STATE OF NEW HAMPSHIRE

BEFORE THE

NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

DOCKET NO. DE 19-057

REQUEST FOR PERMANENT RATES

REBUTTAL TESTIMONY OF PENELOPE McLEAN CONNER

AMR Deployment and Customer Issues

On behalf of Public Service Company of New Hampshire

d/b/a Eversource Energy

March 3, 2020

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I. INTRODUCTION

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

A. My name is Penelope McLean Conner. My business address is 247 Station Drive, Westwood, Massachusetts 02090. I am Chief Customer Officer and Senior Vice President of the Customer Group for Eversource Energy Service Company.

Q. What are your principal responsibilities in this position?

A. As Chief Customer Officer and Senior Vice President, I am responsible for overseeing all aspects of customer services, including planning and directing all activities related to the processes of customer inquiries, billing, credit and collections, and field operations, and also for delivering a cost-effective portfolio of energy efficiency programs to customers of the gas and electric companies of Eversource Energy ("Eversource"), including Public Service Company of New Hampshire d/b/a Eversource Energy ("PSNH" or the

"Company"). I lead a team of 1,400 employees and manage a $120 million annual budget. I am testifying in this proceeding on behalf of PSNH.

Q. Have you previously submitted testimony in this proceeding?

A. Yes. On May 28, 2019, I submitted direct, pre-filed testimony on the Company's customer experience initiatives and introduced the Company's proposals for a "fee free" credit/debit card payment system and for implementation of an arrearage forgiveness program. My testimony also provided a discussion of the Company's 2013 project to transition to an automated meter reading ("AMR") system from the old mechanical manual meter system. My initial testimony included a description of my educational and professional background

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony responds to several issues raised in the testimony of the Commission Staff, the Office of Consumer Advocate ("OCA") and others related to the Company's 2013 AMR deployment, as well as to issues raised regarding the Company's fee free proposal and New Start arrearage forgiveness proposal.

Q. Please provide an overview of your rebuttal testimony.

A. In Section II, I address the Company's AMR deployment, including the recommendation by Staff Witness Richard Chagnon to allow recovery of the Company's meter investments "subject to adjustments after a more detailed investigation of all meters and associated equipment (Account 370) and associated costs (e.g., IT upgrades) by Staff" (Chagnon Test., at 34). The Company appreciates this recommendation as the Company has presented substantial evidence demonstrating that the decision, at the time it was made,

was the appropriate, cost-justified plan to address the approaching obsolescence of PSNH's legacy metering plant and to reduce operating cost. The Company recognizes that it took time for the Company to investigate, confirm and present information on the steps taken to account for meter-plant retirements and that Mr. Chagnon did not receive necessary information until just before Staff's testimony was due to be filed.

For this reason, the Company recognizes Staff's interest in further investigation of this issue. However, the record developed on this issue now contains the appropriate substantial evidence to support a final determination at this time that the Company's legacy meter investments were properly retired and accounted for; that the costs of the new AMR metering plant included in rate base was prudently incurred; and that the AMR metering plant is used and useful in the service of customers. Therefore, the Company is suggesting that there is a basis for concluding this issue in this case and the Company stands ready to provide any further explanation that may be necessary to accommodate this result.

The balance of Section II responds in detail to a number of false assertions and speculation by OCA witness Paul J. Alvarez that the Company did not demonstrate that its AMR deployment was necessary; should have pursued installation of retrofit "radio modules" as a least cost option; and, if it were to replace its meters, should have installed "industry standard technology," meaning advanced metering infrastructure ("AMI"), offering interval usage data available (Alvarez Test. at 5). My testimony demonstrates that the Company's AMR installation in 2013 enabled substantial operating cost savings and was necessary to replace a mechanical meter system approaching obsolescence, with almost

one-third of the legacy meters at or beyond the 35-year depreciated lifespan, and almost 50 percent of the meters older than 20 years. Approximately 80 percent of the meter inventory was older than 10 years.

My testimony also discredits Mr. Alvarez's radio-module retrofit concept, showing that -- in 2013 -- this was not a viable option because these types of modules were not available in the market; would have been more costly than represented by Mr. Alvarez even if the units were available; and would have been operationally inferior, as demonstrated by industry experience.

Regarding AMI, my testimony demonstrates that AMI was not "industry standard technology" in 2013; was not a viable alternative to the Company's AMR project in 2013; and, in fact, would have cost in excess of $200 million to achieve the functionality espoused by Mr. Alvarez, as compared to the $38 million AMR installation – which seven years later remains the appropriate choice. The Company's AMR installation yielded quantifiable cost savings associated with the elimination of manual operations. Further, it was reasonable to move forward with the AMR initiative because it takes time for new rates to incent behavior and it was unclear at the time whether the ultimate solution could be more dynamic than time-varying rates ("TVR"). Today, Eversource can accomplish peak load reduction without TVR, and with the maturation of demand management programs, such rates are not necessary to support customer participation in these programs. Moreover, Mr. Alvarez's claims supporting AMI in this proceeding are in direct conflict with claims he has made opposing AMI in other jurisdictions.

In Section III of my testimony, I address several customer-related issues, including suggested modifications of the Company's fee free proposal and New Start arrearage forgiveness proposal by Staff witness Amanda Noonan (Noonan Test. at 2-3). PSNH appreciates the Staff's support of fee free and New Start and the constructive nature of Staff's recommendations. My testimony provides a brief response and path forward to address Staff's suggested modifications to these proposals. Regarding fee free, the recommendation to expand the program to include recurring payments remains problematic because it introduces the potential for larger than planned customer adoption, which would result in larger costs to be borne by rate payers. Regarding New Start, Staff makes a number of recommendations related to program implementation that the Company is open to discussing in an appropriate stakeholder process.

Lastly, Section III provides a brief response to several issues raised by Roger D. Colton on behalf of The Way Home, an intervenor in this proceeding, which proposes numerous modifications to the Company's New Start arrearage forgiveness proposal and also makes recommendations on service disconnections, customer communications, and deferred payment arrangements (Colton Test. at 5-8).

Q. Are you sponsoring any attachments through your rebuttal testimony?

A. Yes. The table below lists the attachments I am sponsoring through my rebuttal testimony:

Attachment	Description
Attachment-PMC-Rebuttal-1	Annual Meter Report, Year-Ending Sept. 1, 2012
Attachment-PMC-Rebuttal-2	Listing of Installed Meters by Purchase Year
Attachment-PMC-Rebuttal-3	2010 EPRI Report on the Accuracy of Digital Meters
Attachment-PMC-Rebuttal-4	Sensus Communication Regarding Radio Modules
Attachment-PMC-Rebuttal-5	Illustrative Cost Comparison of AMR to Radio Modules
Attachment-PMC-Rebuttal-6	AEP Ohio AMR Implementation
Attachment-PMC-Rebuttal-7	Article by Green Tech Media

II. AMR DEPLOYMENT

Q. Please describe Staff's recommendation related to the Company's meter investments.

A. Staff recommends allowing recovery of the Company's meter investments "(including all meter types—e.g., AMR, probe, AMR-bridge) *subject to adjustments after a more detailed investigation* of all meters and associated equipment (Account 370) and associated costs (e.g., IT upgrades) by Staff" (Chagnon Test. at 34) (emphasis added). Staff raises concerns regarding the level of information provided in my initial testimony and timing of the Company's discovery responses on this topic (Chagnon Test. at 33-34).

Q. Does the Company have a response to Staff's recommendation?

A. Yes. Again, the Company appreciates the reasoned approach demonstrated by Mr. Chagnon. If the Commission were to adopt Staff's recommendation to allow cost recovery subject to further investigation, the Company would certainly support Staff's investigation. However, the record evidence submitted by the Company on AMR (albeit coming late in the process in some cases, and in some instances required to clarify prior responses) is detailed and comprehensive and supports a final determination in this rate case that the

Company's meter investments are used and useful and the costs were prudently incurred. The 2013 AMR project was undertaken pursuant to a detailed business-case analysis that identified AMR with a drive-by data-collection system as the best option for customers based on information available at the time regarding cost, functionality and ease of integration with existing systems. As I explained in my initial testimony, the Company's guiding principle in making these types of investments is to adopt technologies that enable the Company to perform work more efficiently, more accurately, and at the lowest cost balanced with safety and reliability. The business-case analysis indicated that, once completed, PSNH would realize operational efficiencies and associated reductions in operating and maintenance ("O&M"), estimated at approximately $6 million per year, constituting a substantial upgrade in service for customers.

Q. What is the Company's concern with the Staff's recommendation?

A. It appears to the Company's that Staff's perspective is rooted, at least in part, in the notion that it had issued a "warning" to the Company that it would bear the burden of establishing the prudence of its AMR investment (Chagnon Test. at 32), although Staff agrees that pre-approval of these investments was not required (Eversource-Staff 4-007). Staff notes its concern that PSNH made its decision in 2013 to invest in AMR meters "incapable of adapting to future changes and the benefits of a smarter grid" (Chagnon Test. at 33), with the implication being that the Company should have waited to potentially deploy a different technology, such as AMI. However, seven years later, the State of New Hampshire has still not moved forward on grid modernization policies that would require AMI, and the

timeline of potential developments in areas such as peak-demand reduction and TVR is uncertain. In fact, the New Hampshire energy efficiency plans are examining the demand management programs that Eversource has deployed in Massachusetts, which do not require AMI and work very well with the AMR system. Moreover, it is well-recognized that any implementation of full-scale AMI will require the development and completion of a thorough cost-benefit analysis evaluating a range of hard-to-quantify benefits, which would be subject to discussion and debate with key stakeholders. This is a process could take several years and is not yet commenced.

Conversely, the Company was able to install new, efficient and effective metering technology across the distribution system beginning in 2013, and customers have benefitted from both the operational upgrade and attendant cost reduction over that time period, and will continue to do so going forward while the next generation metering technology is debated, investigated, decided upon, developed and installed, which will take many years, even if started today. That said, the Company agrees that its meter investments must meet the Commission's standard for cost recovery. The Company recognizes that, although the Company has worked hard to provide evidence that its investments do, in fact, meet this standard, further discussion may be warranted to finalize the collective understanding of what the Company has done to account for the retirements of the legacy metering plant. However, this is a relatively narrow, limited aspect of the overall issue and the Company anticipates that, if focused on prior to the conclusion of this case, a collective

understanding could be reached that would allow this issue to be resolved with clarity so that both Staff and PSNH management could focus on future operations.

Q. In the testimony of Mr. Alvarez, does OCA recommend disallowance of the Company's AMR investments?

A. Yes. Mr. Alvarez argues that PSNH's investment in AMR technology was imprudent and that cost recovery should be denied (Alvarez Test. at 5). Mr. Alvarez argues that the Company did not demonstrate that its AMR deployment was necessary; that it should have pursued installation of retrofit "radio modules" as a least cost option; and, if it were to replace its meters, that it should have installed "industry standard technology," meaning advanced metering infrastructure ("AMI") that would enable interval data collection and the implementation of time-varying rates (Alvarez Test. at 5). I respond to each of these claims in the balance of this section of my testimony.[1]

Q. What is your response to OCA's first claim that PSNH has not demonstrated that meter replacement was necessary?

A. This claim is not correct. The record shows that, in the third quarter of 2012, Eversource formed a cross-organizational team to examine the feasibility of migrating from an entirely manual meter reading process to an AMR system. As part of that process, the Company assessed the age and functionality of its existing meters at the time, the vast majority of which were aging, mechanical meters. Based on the Company's annual meter report to the

[1] Mr. Alvarez also claims that the Company's project was "biased and calculated to forestall interval usage data availability" and that it "harmed customers and markets in defiance of New Hampshire law and policy" (Alvarez Test., at 5); however these specious claims are subsumed by his AMI argument.

Commission for the year ending September 30, 2012 (Attachment PMC-Rebuttal-1), tests concluded that approximately 3,500 meters or 0.63 percent of the meter inventory were out of tolerance limits at that time. In addition, PSNH had 56,570 meters that were installed prior to 1962 (i.e., or over 50 years of age), representing approximately 10 percent of installed plant. A total of 188,242 meters (or 33.4% of installed meters) were beyond the 35-year depreciated lifespan. Attachment PMC-Rebuttal-2 provides a listing of installed meters by purchase year.

Moreover, Eversource's analysis in 2012 recognized that mechanical meters by their nature slow down over time, impeding accuracy. In contrast, solid state meters, have a shorter expected lifespan (approximately 20 years per the manufacturer) but keep their accuracy longer over time. In addition, solid-state meters eliminate the drifting problems between the meter's register and the AMR read that can occur with mechanical meters, capturing usage (and revenue) that is generally lost. As a result, solid state meters are now the industry standard (see, Attachment PMC-Rebuttal-3 for an EPRI report from May 2010 on the Accuracy of Digital Meters).

Further, PSNH's legacy metering infrastructure included thousands of meters that had only *four* dials/digits of active kWh information available for meter reading and billing versus the standard of *five* dials/digits, which provides expanded measuring capabilities. These 4-dial meters cause customer confusion and required manual multiplier procedures, prone to user input and interpretation error. With the implementation of the AMR related 5-dial

standard, measuring was implemented that eliminated customer confusion and billing errors.

Lastly, beyond the physical condition of the mechanical meter system, the Company's analysis also showed that meter replacement was necessary to obtain substantial cost savings and operational efficiencies.

Q. What is your response to OCA's second claim that, while the meters PSNH installed eliminated manual meter reading, the technology deployed was not the least cost means to do so?

A. This assertion is incorrect and largely based on Mr. Alvarez's speculation. At the time of the team's review in 2012, Eversource's electric and gas subsidiaries in Connecticut and Massachusetts obtained their monthly meter reading data through AMR meters using "drive-by" technology, in which vehicles with radio receivers and laptop computers drive near each meter and the radio signal from the meter transmits the reading to the vehicle, which is later uploaded to the billing systems. The legacy Northeast Utilities companies (The Connecticut Light and Power Company ("CL&P"), Yankee Gas Service Company and Western Massachusetts Electric Company ("WMECO")) used MVRS and Fieldnet software to obtain and process the readings up to the C2 billing system. The NSTAR companies (NSTAR Electric and Gas) used software from Itron FCS to process the reads in a similar manner. At the time that the AMR decision was made, the Eversource team reviewed three primary solutions to the automation of PSNH's meter reading, which included: (1) an AMR system; (2) an AMR/AMI "bridge" option; and (3) a full AMI system. The team determined that an AMR system would provide the most benefits at the

least cost by installing a system utilizing AMR meters and drive-by vehicles to obtain the monthly meter readings. This solution leveraged past Company integration efforts, which successfully assimilated the AMR meter data into the Company's legacy C2 billing system and Meter Data Management ("MDM") system.

Q. What did the Company conclude regarding the other options?

A. As the review progressed into the first quarter of 2013, the Company concluded that it would not select the "bridge" option (e.g., remote reading capability and the ability to convert from one-way to two-way communications) because the bridge meter was more expensive (approximately 52% higher at the time than an AMR meter); costs would have to be incurred to utilize them to obtain interval data; and a significant additional cost would be needed to develop a communications network to support full AMI deployment. Similarly, the third option, full AMI deployment, was also ruled out due to the higher cost of the AMI meters, but also due to the costs of design, development and deployment of a sophisticated communications network, as well as associated required upgrades to the billing system, MDM and other system interfaces. I discuss AMI in more detail below.

Q. Did you examine Mr. Alvarez's claim that other technologies existed at the time that were lower cost?

A. Yes, I have examined this claim in great detail. Mr. Alvarez states that, if PSNH's primary goal was to eliminate meter reading operations, "the least cost way to do so in 2013 would have been to add *radio modules* to the existing meters" (Alvarez Test. at 9) (emphasis added). He speculates that radio modules would have had the same functionality as the

Company's AMR (although he concedes that radio modules "have fallen out of favor today") (Alvarez Test. at 9). He also speculates that in 2013 there were likely "millions of mechanical meters retrofitted with AMR in service in the US" and that "[r]etrofit options were offered by major manufacturers like Sensus and Itron," at a small cost per module (Alvarez Test. at 9). These assertions are incorrect.

Q. Why are Mr. Alvarez's assertions incorrect?

A. The radio modules described by Mr. Alvarez *were not available in 2013* and had been discontinued for sale by the manufacturer in 2005. In addition, even if available, radio modules would have been more costly than the AMR installation and operationally inferior.

Q. Please explain.

A. The "radio module" described by Mr. Alvarez is an encoder receiver transmitter ("ERT"), which was a "packet radio" protocol developed by Itron for automatic meter reading. The technology was used to transmit data from utility meters over a short range so a utility vehicle is able to collect meter data without a worker physically inspecting each meter. Itron invented and patented the ERT, and therefore Itron would have had to license any other provider making or selling such units. In August 2004, Itron granted a license to Hunt Technologies, Inc. (now a Landis+Gyr company) to manufacture and sell ERTs, but it was only to install ERTs in original manufacturing of solid-state meters. Itron announced "End of Sales" of its ERTs in October 2005. Last orders were accepted in December 2005 and had to ship by March 2006. As a result, the radio module product espoused by Mr. Alvarez had not been available for approximately seven years at the time of PSNH's AMR

deployment in 2013. Itron has informed the Company that it is not aware of any other entity manufacturing or selling retrofit ERTs after 2010. Eversource stopped buying mechanical ERT meters around 2002.

Q. What about Mr. Alvarez's claim that Sensus also provided a retrofit option?

A. Sensus never sold ERTs. Attachment PMC-Rebuttal-4 provides an email from a company representative to that effect.

Q. Beyond the fact that ERTs were unavailable in 2013, what is your basis for concluding that the radio modules would have been a more costly option?

A. The lack of availability of the product alone discounts the radio module as a viable alternative. However, even if the units were available, the cost would have been substantially higher than the Company's AMR project. The last Itron ERT models available in 2005 that may have been suitable for retrofit in most of the PSNH meter population were the ERT II 45ER-1 and ERT II 45ES-1. These units sold for $48 each according to the 2004 Itron price book. To retrofit the ERT into a typical single-phase mechanical meter, Itron would have charged $14 per meter for the retrofit, calibration and testing, and another $1.70 for bar coding, meter handling and packaging, for a total of $15.70 per retrofitted meter. These prices are also extracted from the Itron price book. This means that for the Company's approximately 552,000 meters, the total cost of ERTs and retrofit would have been $63.70 per meter, which equates to $35,162,400. This is $8,361,400 more costly (25%) than new AMR meters, which were purchased for $32.25 per meter.

In addition, PSNH would have had to purchase a minimum of 35,000 "seed stock" meters for about $1.4 million. These meters would have been purchased at a minimum cost of $40.00 per meter to support "single-trip" install work while the old meters were sent to Itron and retrofitted, and then returned to PSNH to be staged for deployment. Without the seed stock to cover rotation time, each meter in the field would have had to be visited twice, once to remove the meter to be retrofitted and install a temporary meter, and again to remove the temporary meter and install a permanent retrofitted meter. This also would have resulted in two service interruptions for the customer.

Because each existing meter would also have been sent back to Itron for the retrofit work, there would also have been an increase in the installation costs, which include meter shipping and transportation. This would have included the packaging of each removed meter; transportation to the Itron facility in South Carolina; handling; packaging; and, return shipping to New Hampshire. This is estimated to have cost an additional $3.7 million.

Further, Meter Acceptance Testing costs would have increased by about $522,000 or 20 percent. The Company tests 10 percent of shipments from the vendor, which includes receiving the pallets, breaking them down, selecting meters from each pallet for testing, performing the testing, comparing results within acceptable values, repackaging the tested meters, and shipping them to the facility from which they will be deployed. AMR meters equated to about $40.50 per meter while ERT retrofitted mechanical meters would equate to about $50.00 per meter. The Company likely would have tested more than 10 percent

in the ERT scenario because there would have been a greater potential for errors and issues with retrofitted mechanical meters. However, even without testing greater numbers the testing time would be increased on mechanical meters and in particular where issues are encountered as it takes considerable time to adjust these meters back into acceptable tolerances.

Q. What is the bottom line regarding the claim that radio modules would have been a lower cost alternative?

A. There are no reductions in any of the categories of project costs as compared to AMR implementation; instead, only increases. The Company estimates that this option would have increased costs by about $13 million, or a 25 percent increase in the project costs. Attachment PMC-Rebuttal-5 provides a high-level illustrative cost comparison for purposes of this proceeding of the Company's AMR project to a retrofit of radio modules.[2]

Q. Beyond product availability and increased costs, are there operational reasons why retrofitting old meters with radio modules would not have been a viable option?

A. Yes, there were many additional reasons why this would not have been a viable option, including:

1. Age of the Meters: Many of PSNH's mechanical meters were near, at, or beyond their useful service life, and some meters were too old to be retrofitted with radio modules due to their construction/design. Some meters were likely

[2] Mr. Alvarez speculates that "the cost of retrofitting a drive-by system in 565,000 existing meters would probably have been less than $20 per meter" (Alvarez Test. at 10-11). However, he provides no cost data or documentary evidence to support his claim.

not compatible with any manufactured retrofit devices.

2. Performance: The measurement accuracy of new solid-state meters is significantly better than the older electromechanical meters. There have been cases where the mechanical dial readings did not match the ERT transmitted usage due to a variety of reasons, not all of which represent a malfunctioning meter or ERT, which led to billing issues/concerns.

3. Support: Original ERT suppliers had phased-out production and support for retrofit products and therefore PSNH would have been purchasing and deploying products that were obsolete even before they were deployed.

4. New Features – Application Flexibility: The solid-state meters offered more application flexibility and features than electromechanical meters, such as bidirectional (net) metering, time-of-use, demand with remote reset capability, event logs, programmability, self-monitoring/error/tamper codes, and similar features.

Q. What is your response to OCA's third claim that if PSNH were to replace its meters, it should have used "industry standard technology (i.e., advanced metering infrastructure)" offering interval usage data?

A. AMI was not "industry standard technology" at the time of the Company's AMR deployment. In fact, in 2012-2013, a number of other companies were installing AMR systems. For example, AEP Ohio had commenced an initiative to expand installation of AMR in its service territory to approximately 204,000 customers. In a news release, AEP

cited increased meter reading percentages, reduced estimated bills, and a safer work environment for its employees as the reason for the expansion of AMR (Attachment PMC-Rebuttal-6). Similarly, EEI reported that MidAmerican Energy installed 1.5 million AMR meters in 2013. More generally, a June 2012 article in Green Tech Media entitled "The Smart Meter Landscape: 2012 and Beyond" concluded that AMI or smart meter deployment was on a *downward* trend, due to a lack of stimulus funding to help cover the costs of AMI deployment. The article also noted that less than half of all meters in the U.S. were predicted to be AMI meters by the end of the 2012 (Attachment PMC-Rebuttal-7).

Q. Do companies continue to install AMR meters today?

A. Yes. According to Itron, a number of utilities continue to maintain their AMR meter reading systems that are providing valuable billing and metering information, including National Grid, Consolidated Edison, Detroit Edison, Duke Energy, Consumers Power, South Carolina Gas, NiSource, Central Hudson and CNP.

Q. Would AMI have been more expensive than the Company's AMR installation?

A. Yes, AMI was a far more expensive option. Mr. Alvarez cites a Company business case presentation from 2012 for a single ($25 million) cost component of an AMI deployment (Alvarez Test. at 25-26, citing Attachment TS 1-011A, at 4), but he does not consider the total cost of AMI. In fact, the Company business case in 2012 analyzed AMI solely as a metering alternative (without the two-way communication functionality required to offer time-varying rates), identifying a net capital requirement in excess of $110 million for AMI with an average installed cost per meter of $202.29, compared to AMR cost of

approximately $39 million and cost per meter of $70.55 (Attachment TS 1-011A), at 4). More importantly, the functionality that this investment would have produced, *did not include two-way communication capability,* which is necessary to collect interval data and enable real-time use of time-varying rates. This fact alone was definitive proof that AMI would not have been a cost-effective option.

Since 2012, the Company has since conducted additional analysis to refine the AMI cost projection from the high-level estimate used in the 2012 business case, which shows that the cost of fully enabled AMI would likely exceed $200 million in New Hampshire. Attachment PMC-Rebuttal-5 includes a breakdown of the cost of an AMI installation, including IT system costs that were not developed at the time of the business case and account for $78 million in added costs necessary to achieve the two-way communication and time-varying rates capability.

Q. Beyond cost, what are some of the impediments that have hindered AMI deployments in the United States?

A. At the time of the Company's business case review, most utilities in the United States deploying AMI did so either to satisfy regulatory mandates (such as in California and Texas) or because the companies were receiving federal stimulus money (Smart Grid Investment Grants), which dramatically reduced the cost burden to customers. This was the case for companies such as Central Maine Power and the New Hampshire Electric Cooperative, to cite two local examples. Conversely, there were no existing or potential regulatory mandates in any of the Eversource service territories regarding AMI at that time.

Additionally, Eversource was concerned about customer opposition to AMI meters, which was spreading in some areas of the country (such as Maine and California), as well as a lack of interest in customer participation in off-peak pricing programs.

A recent study by the American Council for an Energy-Efficient Economy (ACEEE")[3] cites several factors that impede AMI deployment, including challenges in delivering promised customer benefits. "Generally, the reason cited is that AMI remains too costly relative to the benefits, or that utilities have not verified to the regulator's satisfaction the likelihood of those benefits. In a few cases customer suspicions of alleged negative health impacts of AMI, such as radiation, have hindered rollouts" (ACEEE Report at 6). The report further states that "AMI produces a much higher volume of customer data than traditional analog meters. Having additional data creates opportunities for energy savings but also raises data privacy and cybersecurity concerns" (ACEEE Report at 32). "'AMI deployments raise new questions about the security of customer data, the types of entities that can access it, and how the data will be protected from cybersecurity breaches and other data privacies intrusion (DOE 2016)'" (ACEEE Report at 32).

Q. Is Mr. Alvarez's position on AMI in this proceeding inconsistent with positions he has taken in other jurisdictions?

A. Yes. Mr. Alvarez concedes he has been consistently critical of utility AMI deployments in other cases, stating that his testimony "generally claims that the benefits of an AMI

[3] The ACEE Report is available at: https://www.aceee.org/research-report/u2001

deployment would be unlikely to deliver (in the case of deployment plans) or did not deliver (in the case of requested cost recovery) benefits to customers in excess of costs to customers" (Alvarez Test. at 27). Mr. Alvarez's claim in this case – i.e., that AMI was a feasible and cost-effective option for the Company in 2013 -- is inconsistent with his prior positions.

Q. Was the Company's decision to install AMR meters instead of AMI "biased and calculated to forestall interval usage data availability" as Mr. Alvarez claims?

A. No. In addition to all of the reasons why AMI was neither industry standard nor a cost-effective option, there was no "push" for TVR at that time, and in fact TVR would have a negative impact on the most vulnerable customers, who are unable to shift load. It takes time for new rates to incent behavior and it was unclear whether the ultimate solution could be more dynamic than TVR. Today, Eversource can accomplish peak load reduction without TVR. Moreover, seven years after the Company's AMR deployment, the State of New Hampshire has not moved forward on grid modernization policies that would require AMI, and the timeline of potential developments in areas such as peak demand reduction and TVR is uncertain.

Q. Was the Company's decision to install AMR meters harmful to "customers and markets in defiance of New Hampshire law and policy" as Mr. Alvarez claims?

A. No, this claim fails for the same reasons as Mr. Alvarez's other assertions. He states his belief that "PSNH's decision to install meters without industry-standard interval usage data capabilities stifles, rather than empowers, competitive electricity markets and market innovation" (Alvarez Test. at 31), but he provides no evidence that AMI has had these

effects. In fact, all of the Eversource distribution companies in New Hampshire, Connecticut and Massachusetts have seen similar levels of customers choice, with a majority of large industrial customers (and hence the large majority of the load) in these states taking service from competitive suppliers. The Company's AMR system has no impact or bearing on the competitive supply market in this regard. The Company's decision in 2013 to deploy AMR has yielded substantial cost savings and benefits to customers.

III. FEE FREE, ARREARAGE FORGIVENESS AND CUSTOMER ISSUES

Q. Please describe the Staff's recommendations related to the fee free proposal.

A. Staff supports adoption of the fee free program but with two modifications. Specifically, Staff recommends that the program should allow all customers paying with a credit or debit card, whether recurring or non-recurring, to do so without a transaction charge, stating that there is no need to distinguish recurring from non-recurring and no rationale for penalizing customers who make automatic payments (Noonan Test. at 4). Staff also recommends that the Company should file an annual report by March 1 to report on various aspects of the program, as filed by the Company's Connecticut affiliate (Noonan Test. at 5).

Q. What is the Company's response to these recommendations?

A. The Company appreciates Staff's support of the fee free program. In this proposal, PSNH is aiming to eliminate the current customer pain point associated with fee-based credit and debit card payments, while ensuring that the total cost of offering fee free payments is a net positive value for customers. However, while Eversource is interested in offering fee

free recurring credit card payments at some time in the future, it is not currently offering or proposing fee free recurring payments in any of its service territories at this time. The Company's seeks to gain additional experience over time with customer adoption rates for the one-time payment approach. The Company is closely monitoring emerging options from the credit card companies to offer a flat fee for recurring payments in conjunction with fee free non-recurring payments. However, such options are not broadly available and are not yet offered by credit card companies today. For this reason, the Company does not support Staff's recommendation to provide fee free for recurring payments.

Q. What is the challenge in providing fee free for recurring payments?

A. The Company and its industry peer utilities do not currently have a basis to estimate costs for fee free recurring payment credit card utilization. In contrast, the Company has a reasonable basis for projecting non-recurring fee free credit card payment utilization from peer utilities and from Eversource's first nine months of offering fee free in Connecticut. For example, in Connecticut, credit card payment utilization as a percent of total payments increased from 3.97 percent to 5.4 percent during the first nine months of the program. For these reasons, the Company proposes initially offering fee free credit and debit card payments only on a non-recurring basis, to help ensure incremental costs are consistent with the value to all customers.

Q. Does the Company support Staff's recommendation to provide an annual report on the fee free program?

A. Yes, the Company would agree to file a report annually like the one provided by Eversource in Connecticut.

Q. Does Staff also make a recommendation to modify the cost recovery for the fee free proposal?

A. Yes. Staff recommends that any over-collection would not be credited to residential customers and any over-collection in the reserve fund would incur interest (credit) on monthly balances. Staff also recommends that any under-collection would incur monthly carrying costs (Chagnon Test. at 30). Staff recommends recovery of $707,000 annually beginning July 1, 2020 and ending on the effective the date of its next permanent rate case and approval from the Commission for permanent rates in that preceding (Chagnon Test. at 30). Any over or under-collection in the reserve account would be deferred for refund or recovery in rates at the time permanent rates are approved and effective in the Company's next rate case (Chagnon Test. at 30).

Q. Does the Company agree with Staff's modifications to cost recovery for the fee free proposal?

A. The Company is generally supportive of the reserve fund accounting as proposed by Staff with interest accruing for both under and over-collections.

Q. On the New Start arrearage forgiveness proposal, please describe the Staff's recommendations.

A. Staff supports adoption of this program but recommends the addition of certain eligibility criteria, program parameters and reporting requirements (Noonan Test. at 3). Specifically, Staff recommends that the program should be made available to any account coded financial hardship; that customers with past due balances greater than $300 and greater than 60 days should be eligible for enrollment; that if a customer misses a payment, the payment must be made up to continue enrollment; that new enrollments can occur 12

months after being dropped from the program; that new enrollments can occur 12 months after successful completion of the program for customers with no remaining past due balance upon completion; that customers who successfully complete the program, and who still have a remaining past due balance, may re-enroll immediately and will not be subject to the 12-month waiting period; that customers will be automatically enrolled in a budget plan following successful completion of the program; and that the annual cap on the forgiveness amount should be $12,000 (Noonan at 6-7). Overall, Staff recommends establishing a stakeholder group to develop a comprehensive program design for the New Start program (Noonan Test. at 8).

Q. What is the Company's response to these recommendations?

A. The Company appreciates Staff's support of the New Start program and recognizes there are a number of program design issues to ensure effective implementation. The Company supports discussion of these issues in a stakeholder process. PSNH proposes to work through the Electric Assistance Program, or "EAP" for New Start, which brings together the Commission, OCA, the action agencies. The EAP a program to address energy cost burdens for low income customers and makes sense for consideration of New Start.

Q. Does Staff recommend an annual reporting requirement related to New Start?

A. Yes. Staff recommends that the Company should submit a plan and format for annual reporting on the New Start program for review and approval by the Staff within 90 days of the Commission's final order in this proceeding (Noonan Test. at 8). Staff states that the plan should include the collection and reporting of data prior to the start of the program in

order to provide a baseline (Noonan Test. at 8). The Company supports this recommendation.

Q. Does Staff propose to modify the cost recovery for implementation of the New Start proposal?

A. Yes. The Staff alleges that Company proposed to recover its capital costs to implement the program, estimated at $1.7 million, through the Distribution Rate Adjustment Mechanism ("DRAM")[4], which Staff does not support. Staff recommends that PSNH should recover the $1.7M of start-up costs over five years beginning July 1, 2020, which is approximately $340,000 annualized (Chagnon Test. at 16). If the Company files a rate case for permanent rates or temporary rates in 2025, any over or under-collection of the actual implementation costs would be fully reconciled for rates effective July 1, 2025; and if the Company does not file a rate case for permanent rates or temporary rates in 2025 or before, any over or under-collection for the actual costs would be fully reconciled for rates effective July 1, 2025 (Chagnon Test. at 16). Lastly, if the Company files a rate case for permanent rates or temporary rates prior to 2025, Staff recommends that the actual implementation costs would be addressed in that rate case (Chagnon Test. at 17).

Q. Does the Company agree with Staff's proposal?

A. Given that the Staff is providing a fully reconciling mechanism for the recovery of these startup costs, the Company is supportive of the recommendation under the presumption

[4] The Company's proposal was to recover capital costs of $1.7M through step adjustments. Any arrearage forgiveness costs would be recovered through the DRAM mechanism.

that carrying charges would accrue for the under or over collection of costs.

Q. Does Staff propose additional modifications to the cost recovery for the New Start proposal?

A. Yes. For past-due balances forgiven through the program, the Staff recalculates the recovery amount to be $4,176,985 and proposes to recover it over 4.5 years beginning July 1, 2020, for a net annual recovery of $842,000 (Chagnon Test. at 17). Staff recommends that the Company create a reserve account for funds collected through rates for the New Start program and to reflect all amounts charged to the New Start program created by forgiven past due balance amounts (Chagnon Test at 19). Staff states that any over-collection in the reserve fund would incur interest (credit) on monthly balances, but that any under-collection would not incur monthly carrying charges.

Q. Does the Company agree with Staff's proposal?

A. Carrying charges on over or under-collections should be symmetrical, as suggested for the fee free program. Staff's recommendation for New Start is inconsistent with its proposed treatment of costs associated with the fee free program where symmetrical treatment is supported. There is no basis for denying carrying charges on under-collections and it does not make sense to allow a buildup of amounts for future recovery of forgiven arrears. The Company's initial proposal was designed with recovery through the DRAM so that costs are recovered from contemporaneously with cost incurrence maintaining alignment between the customers obtaining the benefit and the customers providing the benefit. The Company's proposal to put this through the DRAM accomplishes this alignment, mitigates

carrying costs and allows for experience to be gained with the program before fixing an unrepresentative or speculative amount in base rates now.

Q. Lastly, does the Company have a response to the customer issues raised in the testimony of intervenor The Way Home?

A. Yes. The Company appreciates The Way Home's participation in this process and its support of the fee free program (Colton Test. at 8). The Company also appreciates The Way Home's support of the New Start program, although many of its extensive modification proposals in areas such as program structure, implementation and cost recovery are unnecessary and unwarranted, or would run counter to successful and cost-effective program implementation (Colton Test. at 5-7). Recognizing that Staff has suggested establishing a stakeholder group to develop a comprehensive program design for the New Start program, the stakeholder group would be a more appropriate forum in which to address the concepts raised in The Way Home's testimony.

Q. Does The Way Home raise additional customer issues?

A. Yes. The Way Home recommends that the Company should modify certain practices related to service disconnection notices, non-English language communications, and deferred payment arrangements (Colton Test. at 7-8). The testimony provides no evidence on non-compliance by PSNH and none of these changes are warranted at this time. In fact, the Company complies with all rules and regulations of the Commission related to its customer service practices.

Q. Does this conclude your testimony?

A. Yes.