

January 12, 2010

The Honorable Cynthia L. Quarterman  
Administrator  
Pipeline and Hazardous Materials  
Safety Administration  
Washington, DC 20590

Dear Ms. Quarterman:

Thank you for your August 7, 2009, letter, regarding Safety Recommendation P-05-5, stated below. The National Transportation Safety Board (NTSB) issued this recommendation to the Pipeline and Hazardous Materials Safety Administration (PHMSA) on December 23, 2005, as a result of the NTSB's study on supervisory control and data acquisition (SCADA) systems in liquid pipelines.

P-05-5

Require operators to install computer-based leak detection systems on all lines unless engineering analysis determines that such a system is not necessary.

On May 1, 2009, responding to PHMSA's September 17, 2008, letter, the NTSB wrote the following:

While PHMSA has expended some effort to address the requirements of Section 21 of the PIPES Act (Pipeline Inspection, Protection, Enforcement, and Safety), it has not identified any specific initiative to require operators to install computer-based leak detection systems as requested. Accordingly, pending implementation of the recommendation, Safety Recommendation P-05-5 is classified "Open—Unacceptable Response."

The NTSB has reviewed your August 7, 2009, update and clarification and is encouraged by PHMSA's plans for addressing this issue. The NTSB notes that PHMSA requires operators to (1) deploy an interconnected set of required layers of protection to detect and repair hazardous liquid pipeline leaks at the soonest possible time to mitigate any damages appropriately and (2) continuously improve the cumulative performance of these interlinked protections in leak detection. These protections include, but are not limited to, customized leak detection technology deployment, periodic risk-based assessment, and defect repair prioritized by environmental consequence, corrosion management, pipeline rights-of-way surveillance, public awareness leading to citizen identifications of leaks, emergency preparedness and response (including ongoing liaison with emergency responders), and lessons learned and applied from accident analyses and investigations.

The NTSB understands that from 1997 to 2007, when PHMSA implemented its integrity management (IM) program, the median volume lost from hazardous liquid pipeline accidents dropped by more than half, from 200 to less than 100 barrels, and the number of pipeline accidents declined by over a third. PHMSA's regulations require the prompt and remote detection of leaks through monitoring operational parameters and engineered leak detection systems for areas identified as having the greatest consequence in the event of a pipeline failure. Further, under the IM program, PHMSA is addressing existing leak detection system inadequacies with each operator by analyzing and evaluating each operator's leak detection capabilities for individual pipeline systems.

The NTSB notes that PHMSA conducted an analysis to determine the number of operators that operate less than 50 miles of pipeline, those that operate 50 to 250 miles of pipeline, and those that operate greater than 250 miles of pipeline. Currently, there are 421 hazardous liquid pipeline operators; 220 operate less than 50 miles of pipeline, 96 operate 50 to 250 miles of pipeline, and 105 operate more than 250 miles of pipeline. PHMSA reports that many of the operators in the higher mileage categories have configured their pipelines into networks, sometimes collecting material from multiple sources and delivering material to multiple destinations. Further, the engineering analysis that PHMSA has performed on many of the point-to-point pipeline systems has determined that a computer-based leak detection system is not necessary for these pipeline systems.

PHMSA reports that it will expect operators to do the following:

- Use traditional line balancing processes, performed routinely at 1-hour intervals any time that material is flowing.
- Ensure open and regular communication between all active source and delivery points along the pipeline, either through verbal communication or through the use of SCADA technology.
- Perform the basic process of monitoring flow and pressure to detect large pipeline breaks for pipelines equipped with SCADA technology.
- Gear line balance processes involving the use of SCADA technology to find less obvious failures such as partial line breaks and smaller leaks not apparent in flow and pressure monitoring.
- Include communication and monitoring plans that apply to the entire pipeline system, not only to sections of the pipeline located inside a high consequence area, in operating and maintenance manuals.

The NTSB understands that PHMSA intends to publish an advisory bulletin (AB) to inform operators of PHMSA's expectations regarding pipeline leak detection systems on both network and less complex point-to-point pipeline systems. Operators with point-to-point pipeline systems will be required to perform an engineering analysis to determine whether a

computerized leak detection system is necessary, and if a system is determined to be unnecessary, the operator will be required to perform a line balance at no greater than 1-hour intervals whenever material is flowing through the line. The NTSB would also like to know how PHMSA will define when a computerized leak detection system is determined to be unnecessary.

Because PHMSA has identified an acceptable alternate process to meet the intent of the recommendation, Safety Recommendation P-05-5 is classified “Open—Acceptable Alternate Response” pending completion of the actions described above. The NTSB would appreciate receiving a copy of the AB when it has been published and information regarding the success of this alternative solution.

Sincerely,

Original Signed By:

Deborah A.P. Hersman  
Chairman

cc: Ms. Linda Lawson, Director  
Office of Safety, Energy, and Environment  
Office of Transportation Policy