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June 24, 2024

Alan K. Mayberry
Associate Administrator for Pipeline Safety
Pipeline & Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590

Re: Noticed Agency Information Collection Activities of the Pipeline & Hazardous Materials Safety Administration ("PHMSA") Pipeline Safety: Mitigation of Ruptures on Onshore Gas Transmission and Gathering, Hazardous Liquid, and Carbon Dioxide Pipeline Segments Using Rupture-Mitigation Valves or Alternative Equivalent Technologies and Blending of Hydrogen Gas and Natural Gas within Gas Pipelines; Docket No. PHMSA-2022-0085.

Associate Administrator Mayberry:

Thank you for the opportunity to comment on this information collection proposal from the Pipeline and Hazardous Materials Administration (PHMSA). The Pipeline Safety Trust (PST) has reviewed the proposal and is largely supportive of both collection activities. This comment will focus on the hydrogen blending portion of the proposal given the serious technical and safety concerns PST has with blending hydrogen into gas systems. While this information collection will give the public and PHMSA insight into current hydrogen blending projects, PST strongly urges PHMSA to limit hydrogen blending activities on gas distribution systems until the safety, health, and technological implications of hydrogen blending can be better understood.

The Inflation Reduction Act (IRA) and Bipartisan Infrastructure Act (BIF) included incentives for hydrogen development and usage for possible climate reduction benefits.[1] Given these incentives, hydrogen blending in distribution and transmission systems is expected to rise because operators may be able to reduce the volume of methane used by adding hydrogen to the energy mix, leading to greenhouse gas emission reductions. Incentives are catalyzing the use of hydrogen despite operators being relatively new to transporting it and without adequate regulations in place to ensure technical feasibility and public safety. As a safety regulator, PHMSA should ensure science-based safety standards are in place to protect the public from unintended or unknown consequences of hydrogen blending.

In 2022, PST commissioned a report to assess the state of hydrogen pipeline safety and identify key policy and scientific gaps.[2] At the time of our analysis, 1,500 miles of hydrogen pipelines existed, with 80% of milage represented by three small-diameter transmission pipelines in rural Gulf Coast areas.[3] According to 2023 PHMSA data, there are now approximately 1,600 miles of hydrogen pipelines.[4] Few operators have

[1] Pipeline Safety Trust, *Hydrogen Pipeline Safety: Summary for Policymakers* (Jan. 2022) https://pstrust.org/wp-content/uploads/2023/01/hydrogen_pipeline_safety_summary_1_18_23.pdf.
[2] Accufacts Inc., *Safety of Hydrogen Transportation by Gas Pipelines* (2022) https://pstrust.org/wp-content/uploads/2022/11/11-28-22-Final-Accufacts-Hydrogen-Pipeline-Report.pdf.
[3] *Id.* at 10.
[4] *Id.*

experience transporting hydrogen, and even fewer have experience transporting hydrogen in distribution systems. With attention to some of the current regulatory gaps, operators are not required to notify PHMSA, the public, or local first responders if blending occurs. Also, there are no regulations that address the unique safety risks posed by hydrogen-methane blends. Meanwhile, the American Gas Association (AGA) included a 20% hydrogen blend through gas distribution systems in guidance for natural gas utilities.[5] Transporting hydrogen poses serious explosion risk due to its different flammability properties from methane, a propensity to leak at higher rates than methane, and the possibility of infrastructure integrity issues caused by embrittlement.[6]

Since commissioning this report, PST has cautioned against the blending of hydrogen into gas distribution systems because of the safety risks it identified. We have also called attention to the need for more research into the effects of blending hydrogen in gas transmission systems because of the broad knowledge gaps that exist. Transporting hydrogen poses serious explosion risk due to its different flammability properties from methane, the propensity of hydrogen to leak more than methane, and infrastructure integrity issues caused by embrittlement.[7] A recent study found that hydrogen can ignite 13 times more easily than methane and its flame propagation speed is 8 times faster than methane.[8] Another recent study found that 20% hydrogen blended gas leaked twice as much as non-blended gas from cooking ranges.[9] Most critically, the lack of effective hydrogen leak detection makes it unclear how operators could begin to safely blend hydrogen in distribution systems.

This information collection is a critical first step to understanding where and at what volume blending is occurring. However, PST continues to have concerns that hydrogen blending activities could become widespread before existing scientific and safety gaps can be addressed through regulation. Right now, operators are not required to notify PHMSA or the public about hydrogen and gas blending projects or disclose safety measures being used to protect consumers of blended gas. To ensure public safety, PHMSA must continue to fund research and development into assessing the compatibility of hydrogen blends in transmission pipeline systems designed for methane, safety implications of blending hydrogen at high percentages in distribution systems, prevention of pipeline embrittlement, hydrogen leakage studies, and leak detection technologies.

We hope the insight into industry trends gained because of this information collection on blending are used to quickly set safety standards to mandate transparency about blending activities and can provide more science-based information about the risks posed by blending hydrogen with methane. PHMSA must ensure that all potential health and safety impacts of hydrogen blending are better understood, and operators can prove the integrity of the pipelines will not be compromised by the presence of hydrogen.

Regarding the proposed information collection, PST believes the following changes would strengthen the information collected, increase transparency for the public, and better inform future rulemaking.

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[5] American Gas Association, *Net-Zero Emission Opportunities for Gas Utilities*, (2022) https://www.aga.org/wp-content/uploads/2022/02/aga-net-zero-emissions-opportunities-for-gas-utilities.pdf.

[6] *Safety of Hydrogen Transportation by Gas Pipelines*, *supra* note 2.

[7] *Hydrogen Pipeline Safety: Summary for Policymakers*, *supra* note 1.

[8] Michael Scholand, *Debunking the Hydrogen* Hype, 1 (2024) https://ecostandard.org/wp-content/uploads/2024/05/Debunking-the-Hydrogen-Hype_M2S2-Energy-Ltd2.pdf.

[9] Nathan Morgan, *Research into Leakage Rates of Hydrogen Blends*, 16 (Apr. 11, 2024) *https*://ecostandard.org/wp-content/uploads/2024/04/Q4893-Research-on-Leakage-Rate-issue-4-.pdf.

1. Commodity Report Granularity

The current proposal would update the Commodity Group section of Form F7100.2-1, Gas Transmission, and Gathering Annual Report Form (referred to as "Annual Report") operators are required to complete under 49 C.F.R. part 191 to include new categories for blended natural gas and hydrogen gas pipelines based on hydrogen volume. PST believes the suggested volume categories of "greater than 0% but less than or equal to 5%," "greater than 5% but less than or equal to 20%," and "greater than 20%" are too broad. PST believes having more granular categories at the would be more helpful. We suggest the following categories: "greater than 0 but less than 5%," "greater than or equal to 5% but less than 10%", "greater than or equal to 10% but less than 15%," and "15% and greater." There is little evidence of hydrogen blending at or above 20% occurring at all and many operators are not expected to begin blending at 20% hydrogen volume immediately. This granularity would increase transparency for members of the public and better capture real-life scenarios. Additionally, PHMSA should make clear that operators should report the highest potential presence of hydrogen intended to be blended rather than an average. Operators should also be required to provide blending timelines or schedules if the volume of hydrogen they blended increased incrementally. Several of the announced hydrogen blending projects set schedules for gradually increasing the hydrogen volume over a set period. As an example, the SoCalGas blending project at the University of California, Irvine is expected to begin with a hydrogen 5% blend with a goal of blending up to a 20% over two years.[10] Requiring operators to report their blending timelines would give the public and PHMSA a fuller picture of hydrogen blending activities.

2. Public Access to Collected Information

The current proposal does not specify whether the information collected from operators would be added to the public version of the National Pipeline Mapping System (NPMS). Given the outlined safety concerns about hydrogen blending in distribution systems specifically, lack of regulatory requirements for operators to notify customers if blending occurs, and the different emergency response to the presence of hydrogen, PST believes it is important to ensure the public can access information through the NPMS on its own. Given the one-year cycle of reporting for operators, we recognize the public would only be accessing information about blending after it has occurred, and in the case of some feasibility projects, after the blending has been completed. PHMSA should require that operators notify the public receiving hydrogen blended gas of the activity and provide information about hydrogen safety before the blending occurs.

3. Expand Information Collection Activities for All Methane Blends

The Pipeline Safety Trust is very pleased to see the proposed information collection specific to hydrogen blending. We also believe it would be an improvement to pipeline safety if PHMSA collected information about all blending activities in methane gas systems. Unfortunately, we already have an example of the extreme consequences of improperly blending alternative fuels into methane gas systems. CenterPoint Energy, an Indiana operator, admitted to improperly blending propane into its gas system in 2022, resulting in hundreds of emergency calls and four hospitalizations from carbon monoxide accumulation.[11] In this incident, the operator improperly blended propane with methane, and home and business appliances were unable to fully combust the fuel, creating carbon monoxide which then accumulated in enclosed spaces. As operators continue seeking pathways for decarbonization, it will be important to proceed with caution and

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[10] SoCalGas, *University of California, Irvine Developing A Clean Fuels Network* https://www.socalgas.com/sites/default/files/2024-02/UCI_Blending_Fact_Sheet.pdf.

[11] CenterPoint Energy, *CenterPoint Energy issues statement on operational review of propane air facility in southeast Indiana,* (Feb. 7,2023) https://www.centerpointenergy.com/en-us/Documents/CNP-IN-CO-Statement.pdf.

transparency; PHMSA can play a role in ensuring that happens by helping direct research, future rulemaking, and increasing transparency for the public.

4. Rupture Mitigation Valves

Finally, Pipeline Safety Trust is deeply supportive of the information collection PHMSA has also proposed: *Operator Utilization of Rupture Mitigation Valves (RMVs) on gas transmission, gathering, hazardous liquid, and carbon dioxide pipelines*. RMVs are automatic or remote shut-off valves that can be used by operators to minimize the volume of a release. The National Transportation Safety Board (NTSB) has recommended the inclusion of RMVs on pipelines in high-Consequence Areas (HCAs) since 1970, but a regulatory requirement for them has been slow to formalize. While collecting this information will improve PHMSA's understanding of operator use of this technology, PHMSA should also require operators to report estimated shut-off times for pipelines in HCAs if the pipe does not have rupture mitigation valves. This would allow the ability to compare the safety implications of not including RMVs. PHMSA should ensure the information collected in this proposal is aligned with NTSB Safety Recommendation P-11-11 issued in 2010 following the Pacific Gas & Electric pipeline rupture in San Bruno. This recommendation outlines a need for operators to install RMVs on pipelines in HCAs and Class 3 and 4 locations at intervals determined by analyzing the criteria in 49 C.F.R. § 192.935(c): [the] timing of leak detection and pipe shutdown capabilities, the type of gas being transported, operating pressure, the rate of potential release, pipeline profile, the potential for ignition, and location of the nearest response personnel.[12] The NTSB's recommendation does not simply call for installing an increased number of RMVs; it asks operators to carefully determine where installing RMVs would have the largest impact on public safety.

Thank you again for the opportunity to comment, we look forward to the collection of this critical information and for PHMSA to take action toward limiting hydrogen blending specifically in distribution systems until we have the information need to safety regulate hydrogen blending. If you have any questions or wish to discuss this comment, please contact Hailey Duncan, Policy Advisor at Hailey@PSTrust.org or (360) 543-5686 ext. 108.

Sincerely,

Hailey Duncan

Policy Advisor

[12] National Transportation Safety Board, *Pacific Gas and Electric Company Natural Gas Transmission Pipeline Rupture and Fire San Bruno, California*, 80 (Sept. 9, 2010) https://www.ntsb.gov/investigations/accidentreports/reports/par1101.pdf.