United States Senate
WASHINGTON, DC 20510

October 22, 2018

The Honorable Howard "Skip" Elliott
Administrator
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Administrator Elliott,

We write to follow up on issues raised by the National Transportation Safety Board (NTSB) in its investigation of the Columbia Gas disaster in the Merrimack Valley on September 13, 2018, in which more than 20 people were injured, one was killed, and nearly 8,600 gas meters were left without service. In its preliminary report and in subsequent briefings of our staff by the NTSB, it is clear that there were serious lapses in safety procedures that resulted in this accident. These issues call into question whether existing regulations are sufficient to protect the public from future disasters or if additional oversight is needed to prevent this from happening again in Massachusetts or anywhere else.

Regulations to Prevent a Common Mode of Failure

In briefing our staff, NTSB investigators revealed that the safety redundancies intended to prevent an accident on Columbia Gas' system had "a common mode of failure." NTSB officials told our staff that there were two sensing lines going to two separate regulators within the affected station—one regulator was intended to keep the gas flow at 0.25 psi and the other regulator was intended to serve as a monitor, adding an additional layer of control if the gas pressure exceeded the maximum allowable operating pressure. However, the two sensing lines leading to these two regulators were on the same section of pipe. This meant that both sensing lines could be taken offline by the same construction project, nullifying the redundancy through a common mode failure. According to the NTSB, that is exactly what happened in this event.

In a response to our offices, NiSource CEO Joseph Hamrock justified this configuration, writing, "Columbia's regulator systems are designed with one full level of redundancy, and are constructed in compliance with federal standards, which are defined in federal code (CFR 49, Part 192)." However, there are other options for guarding against an over-pressurization event, including the use of an automatic shut-off valve or an emergency relief valve, which do not entail the use of two similar regulators installed in series. This raises serious questions as to whether federal regulations governing these requirements are sufficient to protect public health and safety.

Regulations to Ensure Qualified Personnel for Construction

While the NTSB did not identify any issues related to the contractor performing the work, investigators informed our staff that some of the work being performed by Columbia Gas at the time of the incident was pipeline "construction work," which is not covered under federal regulations governing "Qualification of Pipeline Personnel."[1] These qualification regulations only apply to "individuals performing covered tasks on a pipeline facility," and covered tasks are limited to "operations or maintenance." According to the Pipeline and Hazardous Materials Safety Administration (PHMSA), construction activities include the installation of a new pipeline or pipeline components that include welding, coating, backfilling, testing and all other construction activities that ensure that newly constructed pipelines can operate safely. It is imperative that PHMSA regulations address all aspects of pipeline work to ensure that it is being undertaken by qualified personnel. While PHMSA staff has said that the agency is "considering expanding these [operator qualification] requirements to include more aspects of new construction," it is alarming that there are not currently requirements in place for some activities that could impact the safety of pipeline systems.[2]

Regulations Requiring Remote Shut-Off

According to the NTSB report, after the pressure sensing lines were disconnected, the regulators fully opened and allowed high-pressure gas to enter the low-pressure system. Conversations with the NTSB and follow-up materials provided by the company suggest that no Columbia Gas employees were at the regulator station at the time this work was being done, delaying the response time of the company and likely contributing to the more than 20-minute gap between the alarms and the shutdown of the regulator station.

More troubling, the Columbia Gas control room personnel also had no ability to shut the gas down remotely, as would have been possible if remote shut-off valves had been installed. While PHMSA is working on regulations that would include requirements for remote shut-off valves on new or entirely replaced natural gas transmission lines, there are no regulations governing the use of these valves on distribution lines. Given the circumstances of this disaster, that lack of regulation appears to be a serious safety failing in PHMSA regulations.

While we understand you are limited in addressing any questions about this specific incident as the investigation proceeds, we request your responses by October 25, 2018 to the following questions.

1. Does PHMSA believe that it would improve safety to require configurations of regulators and sensing lines for natural gas distribution systems that ensure that there cannot be a common mode of failure? If not, why not? If so, what actions is PHMSA taking to require this?

[1] 45 CFR Part 192, Subpart N
[2] Correspondence with PHMSA staff, October 17, 2018

2. Does PHMSA believe that the regulator and sensing line configuration employed by Columbia Gas in the Merrimack Valley region meets the federal requirement that over-pressurization devices are "designed and installed to prevent any single incident [...] from affecting the operation of both the overpressure protective device and the district regulator"?[3]

3. If PHMSA believes that Columbia Gas' configuration met the current federal requirements, does PHMSA believe that those requirements are sufficient to ensure redundancy on the system to prevent a disaster as we saw in the Merrimack Valley? If yes, please justify. If no, what steps is PHMSA taking to revise the regulations?

4. Does PHMSA believe that promulgating regulations to govern the qualifications of workers engaged in pipeline construction, in addition to those governing operations and maintenance, would improve safety? If not, why not? If so, what actions is PHMSA taking to require this?

5. Does PHMSA believe that safety would improve if your agency (or the state agency to which PHMSA has delegated authority for intrastate projects) reviewed and approved work packages for construction, operation, or maintenance of natural gas distribution pipelines?

6. Does PHMSA believe that requiring remote shut-off capabilities for natural gas distribution pipelines would improve safety? If not, why not? If so, what is PHMSA doing to require this?

We appreciate your prompt reply. Should you have any questions, please contact Morgan Gray in Senator Markey's office at 202-224-2742.

Sincerely,

Edward J. Markey
United States Senator

Elizabeth Warren
United States Senator

[3] 49 CFR 192.199(g)