BEFORE THE
RHODE ISLAND PUBLIC UTILITIES COMMISSION

DOCKET NO. 4770

SUPPLEMENTAL TESTIMONY OF JOHN G. ATHAS

ON BEHALF OF THE
RHODE ISLAND DIVISION OF PUBLIC UTILITIES AND CARRIERS

April 25, 2018

I. INTRODUCTION

Q. Please state your name, position, and business address.

A. My name is John G. Athas. I am a Principal Consultant and Vice President at Daymark Energy Advisors (Daymark). My business address is 370 Main St., Suite 325, Worcester, Massachusetts 01608.

Q. Are you the same John G. Athas who submitted testimony in Docket No. 4770 on April 6, 2018 on behalf of the Rhode Island Division of Public Utilities and Carriers ("Division")?

A. Yes.

Q. What is the purpose of your testimony?

A. My testimony evaluates certain issues related to the Revised Narragansett Electric Company's ("NECo" or "the Company") proposed electric rates filed in this docket. I focused my review on the Company's revised allocated cost of service study and revised proposed class revenue allocation and rate design presented in the testimony and exhibits of Company Witness Howard Gorman that were filed after the Company lowered its revenue requirement as a result of the change in the corporate tax rate and corrected its revenue requirement for an error identified by the Division. The new schedules were received on April 3 relating to the allocated cost of service study and other pricing schedules. For that reason, I am filing supplemental testimony to address certain identified rate design issues.

Q. Please summarize your findings regarding these issues.

A. I find that the Company's proposed fixed charge increase for residential customers is too aggressive and too fast. I recommend maintaining current fixed charges in anticipation that planned installation of Advanced Metering Infrastructure (AMI) will soon facilitate new and potentially more appropriate rate design mechanisms. I believe it is best to avoid making changes that could be unwound in the near term. I discuss tradeoffs among a variety of alternative rate designs that are feasible with

current metering technology, including a range of fixed charges and minimum bill amounts.

In addition, while I view that the consolidation of Rate G-62 customers with those in Rate G-32 is appropriate, the Company needs to capture this consolidation in a new ACOSS modeling.

Lastly, the residential rate increase should be more modest than the 16% proposed by the Company to approach an equal rate of return among the rate classes by applying some degree of gradualism that is tighter than the criterion applied by the Company.

Q. Are you sponsoring any schedules as part of your testimony?

A. Yes. I am sponsoring the following schedules:

JGA-S1 – Principle of Gradualism Illustration

JGA-S2 – Residential Costs Allocated by Customer Bill Count

JGA-S3 – Alternative Residential Rate Designs (Revised Filing)

JGA-S4 – Alternative Residential Rate Design Bill Impacts (Revised Filing)

JGA-S5 – Docket 4600 Rate Design Principles

II. ALLOCATED COST OF SERVICE STUDY

Q. What documents have you reviewed in your review and analysis of the Company's electric Allocated Cost of Service Study?

A. I have reviewed all the testimony in the application regarding the Company's allocated cost of service study (ACOSS), proposed class revenue allocation and rate design, and bill impacts. I have also issued discovery requests to the Company on the topics I have been requested to review. I have reviewed all responses to these requests and those from other parties pertaining to the topics I have been requested to review. My review focused on the revised testimonies and schedules of Howard S. Gorman (Book 12 of 17) in the areas of Cost of Service, Rate Class Allocations and Rate Design and those of Anne E. Leary and Scott M. McCabe (Book 15 of 17) the Pricing Panel. I have also reviewed the revised versions of Schedules HSG 1-5

and PP-2, filed April 3. The revised schedules were provided to me in PDF format, so I did not review revised electronic workpapers.

Q. Are there particular aspects of the Cost of Service Study you reviewed?

A. I reviewed the detailed working electronic version of the 2017 ACOSS model originally filed within this Application with respect to its consistency with the prior ACOSS model from 2012. In addition, I reviewed the changes to the ACOSS allocation methodology incorporated into the model as described in Gorman's Testimony[1]:

- *Transformer costs (Account 368) and related accumulated depreciation (Account 108), depreciation expense (Account 403), and Operation and Maintenance (O&M) costs (Account 595) are assigned based on the Transformer cost study presented in Schedule HSG 2D; in the past these items were allocated based on the average of the allocators NCP_Pri and NCP_Sec.*
- *Materials and Supplies is allocated based on Operating expenses, which more closely reflects the nature of the cost than the Plant allocators used in the past.*
- *Municipal taxes (Account 408) is allocated based on Net Plant, which more closely reflects the cost than the Plant allocators used in the past.*

Q. Are the changes in allocation methodology relative to the ACOSS submitted in the 2012 Rate Case appropriate?

A. Yes. I agree that these changes are appropriate and that they have only the slightest effect on the ACOSS results.

Q. Do you have any concerns about the Company's ACOSS methodology or the changes in the revised ACOSS?

[1] Gorman p 13 lines 9-17

A. No. The ACOSS methodology is consistent with prior Commission-approved studies from past rate cases, with a few logical changes. The selection and development of allocators appears reasonable and consistent with typical industry allocator choices between Customer and Demand. The few minor variations from studies in prior rate cases are well-explained (Gorman p 13, DPUC 17-5) and relatively minor in impact. In the revised filing the changed allocators affect only $75.9 million in rate base items and $30.9 million in operating cost items, and the difference in the allocators is relatively minor.

III. CLASS REVENUE ALLOCATION

Q. Describe the Company's original proposed revenue allocation to the customer classes.

A. The Company's proposal is provided in detail in Schedule HSG-3. Except for very small classes (lighting, propulsion), the Company originally proposed a direct one-step move to within 10 basis points (0.1%) of equalized rates of return. This approach resulted in a wide range of rate increases among classes, from no increase for Large Demand (>200 kW) Rate (G-32) to 21.6% for Residential and 24.3% for customers that would remain on the Optional Large Demand Rate (>5000 kW demand).

Q. How did the Company arrive at the proposed Class Revenue Allocations?

A. The Company initially looked at the class revenue allocation if all customer classes were brought to the overall Return on Rate Base of 7.43% requested in their application. The Company balanced the ratemaking principle of reflecting ACOSS results closely with the principle of gradualism. There were two checks made to see if this allocation was reasonable. The first check tested if the principle of gradualism needed to be applied to limit excessive rate increases resulting from achieving the equalized rate of return on rate base allocations. The Company did not find it necessary to alter the revenue allocation because of this check. The second check to apply gradualism did result in a small reallocation of $850,000 by

removing any class revenue decreases, which affected Street and Area Lighting Rates (S-05, S-06, S-10, and S-14), and Propulsion (X-01).

Q. How did the Company's proposed revenue allocation change in its April 3 revised filing?

A. The overall requested increase in total distribution revenue fell from 15.2% to 10.1%. The band around return on rate base at proposed rates is wider among the residential, C&I and large demand classes, ranging from 23 basis points below to 68 basis points above the target of 7.43%. Based on Schedule HSG-3 (REV-1) the Company appears to have applied the same excessive rate increase test, limiting increases to twice the overall average. No class was impacted. The second check to remove class revenue decreases appears to have changed. Though it is implied in row 31 that the minimum relative increase will be -2.0% (i.e. a decrease of not more than 2%), three classes have revenue decreases slightly exceeding 2.0% - 200kW Demand Rate G-32 (-2.6%), Lighting (-2.6%) and Propulsion (-2.1%). It is unclear what standard was used to determine these specific levels of reduction, which result in the reallocation of $1.6 million from these classes.

Q. Do you agree with the Company's proposed gradualism standard?

A. No. The Company did not find a need to reduce any class revenue allocations below the equalized rate of return except for crediting the redistribution of the $1.6 million added to the 200kW Demand G-32, Lighting and Propulsion rate classes. The Company's criteria for gradualism would only require reducing a class revenue allocation percent increase if it exceeds twice the overall revenue increase. In this rate case, as originally filed this would mean an individual rate class could be given an increase of over 30% (twice the 15% requested in revenue requirement increase). In the revised filing the class revenue increase would still be able to exceed 20% by this standard. I do not believe that this 2X criteria is applied to situations where there is a large overall percent increase requested. An 'extra' 15% increase in one step to get to cost of service as the 2X criterion cannot be viewed as gradual. This 2X criterion is a bit simplistic when applied to even the 10% overall increase as

requested in the revised filing. The change in the Residential Class rate as proposed was viewed by the Company in the original filing as acceptable with a 21.5% increase (an 'extra' 6%) since it was 'only' 1.42 times the average. In the revised filing residential is proposed for a 16.0% increase (an 'extra' 5.9%), or 1.57 times the average.

Q. Do you suggest an alternative class revenue allocation?

A. Yes, I would suggest that the amount of class revenue increase above the average should have a maximum difference and still be considered sufficiently gradual. I refer to this visual of increase above overall revenue requirement increase as 'extra' much as the public would perceive. I would suggest that a maximum 'extra' class revenue increase should be 4%. I suggest that this constraint be added to the 2X criterion, meaning we would stop using the 2X criterion when overall increases exceed 4% as it is in the revised filing. I would have proposed utilizing a 1.25X criterion on gradualism at the original filing level of a 15.2% overall rate increase. In addition, we need to look at the impact on the rate classes where the revenue requirement reduced would be reallocated. In the NECo application only the General C&I and Large Demand customer classes would be receiving less than the overall requested rate increase. I examined the revised Schedule HSG1-A. I believe that at the revised rate increase of 10.1% would allow the use of a 1.5X criterion which would result in a Residential Class rate increase of 14.8% or 1.2% below the Company's proposed 16%. The 1.2% reduction in the residential revenue would mean that the General C/I and Large Demand rate classes would see an additional increase by about 2.5%. I would not view this as an excessive reallocation. Thus, if a 10.1% overall increase was granted I would recommend that the Residential Class Revenue Allocation be set to a maximum of 14.8%, impacting other rate classes to an additional increase of less than 3%.

Q. Do you have a specific proposal for an alternative class revenue allocation?

A. No. I would suggest that the more detailed application of 'gradualism' I have just described be applied when the final amount of revenue increase is granted by the

commission. As an indicative matter Schedule JGA-S1 provides an example of how the revenue allocation would look based on the Company's proposed revenue increase based on the April 3 revised ACOSS.

Q. Are you suggesting that the size of the overall rate increase should tighten or loosen the tolerance for above average class specific rate increases?

A. When considered as a multiple of the overall average (e.g. "2X", 1.5X, etc), yes. As part of the original application by the Company a high rate increase was proposed for the Residential Class at 21.5% (with an average rate increase of 15.2%). The Company proposed to essentially allocate revenue to each rate class that would provide an equalized rate of return among the classes. The Company uses a criterion to test whether there is a need to moderate a class rate increase due to concerns about the increase exceeding a tolerance as to being gradual. The Company's criterion is that unless an individual class rate increase is greater than two times the average rate increase ("2X") that increase should be proposed unaltered. This would make individual rate class increases as high as 30.4% acceptable at the overall level of increase in the original filing. I submit that the appropriate use of a 2X criterion for applying the principle of gradualism should be when the average increase is 4% or less. When such a large average revenue increase of 15.2% is being requested, I would cap a single rate class increase using a 1.25X criterion. I would have suggested to cap the residential rate increase to 19% if an overall increase of the requested 15.2% was granted.

Since the average proposed rate increase by the Company in the Supplemental Filing is 10.1%, I propose that we can relax the criterion that limit the class revenue increases to 1.5X, which would provide for a maximum rate increase for the residential class to be 14.8%. This would require about $1.6 million to be taken from the residential class allocation to be allocated to the other classes. An illustrative class revenue allocation is provided in the table in Schedule JGA-S1. Also in this table, if the Commission granted only the $9 million revenue increase that is recommended by Division Witness Michael Ballaban, or a 3.3% overall

average rate increase, then my proposed criteria for applying gradualism would permit up to a 6.6% increase (i.e. 2X) to any one class if necessary to bring that class to an equalized rate of return.

VI. CONSOLIDATION OF LARGE DEMAND CUSTOMER CLASS

Q. What is the Company's proposal with respect to the current voluntary Rate G-62 (5,000 kW Demand)?

A. The Company has proposed the elimination of its voluntary Large Demand (>5000 kW) Rate (G-62). The Company has included this voluntary rate as a separate rate class in its ACOSS. The Revised 2017 ACOSS identified a revenue requirement for the test year that would exceed the expected revenue from current rates by 17.9% as shown in Schedule HSG – 1A (REV-1). The proposed class revenue allocation in Schedule HSG – 3 would utilize this higher revenue requirement and is proposed to be 18.3 higher than current rates. This rate level would result in the roughly one dozen customers currently opting for Rate G-62 to have significantly higher bills under G-62 than if they returned to Rate G-32. The Company anticipates that customers would elect to move these accounts back to Rate G-32. Thus, the Company has proposed eliminating the optional Rate G-62.

Q. What is your reaction to the cost allocation to Rate G-62 and the proposed elimination of the optional rate?

A. First, I view what the Company has is one Large Demand Rate class for customers over 200 kW demand (G-32) and an option for customers in the Large Demand class that are over 5000 kW demand to take service under G-62. The tariff does not prohibit a customer that had chosen G-62 from electing to go back to G-32. My understanding is that the advent of offering the Rate G-62 option was related to supporting economic development. I summarize my observations on the voluntary Rate G-62 below.

- The two rates are not differentiated in voltage level or any other aspect.
- G-62 has a larger customer charge (more than 20 times that of G-32), lower demand charge and no energy charge as compared with Rate G-32.

- Presumably this results in lower bills for those that elect G-62, or else the customer would likely return to Rate G-32.
- The Rate G-32 portion of Large Demand Customers has about five times the revenue requirement in the ACOSS of the Rate G-62 portion of Large Demand Customers.
- To align revenues with the ACOSS currently filed by NECo in this rate case, Rate G-32 customers would require essentially no increase, while Rate G-62 customers would require a 18.3% increase.
- Any rate design aimed at collecting an additional 18.5% in revenue from Rate G-62 customers while leaving Rate G-32 essentially flat would likely result in existing G-62 customers now having significantly higher bills than if they were on Rate G-32; in this case G-62 customers would almost certainly elect to go back to Rate G-32.
- Thus, the Company is proposing to eliminate optional Rate G-62. For rate design the ACOSS results from G-32 and G-62 were simply added without redoing the ACOSS or reassessing combined billing determinants. The combined rate class gets a 0.3% rate increase under the Company's proposed revenue allocation.[2]
- The Company's proposed rate design results in expected revenue from legacy G-32 customers that is 3.5% above revenues at current rates and expected revenue from legacy G-62 customers that is 18.3% below revenues at current rates.[3]

Q. Overall, do you find that a single rate class for all Large Demand customers over 200 kW as appropriate?

A. Yes. It is reasonable for the Company to return to just one class for Large Demand C/I customers over 200 kW. Since the rate was optional the Company always essentially had this same rate class with the same customer eligibility. I have found no evidence that this withdrawal of an opt-in rate class would unreasonably violate

[2] Based on analysis of Schedule HSG-3 (REV-1), rows 3 and 47.
[3] Based on analysis of Schedule HSG-3 (REV-1), row 3 and Schedule HSG-4-K (REV-1).

cost of service principles. In addition, I do not find the extremely high monthly customer charge of the current G-62 Rate design to be cost-based. Thus, the existence of that Rate Class was distorting pricing signals and its elimination provides better pricing signals in the future.

Q. Do you have any specific concerns?

A. Yes, the numbers I discussed above are based on the simplifying assumption that the cost to serve the combined rate class would be equal to the sum of the ACOSS results for the cost of service for each specific class, Rate 32 and Rate 62. It is unlikely that this would be the case, since it would only occur if each rate class had their non-coincident demand occur in the same hour. The Company should combine the loads of the two rate classes and then rerun their ACOSS model. I have made the observations above utilizing the Company's simple addition of the cost to serve each class since I do not expect a large deviation from a new ACOSS model run. It would not affect my support for consolidation of the two rate classes, but it would change the numbers in my class revenue allocation discussed earlier.

IV. RESIDENTIAL RATE DESIGN

Q. Do you have any updated analysis of the Company's proposed rate design for residential class based upon the revisions in the Company's April 3rd filing?

A. Yes. What follows is a similar discussion as to what was in my April 6th direct testimony, updated to reflect the information in the Company's April 3rd revised filing.

Q. What is the Company's proposed rate design for the residential class?

A. The Company has proposed increasing the A-16 residential class customer charge by 70%, from $5 to $8.50, and collecting the remaining revenue requirement from an increase in the volumetric charge from $0.03664 to $0.04159 per kWh, a 13.5% increase. The Company proposal would result in 27% of the residential revenue billed on monthly fixed charges. As I will discuss, the Company identifies the large monthly fixed customer charge as being cost of service based.

Q. How would you characterize the Company's proposed change to the customer charge?

A. It certainly is a very significant one-step increase. Current rates are designed to collect only 17% of residential revenue from fixed monthly charges. The increase from $5/month to $8.50/month makes for a major step toward collecting a lower percentage of revenue from volumetric charges. This significant increase in monthly fixed charge will disproportionately affect low use customers in terms of percent increase in bills that they will receive. Increasing low usage customers to this degree would violate the principle of gradualism for the low use customers.

Q. What is the Company's basis for proposing the significant increase to the fixed charge?

A. The Company's revised 2017 ACOSS filed on April 3rd determines that the amount of revenue allocated to the residential class as a function of number of customers is $9.38/month. This has increased from the $7.57/month in the 2012 ACOSS (+24%) and is essentially double the $5/month charge in the current A-16 residential rate. I have not found any specific rationale for $5/month charge as part of the 2012 rate case which was settled. I have prepared a table below and provide a more detailed table in Exhibit JGA-S2, that shows the costs that are driving the residential revenue requirement in customer-related costs. There are two categories of costs that are allocated to the residential class by number of bills/customers: Billing/Customer Service and Secondary Distribution System. The table shows that the revised 2017 ACOSS allocated $10.4 million more to the residential class as compared to the 2012 ACOSS. While there was a small ($1.2 million, or about +4%) increase in the Billing/Customer Service Costs, almost all the increase comes from increased revenue requirement of the secondary distribution system, $9.2 million (+114%). This secondary System cost increase comes in Service Drop-related accounts. This suggests that an increase in monthly fixed charges would be consistent with cost causation principles of a cost of service study.

REVISED Residential Costs Allocated on Customer Count

	2017 COS	2012 COS	Difference
Number of Bills -millions	5.285	5.172	
Secondary System			
$millions	17.2	8.1	9.2
$/month	3.26	1.56	1.70
Billing/Customer Service			
$millions	32.3	31.1	1.2
$/month	6.12	6.01	0.10
Total			
$millions	49.6	39.2	10.4
$/month	9.38	7.57	1.81

Q. Does the Company provide additional justification for a large increase in monthly fixed charge?

A. Yes, NECo in its original filing argues that a "maximum fixed monthly charge" for residential could also include demand related costs ($11.57/kW-month[4]) for the first 0.5 kW demand (amounting to $5.78/month) which is a level exceeded by essentially all residential customers (90% meet this level each month and 98% meet 0.50 kW at least one month per year). This would bring the total maximum fixed monthly charge to $15.79/month. The proposed $8.50/month fixed charge is 55% of that total.

Q. Do you agree that the Company's "maximum fixed monthly charge" is the appropriate cost of service metric for setting the customer charge?

A. No. This use of a minimum demand concept is imprecise, adversely affecting the customers (albeit 10% of the customers or less) that do not reach 0.50 kW.

Q. Are there alternative rate designs the Company could have considered?

A. Yes. Other rate design mechanisms might help the Company balance sometimes competing rate design principles more effectively. I note that options for alternative rate mechanisms are limited at this point due to metering infrastructure. Most

[4] Schedule HSG-1C-1, line 10.

residential meters currently in place would not collect the billing determinants necessary for certain rate designs such as time of use (TOU) rates, critical peak pricing, or demand charges. Plans to install advanced metering infrastructure will facilitate consideration of a greater variety of rate mechanisms in future rate cases. The minimum bill charge also is a mechanism that would be feasible with current metering infrastructure that could provide an alternative to the customer charge for ensuring collection of minimum fixed costs even from low usage customers.

Q. What does the use of 'minimum bill' mean and why is it considered?

A. If a minimum bill is used customers will be billed in any given month the amount calculated from the monthly fixed charge component and their energy usage or the approved minimum monthly bill, whichever is higher. Minimum bills can apply to the total bill or to certain subsets, such as distribution charges only. It is considered for residential rate tariffs to recognize that the costs associated with the distribution system are not directly related to energy usage, but rather a customer's maximum annual demand. Like most utilities, NECo does not include a demand charge component in its residential rates. The current meters do not record monthly demand for residential customers, and there can be challenges associated with residential class demand charges, most prominently in bill transparency and understandability. Some use of a minimum bill would help collect more revenue from fixed charges and ensure that each customer is contributing a monthly minimum toward fixed costs. The increased revenue collected from minimum bill levels is considered a fixed charge cost recovery mechanism. It is important to note that unlike utilities who are still vertically integrated generation, transmission, distribution and billing/customer service providers, in this testimony we are only applying minimum bill to NECo's distribution and billing/customer service charges.

Q. What range of monthly fixed charge should be considered for residential rate design?

A. Residential rate designs should be evaluated on several dimensions, with a focus on the rate design principles adopted by the Commission in Docket No. 4600 and discussed further in Section VI of my testimony below. Key principles relevant to setting monthly fixed charges include consistency with cost of service, continuity, and gradualism for residential customers with various usage levels, state energy policy and ease of implementation. I have developed a set of five alternative rate designs to compare with the Company's proposal for exploring some of key tradeoffs in rate design. The range of monthly fixed customer charge levels considered range from the current charge of $5/month to the Company's proposal of $8.50/month. I studied each customer charge with and without a minimum distribution bill (applied only to the customer charge and the base distribution per kWh charge, which are the charges tied to the ACOSS) of $9.38/month, which is the level of customer-related costs indicated by the ACOSS.

Q. Explain how you developed rate design alternatives to the Company's proposal.

A. I developed rates that would be expected to yield the same total revenue as the Company's proposed rates, based on the billing determinants in the Company's own proof of revenue calculations for A-16 and A-60.[5] The model for estimating minimum bill revenue is based on more granular bill frequency data[6] provided in response to data request DPUC 21-23. The bill frequency distribution was normalized to be consistent with the overall bill determinants used in proof of revenue. The increased granularity for bills with usage less than 300 kWh allowed for more focus on bill impacts at the lower usage end.

Q. Please describe the alternative rate design examples you considered.

A. I analyzed the Company's proposal in comparison to five alternative rate designs, based on the Company's original revenue requirement. I am updating my April 6th

[5] Schedule HSG-4-K

[6] Bill frequency data is for billed usage in 10 kWh increments up to 300 kWh, then following the same increments as the Company's bill impact analysis in Schedule HSG-5-A.

testimony to capture the revised filing by the Company and will need to supplement my testimony with new numbers. I considered three levels of customer charge: 1) the Company's proposed level of $8.50/month; 2) maintaining the current customer charge of $5/month, as recommended by the Division; 3) increasing the current customer charge by the same percentage that residential allocated class revenue filed ACOSS, yielding a customer charge of $5.80/month). The first three cases (1 – 3) use the customer charges described above, respectively, and solve for per kWh rates that yield the target revenue. Case 1 is the Company's proposal. The second set of three cases (1M – 3M) have the same customer charges as Cases 1 – 3 but also incorporate a minimum distribution bill of $9.38. The per kWh charges are once more solved for to yield the target revenue, accounting for additional fixed charge revenue resulting from the imposition of the minimum bill. The alternative rates are summarized in the table in Exhibit JGA-S3, along with the split in revenue collection between fixed and per kWh charges, and the maximum level of monthly energy usage that results in minimum bill adjustments. Total bill impacts are shown in Exhibit JGA-S4.

Q. Discuss the tradeoffs among alternative rate design examples that don't include a minimum bill.

A. Residential class revenue at current rates includes 17% collected through the fixed charge and the balance collected through per kWh charges, including revenue decoupling and CapEx ISR mechanisms.[7] According to the Company's ACOSS, 29% of residential cost of service revenue requirements are customer-related and 71% are demand-related. The Company's proposed customer charge moves rates the furthest toward cost of service for collecting customer-related costs through fixed charges, increasing fixed charge revenue to 27% of total. However, there are several key rate design principles that justify keeping fixed charges lower. First, looking at the bill impact analysis in Exhibit JGA-S4 highlights the significant impact higher fixed charges have on low usage customer bills. The Company's

[7] Based on Gorman workpapers, proof of revenue at present rates. Customer charges for A-16 and A-60 total $24,237,476 out of total revenue of $144,451,182.

proposal would cause total bill increases (including other delivery charges and standard offer service energy rates) of between 9% and 46% on A-16 customers using less than 200 kWh per month. In contrast, keeping the current fixed charge of $5.00 would keep total bill increases between 1% and 4% for customers using less than 200 kWh. A $5.80 customer charge falls in the middle, with increases ranging from 5% to 12% on customers using less than 200kWh. The bill impacts on A-60 customers are more pronounced due to the lack of a customer charge in current rates, but the impacts would also be phased in over 3 years. Another tradeoff that should be considered is the price signal on energy usage. In a two-part rate the energy charge varies inversely with the customer charge. A higher energy charge provides a stronger price signal for conservation by allowing customers greater control over their bills by reducing consumption.

Q. Discuss the tradeoffs among alternative rate design examples that include a minimum bill.

A. Cases 1M, 2M and 3M include a minimum bill of $9.38. The minimum bill at this level assures that each customer is paying at least the ACOSS-indicated level of customer-related cost each month. Due to the relatively small number of customers with low enough usage to be impacted by the minimum bill, it has little impact on fixed revenue collection or the energy rate. The bill impacts on low usage customers are significantly greater for all levels of customer charge.

Q. What are your recommendations on rate design?

A. There is no “right” answer when it comes to picking the appropriate level of fixed charge. As discussed, there are many tradeoffs among valid and important rate design principles that exist in tension with one another. In my opinion the Company’s proposed customer charge moves too far, too fast. As indicated earlier in my testimony, I recommend the Commission leave the fixed charge unchanged.

V. LOW INCOME SAVINGS APPROACH

Q. Has the Company's revised filing caused you to reconsider your recommendation on the way discounts for low income Rate A-60 customers are provided and recovered that was in your April 6th testimony.

A. No. My recommendations from my direct testimony remain unchanged.

VI. RATE DESIGN PRINCIPLES FROM DOCKET NO. 4600

Q. Has the Company's revised filing changed any of your findings or recommendations in your direct testimony with respect to rate design principles from Docket No. 4600?

A. No.

Q. Do you wish to further address the rate design principles from Docket No. 4600?

A. The Commission's Report and Order 22851 (issued July 31, 2017) in Docket No. 4600 adopted the above principles and required that any party proposing a specific rate design provide evidence addressing "how the proposal advances, detracts from, or is neutral as to each of the stated rate design principles listed above. Likewise, an opponent to a rate design proposal should also refer to these principles in developing its rationale" (Report and Order No. 22851 at 23). This supplemental testimony contains two key recommendations in opposition to the Company's proposed revenue allocation and rate design. I recommend that the proposed 70% increase in the residential fixed charge not be allowed, and I recommend that a more stringent criteria of gradualism be applied to reduce the maximum allowable rate increase for any one customer class in revenue allocation. Both of these recommended changes, on balance, advance the rate design principles adopted in Docket No. 4600. Exhibit JGA-S5 provides a summary of evidence for why each of my proposed changes either advances, is neutral to, or detracts from each rate design principle relative to the Company's proposal.

Q. Does this conclude your testimony?

A. Yes.

Proposal	*Company Application*	*Company April 3rd Revised Filing*	*Division Witness Ballaban*
Average Rate Increase Granted	*15.2%*	*10.1%*	*3.3%*
Residential Rate Increase for Equalized ROR	*21.5%*	*15.9%*	---
Max Residential increase using Company 2X Criteria	*30.4%*	*20.2%*	*6.6%*
Daymark Recommended criterion for Increase limit	*1.25X*	*1.5X*	*2X*
Daymark Recommended Maximum Residential Increase	*19.0%*	*14.8%*	*6.6%*

BillCus
Class Cost of Service Study ($000s)
Source: Sch. HSG-1F-5

Line Reference	ACCOUNT	RESIDENTIAL
	Billing Customer Cost in Rate Base	
20	Meters	32,234.38
21	Install on Cust Premises	104.13
28	General Plant	7,951
48	Depreciation Reserve	(29,403)
59	Other Rate Base	2,216
	TOTAL RATE BASE	13,101.85
	Billing Customer Cost Revenue Requirement	
	Annual Expenditures	
70	Dist Oper-Supervision & Eng	85.2
76	Dist Oper-Electric Meters	802.02
78	Dist Oper-Misc Expenses	264.46
79	Dist Oper-Rents	7.85
80	Dist Maint-Supervision & Eng	37
87	Dist Maint-Electric Meters	32
91	Supervision	604
92	Meter Reading Exp- Comp	216
93	Cust Recs & Coll	10,511
95	Misc Cust Acct	798
98	Cust Service-Supervision	25
99	Cust Assistance Expenses	460
100	Info&Instruct Advertising Exp	209
101	Cust Service-Misc Expenses	445
102	Demo & Selling Expenses	116
103	Sales-Misc Expenses	234
108	A&G-Salaries	3,132
109	A&G-Office Supplies	1,066
110	A&G-Outside Services	910
111	Property Insurance	218
112	Injuries & Damages Insurance	92
113	Employee Pensions & Benefits	4,117
114	Regulatory Comm Expenses	36
115	A&G-Misc Expenses	0
116	A&G-Rents	2,709
117	A&G Maint-Gen Plant-Elec	34
188	TOTAL ANNUAL EXPENDITURES	27,160

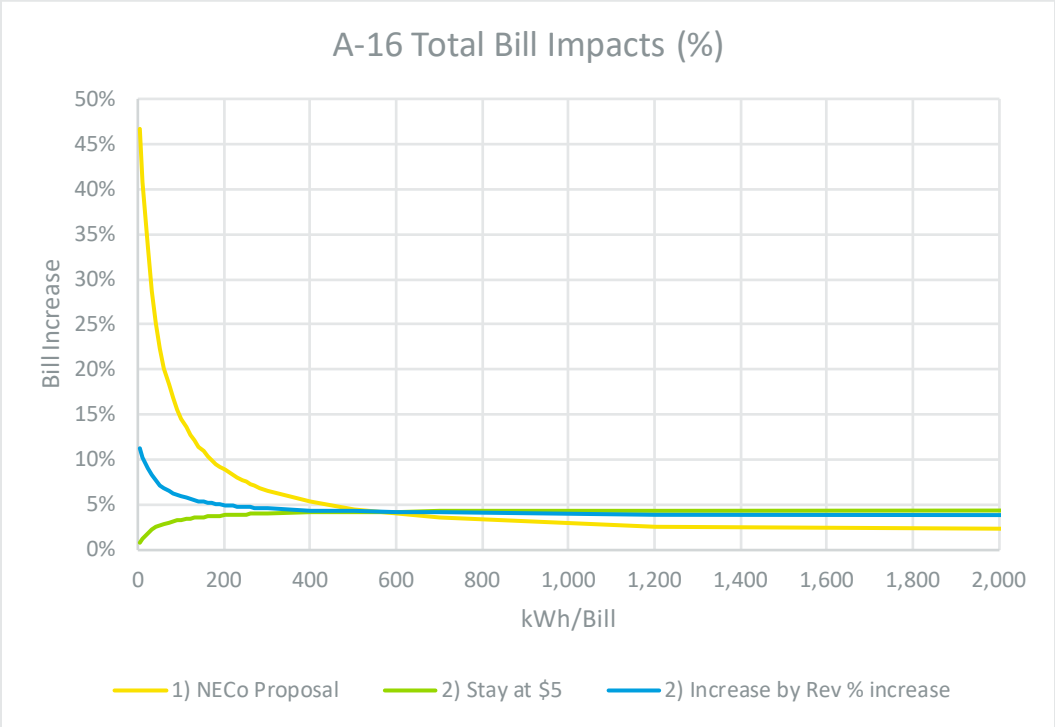
Revenue Requirements from Capital Expenditures

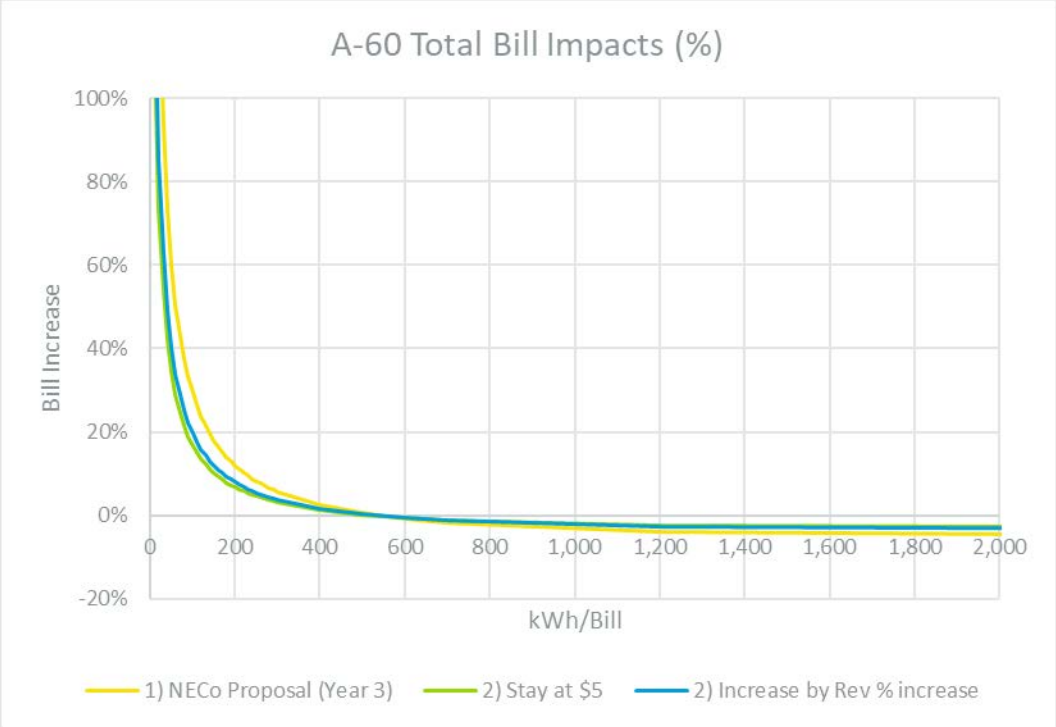
130	Meters	1,820
131	Install on Cust Premises	568
134	Net Additions and Retirements Depreciation	121.86
139	Municipal Property Tax	402.76
140	Payroll Related	700.15
141	Other Tax, Reg Deferrals	7
149	Interest on Customer Deposits	6
189	Uncollectibles-Delivery	377
194	Target Return on Rate Base	973
195	Income Taxes to Recover	195
	TOTAL REVENUE REQUIREMENT FROM CAPITAL INVESTMENT	5,191
199	TOTAL REVENUE REQUIREMENT FROM BILLING CUSTOMER	32,351

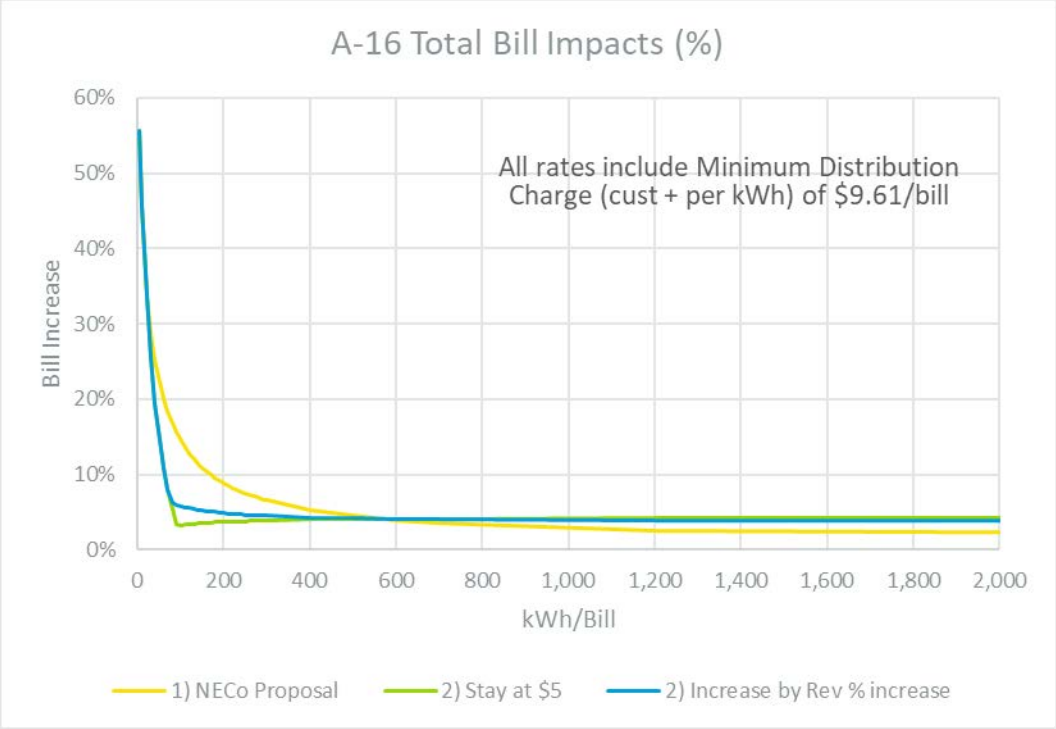
SecnCus
Class Cost of Service Study ($000s)
Source: Sch. HSG-1F-4

Line Reference	ACCOUNT	RESIDENTIAL
	Secondary Services Cost in Rate Base	
19	Services	95,006
48	Depreciation Reserve	38,958
59	Other Rate Base	(7,526)
61	TOTAL RATE BASE	48,522
	Secondary Services Cost Revenue Requirement	
	Annual Expenditures	
88	Oper. & Maint. Exp.	19
111	Property Insurance	515.22
112	Injuries and Damanges Insurance	217.07
114	Regulatory Comm Expenses	188.92
189	Uncollectibles - Delivery	189
	TOTAL ANNUAL EXPENDITURES	1,129
	Revenue Requirements from Capital Expenditures	
134	Net Additions and Retirements Depreciation	287
129	Services Depreciation	9,386
139	Municipal Property Tax	2,074
141	Other Tax, Reg Deferrals	35
194	Target Return on Rate Base	3,605
195	Income Taxes to Recover	724
	TOTAL REVENUE REQUIREMENT FROM CAPITAL INVESTMENT	16,111
199	TOTAL REVENUE REQUIREMENT FROM SECONDARY SERVICES	17,240

Case ID	Customer Charge	Cust Charge ($/cust-mo)	Energy Charge ($/kWh)	Min Distrib Bill ($/cust-mo)	Max kWh for Min Bill Impact	Revenue from Fixed Charges ($M)	Revenue from per kWh Charges ($M)	% Rev from Fixed	% Rev from per kWh
Rate Designs WITHOUT minimum distribution bill									
1	NECo Proposed ($8.50)	$ 8.50	0.04159	$ -	n/a	$ 44.92	$ 122.55	27%	73%
2	Stay at Current ($5)	$ 5.00	0.04787	$ -	n/a	$ 26.42	$ 141.05	16%	84%
3	Increase by % class rev incr. (16%)	$ 5.80	0.04643	$ -	n/a	$ 30.65	$ 136.82	18%	82%
Rate Designs WITH minimum distribution bill									
1M	NECo Proposed ($8.50)	$ 8.50	0.04157	$ 9.38	21	$ 44.98	$ 122.49	27%	73%
2M	Stay at Current ($5)	$ 5.00	0.04761	$ 9.38	92	$ 27.18	$ 140.29	16%	84%
3M	Increase by % class rev incr. (16%)	$ 5.80	0.04625	$ 9.38	77	$ 31.20	$ 136.28	19%	81%


A-16 Total Bill Impacts (%)
Bill Increase
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
0
200
400
600
800
1,000
1,200
1,400
1,600
1,800
2,000
kWh/Bill
1) NECo Proposal
2) Stay at $5
2) Increase by Rev % increase


A-60 Total Bill Impacts (%)
Bill Increase
100%
80%
60%
40%
20%
0%
-20%
0
200
400
600
800
1,000
1,200
1,400
1,600
1,800
2,000
kWh/Bill
1) NECo Proposal (Year 3)
2) Stay at $5
2) Increase by Rev % increase


A-16 Total Bill Impacts (%)
All rates include Minimum Distribution Charge (cust + per kWh) of $9.61/bill
Bill Increase
60%
50%
40%
30%
20%
10%
0%
0
200
400
600
800
1,000
1,200
1,400
1,600
1,800
2,000
kWh/Bill
1) NECo Proposal
2) Stay at $5
2) Increase by Rev % increase

Docket 4600 Rate Design Principle	Proposed Rate Design Change from NECo Proposal	
	Reduced Residential Fixed Charge	**Lower maximum class increase in revenue allocation**
1. Ensure safe, reliable, affordable, and environmentally responsible electricity service today and in the future	Advances – higher energy price signal supports conservation. Affordability enhanced for low usage customers. Neutral – Revenue stability concerns (affecting safety/reliability) mitigated by existing revenue decoupling mechanism (RDM).	Neutral – no impact on overall revenue.

Docket 4600 Rate Design Principle	Proposed Rate Design Change from NECo Proposal	
	Reduced Residential Fixed Charge	**Lower maximum class increase in revenue allocation**
2. Promote economic efficiency over the short and long term	*Advances* – In the long-term the distribution system will evolve based oninvestment in distribution equipment. A lower fixed charge promotes alternatives to consumption and reliance on the distribution system. *Detracts* - In the short-term distribution system avoided costs due to consumption changes are minimal. A lower fixed charge will set a per kWh price signal that is too high from a strict economic efficiency perspective in the short-term.	*Advances* – Excessive one-time rate increases to the residential class could induce "rate shock" that may drive economically inefficient over-reaction in the short- and long-term. *Neutral* - Over the long term subsequent rate cases could bring class revenue allocation closer to equalized rates of returns.
3. Provide efficient price signals that reflect long-run marginal cost	*Neutral* – long-run marginal costs not studied.	*Neutral* – long-run marginal costs not studied.

Docket 4600 Rate Design Principle	Proposed Rate Design Change from NECo Proposal	
	Reduced Residential Fixed Charge	**Lower maximum class increase in revenue allocation**
4. Future rates and rate structures should appropriately address "externalities" that are not adequately counted in current rate structures	*Advances* – higher price signal on electricity usage likely reflects some of the higher consumption price signal that the would come with the incorporation of externalities.	*Neutral* – different impacts on different classes.
5. Empower consumers to manage their costs	*Advances* – Customers cannot manage fixed charges, but can manage usage through conservation or distributed energy resources.	*Neutral* – different impacts on different classes.
6. Enable a fair opportunity for utility cost recovery of prudently incurred costs and revenue stability	*Neutral* – Does not impact expected utility cost recovery – deviations in actual rates revenue mitigated by RDM.	*Neutral* – revenue allocation not expected to affect overall cost recovery.
7. All parties should provide fair compensation for value and services received and should receive fair compensation for value and benefits delivered	*Detracts* – slightly greater departure from cost causation principle.	*Detracts* – slightly greater departure from cost causation principle.

Docket 4600 Rate Design Principle	Proposed Rate Design Change from NECo Proposal	
	Reduced Residential Fixed Charge	**Lower maximum class increase in revenue allocation**
8. Be transparent and understandable to all customers	*Neutral* – no change in rate design structure. *Advances* – large increase in customer charge may increase customer dissatisfaction.	*Advances* – mitigates rate shock from extreme rate increases.
9. Any changes in rate structures should be implemented with due consideration to the principle of gradualism in order to allow ample time for customers (including DER customers) to understand new rates and to lessen immediate bill impacts	*Advances* – Reduces bill impacts on low usage customers from rapid fixed charge increase.	*Advances* – This change is an implementation of a more realistic and less simple principle of gradualism by mitigating particularly large percentage rate increases for any single class.
10. Provide opportunities to reduce energy burden, and address low income and vulnerable customers' needs	*Advances* – reduces bill impacts for low usage low income customers. Greater price signal in energy rate gives greater opportunity for savings through conservation and community solar participation.	*Advances* – reduces rate increase on low income residential customers.

Docket 4600 Rate Design Principle	Proposed Rate Design Change from NECo Proposal	
	Reduced Residential Fixed Charge	**Lower maximum class increase in revenue allocation**
11. Be consistent with policy goals (e.g. environmental, climate (Resilient Rhode Island Act), energy diversity, competition, innovation, power/data security, least cost procurement, etc.)	*Advances* – higher per kWh rate incentivizes conservation and provides stronger investment signal for distributed energy resources.	*Neutral* – not applicable to revenue allocation.
12. Rate structures should be evaluated on whether they encourage or discourage appropriate investments that enable the evolution of the future energy system	*Advances* – Maintains flexibility to take advantage of future AMI to re-allocate per kWh revenues to alternative design mechanisms such as TOU.	*Neutral* – Since this change is part of a zero-sum game to allocate approved revenue requirement levels it has counterattacking affects among the rate classes