

**Testimony of
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National Transportation Safety Board
Before the
Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
U.S. House of Representatives
Pipeline Safety: A Progress Report Since the Enactment of
'The Pipeline Safety Improvement Act of 2002'
April 27, 2006**

Good morning Chairman Hall, Ranking Member Boucher, and Members of the Subcommittee. My name is Bob Chipkevich. I am the Director of the National Transportation Safety Board's Office of Railroad, Pipeline and Hazardous Materials Investigations. The Safety Board's Acting Chairman, Mark Rosenker, asked me to represent the Board today to discuss pipeline safety.

The Safety Board is currently investigating pipeline accidents in Dubois, Pennsylvania, involving a leaking butt fusion joint in a 2-inch diameter plastic gas main; Kingman, Kansas involving the failure of an 8-inch diameter hazardous liquid pipeline carrying anhydrous ammonia; and, Bergenfield, New Jersey where an apartment building was destroyed. Excavation activities were being conducted adjacent to a natural gas service line located near the apartment building.

Since I last testified before this Subcommittee in March 2002, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has continued to make progress to improve pipeline safety.

After a series of natural gas pipeline accidents in Kansas in 1988 and 1989 and a liquid butane pipeline failure near Lively, Texas, in 1996, the Safety Board recommended that PHMSA assess industry programs for public education on the dangers of pipeline leaks and require pipeline operators to periodically evaluate the effectiveness of those programs.

In December 2003, the American Petroleum Institute published its Recommended Practice 1162, *Public Awareness Programs for Pipeline Operators*, that addressed these issues. And in May of 2005, PHMSA incorporated this Recommended Practice into its pipeline safety requirements.

PHMSA also has made progress in the area of mandatory pipeline integrity assessments. The failure of pipelines with discoverable integrity problems has been a safety issue identified in pipeline accidents investigated by the Safety Board for many years, and related safety recommendations date back to 1987. The Board recommended that PHMSA require periodic inspections or tests of pipelines to identify corrosion, mechanical damage, and other time dependent defects that could be detrimental to the safe operation of pipelines.

PHMSA published final rules in 2000 and 2002 requiring liquid pipeline operators to conduct integrity assessments in high-consequence areas. And in 2003, PHMSA issued similar requirements for natural gas transmission pipelines in high-consequence areas. Operators must now assess the integrity of these pipelines using in-line inspection tools, pressure tests, direct assessment, or other technologies capable of equivalent performance. PHMSA's rulemaking met

the intent of the Safety Board's recommendations and we closed the safety recommendations as "acceptable action. "

As the Safety Board has previously noted, PHMSA will have to ensure that pipeline operators implement effective integrity management programs. Risk management principles, if properly applied, can be powerful tools to identify the risks to pipeline integrity and should lead operators to take action to mitigate those risks. Quantifying inputs into various risk management models, however, can be difficult and subjective. To ensure that the new rules for risk-based integrity management programs are effectively employed throughout the pipeline industry, it is important that PHMSA establish an effective evaluation program. PHMSA has shared its inspection protocols with the Safety Board, and when we investigate pipeline accidents that involve integrity issues we will examine the effectiveness of PHMSA's process for evaluating pipeline operators' integrity management programs.

In 2001, after investigating an accident that involved the explosion of a new home in South Riding, Virginia, the Safety Board again recommended that PHMSA require gas pipeline operators to install excess flow valves in all new and renewed gas service lines when operating conditions are compatible with readily available valves. PHMSA currently requires gas distribution operators, for new or renewed services, to either install the valves at their cost or notify customers of their option to have them installed at the customer's cost. Only about one-half of the operators currently install these valves at their cost.

We understand that PHMSA plans to incorporate a decision-making process for the installation of excess flow valves into its upcoming gas distribution integrity management rules. This would require each operator to employ a risk-based approach to consider the mitigation value of installing excess flow valves. PHMSA has asked the Gas Piping Technology Committee to develop guidance to address risk factors that would be appropriate for this determination.

The Safety Board believes that its recommendation to install excess flow valves should be a stand-alone requirement and not be the result of a decision based solely on risk analysis. A decision to install excess flow valves needs to be made when gas lines are newly installed or renewed. Once a service is installed, it normally has a very long life-- several decades-- before it must be renewed. Risk factors may change over time due to community growth or other future events, and the cost of excavating existing service to install excess flow valves would be another factor to overcome. Excess flow valves are inexpensive safety devices that can save lives. They should be installed whenever operating conditions are compatible with readily available valves.

In 1987, after investigating accidents in Kentucky and Minnesota, the Safety Board recommended that PHMSA require operators to develop training and testing programs to qualify employees. And following a 1996 accident in San Juan, Puerto Rico, the Board recommended that PHMSA complete its rulemaking on operator qualification, training, and testing standards. PHMSA's final rule, issued in 2001, focused on qualifying individuals for performing certain tasks. The Safety Board noted that the final rule did not include requirements for training, nor did

it specify maximum intervals for re-qualifying personnel. The safety recommendation was closed as “unacceptable action.”

On March 3, 2005, PHMSA published a direct final rule that amended the pipeline personnel qualification regulations to conform to the Pipeline Safety Improvement Act of 2002. Among other changes, this rule required operators to provide training. And on December 15, 2005, PHMSA held a public meeting to explore several issues and potential ways to strengthen the operator qualification rule. The Safety Board believes that operator qualification requirements must include training, testing to determine if the training was effective, and the re-qualification of personnel on a timely basis.

Over the years, the Safety Board has investigated numerous accidents involving excavation damage to pipeline systems, and excavation damage continues to be a leading cause of pipeline accidents. Therefore, the recent effort of PHMSA and the Common Ground Alliance to establish a national one-call number -- 811 -- is especially noteworthy. Soon, contractors and homeowners across the country will have an easy-to-remember, easy-to-use means for getting underground utilities marked and identified before excavation activities begin. We hope that all States will move quickly to ensure that this number is incorporated into all telephone exchange systems.

Last year, the Safety Board completed a study of a series of liquid pipeline accidents that involved delayed reaction by pipeline controllers and made several safety recommendations to PHMSA. The study found that most controllers indicated that alarms represent the most

important safety feature of Supervisory Control and Data Acquisition (SCADA) systems. However, two controllers reported receiving up to 100 alarms an hour and one manager noted a reduction from 5,000 alarms a day in the control center to 1,000 by working with controllers to develop guidelines for more realistic alarm set points. The study found that an effective alarm review/audit system by operators would increase the likelihood of controllers responding appropriately to alarms associated with pipeline leaks. The Board recommended that PHMSA require pipeline companies to have a policy for the review/audit of alarms and that controller training include simulator or non-computerized simulations for controller recognition of leaks. The study also found that most control center employees worked 12-hour shifts, but the shifts could be extended and the cycle of shifts changed. The Board believes that requiring operators to report information about controllers' schedules on accident reports could help PHMSA determine the contribution of fatigue to pipeline accidents and recommended that PHMSA require operators to provide related data.

Other safety issues with open recommendations include the need for determining the susceptibility of some plastic pipe to premature brittle-like cracking problems; ensuring that pipelines submerged beneath navigable waterways are adequately protected from damage by vessels; and requiring that new pipelines be designed and constructed with features to mitigate internal corrosion. Actions on these safety recommendations are classified as "acceptable response" by the Board.

The Safety Board will continue to review activities involving pipeline safety, but clearly progress has been made in the past 5 years.

Mr. Chairman, that completes my statement, and I will be happy to respond to any questions you may have.

Testimony Summary

- Progress has been made in the past 5 years to improve pipeline safety.
- Mandatory pipeline integrity assessment programs required for hazardous liquid pipelines in high consequence areas in 2000 and 2002.
- Mandatory pipeline integrity assessment programs required for gas transmission pipelines in high consequence areas in 2003.
- To ensure that the new rules for risk-based integrity management programs are effectively employed throughout the industry, it is important that PHMSA establish an effective evaluation program.
- Gas distribution operators should install excess flow valves in all new and renewed gas service lines when operating conditions are compatible with readily available valves.
- Operator qualification requirements must include training, testing to determine if training was effective, and re-qualification of personnel on a timely basis.
- The recent effort of PHMSA and the Common Ground Alliance to establish a national one-call number -- 811 -- is especially noteworthy. States should move quickly to ensure that this number is incorporated into all telephone exchange systems.
- A National Transportation Safety Board study found that an effective alarm review/audit system by operators would increase the likelihood of controllers responding appropriately to alarms associated with pipeline leaks.