STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DG 16-XXX

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Fiscal Year 2016 Cast Iron/Bare Steel Replacement Program Results

JOINT DIRECT TESTIMONY

OF

GWYN M. CASSETTY AND IAN T. CRABTREE

April 15, 2016

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I. INTRODUCTION

Ms. Cassetty

Q. Would you please state your full names and business address?

A. My name is Gwyn M. Cassetty. My business address is 130 Elm Street, Manchester, New Hampshire 03101.

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

A. I am the Manager, Gas Construction for Liberty Energy Utilities (New Hampshire) Corp. ("Liberty Energy NH"), which provides services to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities ("Liberty" or the "Company").

Q. Would you please provide a brief overview of your experience and education?

A. Yes. In 1994, I received a Bachelor's of Arts in Finance from Saint Anselm College in Manchester, NH. I received a Masters of Business Administration in 2001 from the University of West Florida in Pensacola, Florida. From 2001 to August 2012, I was employed by National Grid and its legacy companies where I held various positions including Senior Analyst Gas Financial Operations, Lead Analyst Resource Management, and Program Manager, Gas Distribution Field Operations. In September 2012, I became employed by Liberty Energy NH. My current position is Manager, Gas Construction. One of my responsibilities is the execution and tracking of Liberty's Cast Iron/Bare Steel ("CIBS") program.

Q. Have you previously testified in regulatory proceedings before the New Hampshire Public Utilities Commission (the "Commission")?

A. Yes, I testified in Docket No. DG 13-149, Liberty's Fiscal Year 2013 Cast Iron/Bare Steel Replacement Program Filing, DG 14-041 Liberty's Fiscal Year 2014 Cast Iron/Bare Steel Replacement Program Filing, and DG 15-104, Liberty's Fiscal Year 2015 Cast Iron/Bare Steel Replacement Program Filing.

Mr. Crabtree

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

A. My name is Ian T. Crabtree. My business address is 15 Buttrick Road, Londonderry, NH 03053. I am a Senior Engineer for Liberty Energy NH and provide engineering services to the Company.

Q. Please describe your educational background and training.

A. In 2008, I received a Bachelor of Science degree in Mechanical Engineering from the University of Massachusetts Lowell. I have attended several training seminars and courses conducted by various organizations such as the National Association of Corrosion Engineers (NACE), the Northeast Gas Association (NGA) and the Gas Technology Institute (GTI).

Q. Please describe your professional background.

A. In July of 2012, I assumed a position in Project Engineering for Liberty Energy Utilities where some of my responsibilities include analyzing, prioritizing and selecting the gas main replacement projects under the CIBS Program. From 2007

to 2008, I was employed by KeySpan Energy Delivery where I was an intern for the Corrosion Department. From 2008 to 2012, I worked as a Gas System Operator in the Gas Control room and as an engineer in the Asset Replacement department at National Grid.

Q. Have you previously testified before the Commission?

A. Yes, I testified in Docket No. DG 15-104, Liberty's Fiscal Year 2015 Cast Iron/Bare Steel Replacement Program Filing.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of our testimony is to explain the Company's annual program report associated with the CIBS main replacement program for fiscal year ("FY") 2015-2016, or the twelve months ending March 31, 2016 ("FY 2016").

III. IMPLEMENTATION OF THE CIBS PROGRAM

Q. Please describe the purpose of the CIBS Program.

A. The CIBS program was established as part of the National Grid/KeySpan merger settlement agreement approved by the Commission in Order No. 24,777 (July 12, 2007), in Docket No. DG 06-107, and the settlement agreement in Docket No. DG 11-040 approved in Order No. 25,370 (May 30, 2012). The program's goal is to accelerate the replacement of cast iron and bare steel pipes used in the Company's distribution system, which tend to deteriorate over time. These are

pipes that have been in ground and exposed to a corrosive environment and earth movement for a long time, in some cases more than one hundred years.

Q. How is the CIBS program implemented?

A. Under the CIBS program the Company annually submits to Commission Staff for review and comment its plan for the replacement of cast iron and bare steel pipes for the coming fiscal year, which begins in April.[1] The proposed plan sets forth a prioritized list of pipes to be replaced based on the year of installation, condition of the pipe, and other relevant factors. Subject to certain limited exceptions, pipes replaced as part of public works projects or as part of the Company's gas main encroachment policy are excluded from the CIBS program because these pipes would likely have been replaced even in the absence of the program. Following review by Staff, including technical sessions between Staff and the Company, Liberty implements the CIBS plan over the course of the construction season, subject to reasonable deviations based on circumstances that may arise or additional information that may become available.

The Company is required to spend a base amount each year on the CIBS program; the capital expenditures required under the FY 2016 CIBS program is $514,244 ("CIBS Base Amount"). The Company is allowed a permanent increase in its base distribution delivery rates ("Capital Investment Allowance"), effective July 1

[1] The CIBS' fiscal year begins in April and concludes in March of the following year.

of each year, to recover the annual revenue requirement for investments made in excess of the CIBS Base Amount during the preceding fiscal year. A copy of the CIBS report is included as Attachment GMC-ITC-1 and includes, among other things, an overview of the actual capital expenditures incurred in implementing the FY 2016 CIBS Plan, variances between the initial project estimated costs and final project actual costs, with comments on variances. Also included with the Report is a FY 2016 Condition Bare Steel Main Replacement Program – Sample Analysis, which describes the steel pipe and soil samples collected from CIBS projects completed over the course of the FY 2016 construction season.

IV. FY 2016 CIBS PROGRAM

Q. Please describe the FY 2016 CIBS program.

A. The FY 2016 CIBS program was based on a preliminary project plan developed by the Company in January 2015 and agreed to by Staff during a subsequent technical session in March 2015. In June of 2015, the Company revised the FY 2016 cost estimates to reflect the new contractor bid unit pricing. The final FY 2016 CIBS program consisted of twenty projects that included the replacement of approximately 8.4 miles of Cast Iron/Bare Steel Leak Prone Pipe. Thirteen of the planned projects were completed, with two of those projects resulting in significant scope reduction. The remaining seven projects will be completed under future CIBS programs, six of which are scheduled for replacement in FY 2017. The thirteen completed projects eliminated 5.05 miles of leak prone pipe at a total cost of $ $4,578,647 (including estimated carryover costs). The program

also included the replacement, insert, or abandonment of 292 associated services (177 Bare Steel, and 115 Coated Steel or Plastic), the transfer of 93 services and 4 new services.

During the construction season it became evident that additional capital and construction resources would have to be allocated to the Company's growth program and the installation of new services and new main. Therefore, the company made the difficult decision to reallocate some resources from the CIBS Program to growth. This reallocation resulted in the CIBS program eliminating 5.05 miles of pipe versus the 8.5 miles initially projected for FY 2016. The company remains committed to completing the removal of substantially all of the leak prone pipe and associated bare steel services by 2024 and will make up for the lesser FY 2016 mileage over the program period.

Q. Is all of the replacement main installed as part of the FY 2016 CIBS Program used and useful?

A. Yes. All of the main installed and related capital improvements are used and useful and providing service to customers.

Q. Did the Company replace any other Leak Prone outside of the CIBS Program?

A. Yes. In FY 2016, the Company replaced 248 feet of cast iron through the Cast Iron Encroachment Policy and 12,206 feet of cast iron and bare steel through municipal projects, totaling to 2.36 miles of replacement.

Q. Please explain the process for collecting bare steel main samples and soil analysis and the efforts conducted for the FY 2016 Program.

A. Over the course of the FY2016 construction season, two bare steel pipe and related soil samples were collected from the CIBS main replacement program. Each pipe sample was sand blasted to expose the pipe down to the bare metal and was made available for visual representation. Soil samples were taken as close to the pipe samples as possible in an effort to retrieve native soil. Each soil sample was collected by a Company representative and a GPS point was captured. Chemical testing was conducted to determine the existing pH, chloride, sulfide, and sulfate levels. Microbiological testing for Acid Producing Bacteria ("APB") and Sulfate Reducing Bacteria ("SRB") were performed as well using a Pipeline Inspection Chemical/Bacteria Kit. Both chemical and microbiological tests were conducted as soon as possible. Detailed results for each FY 2016 bare steel segments and soil analysis are reported in Appendix A in Attachment GMC-ITC-1.

Q. Please state whether the Company's analysis of bacterial conditions in soil surrounding mains play any role in the future selection of mains to be replaced in the CIBS Program.

A. The bacterial conditions in the soil surrounding bare steel mains replaced do not play a role in the selection of future mains to be replaced for the CIBS program because the locations where soil samples are collected are near bare steel mains that are being replaced with new plastic main.

Q. Please approximate the annual cost to obtain the bare steel sample and bacterial analysis of the soil.

A. The Company estimates the total loaded cost to collect one sample is approximately $4,072. The company has collected 16 samples through the FY 2014 through FY 2016 CIBS programs at an estimated total loaded cost of $65,152 or an average annual cost of $21,717.

Q. Why are there additional costs associated with obtaining the bare steel pipe and soil samples?

A. The additional cost is based on time and material of a crew to open up the street, cut out a segment of main and collect a sample, which takes about four hours. A sample cannot be retrieved until the new pipe is in service and the old pipe purged. There are also costs associated with testing the soil, sandblasting the pipe segment, the additional restoration, and project delay.

V. COSTS OF FY 2016 CIBS PROGRAM

Q. Are there any carry-over costs from FY 2016 CIBS projects that the Company expects to incur in FY 2017?

A. Yes. As shown on Attachment GMC-ITC-2, line 31 column BB, there will be a total of $593,728 of estimated carry-over costs from FY 2016 to FY 2017, as compared to $816,314 in carry over costs from FY 2015 to FY 2016. All of the carry-over costs are related to final trench restoration work that could not be

completed in the planned fiscal year due to city rules regarding minimum temperature requirements for final restoration.

Q. What are the unit costs for FY 2016?

A. The total loaded actual cost per foot for the FY 2016 program was $176 (including carry-over costs and excluding Manchester degradation fees) compared to the estimated cost per foot of $185. The average variances between the estimated and actual costs of FY 2016 completed projects were small, at 3%. Of the thirteen jobs completed, nine had a variance of less than 15%. On a direct basis, the variance between actual and estimated costs were slightly higher at 14% overall.

Q. Please explain why there are fluctuations in the overheads and summarize how they are currently allocated.

A. Overheads are currently spread on a monthly basis as opposed to fixed percentage throughout the year. During the busy construction months, the Company will have a larger pool of direct cost to spread the overheads, causing a lower percentage of burdens. Spreading actual overhead on a monthly basis causes a fluctuation in the percentage of burden applied to jobs. The current practice of allocating overheads consists of proportionately allocating categories of overhead cost to the direct capital cost incurred. Labor burden, which is comprised of payroll taxes, pension, time not worked, and benefits, is allocated to the direct capital labor charges from company employees derived from employee

timesheets. Back office work consisting of sales and work package preparation is allocated to the cost of the new services which are constructed. Corporate allocations, insurance, fleet, and telephone/internet are allocated to direct capital costs incurred. Construction supervision, engineering, compliance, and plant accounting is allocated to direct capital costs incurred. The Company will continue to evaluate the process of allocating overheads to ensure that direct capital cost incurred receives a representative share of the overhead burden.

Q. What steps has the Company taken to control and/or reduce direct costs since last year?

A. The Company continues to monitor and evaluate the estimating process, crew productivity, and invoice review to ensure the bid units are used correctly and for their intended purposes. The Company also works closely with cities and towns to ensure that permits are obtained in a timely manner and crew down time is reduced to the greatest extent possible.

Due to the variability in pricing from the three chosen contractors, when estimating, attention to the intended project owner is reviewed, as well as potential savings in restoration by separating ownership of the pipe installation and restoration activities. Doing this has reduced costs and also decreased the delay in permits being released because the spring restoration is completed on a timelier schedule.

The Company's ability to manage final restoration costs is less flexible. Final restoration requirements imposed by New Hampshire municipalities, including Manchester, Nashua, and Concord, are considerably more strict than those of other municipalities in New Hampshire and in nearby states. In 2014 the Company was successful in working with one particular city to develop a pilot program, reducing the required three foot cut-back to only one foot. That program will be reviewed again this year, and evaluated for use on future projects.

The company also introduced a Grind and Inlay pilot program with the City of Concord, which will be used going forward on a project by project basis. The company will coordinate with the City to choose the best project candidates for this method of restoration.

Ledge removal continues to be a significant driver of costs associated with the FY 2016 CIBS projects. Although ledge removal was included in many of the estimates where the locations were "known ledge" areas, it is difficult to predict these conditions.

Q. Have there been any significant variances in the cost of work in the past year? If so, please explain the reasons for the variances.

A. There were three projects with significant overage variances, i.e., a variance over 20% of the estimated costs. Reasons for the variances include restoration changes required by the municipalities, additional temporary restoration needed for final paving to be done in the spring of 2016, ledge removal, additional gravel, longer

project durations than expected, and additional traffic control. Variances where costs were lower than expected were due in part to cooperation and coordination with the cities and towns, where they allowed less expensive restoration methods. Also, the Company's supervisors work with engineering and the contractors to identify locations where the installation can be on the edge of pavement, thus reducing the size of the required cutback. Lastly, the Company's construction supervisors review every invoice to ensure accuracy of bid units, measurements, and time allocation.

Q. Will the Company have sufficient crews to complete the planned work?

A. Yes. The Company is confident there will be enough crews to complete all the work planned for the FY 2016 CIBS Program. We plan to have between 22 and 26 crews working for the construction season doing CIBS, City/State and growth work. There will be approximately fifteen main crews and eight service crews. Of those crews, approximately six will be focused on Cast Iron/Bare Steel replacement. These calculations are based on historical performance.

VI. CUSTOMER GROWTH ALONG CIBS ROUTES

Q. Commission Order 25,798 in Docket No. DG 15-104 required the Company to provide the Staff with a report documenting the results of its market research conducted during this construction season and its plans for

marketing to new customers going forward. Did the Company submit this report?

A. Yes, although the FY 2016 marketing report was not sent by December 31, 2015, it was summarized in a letter mailed to Staff on April 13, 2016. A copy of the full FY 2016 marketing report is included as Attachment GMC-ITC-3.

Q. Please summarize the efforts the Company undertook in FY 2016 to market to potential customers along the CIBS routes.

A. For the FY 2016 CIBS campaign, the Company sent letters to all residents along the CIBS routes, both existing and potential customers, to inform them of the scope of work that would be taking place and to inform non-gas homeowners that the best time to convert to natural gas is when construction is underway. The Company sent out a total of 444 letters. Of the 444 letters sent to homeowners, 385 were already natural gas customers. This indicates that only 59 homeowners along the FY 2016 CIBS routes were not customers, or that the route already had a saturation rate of 87%. Out of the 59 letters that were sent to non-customers, we received 5 responses yielding an 8% response rate. Out of the 5 homeowners that contacted us, 4 had gas services installed in FY 2016, indicating a conversion success rate of 80%. Of the 4 services installed, 2 meters have been turned on and claimed by the sales department. The other 2 services should have meters installed by the end of FY 2017. In addition to sending letters, field crews hung door hangers on the door of potential customers and spoke to potential customers that were home in an effort to get them to sign up for natural gas.

Q. How many new customers did the Company obtain as a result of these efforts?

A. In FY 2016, the Company added 1,817 new customers, of which 4 resulted from sales and marketing efforts along CIBS routes. Overall, customers obtained as a result of CIBS projects represented 0.2% of the Company's sales in FY 2016. The saturation rate along CIBS routes was 87% in FY 2016.

Q. Why was there a decrease in number of customers added along CIBS routes from FY 2015 to FY 2016?

A. Lower than average oil prices likely caused a negative effect on the conversion rate along CIBS routes. Although in most cases there is no cost to the customer to have a residential gas service installed, the customer must convert internal piping and/or heating equipment inside their home, which can be too expensive to justify getting rid of their current equipment, which may be working fine at the time. Also, a warmer than usual winter combined with the low oil prices means most homeowners saved a significant amount of money compared to their heating expenses from last winter without having to convert to natural gas.

Q. Is the Company marketing to potential customers along the CIBS routes being worked in FY 2017? If so, please explain how.

A. Yes. The Company will be mailing Abutter Letters to all addresses prior to the commencement of work along the CIBS routes, encouraging potential customers along those routes to convert to natural gas and providing information on how to

contact the Company to pursue natural gas service if the potential customer is interested. A second letter will be mailed to only potential new customers along the CIBS routes to remind non-customers that if they want natural gas, they should convert concurrent with the construction in the street. The second letter will be very straight forward and will supply prospects with a Sales Representative's personal information, including their direct office phone line and their signature. This letter is also printed on yellow paper to provide a more vibrant solicitation to non-gas customers. Copies of both the Abutter Letters are included as Attachment GMC-ITC-4 and GMC-ITC-5. The Company's sales intake team will track the response to both of these letters, which will allow the Company to document "before and after" saturation rates.

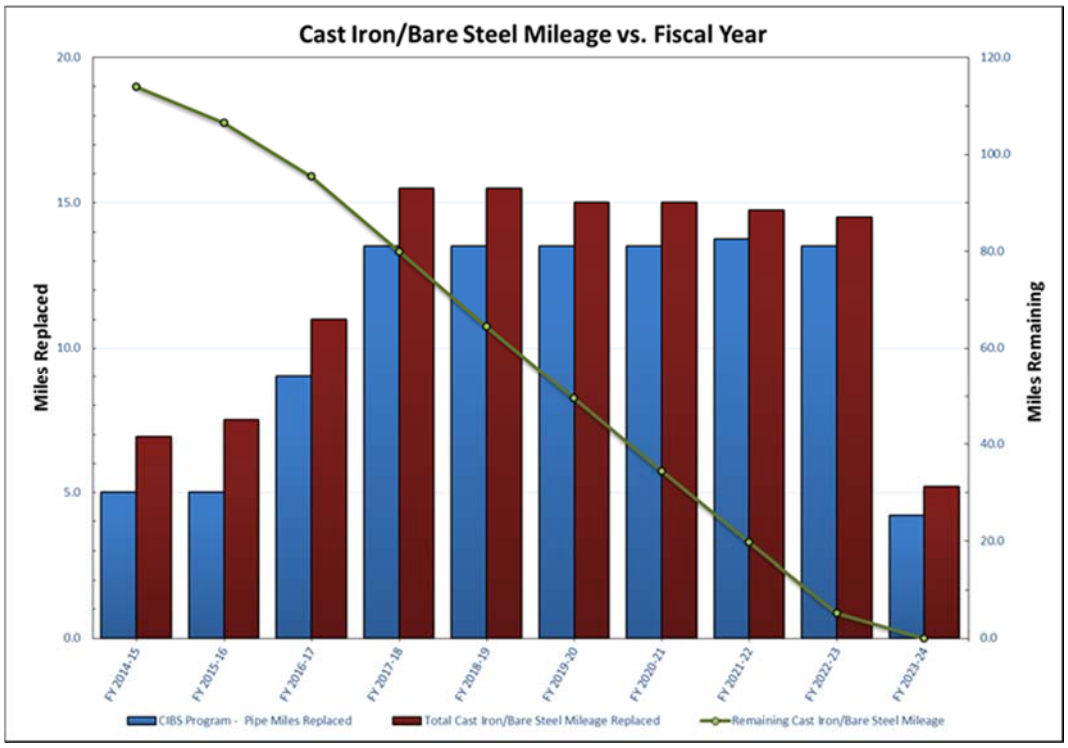
VII. THE ACCELERATED CIBS SCHEDULE

Q. Please provide an update to the Company's ten-year plan for accelerated CIBS replacement.

A. The Company is still on pace to complete the ten-year CIBS replacement plan to eliminate all leak-prone pipe ("LPP") by year 2024. Currently, there are 102.7 miles of less than 12 inches in diameter LPP in the Company's system. LPP includes vintage cast iron, bare steel and wrought iron main pipes that have a high risk of main breaks and corrosion, and replacement of the bare steel services along the route. This accelerated replacement plan will not only reduce leak rates and increase public safety but will also reduce internal operating and maintenance costs to the Company. The Company plans to steadily increase and maintain the

amount of LPP replacement until it is eliminated by the year 2024. This trend can be seen in Figure 1 below.

Figure 1.



In the chart, the blue bar represents miles of cast iron and bare steel replaced under the CIBS program and the red bar represents total cast iron and bare steel replaced (including public works and encroachments). The Company has planned approximately 9 miles of LPP replacement through CIBS and 2 miles of LPP replacement through municipal projects for FY 2017. Going forward, the Company plans to replace upwards of 13 miles of LPP replacement each year under the CIBS program and replace one to two miles of LPP in conjunction with municipal work.

Q. Does this conclude your testimony?

A. Yes.

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