



# governmentattic.org

*"Rummaging in the government's attic"*

Description of document: National Transportation Safety Board (NTSB) Letters to/from the Pipeline and Hazardous Materials Safety Administration (PHMSA) CY 2016-2017

Requested date: 2017

Release date: 06-August-2020

Posted date: 19-July-2021

Source of document: National Transportation Safety Board  
Attention: FOIA Requester Service Center, CIO-40  
490 L'Enfant Plaza, SW  
Washington, DC 20594-2000  
Fax: (240) 752-6257  
[Freedom of Information Act \(FOIA\) Public Access Link](#)  
Email: [foia@ntsb.gov](mailto:foia@ntsb.gov)

The governmentattic.org web site ("the site") is a First Amendment free speech web site and is noncommercial and free to the public. The site and materials made available on the site, such as this file, are for reference only. The governmentattic.org web site and its principals have made every effort to make this information as complete and as accurate as possible, however, there may be mistakes and omissions, both typographical and in content. The governmentattic.org web site and its principals shall have neither liability nor responsibility to any person or entity with respect to any loss or damage caused, or alleged to have been caused, directly or indirectly, by the information provided on the governmentattic.org web site or in this file. The public records published on the site were obtained from government agencies using proper legal channels. Each document is identified as to the source. Any concerns about the contents of the site should be directed to the agency originating the document in question. GovernmentAttic.org is not responsible for the contents of documents published on the website.



**National Transportation Safety Board**  
**Washington, D.C. 20594**

August 6, 2020

Re: National Transportation Safety Board (NTSB)  
Freedom of Information Act (FOIA) No. FOIA-2017-00375

This letter responds to your FOIA request seeking a copy of each letter sent FROM the NTSB TO the Pipeline and Hazardous Materials Safety Administration during Calendar Years 2016 and 2017, and each letter from the PHMSA received by the NTSB during CY 2016 and 2017.

The Safety Board located several responsive documents. The approximately 84 pages of documents that we determined may be released are enclosed. However, we withheld certain information partially and in full pursuant to the following exemptions specified below:

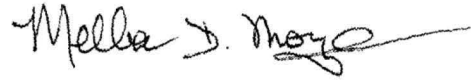
Personal information, notably autopsy information and graphic photos, social security numbers, and any personal identifying information, is withheld pursuant to 5 U.S.C. 552(b)(6), which exempts from disclosure "personnel and medical files and similar files the disclosure of which would constitute a clearly unwarranted invasion of personal privacy," to include personal addresses, phone numbers, etc.

In several documents enclosed with this letter, I determined that exemptions to the FOIA required that I redact a limited amount of material. The redactions are clearly marked, and the applicable exemptions are noted at the place of the redaction.

The NTSB has concluded processing your FOIA request. You may contact Ms. Joy Gordon, the analyst who processed your request or our FOIA Public Liaison at 202-314-6540, for any further assistance and to discuss any aspect of your request. Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration (NARA) to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows: OGIS, NARA, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001, e-mail at [ogis@nara.gov](mailto:ogis@nara.gov); telephone at 202-741-5770; toll free at 1-877-684-6448; or facsimile at 202-741-5769.

If you are not satisfied with the response to this request, you may administratively appeal by writing to the NTSB, Attn: Ms. Sharon Bryson, Managing Director, 490 L'Enfant Plaza, SW, Washington, D.C. 20594. Your appeal must be postmarked or electronically transmitted within 90 days of the date of the response to your request.

Sincerely,

A handwritten signature in black ink, appearing to read "Melba D. Moyer", with a long horizontal flourish extending to the right.

Melba D. Moyer  
FOIA Officer

Enclosure



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Ave. SE  
Washington, DC 20590

August 17, 2016

The Honorable Christopher A. Hart  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594

Dear Chairman Hart:

I am writing to update you on the status of actions taken to date to address 38 open National Transportation Safety Board (NTSB) recommendations. The Pipeline and Hazardous Materials Safety Administration (PHMSA) has completed action on Recommendations P-11-20, P-15-1, P-15-2, P-15-3, and P-15-7.

PHMSA has a long history of cooperating and collaborating with NTSB, and we agree that safe transportation practices are important and necessary. We take our responsibility to address all recommendations seriously and will continue to work diligently to close all open recommendations.

## **PHMSA's ACTIONS TO ADDRESS THE 38 OPEN NTSB RECOMMENDATIONS**

### **NTSB Safety Recommendation P-01-2**

**Recommendation:** *Require that excess flow valves be installed in all new and renewed gas service lines, regardless of a customer's classification, when the operating conditions are compatible with readily available valves.*

**Response:** PHMSA's Technical Advisory Group met by conference call on December 17, 2015, and voted to approve PHMSA's proposed changes to the pipeline safety regulations regarding excess flow valves published in the July 15, 2015, notice of proposed rulemaking (NPRM) titled "Pipeline Safety: Expanding the Use of Excess Flow Valves in Gas Distribution Systems to Applications Other Than Single-Family Residences." The NPRM proposed installing excess flow valves on all new or replaced distribution service lines serving branched single-family residences, multi-family residences, and small commercial entities consuming gas volumes not exceeding 1,000 Standard Cubic Feet per Hour (SCFH) and to install curb valves (manual service-line shutoff valves) for service lines with meter capabilities exceeding 1,000 SCFH. This would capture the remaining pipelines not covered under PHMSA's "Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines" (DIMP) final rule published on December 4, 2009. PHMSA anticipates publishing its final rule in late winter 2017.

### **NTSB Safety Recommendation P-09-2**

**Recommendation:** *Based on the results of the study from NTSB Open Recommendation P-09-1, implement the actions needed.*

**Response:** To further develop how to evaluate seam issues and to facilitate informed decision-making, PHMSA is working to:

- 1) Improve Hydrotesting Protocols for ERW/FW Seams
- 2) Enhance Defect Detection and Sizing via Inspection
- 3) Defect Characterization: Types, Sizes, & Shapes
- 4) Develop and Refine Predictive Models and Quantify Growth Mechanisms
- 5) Develop Management Tools: Manual, Software, Protocols, and Training
- 6) Hold a Public Meeting/ Forum

Reports are anticipated to be completed and made public by December 31, 2016. Further, as item 6 notes, a public meeting and forum will be held. PHMSA anticipates it will take an additional 12 months to implement any determined actions; therefore, we expect implementation to be complete by December 31, 2017.

### **NTSB Safety Recommendation P-11-8**

**Recommendation:** *Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located. This information should include pipe diameter, operating pressure, product transported, and potential impact radius.*

**PHMSA Response:** PHMSA is pursuing multiple actions to address this recommendation. We are pleased that NTSB was encouraged by the publication of ADB-10-08: "Pipeline Safety: Emergency Preparedness Communications."

In September 2013, PHMSA convened a collaborative stakeholder group called the Public Awareness Program Working Group (PAPWG). The mission of PAPWG was to review pipeline awareness data and information from various sources, identify relevant topical review areas, and perform a "strengths, weaknesses, opportunities, and threats" (SWOT) analysis of those areas. On May 16, 2016, PAPWG issued a SWOT analysis on gaps in the requirements for pipeline operators to communicate with the affected emergency response stakeholder audience. The final report is available to the public here:

<https://primis.phmsa.dot.gov/comm/PublicAwareness/docs/PAPWG%20SWOT%20Analysis%20Report-FINAL%2005-16-16.pdf>.

In addition, PHMSA held a Public Awareness Workshop on July 13, 2016, to bring pipeline safety stakeholders, including the American Petroleum Institute (API), together to review the findings from the PAPWG SWOT Report and explore future actions that can be taken to expand public awareness and stakeholder engagement efforts.

On August 5, 2016, API staff invited PHMSA representatives to participate on an API RP 1162 Ad Hoc Team that will use the Pipeline Public Awareness SWOT report and input from Ad hoc team members to develop specific recommendations for enhancing API RP 1162 by January 2017.

Currently, pipeline operators (except for operators of distribution and gathering pipelines) are required to submit geospatial data, attributes, metadata, public contact information, and a transmittal letter to the National Pipeline Mapping System (NPMS) program. Emergency responders have access to data on pipe diameter (an optional submission, but submitted by approximately 75 percent of pipeline operators) and product transported. On July 30, 2014, PHMSA published the Federal Register notice, "Request for Revision of a Previously Approved Information Collection - National Pipeline Mapping System Program," inviting public comment on our intent to request OMB approval to revise and renew an information collection currently under OMB Control Number 2137-0596.

The information collection proposes additional information such as: improved positional accuracy of pipeline maps, pipe diameter (currently optional; would now be required), operating pressure, pipe grade, percent of specified minimum yield strength, leak detection, pipe coating, pipe material, pipe join method, year of construction/installation, class location, high consequence "could affect" areas, onshore/offshore designation, inline inspection capability, year of last inline inspection/direct assessment, year and pressure of original and last hydrostatic test, detail on commodities transported, locations of special permits issued by PHMSA, pipe wall thickness, and seam type. On August 27, 2015, PHMSA issued a second 60-day notice and comments were received and analyzed. PHMSA published the 30-day notice on June 22, 2016, and PHMSA is now in the process of reviewing each additional data element to determine classification.

#### **NTSB Safety Recommendation P-11-9**

**Recommendation:** *Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to ensure that their control room operators immediately and directly notify the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated.*

**Response:** On October 11, 2012, PHMSA published Advisory Bulletin ADB-12-09, "Communication During Emergency Situations" (77 FR 61826) in the Federal Register. This ADB reminded operators of gas, hazardous liquid, and liquefied natural gas pipeline facilities that, if there are indications of a pipeline facility emergency, operators should immediately and directly notify the Public Safety Access Point (PSAP) that serves the communities in which those pipelines are located. Pipeline operators must include provisions in their emergency plans for coordination with appropriate fire, law enforcement, emergency management, and other public safety officials.

Further, PHMSA plans to incorporate aspects of this recommendation into a future NPRM titled "Pipeline Safety: Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards." Publication of the proposed rule is anticipated by late spring 2017.

#### **NTSB Safety Recommendation P-11-10**

**Recommendation:** *Require that all operators of natural gas transmission and distribution pipelines equip their supervisory control and data acquisition systems with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines.*

**Response:** PHMSA plans to incorporate aspects of this recommendation into a future NPRM titled "Pipeline Safety: Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards." Publication of the proposed rule is anticipated by late spring 2017.

#### **NTSB Safety Recommendation P-11-11**

**Recommendation:** *Amend Title 49 Code of Federal Regulations Section 192.935(c) to directly require that automatic shutoff valves (ASV) or remote control valves (RCV) in high consequence areas and in class 3 and 4 locations be installed and spaced at intervals that consider the population factors listed in the regulations.*

**Response:** PHMSA plans to incorporate aspects of this recommendation into a future NPRM titled "Pipeline Safety: Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards." Publication of the proposed rule is anticipated by late spring 2017.

#### **NTSB Safety Recommendation P-11-12**

**Recommendation:** *Amend 49 CFR 199.105 and 49 CFR 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident.*

**Response:** PHMSA proposed to modify 49 CFR 199.105 and 49 CFR 199.225 by requiring drug testing of employees and allowing exemption from drug testing only when there is sufficient information that establishes the employee(s) had no role in the accident in an NPRM titled "Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes," published on July 10, 2015. PHMSA is in the process of addressing comments on NPRM and conducted an Advisory Committee meeting to discuss the proposed final rule on June 1-3, 2016. The Committee approved the rule with amendments. PHMSA will continue work toward publication of a final rule. We anticipate publication in October 2016.

#### **NTSB Safety Recommendation P-11-14**

**Recommendation:** *Amend Title 49 Code of Federal Regulations 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test.*

**Response:** PHMSA has developed an Integrity Verification Process (IVP), which includes additional testing requirements to demonstrate seam stability and to confirm material strength of untested gas transmission pipelines operating under the “Grandfather Clause.” The IVP was proposed in PHMSA’s NPRM titled “Pipeline Safety: Safety of Gas Transmission Pipelines,” published on April 8, 2016. The comment period closed on July 7, 2016.

#### **NTSB Safety Recommendation P-11-15**

**Recommendation:** *Amend Title 49 Code of Federal Regulations Part 192 of the Federal pipeline safety regulations so that manufacturing- and construction-related defects can only be considered stable if a gas pipeline has been subjected to a post-construction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure.*

**Response:** On August 7, 2013, PHMSA held a workshop to present and allow public comment on its IVP proposal to address issues regarding testing requirements to demonstrate seam stability and to confirm the material strength of untested gas transmission pipelines. Under IVP, pipelines that might be susceptible to cracks or crack-like defects due to manufacturing or construction defects and that need to reestablish MAOP would be required to perform a spike hydrostatic pressure test. Spike pressure tests help ensure that hydrostatic pressure tests are not allowing cracks to grow that could fail in service after the test is completed. The IVP was proposed in PHMSA’s NPRM titled “Pipeline Safety: Safety of Gas Transmission Pipelines,” published on April 8, 2016. The comment period closed on July 7, 2016.

#### **NTSB Safety Recommendation P-11-18**

**Recommendation:** *Revise your integrity management inspection protocol to (1) incorporate a review of meaningful metrics; (2) require auditors to verify that the operator has a procedure in place for ensuring the completeness and accuracy of underlying information; (3) require auditors to review all integrity management performance measures reported to the Pipeline and Hazardous Materials Safety Administration and compare the leak, failure, and incident measures to the operator’s risk model; and (4) require setting performance goals for pipeline operators at each audit and follow up on those goals at subsequent audits.”*

**Response:** PHMSA has completed actions on the first three items of this recommendation and is working on final steps to complete actions related to the fourth item. PHMSA has modified several components of our inspection and enforcement processes and procedures regarding meaningful metrics and their inclusion and use in pipeline operators’ integrity management (IM) programs.



Specifically, PHMSA has revised and improved the IM inspection questions in the Inspection Assistant (IA) application used by PHMSA inspectors. We made significant enhancements, including the addition of more detailed guidance and considerations to the gas IM questions. We bolstered our liquid IM questions as well, so that the evaluation of meaningful metrics is similar for both gas and liquid IM. The incorporation of the new questions and modification of other questions has provided for the specific incorporation of meaningful metrics and their trending towards performance goals within operators' IM programs.

Similar to the revised IM inspection questions in the IA application, PHMSA implemented changes in the Hazardous Liquid and Gas IM Inspection Protocols used by State Programs to conduct IM inspections. These revised questions are posted on the public web sites. The new protocol forms, guidance, and other related reference material can be found on our gas and liquid IM public web sites, <https://primis.phmsa.dot.gov/gasimp/> and <https://primis.phmsa.dot.gov/liim/index.htm>, respectively, so they can be shared with operators and all stakeholders.

We have also revised our hazardous liquid and gas transmission enforcement guidance documents to address these topics. Both documents are available now at <http://www.phmsa.dot.gov/foia/e-reading-room>. Inspectors now have additional resources to help them evaluate the effectiveness of an operator's use of meaningful metrics and to develop enforcement cases when necessary.

During the course of an inspection of an operator's IM program, an inspector gains insight into the threats and potential consequences specific to the operator's unique operating environment. Based on these insights, the inspector is well equipped to evaluate the adequacy or inadequacy of the metrics an operator is utilizing to measure the performance of its IM program. Enforcement can be handled by requiring modifications to the IM program in the case of inadequate metrics or by use of orders if the trends in the metrics' data are not proving satisfactory and their actions not in compliance. The results of the PHMSA inspections are documented in the inspection reports, along with enforcement data, when applicable, for follow-up evaluations at subsequent audits.

Over the last 24 months, PHMSA has worked with a diverse stakeholder group, including public representatives, regulators and industry, to identify key performance metrics for hazardous liquid, gas transmission, and gas distribution pipelines. PHMSA is developing a data analysis program that looks at performance metrics derived from our incident and annual report data sets. The specific performance data for operators is evaluated, and key metrics are evaluated and compared to other operators in a comparable peer group (e.g., according to the size of operator based on mileage or the type of commodities transported by operator). Operator performance relative to those in its peer group will be discussed with each operator during inspections and will help inform the focus areas of the inspection. Operators who perform significantly worse than their peers according to these metrics may be targeted for intervention action, such as executive performance reviews. Intervention actions would depend on the specific operator performance and other factors.

While we believe that our past inspections and enforcement actions have directed operators to consider performance measures (in cases where appropriate), these new questions and written

guidance will provide additional assurance that meaningful and appropriate performance measures are considered and implemented by operators in their IM programs.

In December 2012, PHMSA issued an Advisory Bulletin ADB-2012-10, "Pipeline Safety: Using Meaningful Metrics in Conducting Integrity Management Program Evaluations," reminding operators of gas transmission and hazardous liquid pipeline facilities of their responsibilities, under Federal integrity management regulations, to perform evaluations of their IM programs using meaningful performance metrics.

Finally, PHMSA also revised its hazardous liquid and gas transmission enforcement guidance documents. We developed a data analysis program that looks at performance metrics derived from our incident and annual report data sets.

### **NTSB Safety Recommendation P-11-20**

**Recommendation:** *Work with state public utility commissions to (1) implement oversight programs that employ meaningful metrics to assess the effectiveness of their oversight programs and make those metrics available in a centralized database, and (2) identify and then correct deficiencies in those programs.*

**Response:** PHMSA proposes closure of this recommendation. The National Association of Pipeline Safety Representatives (NAPSR) and PHMSA met in February and April of 2013 to develop draft metrics and preliminary criteria for screening those metrics. The draft state metrics have been identified and approved by NAPSR. These metrics are available on PHMSA's new State Program Performance Metrics pages, which can be accessed through the State Pages directory on the Stakeholder Communications website at <http://primis.phmsa.dot.gov/comm/States.htm?nocache=7437>. New links have also been added to the primary stakeholder pages that point to the State Pages directory for access to the metrics pages.

A review of the metrics was conducted with each state pipeline program as part of its annual on-site program evaluation, and discussions regarding how to improve the metrics, where warranted, were conducted with State Program Managers. PHMSA does not envision taking further action to close this recommendation.

### **NTSB Safety Recommendation P-12-3**

**Recommendation:** *Revise Title 49 Code of Federal Regulations 195.452 to clearly state (1) when an engineering assessment of crack defects, including environmentally assisted cracks, must be performed; (2) the acceptable methods for performing these engineering assessments, including the assessment of cracks coinciding with corrosion with a safety factor that considers the uncertainties associated with sizing of crack defects; (3) criteria for determining when a probable crack defect in a pipeline segment must be excavated and time limits for completing those excavations; (4) pressure restriction limits for crack defects that are not excavated by the required date; and (5) acceptable methods for determining crack growth for any cracks allowed to remain in the pipe, including growth caused by fatigue, corrosion fatigue, or stress corrosion cracking as applicable.*

**Response:** PHMSA believes that incorporating recently developed consensus standards will assure better consistency, accuracy, and quality of pipeline assessments that are conducted using these techniques. To this end, on October 13, 2015, PHMSA proposed its NPRM titled "Pipeline Safety: Safety of On-Shore Hazardous Liquid Pipelines" to incorporate by reference consensus standards governing conduct of assessments of the physical condition of in-service pipelines using in-line inspection, internal corrosion direct assessment, and stress-corrosion-cracking (SCC) direct assessment. Comments are being analyzed and a final rule is under Agency review. We anticipate publication by the end of 2016.

#### **NTSB Safety Recommendation P-12-4**

**Recommendation:** *Revise Title 49 Code of Federal Regulations 195.452(h)(2), the "discovery of condition," to require, in cases where a determination about pipeline threats has not been obtained within 180 days following the date of inspection, that pipeline operators notify the Pipeline and Hazardous Materials Safety Administration and provide an expected date when adequate information will become available.*

**Response:** On October 13, 2015, PHMSA published its NPRM titled "Pipeline Safety: Safety of On-Shore Hazardous Liquid Pipelines," which proposes to amend the existing "discovery of condition" language in the pipeline safety regulations to require pipeline operators to provide PHMSA with an expected date when adequate information will become available in cases where a determination about pipeline threats has not been obtained within 180 days following the date of inspection. Comments are being analyzed and a final rule is under agency review. We anticipate publication by the end of 2016.

#### **NTSB Safety Recommendation P-12-7**

**Recommendation:** *Develop requirements for team training of control center staff involved in pipeline operations similar to those used in other transportation modes.*

**Response:** While a number of the sections in the current Control Room Management regulations, the inspection guidance, and related Frequently Asked Questions already relate to the concept of team training for control room personnel (controllers) and others who would likely work together as a team during normal, abnormal, and emergency situations, PHMSA believes a requirement for control room team training would better prepare all individuals who would be reasonably expected to interface with controllers during these situations. Therefore, on July 10, 2015, PHMSA published its NPRM titled "Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes," proposing revisions to the Control Room Management regulations in Sections 192.631 and 195.446 of the Pipeline Safety Regulations to more explicitly require team training. PHMSA is in the process of addressing comments on the NPRM. PHMSA also conducted an Advisory Committee meeting to discuss the final rule on June 1-3, 2016. The Committee approved the rule with amendments and we will continue work toward publication of a final rule. We anticipate publication by October 2016.

In addition to considering rulemaking action, PHMSA incorporated guidance on team training in ADB 14-02, "Pipeline Safety: Lessons Learned From the Release at Marshall, Michigan" (<https://www.federalregister.gov/articles/2014/05/06/2014-10248/pipeline-safety-lessons-learned-from-the-release-at-marshall-michigan>). The ADB cites NTSB's conclusion that Enbridge's failure to train the control center staff in team performance resulted in poor communication and a lack of leadership. The ADB reinforces and recommends that operators consider training control room staff to recognize and respond to emergencies or unexpected conditions as a team.

#### **NTSB Safety Recommendation P-12-8**

**Recommendation:** *Extend operator qualification requirements in Title 49 Code of Federal Regulations Part 195 Subpart G to all hazardous liquid and gas transmission control center staff involved in pipeline operational decisions.*

**Response:** Please refer to P-12-7.

#### **NTSB Safety Recommendation P-12-9**

**Recommendation:** *Amend Title 49 Code of Federal Regulations Part 194 to harmonize onshore oil pipeline response planning requirements with those of the U.S. Coast Guard and the U.S. Environmental Protection Agency for facilities that handle and transport oil and petroleum products to ensure that pipeline operators have adequate resources available to respond to worst-case discharges."*

**Response:** PHMSA plans to conduct a rulemaking to address this recommendation. As first steps, PHMSA is taking the lessons learned from our studies and the workshop to develop a "Good Practices" guide for completing oil spill response plans for onshore oil pipelines. The guide will serve as the basis for developing regulatory options to meet this recommendation, improve and update other aspects of the regulations, and address changes included in PHMSA's pipeline reauthorization. The "Good Practices" guide will be available to the public by October 31, 2016.

PHMSA has studied and evaluated methods to harmonize its Part 194 – Response Plans for Onshore Pipelines with regulations promulgated by the U.S. Coast Guard (USCG) and the Environmental Protection Agency (EPA). Department of Interior regulations were also examined for off-shore facilities. During this period, PHMSA revisited and re-engineered its oil spill response plan review and approval processes to apply what has been learned and has re-engaged with stakeholders and agencies having responsibilities under the national response system.

In practice and policy, PHMSA has harmonized its review of oil spill response plans with those of USCG and EPA, since the primary tools PHMSA uses to verify the adequacy of response resources are the USCG's "Guidelines for Determining and Evaluating Required Response Resources for Facility Response Plans" (found in 33 CFR Part 154, Appendix C) and the Response Resource Inventory (RRI). The RRI is a national database of response resources that is maintained by the USCG, as required by the Clean Water Act as amended.

The RRI includes data received from companies that wish to have their equipment listed in a publicly-accessible system, as well as data generated from the Oil Spill Removal Organizations (OSRO) classification program. Participation by private industry is voluntary, except for classified OSROs whose participation becomes mandatory when they apply for a classification. The EPA regulations found 40 CFR Part 112, Appendix E, references the USCG regulations and have similar resource calculation worksheets as those found in USCG guidelines.

On April 12, 2016, PHMSA hosted a public workshop to share knowledge and experiences with oil spill response planning and preparedness and discuss practical ways onshore oil pipeline operators can better plan and prepare for oil spills. The NTSB's attendance at the workshop is appreciated.

During the public workshop, we discussed our review procedures and how we use the USCG guidelines and RRI to determine whether pipeline operators have sufficient resources to respond to a worst case discharge. Further, we highlighted that an operator must have resources available to respond to a spill anywhere within a response zone that is determined by the operator.

#### **NTSB Safety Recommendation P-14-1**

**Recommendation:** *Revise Title 49 Code of Federal Regulations Section 903, Subpart O, Gas Transmission Pipeline Integrity Management, to add principal arterial roadways including interstates, other freeways and expressways, and other principal arterial roadways as defined in the Federal Highway Administration's Highway Functional Classification Concepts, Criteria and Procedures to the list of "identified sites" that establish a high consequence area*

**Response:** Aspects of this recommendation were proposed in PHMSA's NPRM titled "Pipeline Safety: Safety of Gas Transmission Pipelines," published on April 8, 2016. The comment period closed on July 7, 2016. Specifically, PHMSA proposed to incorporate designated interstates, freeways, expressways, and other principal 4-lane arterial roadways within the new definition of "moderate consequence areas."

#### **NTSB Safety Recommendation P-15-1**

**Recommendation:** *Assess (1) the need for additional inspection protocol guidance for state inspectors, (2) the adequacy of your existing mentorship program for these inspectors, and (3) the availability of your subject matter experts for consultation with them, and implement the necessary improvements.*

**Response:** PHMSA proposes closure of this recommendation. PHMSA assessed the need for additional inspection materials and protocols for state inspectors. Additional information on the resources available to inspectors was added to Section 5.1.4.d of the 2016 *Guidelines for States Participating in the Pipeline Safety Program (Guidelines)* distributed to State Programs on December 29, 2015. Additionally, PHMSA will use its responses to various NTSB Gas Integrity Management (IM) Safety Study Report recommendations to update the inspection materials.

PHMSA assessed the adequacy of the existing mentorship program for state inspectors. PHMSA used the results of this assessment to update the formal process by which states may consult with PHMSA subject matter experts (SME). Specifically, PHMSA added language to Section 5.1.4.d of the *2016 Guidelines* to document the process by which state inspectors may obtain SME support.

Please see Section 4.4 and Appendix H of the *2016 Guidelines* for information on the mentorship program:

([http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/2016\\_State\\_Guidelines\\_Final\\_Version\\_2015\\_12\\_31\\_with\\_Appendices.pdf](http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/2016_State_Guidelines_Final_Version_2015_12_31_with_Appendices.pdf))

PHMSA will provide no further action on this action beyond the scope of activities mentioned above.

#### **NTSB Safety Recommendation P-15-2**

**Recommendation:** *Modify the overall state program evaluation, training, and qualification requirements for state inspectors to include Federal-To-State coordination in integrity management inspections.*

**Response:** PHMSA proposes closure of this recommendation. PHMSA modified Section 5.1.3.a of the draft *2016 Guidelines* to add information regarding the availability of PHMSA personnel to provide technical support to state inspectors, including in the context of integrity management inspections. PHMSA also established a process to conduct Federal-to-State inspections within and outside of an inspector's home state. The *2016 Guidelines* were finalized and distributed to states on December 29, 2015. See ([http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/2016\\_State\\_Guidelines\\_Final\\_Version\\_2015\\_12\\_31\\_with\\_Appendices.pdf](http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/2016_State_Guidelines_Final_Version_2015_12_31_with_Appendices.pdf))

PHMSA will continue to publicize this new information during meetings and discussions with NAPSRS. PHMSA will also continue to encourage states to coordinate with PHMSA on inspections, including integrity management inspections, and to facilitate that coordination through state liaisons. PHMSA does not envision taking further action to close this recommendation.

#### **NTSB Safety Recommendation P-15-3:**

**Recommendation:** *Work with the NAPSRS to develop and implement a program to formalize, publicize, and facilitate increased state-to-state coordination in integrity management inspections.*

**Response:** PHMSA proposes closure of this recommendation. Please see PHMSA's response to NTSB Safety Recommendation P-15-2, which describes PHMSA strategies for publicizing and facilitating increased coordination at NAPSRS meetings.

On April 12, 2016, the Director of State Programs emailed an "Operator Coordination Report" to all States. This report was developed for use by states and PHMSA to see whether other states have operators in common to help facilitate the coordination of inspections. This report also allows states to see whether they have operators in common with PHMSA.

PHMSA also supports an internal NAPSIR website where states can share information to facilitate increased state-to-state coordination in integrity management inspections. PHMSA does not envision taking further action to close this recommendation.

**NTSB Safety Recommendation P-15-4:**

**Recommendation:** *Increase the positional accuracy of pipeline centerlines and pipeline attribute details relevant to safety in the National Pipeline Mapping system.*

**Response:** Since 2014, PHMSA has taken a series of steps to address the positional accuracy of data contained in the National Pipeline Mapping System (NPMS) to help emergency responders more effectively locate a pipeline to the degree needed to respond to environmental and integrity threats and to help in emergency planning. PHMSA first published a Federal Register notice titled "Request for Revision of a Previously Approved Information Collection - NPMS Program,"<sup>1</sup> which invited public comment on PHMSA's intent to revise and renew an information collection of the NPMS Program, which would require pipeline operators to submit data with improved positional accuracy. Subsequently, PHMSA held a public workshop on November 17, 2014, to address this and other geospatial information collection initiatives. Information on the workshop is available on PHMSA's public website: <http://primis.phmsa.dot.gov/meetings/MtgHome.mtg?mtg=101>.

PHMSA published a second notice titled "Request for Revision of a Previously Approved Information Collection - NPMS Program,"<sup>2</sup> which invited public comment on improved positional accuracy of pipeline maps, and other pipeline attribute details. These details include pipe diameter (currently an optional submission to the NPMS), operating pressure, pipe grade, percent of operating specified minimum yield strength, pipe coating, pipe material, and pipe join method, and decade of construction/installation. PHMSA proposed that gas transmission operators submit data at  $\pm 50$  feet accuracy for all segments which are in a Class 2, Class 3, or Class 4 area; within High Consequence Areas (HCA) or have one or more buildings intended for human occupancy; an identified site (See 49 CFR §192.903); a right-of-way for a designated interstate, freeway, expressway, or other principal four-lane arterial roadway, as defined in the Federal Highway Administration's "Highway Functional Classification Concepts," within the segment's potential impact radius. All other gas pipeline segments would be mapped to a positional accuracy of  $\pm 100$  feet. As part of the process, PHMSA will review each additional data element to determine the appropriate security classification. PHMSA held a public meeting on this notice on November 18, 2015. The comment period ended on November 25, 2015. PHMSA published the Information Collection Notice on June 22, 2016.

<sup>1</sup> 79 Fed. Reg. 44,246 (July 30, 2014).

<sup>2</sup> 80 Fed. Reg. 52,084 (Aug 27, 2015).

#### **NTSB Safety Recommendation P-15-5**

**Recommendation:** *Revise the submission requirement to include high consequence area identification as an attribute data element to the National Pipeline Mapping System.*

**Response:** Please see PHMSA's response to NTSB Safety Recommendation P-15-4, which describes the steps PHMSA has taken since 2014 to improve the quality of the data contained in the NPMS, including specific improvements in data submissions relative to HCAs.

#### **NTSB Safety Recommendation P-15-6**

**Recommendation:** *Assess the limitations associated with the current process for identifying high consequence areas, and disseminate the results of your assessment to the pipeline industry, inspectors, and the public.*

**Response:** PHMSA has noted that proper identification and periodic verification of an HCA relies on two key types of information: (1) pipeline-specific information that includes the accurate location of the centerline of the pipeline, the nominal diameter of the pipeline, and the pipeline segment's maximum allowable operating pressure; and (2) all the structures and their usage (including occupancy) located along the pipeline. PHMSA is performing an assessment of these two key types of information needed for identifying HCAs. We are on schedule to publish an advisory bulletin, and, if needed, updated inspection protocol guidance, in November 2016.

#### **NTSB Safety Recommendation P-15-7**

**Recommendation:** *Work with the Federal Geographic Data Committee to identify and publish standards and specifications for geospatial data commonly used by gas transmission pipeline operators, and disseminate the standards and specifications to these operators and inspectors.*

**Response:** PHMSA proposes closure of this recommendation. On May 12, 2015, PHMSA advised NTSB that it would meet with the Federal Geographic Data Committee (FGDC) no later than June 30, 2015, to discuss making the current NPMS model and standards available to operators and inspectors. PHMSA also advised NTSB that our security policy requires individually vetting each consumer of raw NPMS data. As such, PHMSA does not share NPMS data with the Federal community as a whole, nor does it include the data on distributed datasets such as HSIP Gold. PHMSA has not changed its security policy.

On May 27, 2015, PHMSA met with representatives of FGDC and confirmed that the proposed positional accuracy standard of 50 feet for the majority of pipe segments is in line with FGDC standards. We also confirmed that PHMSA's datum<sup>3</sup> is also the same as FGDC standards. While the data collected for the NPMS and the internal data used by operators are

---

<sup>3</sup> In this context, a datum is a model that describes the earth's shape.



significantly different, PHMSA provides a manual of NPMS technical standards to operators, as well as one-on-one operator assistance when operators prepare submissions to NPMS.

To meet the intent of the NTSB recommendation, PHMSA has worked with FGDC to standardize other approaches such as positional accuracy language and North American Datum (NAD) 83 vs NAD 27 datum. PHMSA has standardized its datum to NAD83 to match the FGDC standard, and has implemented all standards mentioned in the FGDC document, "Content Standard for Digital Geospatial Metadata." The FGDC National Standard for Spatial Data Accuracy applies only to data that is collected in the field. PHMSA currently does not collect its own data; the data is received from pipeline operators. PHMSA will follow the FGDC's spatial standards if it embarks upon any data collection in the future. PHMSA does not envision taking further action to close this recommendation.

**NTSB Safety Recommendation P-15-8:**

**Recommendation:** *Work with the appropriate federal, state, and local agencies to develop a national repository of geospatial data resources for the process for high consequence area identification, and publicize the availability of the repository.*

**Response:** Per our response to Recommendation P-15-7, PHMSA has worked with FGDC, whose membership includes the appropriate Federal, state, and local agencies, to evaluate the feasibility of a national geospatial data repository. The FGDC advised PHMSA that it does not recommend developing a new repository. A repository already exists that includes five HCA datasets, of which three are available to the public, and two are available only to pipeline operators who request them through the NPMS web site.

In addition, PHMSA purchased an updated Ecological Unusually Sensitive Area dataset, to be delivered by the end of FY16. By 12/31/2016, PHMSA will complete development of an additional water based Ecological Unusually Sensitive Area dataset in response to the SAFE PIPES Act 2016. The current security policy for Unusually Sensitive Area datasets will remain as is; all datasets will be available to pipeline operators who request them through the NPMS website.

**NTSB Safety Recommendation P-15-9:**

**Recommendation:** *Establish minimum criteria for eliminating threats, and provide guidance to gas transmission pipeline operators for documenting their rationale for all eliminated threats.*

**Response:** As part of the NPRM on gas transmission safety published on April 8, 2016, PHMSA proposed to enhance and expand minimum requirements for performing threat identification, including, but not limited to, specific requirements to address standards for minimum data sets used, data validation, data integration, subject matter expert bias, and interacting threats. PHMSA believes that these improved requirements may address the root cause of previous shortcomings in threat identification and address this recommendation. To further support the NTSB recommendation, PHMSA plans to issue an Advisory Bulletin by

December 1, 2016, to provide guidance to gas transmission pipeline operators for documenting their rationale for all eliminated threats and establish minimum criteria for eliminating threats.

**NTSB Safety Recommendation P-15-10:**

**Recommendation:** *Update guidance for gas transmission pipeline operators and inspectors on the evaluation of interactive threats. This guidance should list all threat interactions that must be evaluated and acceptable methods to be used.*

**Response:** On September 9-10, 2015, PHMSA held a risk modeling workshop to address how operators can move beyond risk index models where needed to improve investigative and forensic capabilities and to enhance stakeholder engagement. After the workshop, PHMSA established a risk modeling work group that includes industry and other stakeholders, to address perceived shortcomings in the application of certain risk models. The expected outcome of this work group will be guidance for operators to use in evaluating interactive threats. This guidance will be communicated to stakeholders through an appropriate mechanism, such as an advisory bulletin. PHMSA originally anticipated publishing this guidance by May 31, 2016; however, to allow for critical stakeholder involvement, as discussed during the workshop, we now expect to publish by July 31, 2017.

**NTSB Safety Recommendation P-15-11:**

**Recommendation:** *Develop and implement specific risk assessment training for inspectors in verifying the technical validity of risk assessments that operators use.*

**Response:** PHMSA has identified the portions of its Training Program that would be affected by the training materials specified in P-15-10, P-15-12, and P-15-13 that are currently under development. PHMSA evaluated the impacted portions of its Training & Qualifications (TQ) Training Program and identified portions of the curriculum for improvement. Specifically, PHMSA reviewed the training materials in IM-related courses, which include:

- PHMSA-PL3267 - Fundamentals of Integrity Management Course
- PHMSA-PL1297 - Gas Integrity Management (IM) Protocol Course
- PHMSA-PL2294 - Hazardous Liquid IM Protocol Course
- PHMSA-PL1245 - Safety Evaluation of Distribution Integrity Management.

Web-based training that supplements these course materials include:

- WBT-PL11PROC - Integrity Management Processes
- WBT-PL11RA - Introduction to Risk Assessment Methods
- WBT-PL11DIMP - Distribution Integrity Management.

Improvements in the course materials are directed at facilitating a more effective verification of the technical validity of risk assessments that operators use.

PHMSA TQ is reviewing all of its courses using a Critical Task Selection Board (CTSB) that meets and reviews each course. The purpose of each CTSB is to develop and validate

individual and collective tasks required for job performance and critical tasks which inspectors must perform to successfully accomplish their duties. This process uses a Systems Approach to Training (SAT) and occurs in the middle of the “Analysis” phase of the instructional design model/process, ADDIE (Analysis, Design, Development, Implementation, Evaluation). Our focus within the Analysis phase is on task analysis, to develop a critical task list. Critical tasks are those that inspectors (the students) must perform to successfully accomplish their duties.

The Critical Tasks identified become learning objectives which are the foundation of lesson plans. The goal of CTSB is to complete a Critical Task List and Individual Task Analysis Report to send to the TQ Director for approval. Once each Board reaches consensus, the Training and Development Division Team will plan the course design and then submit a course design document for the TQ Director approval. Course development/redevelopment does not take place until these steps are complete. The Training and Development Division’s goal is to complete revised courseware one year from CTSB completion.

The current schedule is for PHMSA TQ to complete the CTSB meetings for all courses addressing risk assessment by December 31, 2017, and the training materials identified for revision within the IM curriculum will be addressed during the course redevelopment activities to ensure risk assessment is clearly explained throughout the process. PHMSA TQ will post revised web-based training materials and course materials for students who have previously taken the courses to have available as continuing education.

#### **NTSB Safety Recommendation P-15-12:**

**Recommendation:** *Evaluate the safety benefits of the four risk assessment approaches currently allowed by the gas integrity management regulations; determine whether they produce a comparable safety benefit; and disseminate the results of your evaluation to the pipeline industry, inspectors, and the public.*

**Response:** On September 9-10, 2015, PHMSA held a risk modeling workshop to address how operators may move beyond risk index models, where needed, to improve investigative and forensic capabilities, and to enhance stakeholder engagement. After the workshop, PHMSA established a risk modeling work group that includes industry and other stakeholders, to address perceived shortcomings in the application of certain risk models. The expected outcome of this work group is guidance on risk assessment approaches currently allowed by the gas integrity management regulations. This guidance will be communicated to stakeholders through an appropriate mechanism such as an advisory bulletin. PHMSA originally anticipated publishing guidance by May 31, 2016; however, to allow for critical stakeholder involvement, as discussed during the workshop, we now expect to publish by July 31, 2017.

#### **NTSB Safety Recommendation P-15-13:**

**Recommendation:** *Update guidance for gas transmission pipeline operators and inspectors on critical components of risk assessment approaches. Include (1) methods for setting weighting factors, (2) factors that should be included in consequence of failure calculations, and (3) appropriate risk metrics and methods for aggregating risk along a pipeline.*

**Response:** PHMSA sponsors Research & Development (R&D) projects which, among other things, focus on providing near-term solutions that will increase the safety and reliability of the Nation's pipelines. The existing R&D portfolio includes risk model-oriented projects in areas such as: (1) reviewing candidate models from inside/outside pipeline industry based on their suitability to pipelines and the models' operational, regulatory and business realities, including usage of decision theory to optimize risk; (2) approaches for preventing catastrophic events; and (3) risk tolerance. We awarded three projects on September 30, 2015: Approaches for Preventing Catastrophic Events (<http://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=638>); White Paper on Risk Tolerance (<http://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=639>); and Critical Review of Candidate Pipeline Risk Models (<http://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=656>). Insights and lessons learned from these projects will inform, as appropriate, the revision of PHMSA's guidance on risk assessment approaches.

On September 9-10, 2015, PHMSA held a risk modeling workshop to address how operators can move beyond risk index models where needed to improve investigative and forensic capabilities, and to enhance stakeholder engagement. After the workshop, PHMSA established a risk modeling work group that includes industry and other stakeholders, to address perceived shortcomings in the application of certain risk models. The expected outcome of this work group is guidance on critical components of risk assessment management. This guidance will be communicated to stakeholders through an appropriate mechanism such as an advisory bulletin. PHMSA expects to publish by July 31, 2017.

#### **NTSB Safety Recommendation P-15-14**

**Recommendation:** *Revise 49 Code of Federal Regulations Section 192.915 to require all personnel involved in IM programs to meet minimum professional qualification criteria.*

**Response:** PHMSA requests a change in the status of this response from "Open Unacceptable Response" to "Open Acceptable Response." PHMSA agrees with the intent of the NTSB recommendation that persons involved in IM programs should meet minimum professional qualification criteria. PHMSA regulations at 49 CFR §192.915 set forth the qualification requirement for, among others, persons supervising IM programs, carrying out assessments, evaluating assessment results, and implementing preventive and mitigative measures. For example, PHMSA regulations require:

- Any person who qualifies as a supervisor for the integrity management program to have appropriate training or experience in the area for which the person is responsible. 49 CFR §192.915(a). Operator personnel involved in IM programs receive on-the-job training under the supervision of a qualified person;
- Any person who conducts an integrity assessment allowed under this subpart to be qualified, and, as these are covered tasks, this qualification requirement is covered by Title 49, Part 192, Subpart N, *Qualification of Pipeline Personnel*. 49 CFR §192.915(b)(1);

- Any person who reviews and analyzes the results from an integrity assessment and evaluation to be qualified. 49 CFR §192.915(b)(2). This qualification is typically covered by the consensus standard originally approved in 2005,<sup>4</sup> “Personnel Qualification and Certification for In-line Inspection Technologies Used in the Examination of Pipelines” (ASNT-ILI-PQ), which established minimum qualification and certification requirements for in-line inspection personnel;
- Any person who implements preventive and mitigative measures to be qualified, including, but not limited to, integrity engineers and others involved in the determination of risk reduction measures that are implemented. 49 CFR §192.915(c). Installation of preventive and mitigative measures involves some tasks, such as marking and locating buried structures and excavation activities, covered by Title 49, Part 192, Subpart N, *Qualification of Pipeline Personnel*; and
- Any person who directly supervises excavation work carried out in conjunction with an integrity assessment to be qualified. 49 CFR §192.915(c)(2).

To support the NTSB recommendation, PHMSA intends to issue an Advisory Bulletin no later than December 31, 2016, to remind operators and contractors of their regulatory responsibility to include the training and qualification requirements for IM personnel in accordance with §192.915 and ASME Standard B31.8S, *Managing System Integrity of Gas Pipelines*.

#### **NTSB Safety Recommendation P-15-15:**

**Recommendation:** *Revise Form F7100.1, Annual Report Form, to collect information about which methods of high consequence area identification and risk assessment approaches were used.*

**Response:** PHMSA agrees with NTSB that information about HCA identification methods and risk assessment approaches should be collected. However, PHMSA believes this data would be best obtained as a data attribute in the NPMS geospatial information collection initiative discussed in PHMSA’s response to NTSB Recommendation P-15-5. The NPMS Info Collection will collect the locations of HCAs (including “could affect” areas) but not the method by which those areas were identified. The NPMS is also collecting the related attributes of “Most recent assessment method” and “Last assessment year.” The choices for the method are inline inspection, hydrostatic pressure test, or direct assessment method. PHMSA anticipates new standards for NPMS data collection following the final Information Collection notice, which was published in the Federal Register on June 22, 2016. This followed two previous notices in 2014 and 2015 regarding revision of information collection standards.

---

<sup>4</sup> Developed by the American Society for Nondestructive Testing (ASNT), and approved by the American National Standards Institute (ANSI).

#### **NTSB Safety Recommendation P-15-16:**

**Recommendation:** *Revise Form F7100.2, Incident Report Form, (1) to collect information about both the results of previous assessments and previously identified threats for each pipeline segment involved in an incident and (2) to allow for the inclusion of multiple root causes when multiple threats interacted.*

**Response:** On May 13, 2016, PHMSA published a Federal Register notice in docket PHMSA-2015-0205 proposing changes to Form F7100.2. We are proposing to collect two cycles of integrity inspection data for an incident location instead of just the most recent cycle. The type of inspections conducted directly correlates to the threats evaluated by the inspection. Regarding multiple root causes, PHMSA does not intend to alter Part G of the form, entitled, "Apparent Cause," to retain the ability to document and report an incident with a single predominant cause. A new part is proposed for the report, allowing the operator to select multiple contributing factors when multiple threats/causes interacted. PHMSA will evaluate comments to the May 13, 2016 Federal Register notice and ask OMB to approve the proposal by December 31, 2016.

#### **NTSB Safety Recommendation P-15-17:**

**Recommendation:** *Develop a program to use the data collected in response to Safety Recommendations P-15-15 and P-15-16 to evaluate the relationship between incident occurrences and (1) inappropriate elimination of threats, (2) interactive threats, and (3) risk assessment approaches used by the gas transmission pipeline operators. Disseminate the results of your evaluation to the pipeline industry, inspectors, and the public annually.*

**Response:** PHMSA will evaluate the method for conducting the analysis to include potential changes to our investigation and data systems and communicate our findings to NTSB within six months of completing the actions described under P-15-15 and P-15-16.

#### **NTSB Safety Recommendation P-15-18:**

**Recommendation:** *Require that all natural gas transmission pipelines be capable of being in-line inspected by either reconfiguring the pipeline to accommodate in line inspection tools or by the use of new technology that permits the inspection of previously uninspectable pipelines; priority should be given to the highest risk transmission pipelines that considers age, internal pressure, pipe diameter, and class location. (Supersedes Safety Recommendation P-11-17, which is classified "Closed—Superseded.")*

**Response:** The Gas Transmission NPRM published on April 8, 2016, would enhance and expand the minimum requirements for the selection and use of integrity assessment methods. It is proposed that direct assessment be allowed only if the line is not capable of inspection by internal inspection tools and is not practical to assess using other methods within the IM requirements. PHMSA has proposed revised or new language in several areas of the NPRM that restrict the use of direct assessment as an integrity assessment method, as follows:

- §192.150(a) would be amended to require, except as provided in paragraphs (b) and (c) of this section, that each new transmission line and each replacement of line pipe, valve, fitting, or other line component in a transmission line must be designed and constructed to accommodate the passage of instrumented internal inspection devices, in accordance with the requirements and recommendations in NACE SP0102-2010, Section 7 (incorporated by reference, see §192.7);
- §192.624 (c)(3)(i) on in-line inspection would be amended to add language describing that if a pipe segment does not have records for a pressure test in accordance with subpart J and §192.624(c)(1), where the operator uses engineering critical assessment (ECA), the operator must develop and implement an inline inspection (ILI) program using tools that can detect wall loss, deformation from dents, wrinkle bends, ovalities, expansion, seam defects including cracking and selective seam weld corrosion, longitudinal, circumferential and girth weld cracks, hard spot cracking, and stress corrosion cracking. At a minimum, the operator would have to conduct an assessment using high resolution magnetic flux leakage (MFL) tool, a high resolution deformation tool, and either an electromagnetic acoustic transducer (EMAT) or ultrasonic testing (UT) tool;
- §192.710 would be amended to add a requirement that a significant portion of pipelines not covered by subpart O be periodically assessed, using integrity assessment techniques similar to those proposed for HCA segments. Specifically, PHMSA proposes to require that all pipeline segments in class 3 and class 4 locations and “Moderate Consequence Areas,” as defined in §192.3, be periodically assessed. The use of direct assessment is proposed to be allowed only if the line is not capable of inspection by internal inspection tools and is not practical to assess (due to low operating pressures and flows, lack of inspection technology, and critical delivery areas such as hospitals and nursing homes);
- §§192.921 and 192.937 would be revised to: (1) allow direct assessment only if a line is not capable of inspection by internal inspection tools; (2) add a newly defined assessment method: “spike” hydrostatic test; (3) add excavation and in situ direct examination as an allowed assessment method; and (4) add guided wave ultrasonic testing (GWUT) as an allowed assessment method.

**NTSB Safety Recommendation P-15-20:**

**Recommendation:** *Identify all operational complications that limit the use of in-line inspection tools in piggable pipelines, develop methods to eliminate the operational complications, and require operators to use these methods to increase the use of in-line inspection tools.*

**Response:** PHMSA believes it will meet the intent of this recommendation by incorporating by reference into its Gas Transmission NPRM the consensus industry standard NACE SP0102-2010 (formerly RP0102), “In-Line Inspection of Pipelines.” NACE SP0102-2010 outlines a process by which pipeline operators can plan, organize, and execute in-line inspection projects.

**NTSB Safety Recommendation P-15-21:**

**Recommendation:** *Develop and implement a plan for eliminating the use of direct assessment as the sole integrity assessment method for gas transmission pipelines*

**Response:** At this time, PHMSA is not able to eliminate the use of direct assessment as the sole integrity assessment method for gas transmission pipelines. Title 49, United States Code Section 60102(m), Inspections By Direct Assessment, states that the Secretary shall issue regulations prescribing standards for inspection of a pipeline facility by direct assessment.

The Gas Transmission NPRM published on April 8, 2016, would allow the use of direct assessment only in instances where the line is not capable of inspection by internal inspection tools or where it is not practical to assess using pressure testing or other methods specified (due to low operating pressures and flows, lack of inspection technology, and critical delivery areas such as hospitals and nursing homes). PHMSA believes that this will meet the intent of the recommendation.

**NTSB Safety Recommendation P-15-22:**

**Recommendation:** *Develop and implement a plan for all segments of the pipeline industry to improve data integration for IM through the use of geographic information systems.*

**Response:** The Gas Transmission NPRM published on April 8, 2016, would enhance and expand minimum requirements for performing risk assessment and threat identification to include specific requirements to address standards for minimum data sets used, data validation, data integration (including identification and analysis of spatial relationships), and subject matter expert bias. PHMSA believes that these improved requirements will address certain root causes of previous shortcomings in current data integration, by improving operator understanding of data integration requirements, and will address this recommendation.

PHMSA will take action to understand the effect of these new regulations on GIS implementation, including a cost-benefit assessment.

**CONCLUSION**

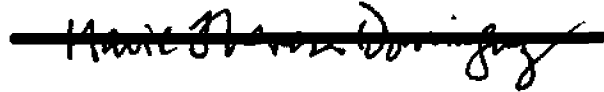
PHMSA continues to make significant strides to improve our pipeline safety program and takes its responsibility to fully address all NTSB recommendations seriously. PHMSA will continue to work with your office in the future as we continue our efforts to ensure the safe, reliable, and environmentally sound operation of the Nation's pipeline transportation system.

We request your consideration for closing Recommendations P-11-20, P-15-1, P-15-2, P-15-3, and P-15-7. We also request that you change the status of Recommendation P-15-14 to "Open Acceptable Response." We will continue to work aggressively and without delay to close all remaining open recommendations.



If you have any questions or require additional information, please do not hesitate to contact me at (b)(6)

Sincerely,

A handwritten signature in black ink, which appears to read "Marie Therese Dominguez", is written over a solid black horizontal line.

Marie Therese Dominguez

**Bing Candi**

---

**From:** Ameri, Maryam CTR (PHMSA) (b)(6)  
**Sent:** Tuesday, August 30, 2016 3:55 PM  
**To:** Correspondence  
**Cc:** Espinoza, Jaime (PHMSA); Drake, John (PHMSA)  
**Subject:** PHMSA's Status Update on 38 Open NTSB Safety Recommendations  
**Attachments:** NTSB Safety Recommendations Status Updates 8-26-2016.pdf

Good afternoon,

Please see the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding the status of 38 outstanding NTSB Safety Recommendations.

Thank you,

**Maryam Ameri, MA | Executive Secretariat**  
Contractor - Unispec Enterprises, Inc.  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
East Building, 2nd Floor, PH-10  
1200 New Jersey Avenue, SE, E27-317  
Washington, DC 20590-0001

(b)(6)

(b)(6)



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Ave. S.E.  
Washington, DC 20590

October 27, 2016

The Honorable Christopher Hart  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594

Dear Chairman Hart:

I am writing to propose closure of the open National Transportation Safety Board (NTSB) Recommendation P-01-2. This letter provides an update of the actions taken to address the recommendation.

#### **Safety Recommendation P-01-2**

**Recommendation:** *Require that excess flow valves be installed in all new and renewed gas service lines, regardless of a customer's classification, when the operating conditions are compatible with readily available valves.*

**Response:** On December 4, 2009, the Pipeline and Hazardous Materials Safety Administration (PHMSA) published a final rule titled "Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines" (DIMP), which required operators install excess flow valves (EFV) on service lines serving single-family residences. In November 2011, PHMSA published an advance notice of proposed rulemaking seeking comment on several issues related to the expanded use of EFVs in gas distribution systems, including expanding EFV use beyond single-family residences to cover all new and renewed gas service lines. PHMSA published a corresponding notice of proposed rulemaking in July 2015 seeking further comment on the requirement to install EFVs on all other customer services, regardless of classification.

On October 7, 2016, PHMSA published a final rule titled "Pipeline Safety: Expanding the Use of Excess Flow Valves in Gas Distribution Systems to Applications Other Than Single-Family Residences." The rule requires operators to install excess flow valves (EFV) on all new or replaced distribution service lines serving branched single-family residences, multi-family residences, and small commercial entities consuming gas volumes not exceeding 1,000 Standard Cubic Feet per Hour (SCFH), and to install curb valves (manual service-line shutoff valves), or EFVs, if supported by sound engineering analysis, on service lines with meter capabilities exceeding 1,000 SCFH. The installation of these valves would include the remaining customer classifications and pipelines not captured in PHMSA's DIMP final rule

The Honorable Christopher A. Hart

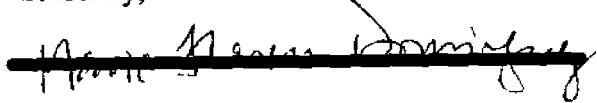
published on December 4, 2009. Therefore, with the publication of this rule, excess flow valves are required to be installed in all new and renewed gas service lines, which should satisfy NTSB Recommendation P-01-2.

As a safety organization, we take our responsibility to address all recommendations seriously and will continue to work aggressively to close all open recommendations. We therefore request your consideration for closing Recommendation P-01-2. PHMSA will continue to work with your office in the future as we continue our efforts to ensure the safe, reliable, and environmentally sound operation of the Nation's pipeline transportation system.

If we can be of further assistance or answer any additional questions, please do not hesitate to contact Nancy White, NTSB Program Manager, Office of Pipeline Safety, by phone at

(b)(6) by e-mail at (b)(6)

Sincerely,

A handwritten signature in cursive script, appearing to read "Marie Therese Dominguez", written over a solid black horizontal line.

Marie Therese Dominguez

## McCray LaSean

---

**From:** Ameri, Maryam CTR (PHMSA) (b)(6)  
**Sent:** Friday, October 28, 2016 2:39 PM  
**To:** Correspondence  
**Cc:** Espinoza, Jaime (PHMSA); White, Nancy (PHMSA)  
**Subject:** PHMSA's Response to NTSB Safety Recommendation P-01-2  
**Attachments:** PHMSA Response to NTSB Recommendation P-01-2.pdf

Good afternoon,

Please see the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding NTSB Safety Recommendation P-01-2.

Thanks,

**Maryam Ameri, MA | Executive Secretariat**  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
East Building, 2nd Floor, PH-10  
1200 New Jersey Avenue, SE, E24-425  
Washington, DC 20590-0001  
Contractor - Unispec Enterprises, Inc.

(b)(6)

(b)(6)



Office of the Chairman

## National Transportation Safety Board

Washington, DC 20594

November 10, 2016

The Honorable Marie Therese Dominguez  
Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Administrator Dominguez:

Thank you for your October 27, 2016, letter to the National Transportation Safety Board regarding the status of Safety Recommendation P-01-002, which we issued to the Pipeline and Hazardous Materials Safety Administration on June 22, 2001, as a result of our investigation of the July 7, 1998, natural gas explosion and fire in South Riding, Virginia.

### P-01-002

Require that excess flow valves be installed in all new and renewed gas service lines, regardless of a customer's classification, when the operating conditions are compatible with readily available valves.

We are currently reviewing your August 17, 2016, letter regarding Safety Recommendation P-01-002 and hope to have a response to you soon.

Thank you for your commitment to pipeline safety.

Sincerely,



**Christopher A. Hart**  
Chairman

*Approved for Electronic Transmittal  
No Hard Copy Will Follow*

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Undersecretary for  
Transportation Policy



# National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

December 5, 2016

The Honorable Marie Therese Dominguez  
Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Administrator Dominguez:

Thank you for your August 17, 2016, and October 27, 2016, letters to the National Transportation Safety Board regarding the status of actions taken to address the 38 open safety recommendations that we issued to the Pipeline and Hazardous Materials Safety Administration (PHMSA).

We issued Safety Recommendation P-01-2 on June 22, 2001, as a result of our investigation of the July 7, 1998, natural gas explosion and fire in South Riding, Virginia.

## P-01-2

Require that excess flow valves be installed in all new and renewed gas service lines, regardless of a customer's classification, when the operating conditions are compatible with readily available valves.

We are pleased to learn that on October 14, 2016, you published the long-awaited final rules at the *Federal Register*. Because the final rule satisfies the intent of Safety Recommendation P-01-2 (improving natural gas distribution pipeline system safety), it is classified "Closed—Acceptable Action."

We issued Safety Recommendations P-09-1 and -2 on October 27, 2009, as a result of our investigation of the November 1, 2007, rupture of the liquid propane pipeline operated by Dixie Pipeline Company near Carmichael, Mississippi.

## P-09-1

Conduct a comprehensive study to identify actions that can be implemented by pipeline operators to eliminate catastrophic longitudinal seam failures in electric resistance welded pipe (ERW); at a minimum, the study should include assessments of the effectiveness and effects of in-line inspection tools, hydrostatic

pressure tests, and spike pressure tests; pipe material strength characteristics and failure mechanisms; the effects of aging on ERW pipelines; operational factors; and data collection and predictive analysis.

On April 8, 2015, based on information provided in your January 22, 2015, letter, Safety Recommendation P-09-1 was classified "Closed—Acceptable Action." In so doing, we wrote:

We note that, on October 23, 2013, you completed your study, Final Summary Report and Recommendations for the Comprehensive Study to Understand Longitudinal ERW Seam Failures Phase One, and you have posted the report on the project website and presented it at various industry events. These actions satisfy Safety Recommendation P-09-1, which is classified "Closed—Acceptable Action."

#### P-09-2

Based on the results of the study requested in Safety Recommendation P-09-1, implement the actions needed.

Although we are disappointed to learn that action on this issue has been delayed a year, we are nonetheless pleased that, after a planned public meeting and forum, you expect the needed actions will be complete by December 31, 2017. Pending completion of this effort, Safety Recommendation P-09-2 is classified "Open—Acceptable Response."

We issued Safety Recommendations P-11-8 through -12, -14, -15, -18, and -20 on September 26, 2011, as a result of our investigation of the September 9, 2010, rupture of an intrastate natural gas transmission pipeline and subsequent fire in a residential area in San Bruno, California.

#### P-11-8

Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located. This information should include pipe diameter, operating pressure, product transported, and potential impact radius.

We understand that you continue to pursue multiple actions to address this recommendation, and that you require pipeline operators (except for operators of distribution and gathering pipelines) to submit geospatial data, attributes, metadata, public contact information, and a transmittal letter to the National Pipeline Mapping System (NPMS) program. Further, you continue to review public comments on your July 30, 2014, proposal, "Request for Revision of a Previously Approved Information Collection—National Pipeline Mapping System Program," as well as to work with various industry partners and groups, hold public meetings, and issue notices on this subject. We would appreciate periodic updates on



the status of these efforts. Pending completion of these actions, Safety Recommendation P-11-8 is classified “Open—Acceptable Response.”

**P-11-9**

Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to ensure that their control room operators immediately and directly notify the 911 emergency call center(s) for the communities and jurisdictions in which those pipelines are located when a possible rupture of any pipeline is indicated.

We are aware of your Advisory Bulletin (AB)-12-09, “Communication During Emergency Situations,” published in October 2012, and understand that you plan to incorporate aspects of this recommendation into a future notice of proposed rulemaking (NPRM), titled “Pipeline Safety: Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards,” which is expected to be published by late spring 2017. Pending completion of these efforts and publication of the final rules, Safety Recommendation P-11-9 is classified “Open—Acceptable Response.”

**P-11-10**

Require that all operators of natural gas transmission and distribution pipelines equip their supervisory control and data acquisition systems with tools to assist in recognizing and pinpointing the location of leaks, including line breaks; such tools could include a real-time leak detection system and appropriately spaced flow and pressure transmitters along covered transmission lines.

In our June 6, 2016, comments on your April 8, 2016, NPRM, “Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines,” we addressed your statement that “leak detection devices mitigate rather than prevent accidents,” and your deferring action on Safety Recommendation P-11-10 until after you complete ongoing research and analysis as part of your greater leak-detection study. We further noted that you have not addressed the valve upgrade issues in topic H of the NPRM.

We now understand that you plan to incorporate aspects of this recommendation into your future NPRM, “Pipeline Safety: Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards,” with an expected publication of the proposed rule by late spring 2017. We look forward to reviewing the proposed NPRM in hope that it addresses this issue. Pending publication of the final rule, Safety Recommendation P-11-10 is classified “Open—Acceptable Response.”

**P-11-11**

Amend Title 49 *Code of Federal Regulations* [CFR] 192.935(c) to directly require that automatic shutoff valves or remote control valves in high consequence areas

[HCAs] and in class 3 and 4 locations be installed and spaced at intervals that consider the population factors listed in the regulations.

We understand that you plan to incorporate aspects of this recommendation into your future NPRM, “Pipeline Safety: Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards,” with an expected publication date in late spring 2017. Pending our review of this NPRM and the final rules as requested, Safety Recommendation P-11-11 is classified “Open Acceptable Response.”

#### P-11-12

Amend Title 49 *Code of Federal Regulations* 199.105 and Title 49 *Code of Federal Regulations* 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident.

On August 18, 2015, we commented on your NPRM, “Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes,” noting that the proposed rulemaking addresses our recommendations. We understand that you are in the process of addressing comments on the 2015 NPRM; you have assembled an advisory committee meeting to discuss the proposed final rule, which the committee approved with amendments, in June 2016; and that you are working toward publishing a final rule within the next few months. Accordingly, pending publication of a final rule addressing this issue, Safety Recommendation P-11-12 is classified “Open—Acceptable Response.”

#### P-11-14

Amend Title 49 *Code of Federal Regulations* 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test.

On June 6, 2016, in our comments to your NPRM, “Pipeline Safety: Safety of Gas Transmission Pipelines,” published on April 8, 2016, we expressed approval that you were moving forward on actions necessary to implement this recommendation. We appreciate this update, which gives an overview of the actions taken and those planned to address this issue. Pending publication of final rules, Safety Recommendation P-11-14 is classified “Open—Acceptable Response.”

#### P-11-15

Amend Title 49 *Code of Federal Regulations* Part 192 of the Federal pipeline safety regulations so that manufacturing- and construction-related defects can only be considered stable if a gas pipeline has been subjected to a

postconstruction hydrostatic pressure test of at least 1.25 times the maximum allowable operating pressure.

On June 6, 2016, in our comments to your NPRM, "Pipeline Safety: Safety of Gas Transmission Pipelines," we expressed our approval of the proposal to remove the grandfather clauses. Pending publication of the final rules, Safety Recommendation P-11-15 is classified "Open Acceptable Response."

#### P-11-18

Revise your integrity management inspection protocol to (1) incorporate a review of meaningful metrics; (2) require auditors to verify that the operator has a procedure in place for ensuring the completeness and accuracy of underlying information; (3) require auditors to review all integrity management [IM] performance measures reported to the Pipeline and Hazardous Materials Safety Administration and compare the leak, failure, and incident measures to the operator's risk model; and (4) require setting performance goals for pipeline operators at each audit and follow up on those goals at subsequent audits.

On April 8, 2015, based on information in your January 22, 2015, letter, we noted that you had completed action on the first three items of this recommendation and were working on final steps to complete action related to the fourth item. We understand that you have modified several components of your inspection and enforcement processes and procedures regarding meaningful metrics and their inclusion in pipeline operators' IM programs. Accordingly, pending notification that you have completed part four of Safety Recommendation P-11-18, it is classified "Open Acceptable Response."

#### P-11-20

Work with state public utility commissions to (1) implement oversight programs that employ meaningful metrics to assess the effectiveness of their oversight programs and make those metrics available in a centralized database, and (2) identify and then correct deficiencies in those programs.

We understand that you and the National Association of Pipeline Safety Representatives (NAPSR) have completed action as requested on this issue. We note that, in February and April of 2013, you and NAPSR met to develop draft metrics and preliminary criteria for screening those metrics. The draft states metrics were identified and approved by NAPSR, and these metrics are now available on your new State Program Performance Metrics pages, which can be accessed through the "state pages" directory on the Pipeline Safety Stakeholder Communications website (<http://primis.phmsa.dot.gov/comm/States.htm?nocache=7437>).

Further, new links have been added to the primary stakeholder pages that point to the state pages directory for access to the metrics pages. You and NAPSR have reviewed the metrics with each state pipeline program as part of the states' annual on-site program evaluation, and have discussed how to improve the metrics, where warranted, with state program managers.

Because these combined actions satisfy the intent of Safety Recommendation P-11-20, it is classified “Closed Acceptable Action.”

We issued Safety Recommendations P-12-3, -4, and -7 through -9 on July 25, 2012, as a result of our investigation of the July 25, 2010, Enbridge Incorporated hazardous liquid pipeline rupture and release that occurred in Marshall, Michigan.

#### P-12-3

Revise Title 49 *Code of Federal Regulations* 195.452 to clearly state (1) when an engineering assessment of crack defects, including environmentally assisted cracks, must be performed; (2) the acceptable methods for performing these engineering assessments, including the assessment of cracks coinciding with corrosion with a safety factor that considers the uncertainties associated with sizing of crack defects; (3) criteria for determining when a probable crack defect in a pipeline segment must be excavated and time limits for completing those excavations; (4) pressure restriction limits for crack defects that are not excavated by the required date; and (5) acceptable methods for determining crack growth for any cracks allowed to remain in the pipe, including growth caused by fatigue, corrosion fatigue, or stress corrosion cracking as applicable.

We note that you agree with incorporating recently developed consensus standards to assure the better consistency, accuracy, and quality of pipeline assessments that are conducted using these techniques, and that, on October 13, 2015, you issued an NPRM, “Pipeline Safety: Safety of Hazardous Liquid Pipelines,” to incorporate, by reference, consensus standards governing physical-condition assessments of the in-service pipelines using in-line inspection (ILI), internal corrosion direct assessment, and stress-corrosion cracking direct assessment. However, we also note that changes to requirements for scheduling crack defect remediation only address indications of significant stress corrosion cracking (SCC). We point out that recommendation P-12-3 refers to all forms of crack defects, not just SCC. The crack that led to the rupture in Marshall, Michigan, was characterized as a “crack-like” feature (individual crack) rather than a “crack field” feature (crack colony). By addressing only crack indications identified as SCC colonies, the proposed regulation does not limit or otherwise describe requirements for remediating other types of crack indications, including the indication associated with the crack that led to the rupture in Marshall. We understand that you are reviewing comments and expect that a final rule will be published by the end of 2016. We urge you to ensure that remediation requirements for all types of crack indications are included in the final rule. Pending resolution of this issue in the final rule, Safety Recommendation P-12-3 is classified “Open—Unacceptable Response.”

#### P-12-4

Revise Title 49 *Code of Federal Regulations* 195.452(h)(2), the “discovery of condition,” to require, in cases where a determination about pipeline threats has not been obtained within 180 days following the date of inspection, that pipeline operators notify the Pipeline and Hazardous Materials Safety Administration and provide an expected date when adequate information will become available.

We understand that “Pipeline Safety: Safety of On-Shore Hazardous Liquid Pipelines” proposes amending the existing “discovery of condition” language in the pipeline safety regulations to require pipeline operators to provide you with an expected date when adequate information will become available in cases where a pipeline threat has not been determined within 180 days following the date of inspection. We note that you are reviewing comments and anticipate publishing a final rule by the end of 2016. Pending our review of the final rule, Safety Recommendation P-12-4 is classified “Open—Acceptable Response.”

#### P-12-7

Develop requirements for team training of control center staff involved in pipeline operations similar to those used in other transportation modes.

#### P-12-8

Extend operator qualification requirements in Title 49 *Code of Federal Regulations* Part 195 Subpart G to all hazardous liquid and gas transmission control center staff involved in pipeline operational decisions.

On August 18, 2016, we provided comments to your NPRM, “Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes,” proposing revisions to the control room management regulations in 49 *CFR* 192.631 and 195.446 to more explicitly require team training. We note that you are reviewing comments to the NPRM and expect to publish the final rule later this year. Further, you incorporated guidance on team training into AB 14-02, “Pipeline Safety: Lessons Learned from the Release at Marshall, Michigan,” at the *Federal Register*, citing our conclusion that Enbridge’s failure to train the control center staff in team performance resulted in poor communication and a lack of leadership, and the AB reinforces and recommends that operators consider training control room staff to recognize and respond to emergencies or unexpected conditions as a team. Pending our review of the final rule, Safety Recommendations P-12-7 and -8 are classified “Open—Acceptable Response.”

#### P-12-9

Amend Title 49 *Code of Federal Regulations* Part 194 to harmonize onshore oil pipeline response planning requirements with those of the US Coast Guard and the US Environmental Protection Agency for facilities that handle and transport oil and petroleum products to ensure that pipeline operators have adequate resources available to respond to worst-case discharges.

We understand that you plan to conduct a rulemaking to address this recommendation. To this end, you are taking the lessons learned from your studies and your April 12, 2016, public workshop to develop a “good practices” guide for completing oil spill response plans for onshore oil pipelines, which will be the basis for developing regulatory options to meet this recommendation, will improve and update other aspects of the regulations, and will address

changes included in your pipeline reauthorization. We note that this guide will be available to the public this fall. Pending completion of these efforts and our review of the final rules, Safety Recommendation P-12-9 is classified “Open—Acceptable Response.”

We issued Safety Recommendation P-14-1 on March 10, 2014, as a result of our investigation of the rupture of a Columbia Gas Transmission Corporation pipeline near Sissonville, West Virginia, on December 11, 2012.

#### P-14-1

Revise Title 49 *Code of Federal Regulations* section 903, subpart O, *Gas Transmission Pipeline Integrity Management*, to add principal arterial roadways including interstates, other freeways and expressways, and other principal arterial roadways as defined in the Federal Highway Administration’s *Highway Functional Classification Concepts, Criteria and Procedures* to the list of “identified sites” that establish a high consequence area.

On June 6, 2016, we commented on your NPRM, “Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines,” which discusses an alternate approach to address P-14-1, whereby you propose creating a “moderate consequence area (MCA)” category that includes a highway size threshold. We continue to disagree with the proposal to limit highway coverage to only four-lane configurations because doing so would exclude other principal arterial roadways wider than four lanes. Although most wider divided highways likely coincide with the existing HCA criteria, some may not.

We urge you to ensure that the wider arterial roadways are included in the MCA scope, and pending resolution of this issue in the final rule, Safety Recommendation P-14-1 is classified “Open—Unacceptable Response.”

We issued Safety Recommendations P-15-1 through -18 and -20 through -22 on February 10, 2015, as a result of our safety study, *Integrity Management of Gas Transmission Pipelines in High Consequence Areas* (SS15-01).

#### P-15-1

Assess (1) the need for additional inspection protocol guidance for state inspectors, (2) the adequacy of your existing mentorship program for these inspectors, and (3) the availability of your subject matter experts for consultation with them, and implement the necessary improvements.

We understand that you addressed this recommendation in your 2016 *Guidelines for States Participating in the Pipeline Safety Program*, which was distributed to state programs on December 29, 2015. In addition, we note that you will be using your responses to several of our *Gas Integrity Management* safety study recommendations to update inspection materials. Because these actions satisfy the intent of Safety Recommendation P-15-1, it is classified “Closed—Acceptable Action.”

P-15-2

Modify the overall state program evaluation, training, and qualification requirements for state inspectors to include federal-to-state coordination in integrity management inspections.

P-15-3

Work with the National Association of Pipeline Safety Representatives to develop and implement a program to formalize, publicize, and facilitate increased state-to-state coordination in integrity management inspections.

We understand that you addressed the recommended issues in your *2016 Guidelines for States Participating in the Pipeline Safety Program*, that you will continue to publicize this new information during meetings and discussions with NAPSRS, and that you will continue to encourage states to coordinate with you on inspections, including IM inspections, and to facilitate that coordination through state liaisons. Because these actions satisfy the intent of Safety Recommendation P-15-2, it is classified “Closed—Acceptable Action.”

On April 12, 2016, the director of state programs e-mailed an operator coordination report to all states, which was developed for you and the states to see whether any states have operators in common to help facilitate the coordination of inspections. We note that you are supporting an internal NAPSRS website that states can use to share information to increase state-to-state coordination in IM inspections. Because these actions satisfy the intent of Safety Recommendation P-15-3, it is classified “Closed—Acceptable Action.”

P-15-4

Increase the positional accuracy of pipeline centerlines and pipeline attribute details relevant to safety in the National Pipeline Mapping System.

P-15-5

Revise the submission requirement to include high consequence area identification as an attribute data element to the National Pipeline Mapping System.

Your update to Safety Recommendation P-15-4 describes the steps you have taken since 2014 to improve the quality of the data contained in the NPMS, including specific improvements in data submissions relative to HCAs. We note that, as part of your efforts to satisfy Safety Recommendations P-15-4 and -5, you have taken a series of steps to address the positional accuracy of NPMS data to help emergency responders more effectively locate pipelines and respond to environmental and integrity threats as well as to help in emergency planning. To this end, you published two *Federal Register* notices, “Request for Revision of a Previously Approved Information Collection—National Pipeline Mapping System Program,” and “Request for Revision of a Previously Approved Information Collection—NPMS Program,” which invited

public comment on improved positional accuracy of pipeline maps and other pipeline attribute details.

We note that you have proposed that gas transmission operators submit data at approximately 50-foot accuracy for all segments that are in a Class 2, Class 3, or Class 4 area; within an HCA or that have one or more buildings intended for human occupancy; in an identified site (49 *CFR* 192.903); or in a right-of-way for a designated interstate, freeway, expressway, or other principal four-lane arterial roadway, as defined in the Federal Highway Administration's *Highway Functional Classification Concepts*, within the segment's potential impact radius. We further note that all other gas pipeline segments would be mapped to a positional accuracy of approximately 100 feet and, as part of the process, you will review each additional data element to determine the appropriate security classification. In addition, you held a public meeting on this notice on November 18, 2015, and published an information collection notice on June 22, 2016.

Pending completion of these efforts, Safety Recommendations P-14-4 and -5 are classified "Open—Acceptable Response."

#### P-15-6

Assess the limitations associated with the current process for identifying high consequence areas, and disseminate the results of your assessment to the pipeline industry, inspectors, and the public.

We note that you continue to address this issue and plan to publish the results in an AB and in updated inspection protocol guidance, as needed, by the end of 2016. Pending completion of these efforts, Safety Recommendation P-15-6 is classified "Open—Acceptable Response."

#### P-15-7

Work with the Federal Geographic Data Committee [FGDC] to identify and publish standards and specifications for geospatial data commonly used by gas transmission pipeline operators, and disseminate the standards and specifications to these operators and inspectors.

We note that you do not share NPMS data with the federal community as a whole, nor do you include the data on distributed datasets, such as HSIP Gold, and you have not changed your security policy. To address this recommendation, you met with FGDC representatives and confirmed that the proposed positional accuracy standard of 50 feet for the majority of pipe segments is in line with FGDC standards, and also confirmed that your data are the same as FGDC standards. We further note that, although the data collected for the NPMS and the internal data used by operators are significantly different, you give operators a manual of NPMS technical standards and provide operators with one-on-one assistance when they prepare submissions to NPMS.



We understand that you worked with FGDC to standardize other approaches, such as positional accuracy language and North American Datum (NAD) 83 versus NAD 27. You also standardized your datum to NAD 83 to match the FGDC standard, and have implemented all standards mentioned in the FGDC document, "Content Standard for Digital Geospatial Metadata." We understand that the FGDC National Standard for Spatial Data Accuracy applies only to data that are collected in the field, and that you receive data from pipeline operators rather than collect it yourself. We note that you will follow the FGDC's spatial standards if the FGDC embarks upon any data collection in the future.

Because these actions satisfy the intent of Safety Recommendation P-15-7, it is classified "Closed Acceptable Action."

#### **P-15-8**

Work with the appropriate federal, state, and local agencies to develop a national repository of geospatial data resources for the process for high consequence area identification, and publicize the availability of the repository.

We acknowledge that you have worked with FGDC and note that the FGDC does not recommend developing a new repository, as one already exists that includes five HCA datasets (three of which are available to the public and two of which are available only to pipeline operators who request them through the NPMS website). We understand that you purchased an updated ecological unusually sensitive area dataset that will be delivered soon, and that you will develop an additional water-based ecological unusually sensitive area dataset in response to the SAFE PIPES Act 2016 by the end of 2016. Further, the current security policy for unusually sensitive area datasets will remain as is, and all datasets will be available to pipeline operators who request them through the NPMS website. Pending completion of these efforts to address Safety Recommendation P-15-8, it is classified "Open—Acceptable Response."

#### **P-15-9**

Establish minimum criteria for eliminating threats, and provide guidance to gas transmission pipeline operators for documenting their rationale for all eliminated threats.

We note that, as part of your NPRM, "Pipeline Safety: Safety of Gas Transmission Pipelines," published on April 8, 2016, you proposed enhancing and expanding minimum requirements to identify threats, including (but not limited to) specific requirements to address standards for minimum data sets used, data validation, data integration, subject-matter-expert bias, and interacting threat, and you believe that these improved requirements may address the root cause of previous threat identification shortcomings. Further, you plan to issue an AB by the end of 2016 that will provide guidance to gas transmission pipeline operators documenting their rationale for all eliminated threats. This will establish minimum criteria for eliminating threats. Pending the completion of these efforts and our review of the final rules, Safety Recommendation P-15-9 is classified "Open Acceptable Response."

**P-15-10**

Update guidance for gas transmission pipeline operators and inspectors on the evaluation of interactive threats. This guidance should list all threat interactions that must be evaluated and acceptable methods to be used.

We understand that, in September 2015, you held a risk-modeling workshop to address how operators can move beyond risk index models, when needed, to improve investigative and forensic capabilities and to enhance stakeholder engagement. Further, you established a risk-modeling work group that included industry and other stakeholders and addressed perceived shortcomings in certain risk models. You are now developing guidance for operators to use when evaluating interactive threats, which you will disseminate to stakeholders by July 31, 2017. Pending completion of these efforts, Safety Recommendation P-15-10 is classified "Open—Acceptable Response."

**P-15-11**

Develop and implement specific risk assessment training for inspectors in verifying the technical validity of risk assessments that operators use.

We note that you have identified the portions of your training program that would be affected by the training materials specified in Safety Recommendations P-15-10, -12, and -13 that are currently being developed; you have evaluated the impacted portions of your Training & Qualifications Training Program; and you have identified portions of the curriculum for improvement. You have also reviewed training materials in various IM-related courses and in web-based training that supplement these course materials. We understand that you intend to complete the critical task selection board meetings for all courses addressing risk assessment by the end of 2017, and that the training materials identified for revision within the IM curriculum will be addressed during course redevelopment activities to ensure risk assessment is clearly explained throughout the process. You will then post revised web-based training materials and course materials as continuing education for students who have previously taken the courses. Pending completion of these efforts, Safety Recommendation P-15-11 is classified "Open—Acceptable Response."

**P-15-12**

Evaluate the safety benefits of the four risk assessment approaches currently allowed by the gas integrity management regulations; determine whether they produce a comparable safety benefit; and disseminate the results of your evaluation to the pipeline industry, inspectors, and the public.

We note that, in 2015, you held a risk-modeling workshop to address how operators may move beyond risk index models. Further, we understand that a guidance document will be developed and disseminated by AB in 2017.

In 2015, we supported your plans to *evaluate* the safety benefits of the four risk-assessment approaches currently allowed by the gas integrity management regulations; however, your update does not provide specifics on how you evaluated the approaches, nor does it provide any information on how you will determine whether they produce a comparable safety benefit. Therefore, we request that you provide amplifying information on how you evaluated the safety benefits of the four risk-assessment approaches and how you reached your conclusions. Pending this information and our determination that these actions satisfy the intent of Safety Recommendation P-15-12, it is classified “Open Acceptable Response.”

#### P-15-13

Update guidance for gas transmission pipeline operators and inspectors on critical components of risk assessment approaches. Include (1) methods for setting weighting factors, (2) factors that should be included in consequence of failure calculations, and (3) appropriate risk metrics and methods for aggregating risk along a pipeline.

We note that you sponsored research and development work in risk-model-oriented projects, including three in September 2015: Approaches for Preventing Catastrophic Events, White Paper on Risk Tolerance, and Critical Review of Candidate Pipeline Risk Models. We also note that you conducted a risk-modeling workshop in September 2015 to address how operators can move beyond risk index models to improve investigative and forensic capabilities and enhance stakeholder engagement. You established a risk-modeling work group that includes industry and other stakeholders to address perceived shortcomings in the application of certain risk models, and, by the end of July 2017, you will issue guidance on critical components of risk-assessment management. Pending completion of these efforts, Safety Recommendation P-15-13 is classified “Open Acceptable Response.”

#### P-15-14

Revise [Title] 49 *Code of Federal Regulations* section 192.915 to require all personnel involved in integrity management programs to meet minimum professional qualification criteria.

We acknowledge that your current regulations at 49 *CFR* 192.915 set forth qualification requirements for, among other things, individuals supervising IM programs, carrying out assessments, evaluating assessment results, and implementing preventive and mitigating measures. We note that you will issue an AB by the end of 2016 to remind operators and contractors of their regulatory responsibility to include the training and qualification requirements for IM personnel in accordance with 49 *CFR* 192.915 and American Society of Mechanical Engineers Standard B31.8S, Managing System Integrity of Gas Pipelines. Accordingly, pending publication of the AB, Safety Recommendation P-15-14 is classified “Open—Acceptable Response.”

P-15-15

Revise Form F7100.1, Annual Report Form, to collect information about which methods of high consequence area identification and risk assessment approaches were used.

We understand that your efforts to address Safety Recommendation P-15-5 are related to Safety Recommendation P-15-15, and note that you continue to address these issues. You anticipate new standards for NPMS data collection following the final information collection notice, which was published at the *Federal Register* on June 22, 2016, following two previous notices in 2014 and 2015 regarding revisions to information collection standards. Pending the completion of ongoing action, Safety Recommendation P-15-15 is classified “Open—Acceptable Response.”

P-15-16

Revise Form F7100.2, Incident Report Form, (1) to collect information about both the results of previous assessments and previously identified threats for each pipeline segment involved in an incident and (2) to allow for the inclusion of multiple root causes when multiple threats interacted.

We note that, on May 13, 2016, you published a *Federal Register* notice in docket PHMSA-2015-0205 proposing changes to Form F7100.2 to collect two cycles of integrity inspection data for an incident location instead of just the most recent cycle. The type of the inspection conducted directly correlates to the threats evaluated by the inspection. Regarding multiple root causes, you do not intend to alter Part G of the form, Apparent Cause, to retain the ability to document and report an incident with a single predominant cause. A new part is being proposed for the report that would allow the operator to select multiple contributing factors when multiple threats or causes interact.

We understand that you are evaluating comments to your May 2016 *Federal Register* notice and intend to ask the Office of Management and Budget to approve the proposed changes by December 2016. Pending completion of these efforts and implementation of the requested changes to the form, Safety Recommendation P-15-16 is classified “Open—Acceptable Response.”

P-15-17

Develop a program to use the data collected in response to Safety Recommendations P-15-15 and P-15-16 to evaluate the relationship between incident occurrences and (1) inappropriate elimination of threats, (2) interactive threats, and (3) risk assessment approaches used by the gas transmission pipeline operators. Disseminate the results of your evaluation to the pipeline industry, inspectors, and the public annually.

We note that you will evaluate the analysis method to include potential changes to your investigation and data systems, and will communicate your findings back to us within 6 months of completing the actions described under Safety Recommendations P-15-15 and -16. Pending your

further communication and our review of how you plan to use the data collected in response to P-15-15 and -16, Safety Recommendation P-15-17 is classified “Open—Acceptable Response.”

#### P-15-18

Require that all natural gas transmission pipelines be capable of being inline inspected by either reconfiguring the pipeline to accommodate in line inspection tools or by the use of new technology that permits the inspection of previously uninspectable pipelines; priority should be given to the highest risk transmission pipelines that considers age, internal pressure, pipe diameter, and class location. (Supersedes Safety Recommendation P-11-17, which is classified “Closed—Superseded.”)

We note your contention that the NPRM, “Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines,” published at the *Federal Register* on April 8, 2016, will enhance and expand the minimum requirements for the selection and use of integrity assessment methods. In so doing, you proposed that direct assessment be allowed only if the line cannot be inspected with internal tools and if it is impractical to assess it using other methods within the IM requirements. Further, you have proposed revised or new language in several areas of the NPRM to restrict the use of direct assessment as an integrity assessment method. On June 6, 2016, we submitted comments on the NPRM, as follows:

The NTSB understands that the PHMSA proposed actions are intended to address Safety Recommendations P-15-18 and P-15-20. It is not clear, however, if the proposed actions will require operators to modify previously uninspectable pipelines to accommodate ILI tools or alternatively, require operators to use new technologies to perform the inspections. Furthermore, it is not clear if PHMSA will establish any requirements to prioritize new ILIs based on pipeline age, operating pressure, or other relevant criteria. We urge PHMSA to ensure the regulations that result from this NPRM address all elements contained in Safety Recommendations P-15-18 and P-15-20.

We again urge you to ensure the regulations that result from this NPRM will address all elements contained in Safety Recommendations P-15-18 and P-15-20, as stated in our comments. Pending completion of these efforts, and with the understanding that they will lead to the eventual use of ILI tools on all gas transmission lines, Safety Recommendation P-15-18 is classified “Open—Acceptable Response.”

#### P-15-20

Identify all operational complications that limit the use of in-line inspection tools in piggable pipelines, develop methods to eliminate the operational complications, and require operators to use these methods to increase the use of in-line inspection tools.

We note that you believe the intent of this recommendation will be met by incorporating, by reference, into your “Gas Transmission” NPRM the consensus industry standard NACE SP0102-2010 (formerly RP0102), In-Line Inspection of Pipelines, which outlines a process that pipeline operators can use to plan, organize, and execute ILI projects.

As we stated in our June 6, 2016, comments to the NPRM, “Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines,” it is unclear whether the proposed actions will require operators to modify previously uninspectable pipelines to accommodate ILI tools or, alternatively, whether they would require operators to use new technologies to perform the inspections. Furthermore, it is unclear whether you will establish any requirements to prioritize new ILIs based on pipeline age, operating pressure, or other relevant criteria.

Pending the completion of these efforts, and with the understanding they will lead to the eventual use of ILI tools on all gas transmission lines, Safety Recommendation P-15-20 is classified “Open—Acceptable Response.”

#### P-15-21

Develop and implement a plan for eliminating the use of direct assessment as the sole integrity assessment method for gas transmission pipelines.

We note your position that your NPRM, “Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines,” published on April 8, 2016, will allow direct assessment only in instances where the line cannot be inspected with internal tools or where it is not practical to assess it using pressure testing or other methods specified (due to low operating pressures and flows, lack of inspection technology, or presence in a critical delivery area, such as a hospital or nursing home), and it is your belief that this will meet the intent of the recommendation.

We disagree that these actions will satisfy the recommendation. In our June 6, 2016, comments to this NPRM, we urged you to require pipeline operators to augment the direct assessment method wherever it is used with appropriate additional integrity assessment methods, such as magnetic flux leakage, ultrasonic testing, and tests directed at determining the integrity of the pipe coating. Pending publication and our review of a final rule that addresses these concerns, Safety Recommendation P-15-21 is classified “Open Unacceptable Response.”

#### P-15-22

Develop and implement a plan for all segments of the pipeline industry to improve data integration for integrity management through the use of geographic information systems [GISs].

In our June 6, 2016, comments on your NPRM, “Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines,” we acknowledged that PHMSA was addressing certain safety recommendations we issued, including P-15-22.

We note your belief that the proposed regulatory amendments would enhance and expand minimum requirements for risk assessment and threat identification to include specific requirements addressing standards for minimum data sets used, data validation, data integration (including identification and analysis of spatial relationships), and subject-matter-expert bias. You further believe that these improved requirements will address certain root causes of previous shortcomings in current data integration by improving operator understanding of data integration requirements, which will ultimately address this recommendation. You write that you will take action to understand the effect of these new regulations on GIS implementation, including conducting a cost-benefit assessment.

Accordingly, pending our review of the final rules addressing this issue, Safety Recommendation P-15-22 is classified "Open—Acceptable Response."

Thank you for your commitment to pipeline safety. Please reply electronically at [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov) regarding Safety Recommendations P-09-2; P-11-8 through -12, -14, -15, and -18; P-12-3, -4, and -7 through -9; P-14-1; and P-15-4 through -6, -8 through -18, and -20 through -22. Please do not submit both an electronic and a hard copy of the same response.

Sincerely,



**Christopher A. Hart**  
Chairman

*Approved for Electronic Transmittal  
No Hard Copy Will Follow*

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Undersecretary for  
Transportation Policy



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Ave. S.E.  
Washington, DC 20590

January 6, 2017

The Honorable Christopher A. Hart  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594

Dear Chairman Hart:

I am writing to propose closure of the National Transportation Safety Board (NTSB) Recommendation P-15-6. This letter provides an update of the actions taken to address this recommendation.

We take our responsibility to address all recommendations seriously and will continue to work aggressively to close all open recommendations.

**Safety Recommendation P-15-6**

**Recommendation:** *Assess the limitations associated with the current process for identifying high consequence areas, and disseminate the results of your assessment to the pipeline industry, inspectors, and the public.*

**Response:** PHMSA performed an assessment of the process for identifying High Consequence Areas (HCAs) and on December 13, 2016, PHMSA published an advisory bulletin, ADB-2016-07, High Consequence Area Identification Methods (ADB) to disseminate the assessment results and address this recommendation. The ADB is available online at <https://www.federalregister.gov/documents/2016/12/13/2016-29880/pipeline-safety-high-consequence-area-identification-methods-for-gas-transmission-pipelines>.

The ADB reminds gas transmission pipeline operators of certain previously issued guidance, and provides operators with additional guidance for the identification of HCAs along pipeline right-of-ways. This ADB provides suggestions for accurately mapping and integrating HCA data, documenting how mapping systems are used, periodically verifying and updating their mapping systems, using buffer zones (tolerances) to provide additional protection around the calculated potential impact radius along their pipelines, and ensuring the accuracy of class locations. The ADB emphasizes that HCA identification relies on pipeline-specific information regarding the location, size, and operating characteristics of the line, as well as the identification

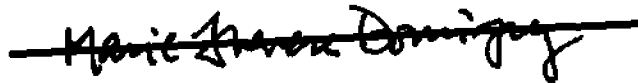


The Honorable Christopher A. Hart

of structures, specified sites, and the intended usage of these specified sites along the pipeline right-of-way.

PHMSA will continue to work with your office in the future as we continue our efforts to ensure the safe, reliable, and environmentally sound operation of the Nation's pipeline transportation system. We appreciate your consideration for closing Recommendation P-15-6. If we can be of further assistance or answer any additional questions, please do not hesitate to contact Nancy White, NTSB Program Manager, Office of Pipeline Safety, by phone at (b)(6) or by e-mail at (b)(6)

Sincerely,

A handwritten signature in black ink, appearing to read "Marie Therese Dominguez", written over a horizontal line.

Marie Therese Dominguez



# National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

March 1, 2017

Mr. Howard McMillan  
Executive Director  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Mr. McMillan:

Thank you for your January 6, 2017, letter to the National Transportation Safety Board regarding the status of actions taken to address Safety Recommendation P-15-6. We issued this recommendation on February 10, 2015, as a result of our safety study, *Integrity Management of Gas Transmission Pipelines in High Consequence Areas*.

## P-15-6

Assess the limitations associated with the current process for identifying high consequence areas [HCAs], and disseminate the results of your assessment to the pipeline industry, inspectors, and the public.

We are pleased that you assessed the process for identifying HCAs, as requested, and that, on December 13, 2016, you published an advisory bulletin (ADB), ADB-2016-07, High Consequence Area Identification Methods, to disseminate the assessment results and address this recommendation. Because these actions satisfy the intent of Safety Recommendation P-15-6, it is classified "Closed—Acceptable Action."

Thank you for your commitment to pipeline safety.

Sincerely,



**Christopher A. Hart**  
Chairman

Approved for Electronic Transmittal  
No Hard Copy Will Follow

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Undersecretary for  
Transportation Policy



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Ave. S.E.  
Washington, DC 20590

March 16, 2016

The Honorable Christopher A. Hart  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza, SW  
Washington, DC 20594

Dear Chairman Hart:

This letter responds to the National Transportation Safety Board (NTSB) Safety Recommendations R-14-18 through R-14-21, and the reiteration of R-07-4. The NTSB issued these four recommendations to the Pipeline and Hazardous Materials Safety Administration (PHMSA) following an investigation into a Consolidated Rail Corporation (Conrail) train derailment in Paulsboro, NJ on November 30, 2012. The train was carrying a Division 2.1 flammable gas, vinyl chloride, which is a regulated hazardous material. The train's derailment resulted in the spillage of approximately 20,000 gallons of vinyl chloride into Mantua Creek, medical attention for the train's crew and first responder team, and approximately \$30 million for the emergency response and remediation. The NTSB's recommendations and PHMSA's responses are as follows:

R-14-18

*Take action to ensure that emergency response information carried by train crews is consistent with and is at least as protective as existing emergency response guidance provided in the Emergency Response Guidebook [ERG].*

The PHMSA does not concur in part based on our understanding of the construct of the safety recommendation that it would entail a regulatory action to satisfy the recommendation and that such an action would leave the ERG as a de facto regulation rather than as a guidebook. The PHMSA has reservations about taking such a course of action. The PHMSA reminds NTSB that 49 CFR Subpart G of Part 172 of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) specifies the requirements to provide and maintain emergency response information (ERI), which is defined as information that can be used in the mitigation of an incident involving hazardous materials. Specifically, section 172.602(a) states that it must include, at a minimum, the following information: 1) The basic description and technical name of the hazardous material; 2) Immediate hazards to health; 3) Risks of fire and explosion; 4) Immediate precautions to be taken in the event of an accident or incident; 5) Immediate methods for handling fires; 6) Initial methods for handling spills or leaks in the absence of fire; and 7) Preliminary first aid measures. The HMR require that this information be presented on

a shipping paper or in a document other than a shipping paper that includes the information in section 172.602(a), such as, a material safety data sheet. The ERG is one form of guidance that can be used to satisfy this requirement. The PHMSA does agree with NTSB that providing emergency responders with accurate and accessible ERI is critical in transportation safety. However, we have concerns with taking regulatory action to ensure that emergency response information is as protective as the ERG.

First, it is important to note that the ERG is a tool to help emergency responders, not necessarily a national standard, even if viewed as such by NTSB or the public. The ERG is a guide to be relied upon in the absence of any other information. Although it may be a good starting point, the ERG cannot account for every variable that a carrier may encounter in transportation. The PHMSA relies on the shipper or carrier's ability to provide accurate emergency response information based on the specific material, the amount of material being transported, and other route-related variables. Ultimately we support giving flexibility to shippers and carriers to prepare emergency response information based on their own unique scenario.

Furthermore, while part of the ERG is based on scientific data, it may not always be the only correct way to respond to an incident. For instance, a shipper or carrier may use a different evacuation distance based on his or her own analysis using a source other than the ERG. The result may be equally or more effective for initial emergency response. This allowance explains why differences can exist between the ERG and sources like the Association of American Railroads (AAR) Bureau of Explosives Hazardous Materials Shipping Descriptions and Emergency Response database (HAZMAT database). For example, prior to the 2012 ERG publication, AAR contacted PHMSA to address the differences in the guidance for chlorine spillage in Tables 1 and 3; questioning the estimates and usability. The PHMSA recognized that there may be differences, but nonetheless, chose to publish the isolation and protective action distances based on research to support the ERG. However, to date, there is no published evidence, in the NTSB report or otherwise to indicate AAR's guidance on chlorine emergency response as unsafe. The PHMSA does, however, acknowledge NTSB's concerns as expressed via conference calls to discuss this recommendation that the information provided by shippers in accordance with section 172.602(a) is often not verified or validated. That is, there is no supporting data or analysis for the ERI provided by the shipper.

For vinyl chloride, the AAR HAZMAT database recommended, "[i]f material leaking (not on fire) consider evacuation from downwind area based on the amount of material spilled, location, and weather conditions." This type of guidance allows for a more specific response without causing unnecessary evacuation for the surrounding community. A properly trained emergency responder should be able to respond appropriately, based on the size of the spill, location, and weather conditions. In some cases, the emergency responder may conclude that the isolation and protective action distances prescribed by the ERG are not necessary. Moreover, making the ERG a minimum requirement could have unintended consequences for the emergency response community. We are concerned that this could eventually lead to enforcement actions taken against emergency responders who choose not to follow what is prescribed in the ERG. We support allowing emergency responders to properly assess the

situation and respond using their discretion, without fear that their actions will result in a penalty for not following what was provided to them.

Additionally, there is insufficient evidence to suggest that emergency responder actions would have been different had the train consist had ERI that was consistent with the ERG. In the NTSB accident report, it states, “[i]t is uncertain whether this inconsistent information influenced the emergency responder actions on the day of the accident”<sup>1</sup> and further states that, “the train consist and emergency response information were not provided to the incident command for more than three hours. However, during the first hour of the emergency response, the Conrail director of risk management recommended a 0.5-mile evacuation, similar to what is suggested in the ERG.” To conclude, at this time we plan no regulatory action regarding this safety recommendation with respect to the ERG, however, we will initiate action (e.g., an internal working group) to consider an alternative means to provide assurances to the public that ERI provided by train crews is valid. The PHMSA will also take into consideration the results of the Government Accountability Office (GAO) study regarding ERI carried by train crews, in accordance with section 7303 of the Fixing America’s Surface Transportation Act (FAST Act).<sup>2</sup>

#### R-14-19

*Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to Title 49 Code of Federal Regulations Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes.*

The PHMSA concurs with this NTSB recommendation to require railroads to implement a public education program. In response, the Office of Hazardous Materials Safety (OHMS) is engaging our counterparts in the Office of Pipeline Safety (OPS), the Federal Railroad Administration (FRA), and TRANSCAER<sup>3</sup>, to explore ways for railroads to provide effective outreach and information to the communities along hazmat routes. This engagement will explore targeted Hazardous Materials Emergency Preparedness (HMEP) funding criteria, regional survey-based commodity flow studies, and community outreach resource templates, along with other possibilities, to respond to the NTSB recommendation. This may also include providing resources to communities to help them understand what information is needed to appropriately plan for and respond to rail hazmat incidents and whom to contact for this information.

Engaging rail carriers in a public awareness program with requirements similar to those outlined under 49 CFR §§ 192.616 and 195.440 for pipeline operators, in a voluntary manner, is a considerable undertaking. We note that the American Petroleum Institute (API)

<sup>1</sup> Pg. 36, Conrail Freight Train Derailment with Vinyl Chloride Release; Paulsboro, New Jersey; November 30, 2012

<sup>2</sup> Section 7303 of the FAST Act directs the GAO to conduct a study to determine whether limitations or weaknesses exist in the ERI carried by train crews operating trains transporting hazardous materials.

<sup>3</sup> TRANSCAER is a voluntary national outreach effort that focuses on assisting communities to prepare for and to respond to possible hazardous materials transportation incidents.

Recommended Practice RP 1162, *Public Awareness Programs for Pipeline Operators* (API 2003), can help guide public awareness programs that help communities understand how to prevent and respond to emergencies. However, its focus on pipeline emergencies, and the codified requirements for pipeline operators limit its application to a voluntary program for rail carriers.

The Department of Transportation (DOT) and PHMSA continue to engage the emergency response community to improve preparedness and emergency response training associated with the transport of crude oil and other Class 3 flammable liquids by rail. Over the past year, PHMSA has met with subject matters experts from the emergency response community, railroad industry, and other Federal agencies to capture lessons learned and best practices for responding to rail incidents involving crude oil. This engagement led to the publication of the *Lessons Learned Roundtable Report* and the *Commodity Preparedness and Incident Management Reference Sheet for Petroleum Crude Oil*. These documents provide emergency responders with an incident management framework, based on pre-incident planning and response best practices, for responding to a rail incident involving flammable liquids, such as crude oil and ethanol.

The PHMSA used the Commodity Reference Sheet as a baseline to develop the web-accessible *Transportation Rail Incident Preparedness and Response* (TRIPR) training resource modules. These modules provide emergency responders with critical information on best practices related to rail incidents involving hazard Class 3 flammable liquids. The TRIPR offers a flexible approach to training first responders and emergency services personnel on pre-incident planning and response. The curriculum consists of nine training modules that focus on key response functions and incorporates three animated training scenario videos to facilitate informative tabletop discussions.<sup>4</sup> In addition to the crude oil-specific initiatives above, PHMSA awards over \$21 million in grants on an annual basis through its HMEP grant program to States, Territories, and Tribes to carry out hazardous materials planning and training activities. These funds ensure state and local emergency responders are properly prepared and trained to respond to hazmat transportation incidents. Eligible activities under this grant include conducting hazmat commodity flow studies, drafting and updating hazmat transportation operations plans, funding emergency response exercises, and offering NFPA-472<sup>5</sup> related training.

In September 2015, PHMSA awarded its first Assistance for Local Emergency Response Training (ALERT) grants. This competitive grant opportunity used recovered funds from prior years and awarded non-profit organizations that have the ability to provide direct or web-based hazardous materials training for volunteer or remote emergency responders. This grant was prioritized for emergency response activities related to the transportation of crude oil, ethanol and other Class 3 flammable liquids by rail. The International Association of Fire Chiefs, the Center for Rural Development, and the University of Findlay (All Hazards Training Center) were recipients of this grant.

<sup>4</sup> The TRIPR modules, along with the Lessons Learned Roundtable Report and the Commodity Preparedness and Incident Management Reference Sheet for Petroleum Crude Oil, can be found on our PHMSA website.

<sup>5</sup> The National Fire Protection Association's Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

R-14-20

*Collaborate with the Federal Railroad Administration and the American Short Line and Regional Railroad Association to develop a risk assessment tool that addresses the known limitations and shortcomings of the Rail Corridor Risk Management System software tool.*

R-14-21

*Collaborate with the Federal Railroad Administration and the American Short Line and Regional Railroad Association to conduct audits of short line and regional railroads to ensure that proper route risk assessments that identify safety and security vulnerabilities are being performed and are incorporated into a safety management system program.*

The PHMSA concurs. As noted in a November 11, 2014 letter from FRA Administrator Joseph C. Szabo, FRA has funded the development and beta testing of the Hazmat Transportation Risk Analytical Model (H-TRAM) web-based software tool. This tool is for short line and regional railroads to perform safety and security risk analyses in accordance with the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180), specifically, § 172.820. The tool uses railroad operating information and route attributes to assess the 27 key risk factors list in Part 172, Appendix A—Rail Risk Analysis Factors, with particular emphasis on population density. The FRA funded an independent verification and validation of the tool and findings of this study (primarily “ease of use” issues and process documentation) are being addressed. Currently, H-TRAM is used by 14 railroad companies. The FRA has requested funding to continue the project.

Furthermore, PHMSA and FRA met recently with the Association of American Railroads (AAR) for a demonstration on the use of the Rail Corridor Risk Management System (RCRMS) software tool for when a railroad only has one route. Similar to H-TRAM, RCRMS provides calculated risk scores based on the 27 key risk factors for each route input into the system. Various visualization tools and reports are available for analysts to use to assess individual routes. Additionally, a railroad can look at the risk profile of a single route and can change a factor like track class or operating speed to reduce the risk associated with the given route. Therefore, PHMSA believes that RCRMS can still be a useful risk assessment tool for short line and regional railroads that only have one route available to assess. The PHMSA recommends that NTSB reach out to AAR for a similar demonstration on the capabilities of RCRMS in reconsideration of its view that the tool has “limitations and shortcomings.”

Regarding the recommendation to conduct audits of short line and regional railroads, FRA has an established program to audit compliance with § 172.820 visiting most, if not all, of the Class I railroads as well as a select number of short line and regional railroads annually. The audits reflected carriers are operating in compliance with the regulations. Specifically, regional and short line railroads that do not use RCRMS or H-TRAM have developed their own methodology to analyze the safety and security risks along required routes.

Furthermore, FRA has collaborated with the American Short Line and Regional Railroad Association (ASLRRA) and presented at the March 2015 ASLRRA conference in Orlando, Florida to promote the importance of performing a complete and thorough route analysis. The FRA, jointly with Countermeasure Assessment & Security Experts (CASE), the developers of H-TRAM, provided an overview of the use of H-TRAM as well as detailing FRA's expectations during audits. They also highlighted the ongoing system improvements and the creation of a web-based training program for railroads. We note that FRA also met with short line conglomerates (Genesee and Wyoming; WATCO; and Omni-Trax) to discuss various hazardous materials regulatory compliance matters with their subsidiary railroads during the same month.

The FRA, as the rail modal arm of DOT, and primarily acting in an enforcement capacity for the transportation of hazardous materials by rail, has taken the lead on actions to address these recommendations. The FRA has the expertise and oversight to complete the actions stated above (i.e., final roll out of the H-TRAM software tool and continuation of audits of short line and regional railroads) for Safety Recommendations R-14-20 and R-14-21. Therefore, we plan no further action beyond providing support and assistance to FRA on these actions as necessary. Moreover, given that NTSB has issued the exact same recommendations under Safety Recommendations R-14-16 and R-14-17 to FRA, we see no safety reason for the duplication of safety recommendations issued to FRA and PHMSA, as Safety Recommendations R-14-16 and R-14-17 require the same collaboration among the relevant parties as Safety Recommendations R-14-20 and R-14-21.

#### R-07-04

*Work together to develop regulations requiring that railroads immediately provide to emergency responders accurate, real-time information about the identity and location of all hazardous materials on a train.*

The PHMSA concurs. The pilot tests of the Hazardous Materials Automated Cargo Communication for Efficient and Safe Shipments (HM-ACCESS) program have been completed. Volpe has completed its draft of the feasibility and assessment report and the target transmission date to Congress is the end of December 2015. Furthermore, Section 7302 of the FAST Act mandates PHMSA to issue regulations to require Class I railroads transporting hazmat to generate accurate, real-time electronic train consist information, no later than 1 year from the date of enactment of the Act. Additionally, the mandate requires that the railroads to provide fusion centers with secure access to the train consist information; and to require fusion centers<sup>6</sup> to share this information with State and local first responders, emergency response officials, and other personnel involved in response to or investigation of a rail incident or emergency. Accordingly, PHMSA has initiated a rulemaking to adopt the Section 7302 FAST Act mandates and expects to publish a notice of proposed rulemaking in the July 2016 timeframe.

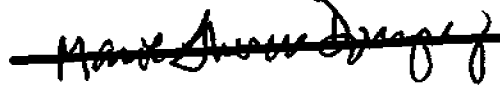
---

<sup>6</sup> Fusion centers are information sharing centers, jointly created by the U.S. Department of Homeland Security and the Office of Justice Programs in the U.S. Department of Justice where some are affiliated with Emergency Operations Center that responds in the event of a disaster.



If we can be of further assistance or answer any additional questions, please do not hesitate to contact Stephen Domotor, Chief Safety Officer, by phone at (b)(6) or by e-mail at (b)(6)

Sincerely,

A handwritten signature in black ink, which appears to read "Marie Therese Dominguez", is written over a solid black horizontal line.

Marie Therese Dominguez

**From:** maryam.ameri@ (b)(6)  
**To:** Correspondence  
**Cc:** Dirk.Derkinderen@ (b)(6); stephen.domotor@ (b)(6)  
**Subject:** NTSB Safety Recommendations R-07-4 and R-14-18 Through -21  
**Date:** Tuesday, March 22, 2016 10:35:34 AM  
**Attachments:** PHMSA Response 03222016.pdf

---

Good morning,

Please find the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding Safety Recommendations R-07-4 and R-14-18 through -21.

Thank you,

**Maryam Ameri, MA | Correspondence Analyst**

Contractor - Unispec Enterprises, Inc.

U.S. Department of Transportation

Pipeline and Hazardous Materials Safety Administration

East Building, 2nd Floor, PH-10

1200 New Jersey Avenue, SE, E27-317

Washington, DC 20590-0001

(b)(6)

(b)(6)



Office of the Vice Chairman

## National Transportation Safety Board

Washington, DC 20594

April 7, 2017

Mr. Howard McMillan  
Executive Director  
Pipeline and Hazardous  
Materials Safety Administration  
Washington, DC 20590

Dear Director McMillan:

Thank you for your March 16, 2016, letter to the National Transportation Safety Board (NTSB) regarding Safety Recommendations R-14-18 through -21, which we issued to the Pipeline and Hazardous Materials Safety Administration (PHMSA) as a result of our investigation of the November 30, 2012, derailment of a Consolidated Rail Corporation train that resulted in approximately 20,000 gallons of vinyl chloride spilling into Mantua Creek in Paulsboro, New Jersey. Your letter also addressed Safety Recommendation R-7-4, which was issued as a result of our investigation of the July 10, 2005, head-on collision of two Canadian National trains in Anding, Mississippi, in which two crewmembers on each train were fatally injured.

### R-14-18

Take action to ensure that emergency response information carried by train crews is consistent with and is at least as protective as existing emergency response guidance provided in the *Emergency Response Guidebook [ERG]*.

Your letter stated that, as you understand it, Safety Recommendation R-14-18 can only be satisfied by a regulatory action that would make the *ERG* a de facto regulation. During a conference call we held on February 10, 2016, with representatives from PHMSA, we made it clear that the NTSB has not requested regulatory action to satisfy this recommendation, but that the *ERG* is an accepted document that emergency responders can use in the event of a hazardous materials incident, and it is the closest thing to a consensus standard regarding the response to such accidents.

We are aware of your many safety initiatives, including publishing the *ERG*, which aids in the recognition of hazardous materials and continues to be a first-line resource for hazardous materials responders. Upon further researching this recommendation, we discovered that you have developed a free 2016 *ERG* mobile Web application, which should provide the nation's emergency responders with fast, easily accessible information to help them manage hazardous materials incidents. We also are aware that you added the following disclaimer:

Currently electronic files, including the ERG App, cannot be substituted for hard copy documents to comply with the requirements of the Emergency Response Information requirements of Subpart G of Part 172. The intent of this regulation is to ensure that the emergency response information be provided together with the shipping paper in an accessible manner. In accordance with 49 CFR Part 107, Subpart B, a person interested in displaying emergency response information in alternate manner may request a special permit from the Associate Administrator for Hazardous Materials Safety.

Accordingly, Safety Recommendation R-14-18 is classified “Closed—Reconsidered.”

#### R-14-19

Require railroads transporting hazardous materials to develop, implement, and periodically evaluate a public education program similar to Title 49 *Code of Federal Regulations* Parts 192.616 and 195.440 for the communities along railroad hazardous materials routes.

We acknowledge that, over the course of the year, PHMSA has met with subject matter experts from the emergency response community, railroad industry, and other federal agencies to capture lessons learned and best practices for responding to rail accidents involving crude oil. We are pleased that you have provided a guidebook for first responders to use during the initial phase of a transportation accident involving dangerous goods or hazardous materials, and we note that you have provided grants, prioritized for emergency response activities related to the rail transportation of crude oil, ethanol, and other Class 3 flammable liquids, to nonprofit organizations that can train volunteer or remote emergency responders, such as the International Association of Fire Chiefs, the Center for Rural Development, and the University of Findlay All Hazards Training Center. We note that you are exploring ways for railroads to provide effective outreach to communities along hazardous materials routes. We urge you to continue to move forward with actions to satisfy Safety Recommendation R-14-19, which is classified “Open—Acceptable Alternate Response.”

#### R-14-20

Collaborate with the Federal Railroad Administration [FRA] and the American Short Line and Regional Railroad Association [ASLRRA] to develop a risk assessment tool that addresses the known limitations and shortcomings of the Rail Corridor Risk Management System software tool.

#### R-14-21

Collaborate with the Federal Railroad Administration and the American Short Line and Regional Railroad Association to conduct audits of short line and regional railroads to ensure that proper route risk assessments that identify safety and security vulnerabilities are being performed and are incorporated into a safety management system program.

We are pleased that you have collaborated with the FRA and the ASLRRA, as well as with the Association of American Railroads (AAR), to provide assessment methods to reduce or eliminate hazards on a rail corridor. We note that the FRA has audited Class 1 railroads, AAR has a rail corridor risk management system program, and PHMSA has conducted joint sessions with each entity to ensure that railroads other than Class 1, such as regional and short line railroads, have developed their own programs to analyze safety and security risks along routes. Accordingly, Safety Recommendations R-14-20 and -21 are classified "Closed—Acceptable Action."

R-7-4

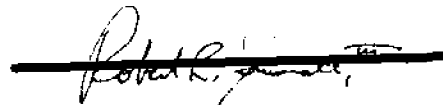
With the assistance of the Federal Railroad Administration, require that railroads immediately provide to emergency responders accurate, real-time information regarding the identity and location of all hazardous materials on a train.

We are aware that the Fixing America's Surface Transportation Act has mandated that PHMSA require that an accurate hazardous materials/train consist be provided to emergency responders so they can be prepared for any accidents as the material moves through their communities. Pending your completion of rulemaking and our review of the new rule, Safety Recommendation R-7-4 is classified "Open—Acceptable Response."

Please respond to this letter electronically at [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov) regarding your progress in addressing Safety Recommendations R-7-4 and R-14-18 and -19, and do not submit both an electronic and a hard copy of the same response.

Thank you for your commitment to rail safety.

Sincerely,



Robert L. Sumwalt, III

Acting Chairman

*Approved for Digital Transmission*

*No Hard Copy Will Follow*

cc: Ms. Deirdre Breithaupt  
OTS NTSB Liaison  
Office of the Undersecretary for Transportation Policy



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Ave., S.E.  
Washington, DC 20590

May 5, 2017

The Honorable Christopher A. Hart  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza, SW  
Washington, DC 20594

Dear Chairman Hart:

This letter provides an update on continued U.S. Department of Transportation (DOT) actions since our last correspondence regarding Safety Recommendations H-11-5, H-11-6, and H-04-23.

### **Cargo Tank Performance Standards**

The National Transportation Safety Board (NTSB) issued Safety Recommendations H-11-5 and H-11-6 to the Pipeline and Hazardous Materials Safety Administration (PHMSA) as a result of its investigation of a rollover accident that occurred on October 22, 2009, outside of Indianapolis, Indiana.

#### H-11-5

*Conduct a comprehensive analysis of all available accident data on U.S. Department of Transportation specification cargo tanks to identify cargo tank designs and the associated dynamic forces that pose a higher risk of failure and release of hazardous materials in accidents. Once such cargo tanks have been identified, study the dynamic forces acting on susceptible structures under varying accident conditions and develop performance standards to eliminate or mitigate these risks.*

#### H-11-6

*Once the performance standards in Safety Recommendation H-11-5 have been developed, require that all newly manufactured cargo tanks comply with the performance standards.*

Since the last update, Volpe, The National Transportation Systems Center (Volpe)<sup>1</sup> completed on behalf of PHMSA its analysis of 93 cargo tank rollover case studies occurring between 2011 and

---

<sup>1</sup> Part of the U.S. Department of Transportation, Volpe is a Federal agency funded by sponsor projects. Volpe partners with public and private organizations to assess the needs of the transportation community, evaluate research and development endeavors, assist in the deployment of state-of-the-art transportation technologies, and inform decision- and policy-making through our comprehensive analyses.

2014 under PHMSA's Cargo Tank Incident Study. The study observed various elements of each rollover, focusing on potential human factors associated with each crash. Volpe reported the comparison between rollovers from about 10 years ago to those analyzed in this study and further examined the relationship among training regulations, training curricula, training technology, and advanced safety technology. Volpe used literature reviews, crash analyses, subject matter experts, and stakeholder consultation to inform its research.

Volpe recently briefed PHMSA on the study's findings and plans to submit a draft report to PHMSA by May 2017. PHMSA will continue to provide NTSB with updates on the progress of the Cargo Tank Incident Study and other analyses related to DOT specification cargo tank performance.

### **Nurse Tank Inspections**

The NTSB issued Safety Recommendation H-04-23 as a result of its investigation involving a non-specification nurse tank that ruptured, injuring two nurse tank loaders.

#### **H-04-23**

*Require periodic nondestructive testing to be conducted on nurse tanks to identify material flaws that could develop and grow during a tank's service and result in a tank failure.*

The Federal Motor Carrier Safety Administration (FMCSA) continues to research nurse tank safety and is currently in Phase III of its Refine Non-Destructive Testing to Improve Nurse Tank Safety Study. The study sought to refine the recommendations for non-destructive testing of nurse tanks. The research team revisited previously measured nurse tanks to better determine the rate of propagation of the detected cracks over time and identify the initiation of new cracks (in relation to the causal factors associated with stress corrosion cracks). FMCSA plans to publish the final report of its findings in spring 2017.


Additionally, FMCSA plans to request funding for a small follow-up project to explore the viability of acoustic emission testing in detecting cracking that occurs during use. PHMSA will continue to provide NTSB with updates on FMCSA's progress and plans to review the findings to determine whether revisions to the Hazardous Materials Regulations (HMR, 49 CFR Parts 171-180) should be made.

Page 3

The Honorable Christopher A. Hart

If we can be of further assistance, please do not hesitate to contact Dirk Der Kinderen, NTSB Program Manager for the Office of Hazardous Materials Safety, by phone at (b)(6) or by e-mail at (b)(6)

Sincerely,

  
Howard W. McMillan  
Acting Deputy Administrator



**From:** [McCloskey, Amber CTR \(PHMSA\)](#)  
**To:** [Correspondence](#)  
**Cc:** [McMillan, Howard \(PHMSA\)](#); [Ameri, Maryam CTR \(PHMSA\)](#); [DerKinderen, Dirk \(PHMSA\)](#)  
**Subject:** PHMSA's Response to NTSB Safety Recommendation H-04-23; H-11-5, and H-11-6  
**Date:** Friday, May 5, 2017 3:47:06 PM  
**Attachments:** [image001.png](#)  
[Recommendations H-04-23; H-11-5; and H-11-6.pdf](#)

---

Good afternoon,

Please see the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding NTSB Safety Recommendation H-04-23; H-11-5, and H-11-6.

Thanks,

**Amber McCloskey**  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
Contractor - Unispec Enterprises, Inc.  
#E27-315 | (b)(6)





**National Transportation Safety Board**  
Washington, DC 20594 | [www.nts.gov](http://www.nts.gov)  
OFFICE OF THE VICE CHAIRMAN

June 22, 2017

Mr. Howard McMillan  
Acting Deputy Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Acting Deputy Administrator McMillan:

Thank you for your May 5, 2017, letter to the National Transportation Safety Board regarding Safety Recommendations H-04-23 and H-11-5 and -6. We issued these recommendations to the Pipeline and Hazardous Materials Safety Administration as a result of two investigation reports we published in 2004 and 2011.

We issued Safety Recommendation H-04-23 on July 1, 2004, as a result of our investigation of the April 15, 2003, nurse tank failure and hazardous materials release near Calamus, Iowa.

H-04-23

Require periodic nondestructive testing to be conducted on nurse tanks to identify material flaws that could develop and grow during a tank's service and result in a tank failure.

We note that you and your sister agency, the Federal Motor Carrier Safety Administration (FMCSA), continue to conduct research to better understand and identify nurse tank material flaws. In addition, we note that the FMCSA plans to further research the viability of acoustic emission testing. Although we are pleased by the thoroughness of your research, we are concerned that, 13 years after this recommendation was issued, you have not yet developed a testing requirement. We urge you to expedite your efforts to develop and require nondestructive testing for nurse tanks, as recommended. Due to the age of this recommendation and lack of implementation progress, Safety Recommendation H-04-23 is classified "Open—Unacceptable Response."

We issued Safety Recommendations H-11-5 and -6 on September 2, 2011, as a result of our investigation of the October 22, 2009, rollover and subsequent fire of a truck-tractor and cargo tank semitrailer carrying liquefied petroleum gas in Indianapolis, Indiana.

H-11-5

Conduct a comprehensive analysis of all available accident data on US Department of Transportation specification cargo tanks to identify cargo tank designs and the associated dynamic forces that pose a higher risk of failure and release of hazardous materials in accidents. Once such cargo tanks have been identified, study the dynamic forces acting on susceptible structures under varying accident conditions and develop performance standards to eliminate or mitigate these risks.

H-11-6

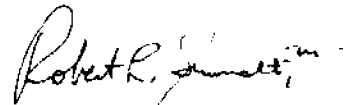
Once the performance standards in Safety Recommendation H-11-5 have been developed, require that all newly manufactured cargo tanks comply with the performance standards.

We note that the National Transportation Systems Center (Volpe) recently completed its analysis of cargo tank accident data and that you will soon be reviewing its report. We look forward to receiving periodic updates on your progress toward developing the recommended performance standards and compliance requirement. Until such actions are complete, Safety Recommendations H-11-5 and -6 are classified "Open—Acceptable Response."

Please notify us at [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov) when your efforts to address Safety Recommendations H-04-23 and H-11-5 and -6 are complete, and do not submit both an electronic and a hard copy of the same response.

Thank you for your continued efforts to improve hazardous material tank safety.

Sincerely,



Robert L. Sumwalt, III  
Acting Chairman

*Approved for Digital Transmission  
No Hard Copy Will Follow*

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Under Secretary for  
Transportation Policy



## National Transportation Safety Board

Washington, DC 20594 | [www.nts.gov](http://www.nts.gov)

OFFICE OF THE CHAIRMAN

December 1, 2017

The Honorable Howard Elliott  
Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Administrator Elliot:

Thank you for the May 25, 2017, letter, signed by then Acting Deputy Administrator Howard McMillan, regarding actions you have completed to address Safety Recommendations P-11-12, P-12-7 and -8, and P-15-14.

We issued Safety Recommendation P-11-12 to the Pipeline and Hazardous Materials Safety Administration (PHMSA) on September 26, 2011, as a result of our investigation of the September 9, 2010, rupture of an intrastate natural gas transmission pipeline and subsequent fire in a residential area in San Bruno, California.

### P-11-12

Amend Title 49 *Code of Federal Regulations* [CFR] 199.105 and Title 49 *Code of Federal Regulations* 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident.

We note that, on January 23, 2017, you published a final rule, "Pipeline Safety: Operator Qualification, Cost, Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes," requiring employees to be tested for drugs and alcohol after an accident, with an exemption only when there is sufficient information that establishes that the employee had no role in the accident. On August 18, 2015, we commented on the notice of proposed rulemaking (NPRM) for this final rule that, if enacted, the proposed rule would satisfy our recommendation. Accordingly, Safety Recommendation P-11-12 is classified "Closed—Acceptable Action."

We issued Safety Recommendations P-12-7 and -8 to PHMSA on July 25, 2012, as a result of our investigation of the July 25, 2010, Enbridge Incorporated hazardous liquid pipeline rupture and release that occurred in Marshall, Michigan.

P-12-7

Develop requirements for team training of control center staff involved in pipeline operations similar to those used in other transportation modes.

P-12-8

Extend operator qualification requirements in Title 49 *Code of Federal Regulations* Part 195 Subpart G to all hazardous liquid and gas transmission control center staff involved in pipeline operational decisions.

We note that your January 23, 2017, final rule also revised the control room management regulations in sections 192.631 and 195.446 of the pipeline safety regulations to more explicitly require team training and to further define the roles and responsibilities of control room staff and those with the authority to direct or supersede the specific technical actions of control room staff. The final rule also brings control center staff involved in operational decisions under the requirements for training and qualification. We note that operators will now need to include this staff and the tasks they perform in their operator qualification programs and plans. Enacting the final rule satisfies Safety Recommendations P-12-7 and -8, which are classified “Closed—Acceptable Action.”

We issued Safety Recommendation P-15-14 to PHMSA on February 10, 2015, as a result of our safety study, *Integrity Management of Gas Transmission Pipelines in High Consequence Areas*.

P-15-14

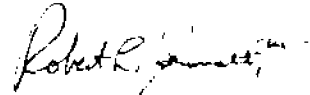
Revise [Title] 49 *Code of Federal Regulations* section 192.915 to require all personnel involved in integrity management [IM] programs to meet minimum professional qualification criteria.

On December 5, 2016, we acknowledged that your current regulations at 49 *CFR* 192.915 set forth qualification requirements for, among other things, individuals supervising IM programs, carrying out assessments, evaluating assessment results, and implementing preventive and mitigating measures. We indicated that Safety Recommendation P-15-14 would be satisfied by your plan to issue an advisory bulletin (AB) to remind operators and contractors of their regulatory responsibility to include the training and qualification requirements for IM personnel in accordance with 49 *CFR* 192.915 and American Society of Mechanical Engineers (ASME) Standard B31.8S, “Managing System Integrity of Gas Pipelines.”

We note that, on April 10, 2017, you published AB 2017-02, “Guidance on Training and Qualifications for the Integrity Management Program,” at the *Federal Register* to remind operators of their responsibility to include in IM programs the training and qualification requirements for IM personnel required by 49 *CFR* 192.915 and discussed in ASME B31.8S. Publishing the AB is

an alternative that addresses the recommended action of revising 49 *CFR* 192.915. Consequently, Safety Recommendation P-15-14 is classified "Closed Acceptable Alternate Action."

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Sumwalt, III".

Robert L. Sumwalt, III  
Chairman

*Approved for Digital Transmission  
No Hard Copy Will Follow*

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Undersecretary for  
Transportation Policy



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Ave., S.E.  
Washington, DC 20590

May 25, 2017

The Honorable Robert L. Sumwalt  
Acting Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594

Dear Acting Chairman Sumwalt:

I am writing to propose closure of the National Transportation Safety Board (NTSB) Recommendations P-11-12, P-12-7, P-12-8 and P-15-14. This letter provides an update of the actions taken to address these Recommendations.

We take our responsibility to address all NTSB Recommendations seriously and will continue to work aggressively to close all open Recommendations.

#### **Safety Recommendation P-11-12**

**Recommendation:** *Amend Title 49 CFR 199.105 and 49 CFR 199.225 to eliminate operator discretion with regard to testing of covered employees. The revised language should require drug and alcohol testing of each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident.*

**Response:** On January 23, 2017, PHMSA published the "Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes" final rule (82 FR 7972). This rule modifies 49 CFR §§ 199.105 and 199.225 to require drug testing of employees after an accident with an allowed exemption only when there is sufficient information that establishes the employee(s) had no role in the accident. PHMSA is requiring documentation of decisions not to administer post-accident employee drug tests and the retention of those records for at least three years. PHMSA's previous regulations required the documentation of decisions not to administer a post-accident drug or alcohol test, but the requirement to document those decisions was implied and not explicit.

The NTSB noted in its comments on the notice of proposed rulemaking for this rule that the proposed change was responsive to its recommendation.



### **Safety Recommendation P-12-7**

**Recommendation:** *Develop requirements for team training of control center staff involved in pipeline operations similar to those used in other transportation modes.*

**Response:** PHMSA's "Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes" final rule (82 FR 7972) revises the Control Room Management regulations in §§ 192.631 and 195.446 of the Pipeline Safety Regulations to more explicitly require team training and to further define the roles and responsibilities of control room staff and those with the authority to direct or supersede the specific technical actions of control room staff. The revision also requires operators to have a training program that includes control room team training and exercises that include both controllers and other individuals. PHMSA is requiring operators comply with the revised team training requirements no later than one year after the rule's publication date.

PHMSA believes a requirement for control room team training would better prepare all individuals who would be reasonably expected to interface with controllers during these situations. A number of the sections in the current Control Room Management regulations, the inspection guidance, and related Frequently Asked Questions also relate to the concept of team training for control room personnel (controllers) and others who would likely work together as a team during normal, abnormal, and emergency situations.

In addition to rulemaking action, PHMSA provided guidance on team training in ADB 14-02, "Pipeline Safety: Lessons Learned From the Release at Marshall, Michigan" (<https://www.federalregister.gov/articles/2014/05/06/2014-10248/pipeline-safety-lessons-learned-from-the-release-at-marshall-michigan>). This advisory bulletin cites the NTSB's conclusion that Enbridge's failure to train the control center staff in team performance resulted in poor communication and a lack of leadership. The bulletin reinforces and recommends that operators consider training control room staff to recognize and respond to emergencies or unexpected conditions as a team.

The NTSB noted in its comments on the notice of proposed rulemaking for this rule that it accepts PHMSA's plan to codify the training guidance previously issued as an advisory bulletin and, therefore, agrees with the changes related to operator qualifications for control center staff.

### **Safety Recommendation P-12-8**

**Recommendation:** *Extend operator qualification requirements in Title 49 CFR Part 195 Subpart G to all hazardous liquid and gas transmission control center staff involved in pipeline operational decisions.*

**Response:** PHMSA's "Pipeline Safety: Operator Qualification, Cost Recovery, Accident and Incident Notification, and Other Pipeline Safety Proposed Changes" final rule (82 FR



7972) also adds language to the Control Room Management regulations in §§ 192.631 and 195.446 to bring control center staff involved in operational decisions under the requirements for training and qualification. Operators will now need to include those persons and the tasks they perform into their Operator Qualification Programs and Plans.

The NTSB noted in its comments on the notice of proposed rulemaking for this rule that it accepted PHMSA's plan to address this recommendation and agrees with the proposed changes related to operator qualifications for control center staff.

#### **Safety Recommendation P-15-14**

**Recommendation:** *Revise 49 CFR 192.915 to require all personnel involved in integrity management programs to meet minimum professional qualification criteria.*

**Response:** On April 10, 2017, PHMSA issued Advisory Bulletin 2017-02, "Guidance on Training and Qualifications for the Integrity Management Program," to remind operators of their responsibility to include in integrity management (IM) programs the training and qualification requirements for IM personnel as required by § 192.915 and as discussed in ASME B31.8S.

PHMSA's gas transmission pipeline IM rule, published on December 15, 2003, established requirements in § 192.915 for supervisory and other personnel with integrity management program functions. PHMSA has since recognized inconsistencies in how the requirements of § 192.915 have been implemented by operators. This advisory bulletin was issued to provide guidance on the requirements of § 192.915 for the training and qualification of supervisory and other personnel that perform IM-assigned tasks.

PHMSA regulations at §192.915 set forth the qualification requirements for, among others, persons supervising IM programs, carrying out assessments, evaluating assessment results, and implementing preventive and mitigative measures. PHMSA regulations require:

- Any person who qualifies as a supervisor for the integrity management program to have appropriate training or experience in the area for which the person is responsible (§192.915(a)). Therefore, operator personnel involved in IM programs receive on-the-job training under the supervision of a qualified person.
- Any person who conducts an integrity assessment allowed under Part 192, Subpart N, to be qualified (§192.915(b)(1)).
- Any person who reviews and analyzes the results from an integrity assessment and evaluation to be qualified (§192.915(b)(2)). This qualification is typically covered by the consensus standard originally approved in 2005, "Personnel Qualification and Certification for In-line Inspection Technologies Used in the

The Honorable Robert L. Sumwalt

Examination of Pipelines" (ASNT-ILI-PQ)<sup>1</sup>, which established minimum qualification and certification requirements for in-line inspection personnel.

- Any person who implements preventive and mitigative measures to be qualified, including, but not limited to, integrity engineers and others involved in the determination of risk reduction measures that are implemented (§192.915(c)). Installation of preventive and mitigative measures also involves some tasks covered in Part 192, Subpart N, such as marking and locating buried structures.
- Any person who directly supervises excavation work carried out in conjunction with an integrity assessment to be qualified per §192.915(c)(2).

PHMSA will continue to work with your office in the future as we continue our efforts to ensure the safe, reliable, and environmentally sound operation of the Nation's pipeline transportation system. We appreciate your consideration for closing Recommendations P-11-12, P-12-7, P-12-8 and P-15-14. If we can be of further assistance or answer any additional questions, please do not hesitate to contact Nancy White, NTSB Program Manager, Office of Pipeline Safety, by phone at (b)(6) or by e-mail at (b)(6).

Sincerely,



Howard W. McMillan  
Acting Deputy Administrator

---

<sup>1</sup> Developed by the American Society for Nondestructive Testing (ASNT), and approved by the American National Standards Institute (ANSI).

**From:** [McCloskey, Amber CTR \(PHMSA\)](#)  
**To:** [Correspondence](#)  
**Cc:** [Ameri, Maryam CTR \(PHMSA\)](#)  
**Subject:** PHMSA's Response to NTSB Safety Recommendations P-11-12, P-12-7, P-12-8 and P-15-14  
**Date:** Thursday, May 25, 2017 4:52:26 PM  
**Attachments:** [image001.png](#)  
[PHMSA's Response to NTSB Safety Recommendations P-11-12, P-12-7, P-12-8 and P-15-14.pdf](#)

---

Good afternoon,

Please see the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding NTSB Safety Recommendations P-11-12, P-12-7, P-12-8 and P-15-14.

Thanks,

**Amber McCloskey**  
**U.S. Department of Transportation**  
**Pipeline and Hazardous Materials Safety Administration**  
**Contractor - Unispec Enterprises, Inc.**  
**#E27-315 | (b)(6)**





## National Transportation Safety Board

Washington, DC 20594 | [www.ntsb.gov](http://www.ntsb.gov)

OFFICE OF THE CHAIRMAN

January 2, 2018

The Honorable Howard R. Elliott  
Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Administrator Elliot:

Thank you for the September 29, 2017, letter, signed by Acting Administrator Drue Pearce, regarding Safety Recommendations P-17-1 and -2. We issued these recommendations to the Pipeline and Hazardous Materials Safety Administration (PHMSA) on June 15, 2017, as a result of our investigation of the September 21, 2015, petroleum product leak from a pipeline owned and operated by Colonial Pipeline Company in Centreville, Virginia.

### P-17-1

Work with pipeline trade and standards organizations to modify the pipeline dent acceptance criteria to account for all the factors that lead to pipe failures caused by dents, and promulgate regulations to require the new criteria be incorporated into integrity management programs.

We note that you plan to work with the standards organizations to identify pipeline-specific factors that correlate with pipeline failures for dent sizes less than the current PHMSA-mandated acceptance criteria, and that you will then identify revisions to assure that safety risks from dent-related threats are appropriately mitigated. In our report on the accident in Centreville, Virginia, we found that the depth of the dent at the leak location was about 1.6 percent of the outer pipe diameter. Your pipeline regulations (Title 49 *Code of Federal Regulations* [CFR] 195.452, "Pipeline Integrity Management in High Consequence Areas") do not require that dents having depths less than 6 percent of the pipeline diameter be repaired unless there is indication of metal loss, cracking, or a stress riser, or unless the dent affects pipe curvature at a girth weld or a longitudinal seam weld. We said that these requirements were similar to the relevant industry standard contained in American Society of Mechanical Engineers (ASME) standard B31.4, "Pipeline Transportation Systems for Liquid and Slurries." We issued Safety Recommendation P-17-1 because neither section 195.452 of your regulations nor ASME B31.4 required the dent that caused the leak in Centreville to be repaired before it began leaking. We emphasize that, to satisfy this recommendation, 49 CFR 195.452 must be revised. Pending that revision, Safety Recommendation P-17-1 is classified "Open—Acceptable Response."

P-17-2

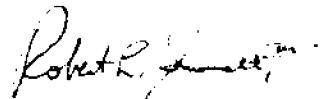
Require operators to either (a) repair all excavated dent defects, or (b) install a local leak detection system at each location where a dent is not repaired, continuously monitor for hydrocarbons, and promptly take corrective action to stop a detected leak.

We disagree with Ms. Pearce's statement that additional regulations requiring operators to excavate, evaluate, and repair all dent defects would be impracticable under the cost-benefit analysis (CBA) required by the Pipeline Safety Act. We point out that Safety Recommendation P-17-2 does not recommend excavating all dents; rather, it recommends that when a pipeline is excavated for other reasons and dents are found, either the dent be repaired (typically by installing a low-cost, full-encirclement sleeve around the affected area), or a local leak detection system be installed. In our report issuing this recommendation, we said that most of the effort associated with evaluating a dent and returning the pipeline to service with or without a repair arises from the excavation work required to expose and examine the buried pipe. The various accepted dent repair methods allowed by your pipeline regulations provide a permanent repair.

Because myriad factors are involved in determining if and when an existing dent will develop a through-wall leak, we believe a more prudent approach is to proceed with dent repair whenever a dented pipe is excavated. Therefore, we believe that including the cost of excavating the dented pipe in a CBA is misleading, because the excavation costs result from whatever valid reason led to the excavation that uncovered the dent. We are concerned that you may not have fully understood the recommendation before concluding that it was not practicable based on the CBA. We also do not believe that the alternative that Ms. Pearce discussed addresses the issue in this recommendation, and we ask that you reconsider your response. Pending your taking the action in Safety Recommendation P-17-2, it is classified "Open—Unacceptable Response."

Please update us regarding these recommendations at [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov), and do not submit both an electronic and a hard copy of the same response.

Sincerely,



Robert L. Sumwalt, III  
Chairman

*Approved for Digital Transmission  
No Hard Copy Will Follow*

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Undersecretary for  
Transportation Policy



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Ave., S.E.  
Washington, DC 20590

September 29, 2017

The Honorable Robert L. Sumwalt, III  
Acting Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594

Dear Acting Chairman Sumwalt:

I am writing to update you on the status of actions taken to-date by the Pipeline and Hazardous Materials Safety Administration (PHMSA) and our intended actions to address the recommendations following the National Transportation Safety Board's (NTSB) accident report, *Colonial Pipeline Company Petroleum Product Leak*, following the September 21, 2015, Centreville, Virginia, incident.

The mission of PHMSA is to protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives. PHMSA shares the NTSB's commitment to preventing accidents and saving lives. PHMSA has a long history of cooperating and collaborating with the NTSB, and we take seriously our responsibility to address all of the Board's recommendations.

The NTSB accident report on the Centreville, Virginia, petroleum leak identified "the probable cause of the release [...] was a through-wall corrosion fatigue crack that developed at a dent in the pipeline due to residual and operational stress and exposure to the underground environment." Colonial had previously examined the dent and did not find any cracks. Although this dent did not exceed the prescriptive repair criteria in 49 CFR Part 195, PHMSA's performance-based Integrity Management (IM) regulations supplement prescriptive safety requirements and set systemic performance requirements for operators. IM is based on practices employed by many safety-oriented organizations, whereby safety is continually improved through an iterative process of collecting data, identifying and prioritizing risks, undertaking corrective actions, and assessing performance. PHMSA requires operators to address risks to pipeline safety based on risk assessment of their own unique operating characteristics that extend beyond PHMSA's prescriptive minimum requirements.

PHMSA notes that dent-related failures are relatively rare, with the majority of these spill volumes below 100 barrels and from a small number of pipeline systems. Since the Pipeline Safety Regulations (49 CFR Parts 192 and 195) already address risks to pipeline integrity, we believe that new regulations would not efficiently address this issue and that there are not enough dent-related incidents to justify a rulemaking. From 2001 to 2017, PHMSA's accident/incident

reports show that dents were a contributing factor in, on average, only two hazardous liquid accidents and one gas transmission incident per year, out of an average of over 600 accidents/incidents total among all pipeline system types.<sup>1</sup> The dent-related accident/incidents have been caused in most cases by poor pipeline construction techniques, operational or third-party damage events, and improper past remediation associated with other pipeline-specific factors such as pipe materials, wall thickness, and diameter. Additionally, the majority of these hazardous liquid accidents are confined to a small number of operators' particular pipeline systems, so wider regulations may not be necessary for the majority of other pipeline systems.

When an operator has a pipeline with a leak or rupture, whether caused by a dent or another pipeline-defect factor, PHMSA reviews the causes of the accident/incident and determines if an order is required to mandate that the operator conduct corrective actions to identify and mitigate integrity issues. Sometimes, these actions include additional pipeline system-specific inspections, different integrity assessment methods, procedural or process changes, training and any other needed remediation techniques to eliminate recurrence of a similar release.

In summary, pipeline operators are required to know and understand the unique operating environments and inherent risks of each of their pipeline systems. PHMSA challenges operators to focus on performance and aim beyond the minimum compliance standards established through pipeline safety regulations, to ensure the safety of the public that lives and works around pipelines.

## **RESPONSES TO THE NTSB SAFETY STUDY RECOMMENDATIONS:**

Below are PHMSA's responses to the specific NTSB recommendations contained in the Safety Study.

### **Safety Recommendation P-17-1**

**Recommendation:** *Work with pipeline trade and standards organizations to modify the pipeline dent acceptance criteria to account for all the factors that lead to pipe failures caused by dents, and promulgate regulations to require the new criteria be incorporated into integrity management programs.*

**Response:** Concur. PHMSA agrees that working with industry and standards organizations to ensure that dent acceptance criteria accounts for all pipeline failure dent factors is an important step. Other dent factors include information such as steel properties, wall thickness, orientation, pipe diameter, and operating pressure and pressure cycles. PHMSA will work with the standards organizations to identify if there are pipeline-specific factors that correlate to the occurrence of pipeline failures for dent sizes less than the PHMSA-mandated acceptance criteria. Based on the information, we will identify next steps in assuring dents, and dent related threats are appropriately mitigated to assure safety. We anticipate completing this action by August 2019.

---

<sup>1</sup> Per PHMSA's publicly-available reported accident/incident reports, including Hazardous Liquid and Gas Transmission, Distribution, and Gathering systems. (<https://www.phmsa.dot.gov/pipeline/library/data-stats/pipelineincidenttrends>)

## Safety Recommendation P-17-2

**Recommendation:** *Require operators to either (a) repair all excavated dent defects, or (b) install a local leak detection system at each location where a dent is not repaired, continuously monitor for hydrocarbons, and promptly take corrective action to stop a detected leak.*

**Response:** Propose alternative action. PHMSA's current hazardous liquid pipeline regulations already require operators to correct conditions in a high consequence area (HCA) that could adversely affect the safe operation of their pipeline systems "within a reasonable time" under §§ 195.401(b)(1), and (2) otherwise make immediate repairs for imminent hazards. Operators are also required to analyze pipeline accidents and failures to determine their causes and take actions to prevent recurrence under §195.402(c)(5) and §192.617. Additionally, under § 195.452(h)(4)(iv), operators must evaluate any conditions identified by an assessment or analysis that could impair the integrity of the pipeline and schedule the condition for remediation within the time periods prescribed. With respect to dent conditions, PHMSA currently requires all dents to be remediated in HCAs if they exceed a depth greater than two-percent of the pipeline's diameter if located on the top of the pipe or six-percent if located at the bottom of the pipe. Any topside dent with a crack or metal loss must also be repaired. These criteria have been mandated by PHMSA since December 1, 2000, and appear to have been generally effective in lowering dent-related spills.

As noted above, according to PHMSA data, the hazardous liquid pipeline accident rate from dents is about two per year, with a majority of these discharging under 100 barrels of product. With the advent of new, more sensitive in-line inspection tools, a pipeline operator can now identify many dents in pipeline systems that are much smaller than our current repair criteria. PHMSA believes that, based on currently available information, additional regulations requiring operators to excavate, evaluate, and repair *all* dent defects would be impracticable under the cost/benefit evaluation required by the Pipeline Safety Act.

To promote greater pipeline safety related to dent evaluation and remediation, PHMSA proposes that the NTSB accept the following alternative actions:

- Issue an advisory bulletin to pipeline operators concerning procedures and remediation to be used when dents are found, in both HCAs and non-HCAs, highlighting factors that lead to dent cracking, such as depth, stress-concentration areas, soil conditions, restrained and unrestrained dents, interacting threats such as longitudinal and girth welds near the dent, past and future pressure cycling, and pipe properties such as toughness, pipe diameter to wall thickness ratio (D/t) ratio, and seam type and location; the advisory will also remind operators of their responsibility to consider all available information when evaluating threats and take action beyond the minimal safety requirements to address safety risks;
- Incorporate the results of shallow dent accident/incident root cause or metallurgical analyses by educating inspectors on dent risks, providing additional inspector guidance, and focusing our inspections on the use of proper assessment tools, dent evaluation and repair criteria, and remediation (if needed); and,



- Work with standards organizations to incorporate any recommended practices developed from ongoing accident/incident root cause or metallurgical analyses that promote increased pipeline safety from improved evaluations of in-service shallow dents. We anticipate completing these actions by August 2019.

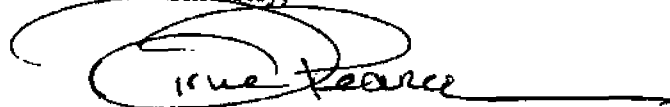
Regarding the installation of external leak-detection systems, PHMSA's data does not support the suggestion that every dent represents an integrity threat that may result in a leak, and PHMSA does not believe a mandate to put an external leak detection system at every unrepaired dent is warranted. Further, PHMSA believes that the cost/benefit evaluation required by the Pipeline Safety Act would preclude the establishment of a new regulatory requirement for installation of a leak detection system at every dent. For these reasons, we do not concur with the part of the recommendation that PHMSA require operators to install a leak detection system that continually monitors for hydrocarbons at every unrepaired dent location.

## CONCLUSION

PHMSA is committed to continued improvements in pipeline safety, and we take seriously our responsibility to address all NTSB recommendations. We think the recommended actions discussed above address the Board's safety concerns to prevent similar future incidents. We will continue to work with your office in the future as we continue our efforts to ensure the safe, reliable, and environmentally sound operation of the Nation's pipeline transportation system.

If you have any questions or require additional information, please do not hesitate to contact me at (b)(6). I hope this information is useful.

Sincerely,

A handwritten signature in dark ink, appearing to read "Drue Pearce", with a long horizontal line extending to the right.

Ms. Drue Pearce  
Acting Administrator

**From:** [McCloskey, Amber CTR \(PHMSA\)](#)  
**To:** [Correspondence](#)  
**Cc:** [Ameri, Maryam CTR \(PHMSA\)](#)  
**Subject:** PHMSA's Response to NTSB Safety Recommendations P-17-1 and -2  
**Date:** Saturday, September 30, 2017 1:14:14 PM  
**Attachments:** [PHMSA-170619-003\\_F.pdf](#)

---

Good morning,

Please see the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding NTSB Safety Recommendations P-17-1 and -2.

Thanks,

**Amber McCloskey**  
**U.S. Department of Transportation**  
**Pipeline and Hazardous Materials Safety Administration**  
**Contractor - Unispec Enterprises, Inc.**  
**#E27-315 | (b)(6) | C: (b)(6)**



## National Transportation Safety Board

Washington, DC 20594 | [www.ntsb.gov](http://www.ntsb.gov)

OFFICE OF THE CHAIRMAN

September 21, 2017

Ms. Drue Pearce  
Acting Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Ms. Pearce:

Thank you for your July 14, 2017, letter to the National Transportation Safety Board regarding Safety Recommendations A-16-1 and -2. We issued these recommendations to the Pipeline and Hazardous Materials Safety Administration (PHMSA) on February 9, 2016, as a result of our participation in the investigation conducted by the Republic of Korea's Aviation and Railway Accident Investigation Board of the July 28, 2011, in-flight fire and crash of Asiana Airlines flight 991, a Boeing 747-400F, which crashed into international waters about 130 kilometers west of Jeju International Airport.

### A-16-1

Require that Class 3 flammable liquids and fully regulated Class 9 lithium batteries be physically segregated when stowed on board an aircraft such that packages containing these materials may not be placed on the same or adjacent pallets or ULDs.

We note that, during the International Civil Aviation Organization (ICAO) Dangerous Goods Panel (DGP) Working Group meeting held in Montreal in April 2017, the International Air Transport Association (IATA) submitted a working paper to establish segregation requirements for lithium batteries, flammable materials, and other hazardous materials. The DGP Working Group agreed to the proposal as drafted. The ICAO DGP will review this decision at its next scheduled meeting in October 2017, and will incorporate it into the 2019–2020 edition of the ICAO "Technical Instructions for the Safe Transport of Dangerous Goods by Air." Pending the US delegation to the ICAO DGP fully supporting the IATA working paper, and revisions to PHMSA's hazardous materials regulations to harmonize with the revision, Safety Recommendation A-16-1 remains classified "Open—Acceptable Response."

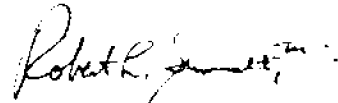
A-16-2

Establish maximum loading density requirements that restrict the quantities of Class 3 flammable hazardous materials or Class 9 lithium batteries stowed on a single pallet or ULD, or on a group of pallets or ULDs, within an aircraft such that cargo fires can be effectively managed by on-board fire suppression capabilities.

On December 15, 2016, we held a teleconference with your staff and with staff from the Federal Aviation Administration (FAA) to discuss this recommendation. The FAA staff felt that, because this recommendation addresses an aircraft's on-board fire suppression capabilities, it was the more appropriate organization to respond to Safety Recommendation A-16-2. We note from your current letter that the FAA will take primary responsibility for this recommendation and is initiating action to address it. We further note that you will update us regarding the FAA's progress. Pending development of maximum loading density requirements that take into consideration an aircraft's on-board fire suppression capabilities, Safety Recommendation A-16-2 remains classified "Open—Acceptable Response."

Please update us at [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov) regarding these recommendations, and do not submit both an electronic and a hard copy of the same response.

Sincerely,



Robert L. Sumwalt, III  
Chairman

cc: Ms. Deirdre Breithaupt  
OST NTSB Liaison  
Office of the Undersecretary for  
Transportation Policy



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Ave., S.E.  
Washington, DC 20590

July 14, 2017

The Honorable Robert L. Sumwalt  
Acting Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza, SW  
Washington, DC 20594

Dear Acting Chairman Sumwalt:

This letter provides an update on continued U.S. Department of Transportation (DOT) actions since our last correspondence regarding Safety Recommendations A-16-001 and A-16-002. These recommendations were issued following the Republic of Korea's Aviation and Railway Accident Investigation Board's investigation of the July 28, 2011, in-flight fire and crash of Asiana Airlines Flight 991. The investigation determined that the fire developed from lithium ion batteries and flammable liquids.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) and the Federal Aviation Administration (FAA) continue work on various lithium battery safety initiatives, including educational outreach to shippers, carriers, and airline passengers; collaboration on research initiatives; and participation in an inter-agency coordination group to increase cooperation between DOT safety regulators and other U.S. Federal agencies.

A-16-001

*Require that Class 3 flammable liquids and fully regulated Class 9 lithium batteries be physically segregated when stowed on board an aircraft such that packages containing these materials may not be placed on the same or adjacent pallets or ULDs.*

During the International Civil Aviation Organization (ICAO) Dangerous Goods Panel Working Group Meeting (DGP-WG/17) held in Montreal, Canada on April 24–28, 2017, the International Air Transport Association (IATA) submitted a working paper (DGP-WG/17-WP/6) to establish segregation requirements for lithium batteries, flammable materials, and other hazardous materials. Specifically, IATA proposed a restriction on shipper packing or overpacking of lithium batteries required to bear the Class 9 label with materials of Class 1 (other than 1.4S), Division 2.1, Class 3, Division 4.1, and Division 5.1, as well as a requirement for air operators to segregate packages of lithium batteries bearing a Class 9 label and packages bearing hazard labels of Class 1 (other than 1.4S), Division 2.1, Class 3, Division 4.1, and Division 5.1. After much discussion, the ICAO DGP Working Group agreed to the proposal as drafted. The ICAO DGP will review this decision at the next meeting on October 16-27, 2017, for subsequent

The Honorable Robert L. Sumwalt

incorporation into the 2019 -2020 edition of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air.


A-16-002

*Establish maximum loading density requirements that restrict the quantities of Class 3 flammable hazardous materials or Class 9 lithium batteries stowed on a single pallet or ULD, or on a group of pallets or ULDs, within an aircraft such that cargo fires can be effectively managed by on-board fire suppression capabilities.*

I would like to extend a note of appreciation to your staff for their cooperation in discussions with PHMSA and FAA in determining the preferred path forward regarding Safety Recommendation A-16-002. FAA will take primary responsibility for this recommendation and is commencing work immediately. PHMSA will update NTSB on FAA's progress accordingly.

If we can be of further assistance, please feel free to contact Dirk Der Kinderen, NTSB Program Manager for the Office of Hazardous Materials Safety, by phone at (b)(6) or by e-mail at (b)(6)

Sincerely,

  
Howard W. McMillan  
Acting Deputy Administrator

**From:** Ameri, Maryam CTR (PHMSA)  
**To:** Correspondence  
**Cc:** McMillan, Howard (PHMSA); DerKinderen, Dirk (PHMSA); McCloskey, Amber CTR (PHMSA)  
**Subject:** PHMSA's Response to NTSB Safety Recommendations A-16-001 and A-16-002  
**Date:** Monday, July 17, 2017 10:51:26 AM  
**Attachments:** PHMSA Response NTSB A-16-001 and A-16-002.pdf

---

Good morning,

Please see the attached correspondence from the Pipeline and Hazardous Materials Safety Administration regarding NTSB Safety Recommendations A-16-001 and A-16-002.

Thanks,

**Maryam Ameri, MA | Executive Secretariat**  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
East Building, 2nd Floor, PH-10  
1200 New Jersey Avenue, SE, E27-315  
Washington, DC 20590-0001  
Contractor - Unispec Enterprises, Inc.  
Phone: (b)(6)  
Fax: (202) 366-3438