Pipelines and Hazardous Materials Safety Administration
U.S Department of Transportation
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Comments of the Pipeline Safety Trust
On the
Advanced Notice of Proposed Rulemaking
Relating to the
Safety of Gas Transmission Lines

I. Introduction

The vision of the Pipeline Safety Trust is simple. We believe that communities should feel safe when pipelines run through them, and trust that their government is proactively working to prevent pipeline hazards. We believe that local communities who have the most to lose if a pipeline fails should be included in discussions of how best to prevent pipeline failures. And we believe that only when trusted partnerships among pipeline companies, government, communities, and safety advocates are formed, will pipelines truly be safer.

Just a few weeks after PHMSA issued this advanced notice of proposed rulemaking relating to the safety of gas transmission lines, the National Transportation Safety Board (NTSB) adopted its final report following its investigation into the rupture of a Pacific Gas and Electric gas transmission line in a residential neighborhood of the City of San Bruno, California that resulted in 8 deaths, many injuries, and the destruction of an entire neighborhood. Since this Advanced Notice of Proposed Rulemaking (ANPRM) was announced in late August there have been reported to PHMSA around 30 incidents on gas transmission pipelines, causing more than 8.5 million dollars in property damage. At least four of these incidents occurred in High Consequence Areas (HCAs). In just the past two months, there have been five major failures reported widely in the news on gas transmission lines across the country: one each in Ohio, Alabama, Mississippi, Utah and Kentucky. Additional tragic incidents have occurred in the past year on distribution lines in Allentown and Philadelphia, Minneapolis, Seattle, Austin, and elsewhere. In spite of the differences in operations and regulations between transmission and distribution systems known to those in the industry, the public does not particularly distinguish among natural gas explosions. This many failures, this frequently, the attendant loss of life and damage to homes and neighborhoods, combined with the rapid expansion of natural gas development and pipeline construction in many parts of the country, creates in many communities a potent mixture of fear and mistrust. It also provides a tremendous opportunity for PHMSA, state regulators and the industry to embark on new initiatives, beginning with the NTSB safety recommendations, that will help prevent future pipeline failures, reduce the consequences of those that do occur, and begin rebuilding the public's trust.

With respect to building public trust in the pipeline regulatory system, the ANPRM itself may heighten the level of concern among some members of the public, and may serve to confirm the already existing fears of others. When PHMSA asks, in the context of the ANPRM:

1) fundamental questions such as: "How many miles of HCA covered segments are in Class 1,2,3, and 4?" "Of the 19,004 miles of pipe that are identified as being within an HCA, how many miles are within Class 1 or 2 locations?" " Why has the number of HCA miles declined over the years?";
2) or, exposing a lack of knowledge about operator practices, asks, among many other examples: "Have operators conducted quality audits of direct assessments to determine the effectiveness of direct assessment in identifying pipeline defects?" or " Do pipeline operators typically implement specific measures across all HCAs in their pipeline system, or do they target measures at individual HCAs? How many miles of HCAs are afforded additional protection by each of the measures that have been implemented?" or " What standards are used to conduct ILI (or ICDA, or SSCDA) assessments?";
3) or, exposing a lack of knowledge of the state of pipeline assessment technology: " Are other technologies available that can consistently be used to reliably find and remediate seam integrity issues?"

it does not reassure members of the public who are already worried about the structure of the current regulatory system in which the operators hold the bulk of operational and jurisdictional information, while PHMSA is in the position of having to ask operators to provide it voluntarily in the context of an ANPRM. Perhaps some of these questions are asked as a rhetorical device to assist the reader in understanding where the agency, already aware of the various answers, might be headed in a proposed rulemaking. But a reader has no confidence that is the case, and in fact, given the huge number of such questions in the ANPRM, any reader would likely assume the questions are in earnest and, in fact, reflect real gaps in PHMSA's fundamental knowledge of gas transmission pipeline systems and operator practices. To establish public trust in the regulatory system, the public must believe that PHMSA knows the fundamentals about the nation's pipeline system; knows what operators do to maintain and improve its integrity and how they do it; knows that those operator actions are, in fact, improving pipeline

safety; and inspects all aspects of pipeline operations, and enforces when shortcomings are detected. That kind of public trust, in the context of a performance-based, non-prescriptive regulatory system, will only come from certainty that the agency fully embraces the "verify" aspect of the NTSB Chairwoman's admonition to "trust, but verify." Along with the substantive aspects of the NTSB's recommendations from the San Bruno tragedy, the Pipeline Safety Trust urges PHMSA to review the entire system of natural gas transmission line regulations with that admonition in mind.

II. Responses to Specific Questions

These comments will not respond to every question in the ANPRM. As noted above, many of the questions appear to be seeking information from operators. Where comments are in response to a specific question, the question number will be stated. If necessary for clarity, the particular sub question may be restated before the response.

Section A - Modifying the Definition of HCA

A. 1. The integrity management rules currently apply to approximately 6-7% of natural gas transmission lines. Integrity management has been shown to be an effective way to identify and eliminate threats. The Pipeline Safety Trust urges PHMSA to subject all miles of gas transmission pipelines to integrity management rules, and to strengthen the rules themselves. The expansion could be accomplished by either phasing in new criteria for high consequence areas (HCAs), or by a different criteria being used for the application of integrity management rules outside of high consequence areas. While we would accept either method, it makes sense to us to better define high consequence areas, and then develop a new set of regulations for integrity management outside of those HCAs. This would allow for additional safety measures– such as increased valve spacing, automated valves, thicker pipe - in what are truly HCAs. Areas outside of HCAs could then be required to have a baseline system of integrity management, but may require less of these additional safety requirements.

A. 2. An open discussion about the identification and extent of high consequence areas would be significantly more productive if the methods of identifying them were simpler, not subject to the choice of the operator, and known to the public. As it is, the public has no way of knowing

whether an operator has identified a particular area as an HCA, whether they've done it correctly, or what method they've used to do it. There should be a single set of criteria for defining HCAs; HCAs should be mapped; and the maps should be public, as now required by Congress in the new reauthorization bill. There is no reason that the identification of which segments of pipelines are subject to integrity management rules, and which are not, should be kept from the public.

Yes, high population areas, like class 3 and 4 locations, should be included in HCAs. Currently, an operator can avoid designating certain Class 3 or 4 locations as HCAs if fewer than 20 buildings intended for human occupancy are within the PIR. For example, a Class 3 area surrounding a pipeline like the one that exploded in San Bruno – a 30 inch, relatively low pressure transmission line with a PIR of just over 400 feet – could avoid being identified as an HCA if the requisite 46 buildings or dwelling units were located outside the PIR but within 660 feet of the pipeline, and the operator chose the method that does not rely on class location. One look at an aerial photo of the San Bruno neighborhood is all it takes to understand that the effects of the unrelenting blowtorch of a ruptured gas pipeline left on for 90 minutes extend well beyond the nominal PIR of 400 feet of that type of pipeline.

For similar reasons, if class locations continue to be used for HCA designation, then the width used for determining class locations for pipelines with PIRs over 660 feet (over 24 inches and above 1000psi) should be expanded at least to include the entire PIR. The regulations presumably use the concept of a PIR in class locations and HCA designations to account for the heightened risk and consequences within that area in the event of a rupture. Presumably, the use of the PIR is to afford greater safety benefits to those areas by requiring more of operators with large or vulnerable populations within those areas. If that is the case, then the safety benefits afforded areas by being designated a Class 3 or 4 area ought to fall on the entire population within the PIR and not be artificially capped at the area within 660 feet.

A. 5. "In determining whether areas surrounding pipeline right of ways meet the HCA criteria set forth in part 192, is the potential impact radius sufficient to protect the public in the event of a pipeline leak or rupture? Are there ways that PHMSA can improve the process of right-of-

ways HCA criteria determinations?" PHMSA should dramatically simplify the way segments of pipelines subject to heightened integrity management rules are identified. The current method allowing operators to choose which method they use for HCA identification and keeping HCA identities secret from the public simply breeds mistrust of the regulatory system, and allows operators to choose a method that minimizes their safety inspections under integrity management rules. There should be one set of criteria, the areas should be mapped, and the maps should be publicly available, as now required by the new reauthorization bill. PHMSA should require operators to provide their maps of areas subject to heightened integrity management to the agency for review and approval under the single set of criteria.

A6. Yes, other critical infrastructure in or near right-of-ways should be considered in determining which areas should be considered at risk of high consequence in the event of a pipeline failure. Things like water and sewage treatment plants, critical high voltage transmission lines, fire stations, etc. should be considered.

A7. If PHMSA adopts one set of criteria for designating HCAs, which requires operators to provide the information to PHMSA for review under that criteria and approval, the identification could be made subject to public review either before or after PHMSA approves and publishes maps of the designated area. The action by PHMSA could be made subject to administrative review.

A8. Should PHMSA develop additional safety measures, including those similar to IM, for areas outside of HCAs? Additional safety measures should be required on additional miles of pipelines beyond the 6-7% that currently are covered by the IM rules. We believe that all miles of pipelines should be required to provide a baseline of integrity management – risk assessment, inspection for anomalies, verification and repair, repeat on a reassessment schedule. This expansion of integrity management could be phased in starting with pipeline segments that include human dwellings, areas where people congregate that do not currently meet the "identified site" definition within the PIR, or other critical infrastructures.

A.9. "Should operators be required to submit to PHMSA geospatial information related to the identification of HCAs? " Yes. PHMSA should have in its possession all information relating to the identification of HCAs and class locations: where they are, how they were identified, etc. That would preclude the need for PHMSA to have to ask questions like A. 10. and parts of A. 2 and 3 relating to miles of HCA in various classes, and why those miles have declined over the years. This geospatial information related to the identification of HCAs should then be placed on the public viewer of the NPMS.

Section B - Strengthening Requirements To Implement Preventive and Mitigative Measures for Pipeline Segments in HCAs

" Section 192.935 requires gas transmission pipeline operators to take additional measures, beyond those already required by part 192, to prevent a pipeline failure and to mitigate the consequences of a potential failure in an HCA. The additional measures to be taken are not specified. Rather, operators are required to base selection and implementation of these measures on the threats the operator has identified to each pipeline segment. Operators must use their comprehensive risk analyses to identify additional measures appropriate to the HCA. *However, the rule establishes no objective criteria by which decisions concerning additional measures must be made, nor does it establish a standard by which such evaluations are to be performed."*

Many of the additional preventive and mitigative measures offered up in the existing regulations as possibilities for operators to employ closely track the safety recommendations of the NTSB to be implemented as mandatory measures: installation of automatic or remote control valves in HCAs and high population areas(P-11-11), installing (and improving) computerized monitoring and leak detection (P-11-10); providing additional training to personnel on response procedures (P-11-9), and insuring that local first responders have accurate, system specific information about the pipelines in their communities (P-11-8). At a minimum, PHMSA should enact regulations to implement these important safety recommendations. Further, the regulations must not provide so much discretion on the part of the operators as to make the regulation useless. Operators are currently required to install automatic or remote control valves if their risk analysis concludes these would be "an efficient

means" of adding protection to the HCA in the event of a gas release. There is no description of how an operator is to determine whether installation would be "efficient", nor is there any basis for PHMSA to determine that an operator failed to install such a valve, since the regulation provides no basis for either PHMSA or the operator to determine "efficiency." Revised regulations must make clear what measures are required under what circumstances, and any required operator analysis and the information on which it is based must be available to PHMSA for auditing and enforcement efforts.

Section C - Modifying Repair Criteria

C.2. There seems to be no justification for having different repair schedules for identified anomalies based on location. Once a risk to the pipeline and public safety is identified, the same repair schedule should apply, regardless of location. Further, reporting requirements should extend to repairs made to all transmission lines, regardless of location. Important safety information is not currently available to PHMSA because many repairs made outside HCAs are not required to be reported.

C.7. As inline inspection tools are increasingly relied upon for compliance with integrity management rules, for identification of anomalies, and, as some suggest they may be capable of doing someday, for verification of MAOP, PHMSA needs to insure that the tools are capable of the tasks they are being used for, that the results are being interpreted correctly by analysts trained to do so, and that the information provided by that analysis is properly integrated into the operators' future risk assessments and IM plans.

Sections D, E and F. The questions in these sections are predominantly directed at operators, seeking information about practices currently used for collecting, validating and integrating pipeline data into risk assessments and IM plans. While we have little ability to add responsive information about the practices used by various operators, we applaud PHMSA for pursuing this topic. As indicated in the preface for section D, the information in PG&E records relating to the section of line 132 that ruptured in San Bruno was full of errors, leading to an entirely unsuitable risk assessment and IM strategy. If basic records are wrong or incomplete, risks

assessments based on them are worthless and misleading. Integrity management programs built upon bad risk assessments provide some illusion of safety, but not much more.

D.4. "Should PHMSA make current requirements more prescriptive so operators will strengthen their collection and validation practices necessary to implement significantly improved data integration and risk assessment practices?"

A proper risk assessment is the basis for constructing a risk-informed integrity management program. Given the evident failure of at least one operator to ensure that the basic data and risk assessment relating to a given pipe is accurate, we urge PHMSA to adopt new regulations, more prescriptive in nature, ensuring that data collection, validation and integration practices require continual adaptation of the operator's risk assessment and IM plans. The new regulations need to be structured in a way that allows regulators to audit the practices of the operator as well as the underlying data to insure its accuracy, part of what the NTSB (San Bruno report) referred to in calling for the use of "meaningful metrics." The revisions to the regulations should fulfill the goals of the NTSB's safety recommendations relating to this topic: P-11-18 and P-11-19.

G. Selection and Use of Assessment methods

The questions in this section are related to information that is, unfortunately, almost solely within the control of the operators. It is particularly disconcerting, however, that PHMSA needs to ask the industry for the answers to these questions several years into the application of the current IM rules, and after nearly all baseline assessments have been completed. For example, the questions seek information about what standards are used to conduct ICDA and SCCDA assessments, whether audits have occurred on direct assessments to determine their effectiveness, and perhaps most troubling, " How do operators decide whether their knowledge of pipeline characteristics and their confidence in that knowledge is adequate to allow the use of direct assessment?" The need to ask these questions makes clear that PHMSA's current level of oversight and review of IM planning and implementation is inadequate, and calls into question the value of many IM programs, particularly those relying to any extent on direct assessment methods. The regulations should be significantly strengthened to require PHMSA's review and administrative approval of any IM program. That approval should be contingent on

a thorough understanding on the part of the operator and PHMSA that the plan relies on an accurate understanding of the pipeline characteristics, an exhaustive review and assessment of the universe of risks to each segment, a plan for periodically assessing the integrity of the pipeline, and a plan for continually integrating new knowledge into that risk assessment. If the plan is inadequate, or if PHMSA does not have confidence in the information on which it relies, PHMSA should reject the plan.

Section H. **Valve Spacing and the Need for Remotely or Automatically Controlled Valves**

The reference in section H to the 1999 review of the economic feasibility of remote control valves warrants a response. The 1999 feasibility report can hardly be relied on for a finding that RCVs were and remain economically unfeasible. The most that can be said about that report is that there were no studies and no data that identified potential economic benefits in terms of property damage and injuries prevented from the ability to close a valve within 10 minutes, as compared with the 150 minutes in the Edison incident, or the 90+ minutes in the San Bruno incident. (Assuming the report's conclusion is correct that most, if not all, fatalities resulting from a failure occur even before an RCV could be activated – a conclusion that also needs review, given the lengthy time before manual valves can be closed and the increasing probability of a rupture in an urban area where complete evacuations may be difficult and time-consuming.) The report concludes that the absence of data from which to quantify the benefits precluded a finding of economic feasibility. Somehow, this conclusion has been shorthanded to "RCVs aren't economically feasible." The report couldn't conclude that, just as it couldn't conclude that they were feasible. There simply was no evidence to rely on to quantify the potential effect of an RCV on lost property or potential injury. However, the report made clear that RCVs would reduce risk, but could not quantify that reduction:

> *"At many locations, there is significant risk as long as gas is being supplied to a rupture site, and operators lack the ability to quickly close existing manual valves. Any fire would be of greater intensity and would have greater potential for damaging surrounding infrastructure if it is constantly replenished with gas. The degree of disruption in heavily populated and commercial areas would be in direct proportion to the duration of the fire. Although we lack data enabling us to quantify these potential consequences, we believe them to be significant nonetheless, and we believe RCVs may provide the best means for addressing them."*
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> *Remotely Controlled Valves On Interstate Natural Gas Pipelines, September 1999, RSPA*.

PHMSA apparently still lacks the data from which to conclude whether the installation of RCVs is economically feasible. We urge PHMSA to undertake an independent analysis to acquire the data from which it might make that conclusion. Further, in making that determination, we urge PHMSA to consider the statutory language related to economic feasibility: the language of the 1996 law required PHMSA to determine the "technical and economical feasibility" of RCVs. The general language in 49 USC 60102(b)(5) provides that with some exceptions, the Secretary may issue a standard "only upon a reasoned determination that the benefits of the intended standard justify its cost." The word used is "justify", not "exceed." Neither of the mandates requires that PHMSA make a finding that the benefits exceed the costs before issuance of a standard for the installation of RCVs, or for that matter, for any standard. Surely the results of Edison and San Bruno, along with the issuance of three NTSB safety recommendations urging the adoption of a standard requiring the installation of RCVs in certain circumstances could enter in to the Secretary's "reasoned determination" that the benefits – many of them unpredictable and unquantifiable – justify the costs of such a standard.

We urge PHMSA to implement the NTSB recommendation issued following San Bruno: to require RCVs or automatic valves in Class 3 and 4 locations and HCAs, and to require their spacing based on the factors in 49 CFR 192.935(c). In considering one of those factors – the location of the nearest response personnel – we urge PHMSA to further require that operators factor in likely issues in the arrival of response personnel: weather conditions, traffic, bridge and road issues following a seismic or other disruptive event, power outages, etc.

Section I. Corrosion Control

The Trust urges that additional post-construction surveying be required to identify damage to, or weaknesses in coating and to insure the integrity of cathodic protection. As noted with respect to the requirements for additional preventive and mitigative measures required in HCAs, the current regulation requiring a "program to minimize detrimental effects " of potentially interfering currents contains no standards to guide the operator in creating such a program, and no criteria for PHMSA to use in judging the adequacy of one. Revised regulations

should provide sufficient standards to assist operators in creating a plan, and for PHMSA to judge the adequacy of the program and enforce accordingly.

Section J. Longitudinal Weld Seams and hydrostatic testing and Section N, Exemption of facilities installed prior to the regulations

The Trust urges implementation of the NTSB recommendation to do away with the exemption for pre-1970 pipes from the requirement for hydrostatic tests. If there is no verifiable record that the pipe segment has been hydrostatically tested it should be required to be tested.

Section O. Gathering Lines

The Trust has consistently argued for regulation of gathering lines on a par with the regulations that apply to transmission lines. There are fewer and fewer differences between the two kinds of lines, and there is significant overlap in size, operating pressure and the attendant risks to the public. The definition of where gathering lines begin needs to be clarified in a way that is clear, and that does not allow companies to choose where that point is by where they decide to install certain equipment. We believe that any line off a well pad should be classified as a gathering line. Incidents and safety related conditions should be reported, and all gathering line locations should be added to the NPMS. Other transmission pipeline regulations should apply to all onshore gathering lines regardless of class location, and this should include the same integrity management requirements for all gathering lines where MAOP produces a hoop stress of 20 percent or more of SMYS. Given the heightened corrosion risks related to the composition of the gasses being transported, additional corrosion testing and cleaning requirements may also be appropriate.

III. Conclusion

PHMSA should revise the regulations governing gas transmission lines to:

1) ensure that all lines are subject to a baseline level of integrity management;
2) expand the areas defined as HCAs;
3) strengthen the IM rules that apply to HCAs;
4) implement the safety recommendation of the NTSB from the San Bruno report;
5) increase the reporting requirements so that repairs in non-HCAs are reported;

6) improve operator data collection and integration to ensure continuous adaptation and improvement of IM programs; and
7) reconfigure the existing regulatory structure so that PHMSA has all plans, analyses, reports and underlying information necessary to determine the fundamental adequacy of operators' safety and integrity programs.

PHMSA should revise the regulations governing gas gathering lines to:

1) clarify the definition of where gathering lines begin;
2) require all onshore gathering lines, regardless of class location, meet the same requirements as transmission lines, including integrity management; and
3) require reporting of incidents and safety related conditions on all gathering lines, and add gathering line locations to the NPMS.