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Ken Silverstein Contributor

I write about the global energy business.

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Pipeline Explosion Rattles Natural Gas Industry

On December 11, 2012, Sue Bonham stood at the epicenter of her home in Sissonville, WV and thought that the earth would swallow her. Projectiles were flying while her household items were sizzling and melting — after a natural gas delivery pipeline had burst and shaken the whole neighborhood there.

"I thought my home and I would explode at any moment," the elderly woman said, as she explained that horrifying day to a U.S. Senate panel and to federal government regulators in Charleston, WV on Monday. "I was suffocating and thought I'd be burned alive." Altogether, four homes were incinerated but no one died.

The increased concerns over pipeline safety are occurring alongside the boom in shale gas, which is touted as this country's energy savior — giving the United States at least a century's worth of newfound natural gas. But if shale gas that is embedded in rocks and found a mile beneath the ground is to reach its promise, it would need an expanded infrastructure in place.

At present, 2.5 million miles of existing natural gas pipelines exist in the United States, according to the National Transportation Safety Board. Half of that was installed prior to 1970, meaning that the standards by which they have been built are not as strict as the more recently constructed lines. With the share of natural gas used to fuel power plants expected to keep rising, gas producers are saying that between 29,000 and 62,000 miles of new pipeline is needed over the next 25 years.

How can policymakers reconcile the need for safety with that of trying to accommodate an expected surge in shale gas? The age of the underground lines is less important than whether they are getting adequately maintained,

says Deborah Hersman, chair of the safety board, at the hearing. Current law requires that pipelines be inspected every seven years, although those located near population centers necessitate more frequent oversight.

“If it is adequately maintained and inspected, age is not an issue,” she said at the U.S. Senate’s Commerce Committee hearing that is chaired by Senator Jay Rockefeller, D-WV. In the case of the pipeline eruption in Sissonville, Hersman said that it was an older line that had “corroded,” or which had lost 70 percent of the wall’s thickness. The line is owned by NiSource Gas Transmission and is operated by its subsidiary Columbia Gas Transmission.

The explosion in West Virginia comes about two years after one in Northern California. There, a pipeline owned by PG&E Corp. erupted, killing nine people and destroying 38 homes. In that situation, the National Transportation Safety Board assigned much of the blame on the utility, saying that it had no methods in place to detect structural weaknesses in its pipeline. It also said that the PG&E did not have shut-off valves that would have limited the explosion’s severity.

Altogether, the risk of pipeline accidents has been steadily declining, says the Pipeline and Hazardous Materials Safety Administration. Despite the increased use of energy, incidents involving death or major injury have fallen by about 10 percent every three years. The risks of hazardous liquid pipeline spills that do lots of ecological damage have also dropped by 5 percent a year.

The hazardous materials agency has 135 inspectors, says Administrator Cynthia Quarterman. “We require them — the pipeline operators — to respond ‘promptly,’” she says, recognizing that that Columbia Gas has been sharply criticized for the 60 minutes it had taken to turn off the gas during the Sissonville pipeline accident.

“When operators have an alert in a control room, they should alert the authorities and immediately move to shutting it down,” especially if the line is losing pressure, Quarterman told the committee. If the gas pressure is reduced, it is a clear sign that leakage is occurring.

To that end, a government watchdog group is recommending the use of automatic shut-off valves, as opposed to those that must be manually attended. Susan Fleming, who authored a report by the General Accountability Office, told the U.S. Senate panel that such automation could have shut off the Sissonville line within minutes. She adds, however, that the cost of those devices can be high and that they may turn off gas in the event of a false alarm.