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Study Finds Flaws in Pipeline Leak Detection Systems

By **DAN FROSCH**

A forthcoming federal report on pipeline safety has found that members of the general public are more likely to identify oil and gas spills than the pipeline companies' own leak detection systems.

The report found that pipeline control rooms, which help monitor whether a line is functioning properly, identified leaks in hazardous liquid and gas transmission lines only 17 percent and 16 percent of the time. Control rooms identified leaks in gas distribution pipelines, like those that go into homes or businesses, less than 1 percent of the time, according to the report.

The study was commissioned by the Pipeline and Hazardous Materials Safety Administration.

Kiefner & Associates, a firm based in Worthington, Ohio, that specializes in pipeline safety, conducted the study by examining pipeline incident reports between Jan. 1, 2010, and July 7 of this year. Its results are currently in draft form and set to be completed early next year. The research was mandated as part of a series of measures passed last year by Congress intended to make oil and gas pipelines safer.

The study found that air patrols and ground crews used by pipeline companies, as well as contractors, were more likely to identify problems on a line than detection systems. And private citizens and emergency responders were

typically the most likely to find evidence of a pipeline accident, it concluded.

"It has been clear for years that these computerized leak-detection systems don't work," said Carl Weimer, executive director of the Pipeline Safety Trust and a member of the pipeline agency's hazardous liquid technical advisory committee, which has reviewed the draft report. "The question for me is why have regulators continued to allow the pipeline industry to keep selling the public on leak detection systems that don't work as advertised?"

Jeannie Layson, a spokeswoman for the pipeline agency, said in an e-mail that leak detection was "obviously an important safety issue" being aggressively addressed. She said the agency would use the report to determine how best to update regulations.

"Within the last year, we've hosted numerous pipeline safety workshops and webinars about addressing leak detection system concerns and a host of other safety issues," Ms. Layson wrote. "We will use the findings from the consultant's draft report along with the rest of the input we've received to complete a final report."

Pipeline safety advocates have long argued that leak detection systems are unreliable and should not be viewed as a fail-safe for accidents. And they have pointed to a number of high-profile spills as examples to back their assertions.

A report issued in July by the National Transportation Safety Board on an Enbridge Energy accident in 2010 near Marshall, Mich., found problems with that company's leak detection system.

The safety board concluded that Enbridge workers had not been sufficiently trained to recognize the alarms being generated by the system, which contributed to the spill's going undetected for 17 hours. The Enbridge spill dumped more than 840,000 gallons of oil and led to extensive environmental damage that required closing a stretch of the Kalamazoo River for about two years.

Ms. Layson noted that leak detection problems were one of the primary

contributors to the spill and that the pipeline agency had levied its largest-ever civil penalty against a pipeline operator, fining Enbridge $3.7 million.

The new draft report also found that in some cases, pipeline companies' procedures might have allowed alarms to be ignored by controllers, or prompted workers to restart the pipeline's pumps, which ultimately made spills worse.

Peter Lidiak, pipeline director for the American Petroleum Institute, questioned the report's methodology, saying the report did not portray a complete picture of the various strategies employed by pipeline operators to prevent leaks.

"The systems are very specific to the kind of pipeline they are being applied to — what is being carried through the pipeline, the elevation of the pipeline and other factors," he said. "Leak detection is not just a computer-based system. It is a whole host of strategies."

Mr. Lidiak said the systems were typically effective at detecting larger spills. But he acknowledged that improvement was needed to identify smaller ones. Pipeline operators have been trying to make it easier for employees to spot warnings conveyed by the systems when something goes wrong, he said.

"It is a technology that continues to evolve," Mr. Lidiak said.

A New York Times report from last year found that the pipeline agency struggled to safeguard the nation's vast network of pipelines, and left too much regulatory control in the hands of operators.

Discussion over how to improve leak detection systems has received more attention of late, as the Canadian company TransCanada seeks to build the Keystone XL pipeline from Canada to the Gulf Coast.

TransCanada has said Keystone XL would be the safest, most advanced pipeline ever built in North America.

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