STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Re: Pennichuck East Utility, Inc.

2013 SRF Financings of the Locke Lake Water System Water Main

Replacement and Avery-Hudson Interconnect

DW 13-____

DIRECT PREFILED TESTIMONY OF JOHN BOISVERT

April 29, 2013

Professional and Educational Background

Q. What is your name and what is your position with the Pennichuck East Utility?

A. My name is John J. Boisvert. I am the Chief Engineer of Pennichuck Water Works, Inc. which provides services to Pennichuck East Utility ("PEU" or the "Company") pursuant to a management allocation agreement. I have worked for Pennichuck Water Works, Inc. since February 1, 2006. I am a licensed professional engineer in New Hampshire and Maine.

Q. Please describe your educational background.

A. I have a Bachelor of Science degree and a Master of Science degree in Civil Engineering from the University of New Hampshire in Durham, New Hampshire. I also have a Master's degree in Environmental Law and Policy from Vermont Law School in South Royalton, Vermont.

Q. Please describe your professional background.

A. Prior to joining Pennichuck Water Works, Inc., I served as a Team Leader for Weston & Sampson Engineers of Portsmouth, New Hampshire in their Water Practices Group from 2000 to 2006. Prior to Weston & Sampson I was employed by the Layne Christensen Company of Shawnee Mission, Kansas as Regional Manager for its Geosciences Division in Dracut, Massachusetts from 1994 to 2000. I completed graduate school in 1992 and was employed by Hoyle, Tanner, & Associates of Manchester, New Hampshire as a Project Engineer from 1992 to 1994. Prior to entering full

time graduate programs at the University of New Hampshire and Vermont Law School I was employed by Civil Consultants of South Berwick, Maine as a Project Engineer from 1986 to 1989 and by Underwood Engineers of Portsmouth, New Hampshire as a project Engineer from 1985 to 1986.

Q. What are your responsibilities as Chief Engineer?

A. As Chief Engineer, I am responsible for the planning, design, permitting, construction, and startup of major capital projects, including pipelines, reservoirs/dams, building structures, pumping facilities, treatment facilities, and groundwater supplies. I provide technical assistance to Pennichuck Water Works' Water Supply Department, Operations Department, Customer Service Department, and Senior Management.

Q. What is the purpose of your testimony?

A. I will be describing the two Company projects, the first to replace approximately 6,800 linear feet (LF) of small diameter PVC water main in the Locke Lake Water System located in Barnstead, New Hampshire and the second to interconnect the Avery Water System, located in Londonderry, with the Town of Hudson Water system through a booster station and 2,400 LF of new water main. The Company seeks approval to finance both projects with loan funds issued by the New Hampshire Department of Environmental Services ("NHDES") through the State Revolving Loan Fund ("SRF"). Please see Exhibit JJB-1 for the NHDES letter offering SRF Loan funds for these two projects.

Q. What are the terms of the SRF loan?

A. The NHDES is offering a $400,000 loan with a 20-year term with level total payments and a maximum interest rate of 2.72% to fund the Locke Lake Water Main Project. The NHDES is offering a $450,000 loan with a 20 year term with level total payments and a maximum interest rate of 2.72% to fund the Avery-Hudson Water System Interconnection Project.

Q. Are either of these projects eligible for principal forgiveness?

No. Median Household Incomes in these communities exceed those that would qualify these projects for principal forgiveness.

Q. Could you please describe why the Company believes it needs to replace water main in the Locke Lake Water System since the piping in question is less than 40 years old?

A. The existing water main in the Locke Lake Water System (exclusive of the water main that was replaced in 2011 and 2012) has approximately 39,000 LF of 4" and 3" schedule 40 glued joint PVC electrical conduit and in excess of approximately 53,000 LF of 2" 160 PSI IPS HDPE with nylon stab fittings or 2" SDR21 PVC with glued joints. Neither type of pipe meets the American Water Works Association ("AWWA") standard for water mains. The schedule 40 glued joint PVC (all sizes) is consistently failing at the joints while the 2" HDPE consistently fails at the nylon stab fittings. Over the past three years (2010, 2011 and 2012) the Company has repaired 56 leaks in the Locke Lake Water System (23 have been water main breaks with the remaining 33 leaks occurring on the main to

stop portion of a service). Unaccounted for water in the Locke Lake Water system constantly exceeds 20% due to the fact that as soon as one leak is found and repaired another leak develops. The Company believes that the only way to eliminate the constant leakage is to replace all the water mains and water services (main to stop) in the Locke Lake system which fail to meet AWWA water main standards.

Q. How much has the Company spent on repairs during the past several years?

The Company has spent an average of about $50,000 per year over the past three years in water main and water service repairs.

Q. If system leakage is a problem why doesn't the Company replace the remaining 91,000 LF of the substandard water main in the Locke Lake Water System as opposed to the proposed 6,800 LF?

A. As the Commission is aware, the rates at Locke Lake are already high. Replacing all the of the remaining water main at once would cost over $6.6 million dollars and would have a large impact on the water rates of all PEU's customers. The Return on Investment ("ROI"), depreciation expenses and property taxes on $6.6 million dollars of new capital, would result in over $470,000 in costs per year that would not be offset by the annual reduction in operating expenses associated with repairing the leaking water mains and services and treating the lost water. In an effort to mitigate rate increases associated with the water main replacement in Locke Lake the Company's plan is to balance the cost of investing in new

water main against the cost and risks of water main leaks. Over the past two years the Company targeted its total investment per customer in Locke Lake to approximately equal the amount it invested per non-Locke Lake customer in PEU. The investment amount per non-Locke Lake PEU customer in 2013 is projected to be about $300 per customer (based on 5,988 non-Locke Lake PEU customers and projected 2013 non-Locke Lake capital expenditures of about $1.8 million). This level of per customer investment would result in an approximate investment in Locke Lake of about $260,000.

Q. If the target amount of investment in Locke Lake is $260,000 why is PEU proposing to spend $400,000?

A. The Company is balancing the impact of completing the replacement of all the substandard water main in Locke Lake against the cost of continued leakage and the associated rate impact in addition to completing large enough sections of the overall project to help minimize the impact of mobilization and demobilization costs. Additionally, the Company believes that the current low interest rate climate and aggressive bidding environment justify an investment level of $400,000 versus a target of $260,000. Investing an additional $140,000 will enable the replacement of about 2,700 LF more water main.

Q. What is the annual additional cost to PEU's ratepayers' of completing an additional $140,000 of replacement work?

The estimated annual additional cost would be about $10,000, or about $1.67 per customer based on an ROI of 2.72%, an average depreciation rate of 1.75%, local property taxes with a mil rate of 20.07 per $1,000, and the State Wide Utility Tax rate of $6.60 per $1,000.

Q. Will the Company replace the main to stop portion of the services as it replaces the water mains?

A. Yes. The existing services consist of one ¾" IPS HDPE service (main to stop) for every two homes. The small diameter of the services creates pressure problems for homeowners when both homes simultaneously receive water through their common single pipe service connection. The Company will replace each single ¾" IPS HDPE service with two 1" HDPE services. It is essential that services be replaced since about one-half of the system leaks each year occur on the main to stop portion of the service.

Q. Please describe the proposed interconnection of the Avery and Hudson Water Systems.

A. The Avery Water System is an independent Community Water System that provides water service to 47 customers. The Avery Water System is located in Londonderry, NH. The existing Avery Station, treatment and atmospheric tanks are in need of replacement. The Company currently treats the water for hardness, arsenic, iron and manganese control,

corrosion control, disinfection, sediment filtration and radon. The Company evaluated three options to correct the current water quality problems, deteriorating building and rusting atmospheric tanks:

1. Rebuild the Avery Booster Station, storage and treatment systems.
2. Interconnect the Avery CWS to the Town of Hudson water system.
3. Interconnect the Avery CWS to the Londonderry Core Water System.

The Company completed a detailed analysis of whether onsite treatment or one of the interconnection options provided the lowest life cycle cost. A copy of life cycle analysis comparing the onsite rebuild versus the interconnection options is attached as Exhibit JJB-2 to this testimony. This exhibit shows the Hudson Interconnection option has the lowest life cycle cost.

Q. Does the interconnection depend upon any other projects to work?

A. Yes. The interconnection project depends upon a private development project called Hickory Woods, which will be constructing a pumping station in Hudson and extending a new 12" water main from the booster station to the Hickory Woods development project in Londonderry. The Avery interconnection will be connected to the end of the Hickory Woods water main upon its completion.

Q. What will happen to the Avery Interconnection project if the Hickory Woods project is not completed?

A. If the Hickory Woods project is not completed, then the Avery CWS Booster Station, Atmospheric Tanks and Treatment system will be rebuilt on site using the $450,000 SRF loan funds.

Q. Does Pennichuck East hope to complete the Locke Lake and Avery projects in 2013?

A. Yes.

Q. Please describe the timeline required to complete these projects in 2013?

A, The NHDES would like to finalize the loan documents associated with this loan by July 31, 2013. The NHDES cannot finalize the loan documents without the NHPUC approving the proposed financing for this project.

Q. What is the timeline for this project?

A. The list below provides an estimated timeline for the proposed 2013 Lock Lake Water Main Replacement and Avery Interconnection Project:

Regulatory Approvals and Permits

1. Company Board Resolution approving SRF loan (vote by consent) – received April 26, 2015
2. File financing petition with Commission– April 29, 2013
3. Complete Engineering Design for both projects – May 15, 2013.
4. NHPUC and Shareholder (City of Nashua) approval of Financing – June 21, 2012

5. NHDES approval of proposed design – June 1, 2013 for Locke Lake and July 1, 2013 for Avery (the Avery project requires an Environmental Review

Locke Lake Project

6. Bid Locke Lake water main replacement project – July 1, 2013
7. Open Bids for Locke Lake water main replacement project – July 19, 2013
8. Sign SRF Loan Documents for Both Projects – July 31, 2013
9. Complete Company, NHDES bid review and award Locke Lake contract – July 31. 2013
10. Contractor begins construction on Locke Lake Project – August 12, 2013
11. Locke Lake Project substantial completion – November 15, 2013

Avery Interconnection Project

12. Bid Avery Interconnection water main project – August 1, 2013
13. Open Bids for Avery Interconnection water main project – August 15, 2013
14. Complete Company, NHDES bid review and award Avery Interconnection contract – August 22, 2013
15. Contractor begins construction on Avery Interconnection project – September 1, 2013

16. Avery Interconnection Project substantial completion – November 1, 2013

Q. Does this complete your testimony?

A. Yes