

# NTSB Most Wanted List

Critical changes needed to reduce transportation accidents and save lives.

## *Enhance Pipeline Safety*

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.



**National  
Transportation  
Safety Board**

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# Enhance Pipeline Safety

## What is the issue?

Two and a half million miles of pipeline crisscross the nation. These pipelines power thousands of homes and deliver important resources, such as oil and gasoline, to consumers. While one of the safest and most efficient means of transporting these commodities, there is an inherent risk that can lead to tragic consequences, especially when safety standards are not observed or implemented.

In 1998 in South Riding, Virginia, a leak resulted in \$18 million in damages and repairs. In 2007, in Carmichael, Mississippi, a pipeline ruptured, and the ensuing cloud of natural gas ignited and created a large fireball, killing two people, injuring seven, and destroying four homes. In 2010, in Marshall, Michigan, another pipeline ruptured and was not discovered for over 17 hours. As a result, almost 850,000 gallons of crude oil spilled into the surrounding wetlands and flowed into local waterways, resulting in by far the most expensive environmental clean-up for an onshore oil spill. Later that year, one of the worst ruptures occurred in San Bruno, California, where a natural gas leak ignited, killing 8 people, and destroying 34 homes. Pipeline leaks can cause significant damage to people, homes, products, and the environment.

## What can be done . . .

The first key to enhancing pipeline safety is to improve oversight of the industry. Many of these accidents occurred because the pipeline operator's safety program was insufficient to identify potential problems. With hazardous materials coursing through pipelines, it is vital that pipeline operators be routinely evaluated according to effective performance-based standards. These standards should address the adequacy of an operator's integrity management and inspection protocols. Federal and state oversight agencies should work together to identify deficiencies in a pipeline operator's safety program and ensure that those deficiencies are corrected. Oversight also means testing involved employees for drugs and alcohol when an accident occurs.

When there is a problem, timely response to shut down pipelines is critical. In both the Marshall and San Bruno investigations, we identified a delay in the operator's understanding of the nature of the rupture and leak and therefore a delay in activating an appropriate response. Pipelines delivering products like natural gas into residential areas must have automatic excess flow valves that terminate the flow of product upon reaching a certain threshold. On the industrial side, remote shutoff valves serve the same purpose, though these could be manual or automatic. With such valves

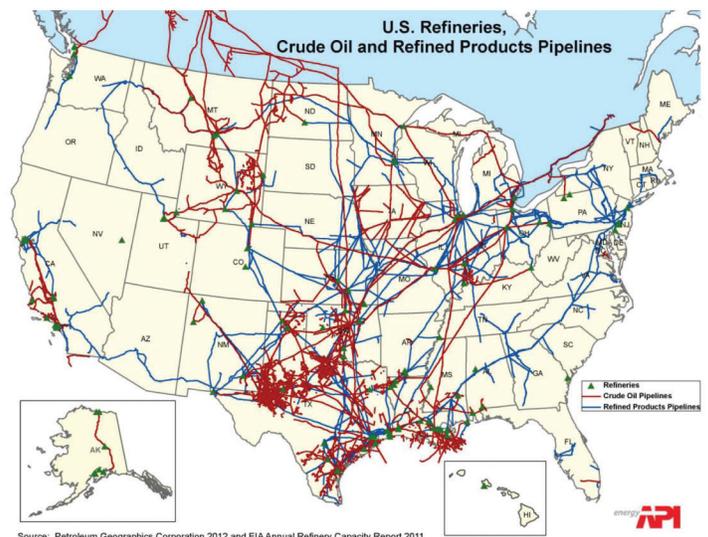
installed, companies would have the ability to stop the flow and isolate a rupture sooner, minimizing both the potential damage and the potential for an explosion.

Emergency response in the event of a leak is also critical. Pipeline operators can help ensure adequate emergency response by providing local jurisdictions and residents key information on pipelines in their areas. When a rupture occurs, operators should notify 911 emergency call centers as part of the standard response. Pipeline operators should also review their internal emergency response procedures and conduct periodic drills. Preparing for a robust emergency response will translate into faster and better response, less damage, and fewer injuries.

## Statistics

The vast pipeline network covering most of the United States demands our attention. Over 175,000 miles of onshore and offshore pipelines carry hazardous liquids, while both onshore and offshore gas transmission and gathering pipelines account for 321,000 miles, and a stunning 2,066,000 miles are dedicated to gas distribution mains and services. The natural gas these pipelines distribute accounts for 24 percent of total energy consumption in the country, while petroleum pipelines account for 39 percent.

According to the Pipeline and Hazardous Materials Safety Administration, in 2010, there were 34 serious pipeline incidents in which 19 people were killed, 104 were injured, and 3,104 barrels of hazardous liquid were spilled. In 2011, another 12 people were killed and 55 injured in 34 serious pipeline incidents.



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