



November 11, 2018

Debra Howland Executive Director and Secretary

New Hampshire Public Utilities Commission

21 S. Fruit Street, Suite 10

Concord New Hampshire 03301

RE: DG 18-092

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities - Keene Division

Petition for a License to Construct and Maintain a Natural Gas Pipeline beneath the Ashuelot River in Keene

RE: DG 17-068

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities - Keene Division

RE: DG 18-140

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities Approval of Renewable Natural Gas Supply and transportation Contract

Dear Ms. Howland,

Thank you for accepting my comments on DG 18-092, DG 18-140, and DG 17-068.

I had the opportunity to attend the technical session on DG 18-092, the pipeline project beneath the Ashuelot River, on Thursday, Nov 8, 2018. The session was both interesting and provocative. I am inspired by the resulting conversations to make the following suggestions for an alternative proposal.

The River Crossing:

Liberty argues for an 8-inch pipeline to cross the Ashuelot River at Winchester Street to provide a "loop" or redundant connection in parallel to the Ashuelot River crossing on West Street. The Company notes that in addition to increasing reliability to the 107 existing customers fed by the main on the far side of the Ashuelot River, the parallel connection will allow Liberty to shut down the West Street crossing for needed repair.

In the petition for DG 18-092, Liberty states that,

“9. As described above, the crossing is critical to the economic and safe upgrade and repair of the existing river crossing at West Street. The existing pipeline that crosses the river at this location cannot be shut down for repair because it is a one-way feed. The planned installation of a pipe across the Ashuelot River at the Winchester Street bridge will allow a temporary shutdown to permit the repair of the West Street bridge. The installation of pipe across the Ashuelot River at the Winchester Street Bridge will also increase the reliability of the Keene distribution system by providing another main across the river. The crossing is thus “necessary to meet the reasonable requirements of reliable service.” *See EnergyNorth Natural Gas*, Order No. 25,572 (Sept. 19, 2013).”

When asked whether a new technique where a plastic pipeline is inserted into the existing, damaged pipeline on West Street could be used instead of the Winchester Street crossing, Liberty responded that there were two major problems with that approach. Without the Winchester Street crossing, Liberty would need to either create a temporary bypass along the West Street crossing or temporarily shut down service to 107 customers fed by West Street. Liberty also reported that the insertion technique requires them to install a 6” pipeline inside the existing 8” pipeline and that the reduction in capacity means that the Company would not be able to meet Design Day requirements.

Liberty acknowledges that 67 of the 107 customers are heating customers and a shutdown in the warm months of the year would have a minimum impact on them. The remaining 40 customers include commercial and residential customers. The Company pointed out that a redundant crossing on Winchester Street was only \$10,000 more expensive than simply repairing West Street but would give them the “looping” and additional capacity they will need to expand their system.

A more serious consideration is the reduction in capacity that could result in a failure to meet Design Day requirements.

Although Liberty was not forthcoming with what the specific volumes would be to meet Design Day requirements, it is possible to perform a rough analysis of the percent capacity reduction in going from an 8” to 6” pipeline. Please see the steel pipe capacity chart and note that the inner area of an 8” pipe is 50.02 square inches, while a 6” pipe has an inner area of 28.89 square inches. That means the capacity of the pipeline would be reduced by approximately 42% for the reduced diameter pipeline. https://www.engineeringtoolbox.com/pipes-relative-capacities-d_1593.html

Liberty noted that the problem of a smaller inner diameter pipe would be exacerbated by the fact that the plastic pipes are thicker and reduce the inner diameter. The inner area of a Schedule 40 equivalent PVC pipe is 26.06 square inches which would equate to a 47% reduction in capacity

compared with an 8-inch steel pipe. https://www.engineeringtoolbox.com/pvc-cpvc-pipes-dimensions-d_795.html

This seemed like a reasonable argument against being able to address the West Street crossing with a PVC pipeline insertion until one of the intervenors from the Ashuelot River Local Advisory Committee (ARLAC) noted that the main feeding the existing 8-inch West Street crossing and the main feeding 107 existing customers on the other side of the river crossing are both 6-inch pipelines.

This means that the problem should be analyzed as a reduction in going from a 6-inch diameter steel pipeline main to a 6-inch plastic pipe for the crossing. Going to PVC would therefore reduce the capacity by only 9.8%.

Instead of installing a redundant pipeline that puts the Ashuelot River at some level of environmental risk, might not the reduction in capacity by using the insertion method be compensated for with targeted energy efficiency/weatherization for the 107 customers downstream of the West Street crossing?

Targeted Energy Efficiency/Weatherization to reduce demand (a "Non-Wires Alternative" for gas pipelines)

Liberty noted that while Keene is finally eligible for Liberty's NHSAVES weatherization programs for the first time, the Company planned to offer the program to NEW customers as part of signing on for service.

Although it is encouraging to know that Keene is finally eligible for energy efficiency services for gas ratepayers, it seems a matter of social justice that existing customers should be the first beneficiaries of such services. Moreover, obviating the need for an additional river crossing while also providing immediate relief to the customers fed by the West Street crossing would be more in harmony with the desire of the community of Keene to reduce greenhouse gases and bring financial relief to residents of Keene.

As more cities and towns make a commitment to achieve 100% renewable energy goals, Liberty could emphasize innovative solutions like weatherization and energy efficiency that provide a 5% return to the company on the cost of the projects, instead of constantly expanding the gas delivery system.

Most cost-effective energy efficiency/weatherization projects reduce consumption by 20 to 30%. Reducing consumption among the 107 existing customers would compensate for the 10% reduction caused by using an inserted plastic pipe to repair the West Street crossing while also making another 10% of capacity available for new customers.

Plans to convert to CNG in 5 Phases - DG 17-068

The Safety Division of the Public Utilities Commission review of Liberty's initial plans for converting to a CNG gas franchise in Keene includes maps and descriptions of the 5 proposed phases in the Appendix starting on page 66 of

https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-068/LETTERS-MEMOS-TARIFFS/17-068_2018-10-05_STAFF_ADEQUACY_REVIEW.PDF

On page 78, "The existing Keene customers will be converted over multiple years by geography and strategic valves to isolate these customers from the propane air system. It is expected to take between four and seven years to accomplish the conversion. Current estimates are conversion costs will be approximately \$850 per customer, which equates to \$1,062,500 (based on 1250 customers). These costs will be borne by all (existing and new) Keene Division customers over a number of years through the Keene Division COG."

Keene still has 8.5 miles of old cast iron pipeline out of a total 30 miles. It also had a very high percentage of Lost and Unaccounted for (LAUF) gas volumes of 2.6% in 2017. In order to avoid building regulating stations to reduce gas pressures for the planned CNG system, Liberty will need to replace all the cast iron pipe.

In Massachusetts, recent legislation tasks the Department of Public Utilities and the utilities to work together to expedite the replacement of leaky old pipes by adopting new techniques and appropriate compensation to the utilities for the work. Were Liberty to prioritize replacing aging pipeline infrastructure to reduce leakage, local clean energy advocates in Keene would support enabling legislation and rules.

Again, Liberty could distinguish itself by developing and optimizing the Keene distribution system in accordance with the goals and desires of the community to reduce greenhouse gases, including the potent methane (86 times more potent than carbon) and propane (3.3 times more potent than carbon) gases as well as avoiding the cost of reimbursing the company for LAUF gas that accounted for 2.6% of volumes in 2017.

Landfill Methane – DG 18-140

Currently, Keene consumes about 130,000 Dekatherms of gas per year. Liberty announced that it is petitioning to operate a landfill methane capture system in a Bethlehem, NH landfill. "For contract years 1–5, the MASQ is 490,000 dekatherms (Dth) annually. For contract years 6–10, the MASQ is 375,000 Dth annually. For contract years 11–17, the MASQ is 270,000 Dth annually. Details of the MASQs can be found in Section 4.1 of the contract, Attachment WJC/MES-1. " https://www.puc.nh.gov/Regulatory/Docketbk/2018/18-140/INITIAL%20FILING%20-%20PETITION/18-140_2018-09-07_ENGI_DTESTIMONY_CLARK_SALTSMAN.PDF

The Keene system could be supplied with landfill methane from Bethlehem, NH for the next 20 years. This is a solution that would support the community's desire to avoid the environmental harms associated with fracking in communities to the west. It would rely on locally sourced,

non-fracked methane, keeping more consumer dollars in New Hampshire. Moreover, instead of flaring the methane at the existing landfill or allowing it to leak into the atmosphere, putting this naturally occurring methane to use heating homes and supplying businesses is a win-win for the environment. Keene is well acquainted with landfill methane as it was in use for nearly 20 years in Keene for municipal operations until the methane output declined below viability.

Were Liberty to commit to providing landfill methane to the entire Keene system, addressing the landfill leakage issue with the Bethlehem, NH site, and offer the people of Bethlehem just compensation for allowing the project to be sited there, the Company could count on enthusiastic support from local clean energy advocates in petitions before regulatory bodies.

Redundancy

This alternative proposal where Liberty would shut down and repair the West Street river crossing using the much quicker and less disruptive plastic pipeline insertion technique, does not address Liberty's desire for redundancy and expansion. The proposal does offer the affected 107 customers a unique opportunity to weatherize their homes and may make those customers much more agreeable to a temporary shutdown. Liberty also stands to gain from the 5% return on investment for weatherization projects and credit for pioneering a "Non-Wires Alternative" to pipeline expansion. Liberty could count on support from clean energy advocates and local lawmakers to promote enabling legislation to support such an alternative investment.

Summary

Liberty Utilities can work together with the people of Keene on a truly innovative and sustainable solution for helping Keene to achieve 100% renewable energy, increased energy efficiency, keeping consumer dollars in-state, reduced greenhouse gas emissions and immediate financial relief for ratepayers. Instead of fighting the people of Keene who are concerned about the harmful environmental impact of expanded fossil fuel use, Liberty could be a partner and ally for a clean energy future for Keene.

Sincerely,

Patricia A. Martin

17 Farrar Road

Rindge, NH 03461

603-899-2894