	-	**-**
														32,109,387

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dth forecast		2011	2011	2011	2011	2011	2011	2011	2011	2011	2012	2012	2012		
Apr 11-Mar 12		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar		
	Res-NH	70,493	60,870	46,251	39,370	33,934	33,888	39,380	55,767	68,622	82,328	88,785	80,912	**700,600**	
	Res-H	1,990,787	1,114,772	639,475	404,535	324,025	378,664	506,454	1,164,449	2,054,323	2,767,997	2,942,081	2,694,171	**16,981,733**	
	Small	224,723	116,333	61,244	58,320	40,721	20,031	51,998	111,612	219,972	338,715	361,487	310,654	**1,915,811**	
	Medium	445,309	294,061	202,007	149,943	139,727	129,491	186,498	349,452	456,925	693,316	733,016	640,121	**4,419,867**	
	Large LL	288,000	136,863	72,453	36,018	37,131	30,799	77,599	173,375	310,201	391,185	405,781	375,646	**2,335,052**	
	Large HL	98,094	69,605	66,704	48,898	58,178	66,847	73,523	84,049	99,351	116,185	108,703	113,275	**1,003,411**	
	XL-LL	84,095	34,091	47,628	9,099	16,197	(1,106)	30,327	64,264	102,401	171,462	145,185	118,020	**821,663**	
	XL-HL	389,009	287,285	282,978	263,168	272,408	311,008	295,370	305,247	341,183	398,762	397,437	387,394	**3,931,250**	
														32,109,387	
		3,590,511	2,113,880	1,418,739	1,009,352	922,322	969,622	1,261,149	2,308,215	3,652,978	4,959,951	5,182,474	4,720,194		**32,109,387**

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Attachment
NG-JFN-3

Revenue Requirement	Rate Class	Rate Base Allocator %	Allocation to Rate Class	Throughput dth	ISR Factor dth	ISR Factor therm	Uncollectible	ISR Factor therm
$2,130,467								
	Res-NH	5.07%	$108,026	700,600	$0.1542	0.0154	2.46%	$0.0158
	Res-H	62.89%	$1,339,945	16,981,733	$0.0789	0.0079	2.46%	$0.0081
	Small	8.20%	$174,698	1,915,811	$0.0912	0.0091	2.46%	$0.0093
	Medium	12.50%	$266,213	4,419,867	$0.0602	0.0060	2.46%	$0.0062
	Large LL	5.88%	$125,262	2,335,052	$0.0536	0.0054	2.46%	$0.0055
	Large HL	1.87%	$39,891	1,003,411	$0.0398	0.0040	2.46%	$0.0041
	XL-LL	0.84%	$17,925	821,663	$0.0218	0.0022	2.46%	$0.0023
	XL-HL	2.75%	$58,507	3,931,250	$0.0149	0.0015	2.46%	$0.0015

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Attachment
NG-JFN-4

Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

Residential Heating:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
600	$937	$1,026	($88)	-8.6%	$0	($102.58)	$12.87	$1.60	$0.00
664	$1,022	$1,119	($98)	-8.7%	$0	($113.53)	$14.24	$1.77	$0.00
730	$1,108	$1,216	($107)	-8.8%	$0	($124.80)	$15.66	$1.93	$0.00
794	$1,191	$1,307	($117)	-8.9%	$0	($135.79)	$16.97	$2.13	$0.00
857	$1,270	$1,396	($126)	-9.0%	$0	($146.54)	$18.34	$2.29	$0.00
Average Customer **922**	**$1,351**	**$1,486**	**($135)**	**-9.1%**	**$0**	**($157.68)**	**$19.75**	**$2.44**	**$0.00**
987	$1,431	$1,576	($145)	-9.2%	$0	($168.78)	$21.12	$2.63	$0.00
1,051	$1,511	$1,665	($154)	-9.3%	$0	($179.70)	$22.50	$2.80	$0.00
1,114	$1,586	$1,750	($164)	-9.4%	$0	($190.50)	$23.84	$2.96	$0.00
1,180	$1,666	$1,839	($173)	-9.4%	$0	($201.77)	$25.24	$3.14	$0.00
1,247	$1,746	$1,929	($183)	-9.5%	$0	($213.22)	$26.65	$3.33	$0.00

Residential Heating Low Income

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
600	$900	$988	($88)	-8.9%	$0	($102.58)	$12.87	$1.60	$0.00
664	$982	$1,079	($98)	-9.0%	$0	($113.53)	$14.24	$1.77	$0.00
730	$1,066	$1,173	($107)	-9.1%	$0	($124.80)	$15.66	$1.93	$0.00
794	$1,146	$1,263	($117)	-9.2%	$0	($135.79)	$16.97	$2.13	$0.00
857	$1,223	$1,349	($126)	-9.3%	$0	($146.54)	$18.34	$2.29	$0.00
Average Customer **922**	**$1,302**	**$1,437**	**($135)**	**-9.4%**	**$0**	**($157.68)**	**$19.75**	**$2.44**	**$0.00**
987	$1,381	$1,526	($145)	-9.5%	$0	($168.78)	$21.12	$2.63	$0.00
1,051	$1,458	$1,612	($154)	-9.6%	$0	($179.70)	$22.50	$2.80	$0.00
1,114	$1,532	$1,696	($164)	-9.7%	$0	($190.50)	$23.84	$2.96	$0.00
1,180	$1,610	$1,783	($173)	-9.7%	$0	($201.77)	$25.24	$3.14	$0.00
1,247	$1,688	$1,871	($183)	-9.8%	$0	($213.22)	$26.65	$3.33	$0.00

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Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

Residential Non-Heating:

Nov - Oct Consumption (Therms)		Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
	123	$282	$297	($15)	-5.1%	$0	($18.93)	$2.65	$0.99	$0.00
	137	$300	$317	($17)	-5.4%	$0	($21.05)	$2.94	$1.08	$0.00
	147	$313	$332	($18)	-5.5%	$0	($22.59)	$3.16	$1.16	$0.00
	161	$332	$352	($20)	-5.7%	$0	($24.74)	$3.49	$1.28	$0.00
	176	$352	$373	($22)	-5.8%	$0	($27.01)	$3.81	$1.37	$0.00
Average Customer	**189**	**$369**	**$392**	**($23)**	**-6.0%**	**$0**	**($29.02)**	**$4.09**	**$1.51**	**$0.00**
	202	$386	$411	($25)	-6.1%	$0	($31.01)	$4.36	$1.62	$0.00
	217	$406	$433	($27)	-6.2%	$0	($33.29)	$4.69	$1.72	$0.00
	231	$424	$453	($29)	-6.3%	$0	($35.47)	$4.98	$1.85	$0.00
	241	$437	$467	($30)	-6.4%	$0	($36.99)	$5.18	$1.93	$0.00
	256	$457	$489	($32)	-6.5%	$0	($39.29)	$5.50	$2.02	$0.00

Residential Non-Heating Low Income

Nov - Oct Consumption (Therms)		Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
	123	$265	$280	($15)	-5.5%	$0	($18.93)	$2.65	$0.99	$0.00
	137	$283	$300	($17)	-5.7%	$0	($21.05)	$2.94	$1.08	$0.00
	147	$296	$314	($18)	-5.8%	$0	($22.59)	$3.16	$1.16	$0.00
	161	$313	$333	($20)	-6.0%	$0	($24.74)	$3.49	$1.28	$0.00
	176	$333	$354	($22)	-6.2%	$0	($27.01)	$3.81	$1.37	$0.00
Average Customer	**189**	**$349**	**$373**	**($23)**	**-6.3%**	**$0**	**($29.02)**	**$4.09**	**$1.51**	**$0.00**
	202	$366	$391	($25)	-6.4%	$0	($31.01)	$4.36	$1.62	$0.00
	217	$385	$412	($27)	-6.5%	$0	($33.29)	$4.69	$1.72	$0.00
	231	$403	$431	($29)	-6.6%	$0	($35.47)	$4.98	$1.85	$0.00
	241	$416	$445	($30)	-6.7%	$0	($36.99)	$5.18	$1.93	$0.00
	256	$435	$466	($32)	-6.8%	$0	($39.29)	$5.50	$2.02	$0.00

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Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

C & I Small:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
824	$1,374	$1,495	($121)	-8.1%	$0	($140.88)	$17.66	$2.33	$0.00
916	$1,490	$1,625	($134)	-8.3%	$0	($156.65)	$19.60	$2.59	$0.00
1,003	$1,599	$1,746	($147)	-8.4%	$0	($171.52)	$21.48	$2.84	$0.00
1,092	$1,707	$1,867	($160)	-8.6%	$0	($186.73)	$23.36	$3.09	$0.00
1,179	$1,808	$1,981	($173)	-8.7%	$0	($201.59)	$25.21	$3.31	$0.00
Average Customer **1,269**	**$1,914**	**$2,100**	**($186)**	**-8.9%**	**$0**	**($217.02)**	**$27.16**	**$3.57**	**$0.00**
1,359	$2,018	$2,218	($199)	-9.0%	$0	($232.38)	$29.05	$3.85	$0.00
1,447	$2,120	$2,333	($212)	-9.1%	$0	($247.40)	$30.96	$4.09	$0.00
1,535	$2,222	$2,447	($225)	-9.2%	$0	($262.47)	$32.82	$4.33	$0.00
1,622	$2,322	$2,561	($238)	-9.3%	$0	($277.34)	$34.71	$4.55	$0.00
1,715	$2,430	$2,682	($252)	-9.4%	$0	($293.25)	$36.70	$4.85	$0.00

C & I Medium:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
7,117	$9,112	$10,162	($1,049)	-10.3%	$0	($1,216.98)	$152.29	$15.51	$0.00
7,884	$10,017	$11,179	($1,162)	-10.4%	$0	($1,348.16)	$168.72	$17.18	$0.00
8,649	$10,919	$12,194	($1,275)	-10.5%	$0	($1,478.99)	$185.09	$18.84	$0.00
9,416	$11,823	$13,211	($1,388)	-10.5%	$0	($1,610.14)	$201.54	$20.53	$0.00
10,185	$12,730	$14,232	($1,501)	-10.6%	$0	($1,741.63)	$217.94	$22.20	$0.00
Average Customer **10,950**	**$13,632**	**$15,246**	**($1,614)**	**-10.6%**	**$0**	**($1,872.45)**	**$234.35**	**$23.86**	**$0.00**
11,715	$14,534	$16,261	($1,727)	-10.6%	$0	($2,003.26)	$250.70	$25.54	$0.00
12,484	$15,441	$17,281	($1,840)	-10.6%	$0	($2,134.76)	$267.17	$27.22	$0.00
13,251	$16,345	$18,299	($1,953)	-10.7%	$0	($2,265.92)	$283.58	$28.89	$0.00
14,016	$17,248	$19,314	($2,066)	-10.7%	$0	($2,396.75)	$299.94	$30.55	$0.00
14,783	$18,152	$20,331	($2,179)	-10.7%	$0	($2,527.91)	$316.36	$32.22	$0.00

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Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

C & I LLF Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
37,532	$46,156	$51,711	($5,554)	-10.7%	$0	($6,417.94)	$803.18	$60.38	$0.00
41,573	$50,971	$57,123	($6,152)	-10.8%	$0	($7,109.00)	$889.63	$66.89	$0.00
45,616	$55,788	$62,539	($6,751)	-10.8%	$0	($7,800.32)	$976.20	$73.41	$0.00
49,660	$60,606	$67,955	($7,349)	-10.8%	$0	($8,491.86)	$1,062.73	$79.89	$0.00
53,699	$65,418	$73,365	($7,947)	-10.8%	$0	($9,182.53)	$1,149.16	$86.39	$0.00
Average Customer **57,742**	**$70,235**	**$78,780**	**($8,545)**	**-10.8%**	**$0**	**($9,873.87)**	**$1,235.68**	**$92.90**	**$0.00**
61,785	$75,052	$84,196	($9,144)	-10.9%	$0	($10,565.24)	$1,322.23	$99.41	$0.00
65,824	$79,864	$89,606	($9,741)	-10.9%	$0	($11,255.88)	$1,408.62	$105.90	$0.00
69,868	$84,682	$95,022	($10,340)	-10.9%	$0	($11,947.42)	$1,495.17	$112.42	$0.00
73,911	$89,499	$100,437	($10,938)	-10.9%	$0	($12,638.74)	$1,581.68	$118.91	$0.00
77,952	$94,314	$105,850	($11,536)	-10.9%	$0	($13,329.82)	$1,668.16	$125.43	$0.00

C & I HLF Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
37,970	$42,075	$47,014	($4,939)	-10.5%	$0	($5,828.39)	$812.54	$76.94	$0.00
42,061	$46,453	$51,924	($5,471)	-10.5%	$0	($6,456.37)	$900.09	$85.24	$0.00
46,151	$50,831	$56,834	($6,003)	-10.6%	$0	($7,084.15)	$987.65	$93.53	$0.00
50,240	$55,206	$61,741	($6,535)	-10.6%	$0	($7,711.85)	$1,075.13	$101.81	$0.00
54,329	$59,582	$66,649	($7,067)	-10.6%	$0	($8,339.50)	$1,162.62	$110.10	$0.00
Average Customer **58,418**	**$63,958**	**$71,557**	**($7,599)**	**-10.6%**	**$0**	**($8,967.16)**	**$1,250.16**	**$118.37**	**$0.00**
62,508	$68,336	$76,466	($8,131)	-10.6%	$0	($9,594.97)	$1,337.70	$126.66	$0.00
66,596	$72,711	$81,373	($8,662)	-10.6%	$0	($10,222.51)	$1,425.15	$134.94	$0.00
70,686	$77,087	$86,282	($9,194)	-10.7%	$0	($10,850.31)	$1,512.68	$143.24	$0.00
74,775	$81,463	$91,190	($9,726)	-10.7%	$0	($11,477.97)	$1,600.18	$151.53	$0.00
78,867	$85,843	$96,101	($10,259)	-10.7%	$0	($12,106.08)	$1,687.75	$159.81	$0.00

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Bill Impact Analysis with Various Levels of Consumption:

Current Distribution, GCR, DAC, Rates with Proposed ISR Rates from April 1, 2011 through October 2011

C & I LLF Extra-Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
189,450	$202,621	$230,824	($28,203)	-12.2%	$0	($32,395.97)	$4,054.25	$138.57	$0.00
209,855	$224,057	$255,298	($31,241)	-12.2%	$0	($35,885.19)	$4,490.88	$153.49	$0.00
230,255	$245,488	$279,765	($34,278)	-12.3%	$0	($39,373.63)	$4,927.46	$168.42	$0.00
250,655	$266,919	$304,233	($37,315)	-12.3%	$0	($42,862.00)	$5,364.02	$183.34	$0.00
271,059	$288,353	$328,705	($40,352)	-12.3%	$0	($46,351.11)	$5,800.69	$198.26	$0.00
Average Customer **291,462**	**$309,787**	**$353,177**	**($43,390)**	**-12.3%**	**$0**	**($49,839.99)**	**$6,237.28**	**$213.17**	**$0.00**
311,865	$331,221	$377,648	($46,427)	-12.3%	$0	($53,328.92)	$6,673.90	$228.10	$0.00
332,269	$352,655	$402,120	($49,464)	-12.3%	$0	($56,817.99)	$7,110.53	$243.03	$0.00
352,669	$374,086	$426,588	($52,501)	-12.3%	$0	($60,306.41)	$7,547.10	$257.94	$0.00
373,069	$395,517	$451,055	($55,538)	-12.3%	$0	($63,794.76)	$7,983.69	$272.89	$0.00
393,474	$416,953	$475,529	($58,576)	-12.3%	$0	($67,284.06)	$8,420.32	$287.80	$0.00

C & I HLF Extra-Large:

Nov - Oct Consumption (Therms)	Proposed Rates	Current Rates	Difference	% Chg	Base Rates	Difference due to: GCR	DAC Base DAC	DAC ISR	EnergyEff
184,661	$193,415	$217,665	($24,250)	-11.1%	$0	($28,345.45)	$3,951.74	$143.72	$0.00
204,549	$213,858	$240,720	($26,862)	-11.2%	$0	($31,398.27)	$4,377.36	$159.19	$0.00
224,435	$234,299	$263,772	($29,473)	-11.2%	$0	($34,450.77)	$4,802.93	$174.67	$0.00
244,321	$254,740	$286,825	($32,085)	-11.2%	$0	($37,503.28)	$5,228.47	$190.13	$0.00
264,206	$275,180	$309,876	($34,696)	-11.2%	$0	($40,555.60)	$5,654.02	$205.60	$0.00
Average Customer **284,094**	**$295,623**	**$332,931**	**($37,308)**	**-11.2%**	**$0**	**($43,608.43)**	**$6,079.61**	**$221.08**	**$0.00**
303,982	$316,066	$355,986	($39,919)	-11.2%	$0	($46,661.22)	$6,505.23	$236.57	$0.00
323,867	$336,506	$379,037	($42,531)	-11.2%	$0	($49,713.58)	$6,930.75	$252.05	$0.00
343,753	$356,947	$402,090	($45,142)	-11.2%	$0	($52,766.09)	$7,356.33	$267.50	$0.00
363,639	$377,388	$425,142	($47,754)	-11.2%	$0	($55,818.58)	$7,781.88	$282.99	$0.00
383,527	$397,831	$448,197	($50,365)	-11.2%	$0	($58,871.40)	$8,207.49	$298.47	$0.00

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Rhode Island ISR Plan
Bill Impact by Rate Class
(Average Usage)

Rate Class	Rate Impact April 1, 2011 to Oct 31, 2011	Annual Rate Impact
Res-NH	$1.51	$2.99
Res-NH-LI	$1.51	$2.99
Res-H	$2.44	$7.47
Res-H-LI	$2.44	$7.47
Small	$3.57	$11.80
Medium	$23.86	$67.89
Large LL	$92.90	$317.58
Large HL	$118.37	$239.51
XL-LL	$213.17	$670.36
XL-HL	$221.08	$426.14