



April 6, 2020

Mr. Alan Mayberry  
Associate Administrator for Pipeline Safety  
Pipeline and Hazardous Materials Safety Administration (PHMSA)  
U. S. Department of Transportation  
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**RE: Pipeline Safety: Valve Installation and Minimum Rupture Detection Standards, Docket Number PHMSA-2013-0255**

Dear Mr. Mayberry:

**Manufacturers Have A Strong Interest in The Safety of Natural Gas Infrastructure**

Commenter first commends you and your agency for the proposal and issuance of recent final rules addressing natural gas pipelines, compressor stations, gathering lines, and underground gas storage<sup>1</sup>. Many of these requirements were long overdue but much appreciated. My comments on the proposed valve and minimum rupture requirements are not intended to be anti-natural gas. In fact, it is because of commenter's sixteen years representing electric utilities (gas-fired) and industrial users of natural gas that these comments are filed. Commenter is an advocate of natural gas as a feed-stock fuel for manufacturing and for fuel for power production. However, natural gas safety regulations have not been sufficient for supporting the electric power sector and industrial customers. PHMSA has often been slow to regulate because of presumptive secondary

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<sup>1</sup> Issued Feb. 12, 2020

cost-benefit requirements that are unrealistic. Cost benefit analysis should always be used by agencies. But safety agencies should not have secondary cost analysis tests or thresholds making new rules difficult to propose and promulgate.

### PHMSA's Proposed Rule is Relevant to Reliability of Electric Utility Sector

Commenter has 19 years' experience in the electric utility sector. Commenter is also a non-paid advisor in the North American Electric Reliability Corporation (NERC) subcommittee on gas-electric reliability. While commenter does not speak officially for NERC, these comments do reflect considerable thought on NERC's current efforts to establish gas-electric reliability guidelines.

Obviously, reducing and preventing injuries and loss of life is the most significant purpose of any pipeline safety rulemaking. Pipeline and compressor station rupture, however, also have economic impacts on any industry reliant upon natural gas for fuel supply and for natural gas-fired power plants that provide essential electricity to homes, industry and other facilities. Over the last 18 months there have been at least 12 oil and gas pipeline ruptures in the press. Some are significant and others less so. Commenter's expertise is not offered for oil pipelines and, unless specifically referenced, are about natural gas and not oil pipelines. Many gas pipeline events are not required to be reported to PHMSA or FERC but are significant to the end users.

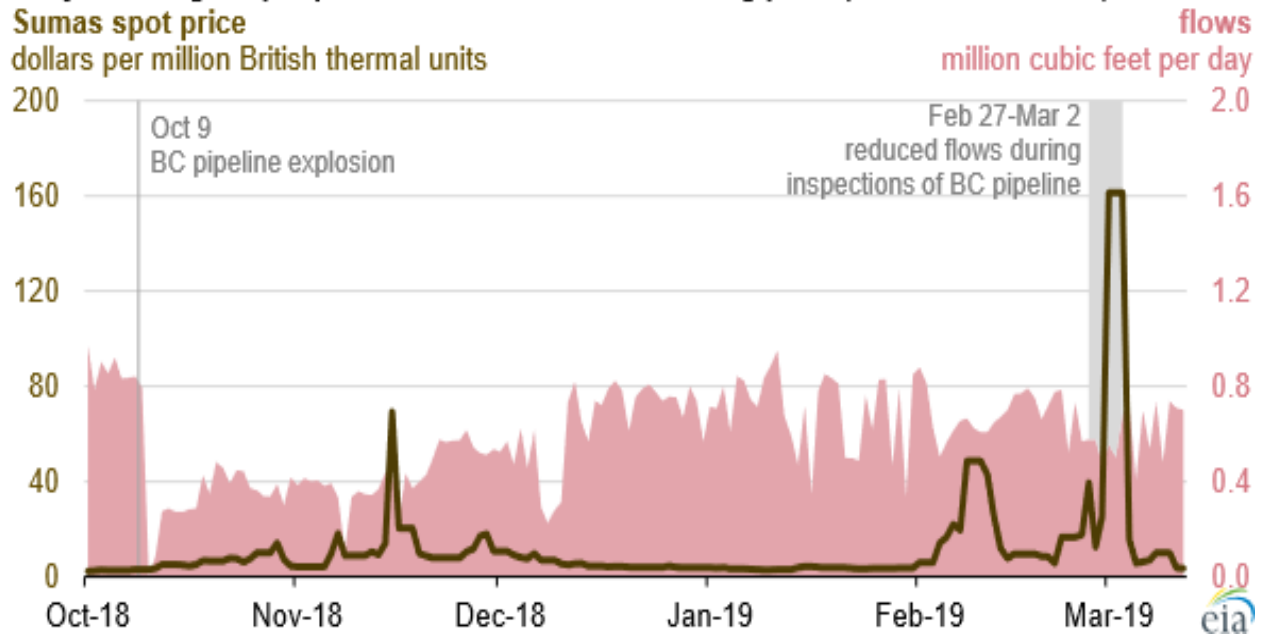
Unfortunately, the commenter cannot draw upon any consolidated events that are not reported to or consolidated by any centralized agency.

### PHMSA's Proposed Rule is Relevant to Industrial Gas Users and Agriculture Sector

Electric utilities and gas-burning manufacturers need reliable and affordable natural gas supplies to maintain their reliability and competitiveness. The use of natural gas for energy is expanding, and power generation also is becoming more dependent on natural gas as its fuel source. EIA recently suggested by end of 2020 the number of gas-fired power sector is expected to exceed 36%. A number of manufacturing companies in the U. S. and Canada have seen significant expenses as a result of pipeline safety incidents over the last 18 months. Enbridge pipeline explosion in the Canadian British Columbia province (Sumas Pass) on October 9, 2018 resulted in impact to all customers even those with firm or uninterruptible gas contracts. were impacted. Approximately 70 percent of the natural gas supplied west of the Cascades in the Pacific Northwest is imported from Canada. As a result of the NEB reduction gas supply was reduced by approximately 20 percent. This meant that for five months, where the pipeline volume/pressure was reduced for safety reasons, the companies experienced curtailments and prices that approached \$200/MMBTU in March 2019. (Electric utilities also faced shortages and purchases off spot market).

The U. S. EIA chart on page 3 demonstrates the unexpected economic impacts.

## Daily natural gas spot price and flows at Sumas trading point (Oct 2018-Mar 2019)



**Source:** U.S. EIA, based on Natural Gas Intelligence (prices) and Genscape NatGas RT (flows)

A second East Tennessee pipeline exploded in December 2018 and a compressor station failed on the northeast section within the same week—affecting customers twice. Customers in this region had to find alternative supplies at a higher cost.

It is true that some industrial parties can obtain 1-2 days of natural gas through surface transport by LNG truck deliveries. But this is a very short-term solution and an extremely expensive one. Power sector cannot find LNG by truck (or rail) to solve the problem because of the size of fuel needed. LNG by rail for industrial parties is significantly more expensive, and the physical tie-in to the feed-line servicing the factories is not always available. *Further, there may be serious LNG by rail public safety concerns when rail lines may have one train carry 110 cars with LNG.*

The 2018 Sumas Pass outage affected electric utilities, manufacturers, and commercial agricultural greenhouse growers<sup>2</sup> when gas supply was shut down or were subject to two electric utility Demand Side Management (DSM) programs (in Canada and in U. S.) before the pipeline was restored (at 80-85% capacity). Those agricultural greenhouses, that start fall harvest plantings in natural gas heated greenhouses. Those greenhouse growers paid \$200 Canadian versus their pre-rupture \$3.00 Canadian per gigajoule (G). The Canadian Growers' Association reports that many nurseries decided to not invest in winter, 2019 plantings because of high fuel costs. Their slim profit margins could not withstand having to buy propane or methane gas off the spot market. Those financial losses were missed opportunity costs for the agriculture sector

<sup>2</sup> British Columbia Greenhouse Growers' Association, Surrey, British Columbia, Canada.

were not identified in PHMSA’s economic analysis. Presumably U.S. nurseries and agricultural parties in Oregon and Washington state also experienced adverse economic impacts resulting from many months of increased natural gas prices—long after the pipeline was repaired in early November 2019. Unfortunately, the data on other industries located in these provinces and states is not available in public information.

To put a finer point on the issue, even though the pipeline explosion was repaired in six days the industrial and electric utility sector faced price or economic distortions in their own natural gas prices and economics for five months following the explosion when the gas supply was not restored at 100% or full capacity. The capacity reduction decision was made by Canadian National Energy Board (NEB), the sister regulatory agency to PHMSA. Commenter does **not** offer this as a criticism of NEB’s decision. Commenter points out that a curtailment can have longer lasting impacts to gas users than PHMSA (or NEB) may recognize. Thus, pipeline explosions and repair-worthy ruptures need to be prevented whenever possible. PHMSA’s proposed rule should assist in shortening the time for identification of problems and completing repairs.

In January 2019 more than 100 auto plants, auto supply contractors, chemical plants and other factories lost power and natural gas due to a fire at a Consumers Energy Macomb County compressor station while a utility employee conducted maintenance. Many hundreds of businesses faced mandatory gas curtailment when an Operational Flow Order (OFO) failed with no natural gas provided, making factories unable to operate for six days. Local news coverage suggested that more than 100 factories sent workers home for six or seven days. Approximately 11 of those companies, paid their staff and provided other benefits without any income during curtailment. According to communication with the Michigan Governor’s Office, if the other businesses paid their employees during the force majeure event that information is considered proprietary. Regardless, either employees lost pay for shut down or the employers lost income and paid salaries of workers without income. Either resulted in an economic loss for one party or perhaps both. For six days Macomb County (Michigan) area residential homeowners were asked to reduce indoor gas-fired and electric heating to reduce gas demand during an exceptionally cold week.<sup>3</sup> While manufacturing customers’ financial losses are proprietary, Consumers Energy’s April 2019 filing indicated the event cost \$25.5 million, including \$18 million for repairs to their Ray Compressor station facility and \$7 million in emergency gas purchases (presumably to power their own gas-fired power plants).

The commenter does not assert that these events would have been prevented if the safety standards as proposed by this rulemaking were already in effect. But believes natural gas pipeline industry (transmission and distribution) needs additional remote sensors and shut off

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<sup>3</sup> The Detroit News, Consumers Energy website, The Morning Sun, and the Michigan Public Service Commission’s report

valves as recommended by National Transportation Safety Board (NTSB)<sup>4</sup>, the General Accountability Office (GAO), and as identified in a number of PHMSA reports and workshops (2012-2019). Many of the proposed rule's proposed requirements were detailed in the Pipeline Safety, Regulatory Certainty and Job Creation Act of 2011. Congress has mentioned concerns about the slow pace for rules to implement the law's often takes as long as ten years.

However, in addition to supporting the requirements for new sensors and better methods to identify changes in pressure, PHMSA should give some flexibility in compliance methods when new and superior commercially sensor technologies emerge. Many of the current sensor technologies coming from refining, upstream remote production facilities and other industries that are effective and affordable now were not imaginable ten years ago. The rule should give reasonable ways for gas transmission and distribution systems to improve upon their technology selections and replacements as long as the technologies are genuinely effective. Perhaps this would mandate Q and A for state or PHMSA enforcement offices to ensure that operators feel safe in making those adjustments and not mandating time consuming revisions to entire existing rules. This must be undertaken carefully to avoid any loophole that allows pipeline/compressor station owners, operators and contractors to arbitrarily not conduct the mandate in this safety rule.

### Supply Chains Matter: What Covid19 Has Taught Us in Real Time

While pandemics are possible, they are truly rare- sometimes only once in a generation. We have learned in the last two months that many businesses have had to rely upon remote operational work and working in non-confined spaces due to the restrictions under novel Coronavirus19 (or Covid19) exposure risks. These quickly convened arrangements have placed many energy workers in more restrictive work arrangements to protect the workforce. While most of these work or on-site living arrangements have been in electric utility sector, some natural gas companies in "hot spot" locations have also been affected. These comments are being submitted just at the time greater New York city and parts of New Jersey are expected to hit their peak. The commenter urges PHMSA to recognize what the consequences of a similar virus would mean if the virus hit the U. S. during peak wintertime heat or natural gas usage by industrials. (In fact, industrial usage of natural gas has dropped in the last two weeks as most factories are not fully operational or have ceased to operate). PHMSA should consider what the consequences would have been for locations like for Merrimack Valley's 2018

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<sup>4</sup> PG&E San Bruno NTSB Accident Report; PAR-11/01;

<https://www.nts.gov/investigations/AccidentReports/Reports/PAR1101.pdf>

GAO Report to Congressional Committees, Jan. 2013 <https://www.gao.gov/assets/660/651408.pdf>; Oak Ridge National Laboratory ORNL/TM-2012/411 and Kiefner and Associates, Inc report

[www.phmsa.dot.gov/sites/phmsa.dot.gov/filesdocs/technical-resources/pipeline/16691/lea-detection-study.pdf](http://www.phmsa.dot.gov/sites/phmsa.dot.gov/filesdocs/technical-resources/pipeline/16691/lea-detection-study.pdf)

over-pressurization by the company or for the homes and residences in three states and one provincial state affected by the Enbridge accident (2019). In the Merrimack Valley events the LDC utility, parent corporation or state pulled plumbers and electricians throughout MA and nearby New Hampshire to service to 8,000 homes and businesses. Those homes (and some small businesses) lost appliances during the over-pressurization and needed many suppliers or vendors and service personnel to remove broken appliances, replace appliances, and re-light the pilot lights of gas appliances. (In some cases, very old homes also needed replacement of older electrical wiring by private electricians though older wiring was due to historical homes not due to the gas pipeline company). How could that have been resolved safety during a pandemic without increasing the number of exposed individuals. **Pandemics are extremely rare but the events that the U. S. are facing right now are an example of the connectedness between a fuel, a power plant, a fuel provider and manufacturers.**

**All regulations should not be presumed cost effective because of rare pandemics but they have taught the country about the significance of supply chains.** Safety regulations at PHMSA should consider that factories and distribution facilities cannot be relied upon during ordinary days or extreme weather events (or pandemics) if there is a disruption on fuel because the supply chain of the gas distribution system is under repairs with no remote sensors.

While commenter acknowledges that there is no known hospital that was unable to operate during 2019 pipeline force majeure events it is very possible to see the connection to similar “supply chain” issues in a cyber, weather or human pathogen events. The natural gas industry could see significant cuts in available employees to be deployed in storms or extreme cold and the electric utilities that they serve then serve hospitals, kidney dialysis clinics, city hall, fire departments, police departments, or others needed during emergencies where not all can run on diesel fired back up generators.

### **Labor Consequences When Remote Sensors Are Not Used**

Not requiring remote sensing means reliance upon current staff or contractors at interstate pipeline companies or gas supply local distribution utilities (LDCs). We have no current public information by gas infrastructure sector and the current pandemic. Yet major electric utility organizations such as Edison Electric Institute (EEI) have predicted that, during this virus, the electric utility sector may see as many as 40% absenteeism—including electric line workers during the virus. While no predictions seem available under current virus crisis, DOT/PHMSA would find it very easy to determine what number of pipeline staff/contractors were absent from work, working at home (unable to go out and make manual changes on pipelines or compressor stations along the supply chain). When evaluating PHMSA should differentiate those staff remaining at home to take care of children with in-home schooling obligations, those needing to shelter in place because of spouses needed for hospital work or essential government workers in military and intelligence, or taking care of elders. PHMSA should not ‘over count’ by counting

those who were not able to work in the rarest of circumstances falsely presuming that rare pandemics happen every year or even every decade. Similarly when PHMSA reviews these numbers PHMSA should also inquire what number of employees used vacation time and not counted as absent, and make sure those are counted who are working 12 hour shifts for two weeks on and two weeks off but living on site if any gas companies conducted this during COVID19 virus time. PHMSA should also consider whether employees deployed to work were because the company did not have remote sensors. PHMSA should consider any OSHA or union requirements for confined space that might not be able to function under a confined space labor restriction.

### Useful Labor Facts from Current Events

Commenter observes that, as comments are submitted on April 6, a number of electric utilities (not covered by this rulemaking unless they own gas pipelines) are moving to install essential linemen, transmission and generation operators into living onsite within lobbies, personal offices, closed cafeterias or rented trailers at utilities due to covid19. New York's Con Ed electric utility has approximately 140 employees on at least a one month 24-hour staff to ensure that they can meet all emergency response or operations without changes in shifts bringing in more opportunities for virus spread. New York's New York Power Authority (NYPA) has approximately 40 employees living on site for a sustained one-month assignment with no visits to family, friends, or restaurants. Kissimmee, Florida's public power utility has retained approximately a dozen staff to run the utility. Con Ed has also announced it has 170 workers of their 14,000 workforce (most normally in office or phone service centers) already absent from work with confirmed cases of Covid.

These electric utility examples are provided as documentation of absenteeism as indicators of how absenteeism could be a factor in natural gas transmission sector and staff deployment problems without remote sensors. The natural gas sector often does not have staff within 15 minutes or 15 miles of the locations needing remote pressure sensors and remote shut off technology. If not located within 15 miles, what would it take under emergency circumstances (flood, earthquake, fire, hurricane, or tornado) to deploy the staff or contractors quickly. NTSB's root cause report<sup>5</sup> on Merrimack Valley said that Columbia's employees (or contractors) said they needed as long as **two hours** to deploy to the Lawrence area to turn off pipeline that had over pressurized. By the time they moved into place the explosion had occurred. The fire department arrived only minutes from the explosion after calls directly from residences.

Commenter asks PHMSA to evaluate what number of gas infrastructure personnel (or their contractors) would be required to keep natural gas transmission infrastructure fully operational

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<sup>5</sup> NTSB Report and Recommendations  
<https://www.nts.gov/investigations/accidentreports/Pages/PAR1902.aspx>

without remote sensors, without proposed shut offs and other devices as proposed in this rulemaking.

Commenter observes that if there is one slender factor to be grateful for it is that the Covid19 virus spread in the U. S. has occurred during the end of a mild winter and easy spring with no heavy electric demand—and no heavy demand for natural gas. Those utilities serve that include hospitals. When PHMSA and OMB review the costs and benefits, they should consider that if the events necessitating staff or contractor deployment that under COVID the employees or contractors might require 24-hour payment for up to two weeks or perhaps for months. (Example, NYPA has 85 staff working on site but confined to central facility isolation. Approximately 15 people are working and housed for more remote dam management. All are paid for 24 hours per day for three weeks or whenever the virus period recovers. All staff must be tested by a third party for temperature daily and all food must be catered<sup>6</sup>). None of these expenses were considered when the utilities set their rate cases—but they were required to have mutual aid agreements, contracts and ways to safely operate remotely. Commenter suggests the same uses of remote sensing and remote shutoff should be established in regulation.

These costs and operational challenges if natural gas stoppages or force majeure events should be considered by PHMSA in their cost-benefit analysis. While a human virus like Covid19 is very rare- it is not be rare to deploy natural gas infrastructure staff and contractors after a storm, earthquake, or flood when there are no remote sensors.

**Commenter urges PHMSA and OMB to consider the research conducted by Carnegie Mellon University’s Jay Apt, Gerard Freeman, and Michael Dwokin demonstrating many losses of gas infrastructure operations by natural gas to power and industrials. See “Fix the Reporting of Natural Gas Pipeline Outages and Pressure Drops”<sup>7</sup>** This Carnegie Mellon University study were published in both the National Academies of Sciences & Engineering and *Medicines Issues in Science and Technology*. Mr Gerad Freeman is currently an employee of DOE through the Pacific Northwest National Laboratory (PNNL) in Richland, WA and would be easy for PHMSA to consult with during PHMSA review of comments regarding the research and findings. Perhaps Carnegie Mellon University has additional useful information available.

Unfortunately, there is no central location in U. S. government or shared data by state agencies for collection of the frequency of power losses or voltage support to the power sector (or those that might affect natural gas industrial users in high tech, banking, medical instrumentation manufacturing, etc. While this is not PHMSA’s role to coordinate all this data the commenter

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<sup>6</sup> Politico, March 27, 2020

<sup>7</sup> Carnegie Mellon study <https://www.cmu.edu/ceic/assets/docs/publications/working-papers/ceic-18-01-natural-gas-pipeline-reporting.pdf>



observes that the relationship between natural gas sector and its final customers are far more significant than five or ten years ago when the largest fuel use for power was coal. The world has changed. **And as a result of this “connectedness”, the safety and prevention measures for the natural gas infrastructure must be improved.**

Lastly, commenter requests that economic impacts for lost power to electric consumers and industrial customers be considered in this rulemaking and in PHMSA’s future natural gas pipeline regulations. Commenter has filed comments on this issue several times over the last two years and has yet to see any expansion of cost-benefit analysis by looking at the risks to lose power due to gas transmission or gas distribution infrastructures that cannot operate their infrastructure remotely in a crisis. Averted safety incidents and the avoided economic costs to the industry and other consumers should be included in the benefits analysis supporting the rules. While, as stated, reductions in serious injuries and loss of life are the most significant consideration, there are other economic factors that PHMSA should consider.

Nothing in these comments is meant to imply or support anti-natural gas sentiment. The comments are offered based upon real world experience by natural gas users in essential electric utilities and manufacturing. **Natural gas is an essential fuel. It is time to have the gas infrastructure reflect that importance.**

**Surely, we don’t one day to be talking about natural gas infrastructure the way we are talking about inadequacies of medical supply chains (respirators, gloves, masks, beds and rubbing alcohol) during an extreme virus and wondering why we didn’t anticipate sequencing and distribution problem for pipeline and compressor station safety.**

Thank you for consideration.

Sincerely,

Theresa Pugh

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