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U.S. NEWS

Leaky Tank's Design, Age Probed

Vessel Dates to 1938, Built With Rivets, Not Welds

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By **VALERIE BAUERLEIN** and CAMERON MCWHIRTER

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Updated Jan. 16, 2014 12:36 a.m. ET



TK

CHARLESTON, W.Va.—As probes develop into a chemical spill here that tainted the water supply, investigators are looking at the design, age and maintenance of the tank that failed, a nondescript storage container sealed with rivets and installed in 1938.

Experts in storage-tank construction say modern standards and testing are much stricter than they used to be, and almost all large steel tanks are now welded, not held together with rivets. But an untold number of smaller companies across the country still store chemicals in older, riveted tanks, they say.

Such tanks are "just an accident waiting to happen," said Koulis Kyriakou, manager of Steelcraft Inc.'s Clemmer Containment Division in Canada, which makes storage tanks

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but not the one in Charleston.

Freedom Industries Inc., the tank's owner, was required under state law to have a groundwater-protection plan. State environmental officials said Wednesday they have no record of such a plan. State regulation also requires the company to have a containment structure around its tanks sufficient to contain a spill for at least 72 hours.

Audio

Cameron McWhirter has more on The Wall Street Journal This Morning.



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A representative of Freedom Industries declined to comment.

On Jan. 9, inspectors said they discovered some 7,500 gallons of the chemical had leaked through a one-inch hole in the tank and flowed through a damaged

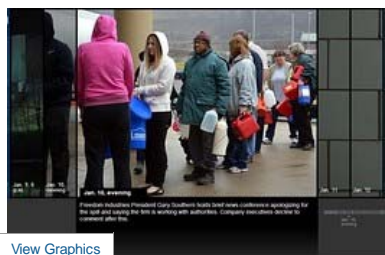
containment wall into the nearby Elk River. Some 300,000 people in the area were left without water for drinking, bathing and other uses for five days. Some still don't have water and most area schools remain closed.

The company wouldn't answer questions Wednesday about whether the tank had been upgraded or how it was maintained. On Friday, Freedom President Gary Southern said the site's tanks were "looked at" on a regular basis. "We have people at the tanks every day," he said.

From 1938 to 2001, the tank stored bulk oil, according to a 2002 environmental review done for its former owner. Since at least 2007, it stored the chemical that spilled, 4-methylcyclohexane methanol, also known as MCHM, according to an annual chemical inventory filed with the state.

Timeline: West Virginia Chemical Spill

See a timeline of events surrounding the contamination of the water supply around Charleston, W.Va.



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Age and upkeep likely were factors in its failure, experts said. While rivets commonly were used in tanks in the 1930s and 1940s, advanced welding is the modern standard, according to Fred Ruinen, corporate sales manager at Fisher Tank Co. of Chester, Pa.

Industry standards today call for X-ray tests of a tank's seals, water tests to find leaks, layered bottoms, liners to help keep the seal, leak sensors and secure containment areas, Mr. Ruinen said.

Many riveted tanks are being replaced because rivets can corrode over time, said Matt Van Alsbury, account manager at Wellington, Colo.-based Advance Tank & Construction Co. Other older tanks are being retrofitted to meet modern standards, he said.

Large companies, especially in the booming U.S. energy industry, are investing in major storage improvements, but some smaller businesses aren't because upgrading tanks or building new ones is expensive and companies lose revenue while tanks are offline, he said. "It's a costly endeavor," Mr. Van Alsbury said. "In a lot of cases, we may just not hear from them."

Mike Dorsey, chief of homeland security and emergency response for West Virginia's Department of Environmental Protection, said last week that Freedom "intended to upgrade" its old tanks but hadn't done so.

Some states regulate what can be stored in riveted tanks, said Wayne Geyer, executive vice president of the Steel Tank Institute, an Illinois-based trade group. Missouri regulations required riveted tanks storing flammable and combustible liquids to be removed from service by the end of 2005, according to the Missouri Department of Agriculture.

Federal environmental laws regulate oil products in aboveground tanks. However, MCHM likely wouldn't be covered, said several chemical experts. A spokeswoman for the U.S. Environmental Protection Agency said the agency is investigating the leak. The



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Occupational Safety and Health Administration, which covers workplace safety, also is investigating.

State DEP officials said Wednesday they had cited Freedom Industries on Tuesday for alleged violations at sister plant Poca Blending LLC, in Nitro, a town about 15 miles from Charleston, where Freedom has been moving some stores of MCHM. The state alleged the company failed to provide "appropriate" secondary containment for tanks and failed to perform mandated self-inspections, among other things. "The [safety] plan indicates that the building itself acts as secondary containment, but holes exist at floor level in the building's walls," inspectors wrote.

The storage of MCHM isn't included in the Clean Air Act and isn't tracked by the Department of Homeland Security's program that keeps tabs on hazardous-chemical storage.

After last year's fertilizer explosion in West, Texas, which killed 15 people, President Barack Obama set up a task force to review chemical storage regulations, but the group's final recommendations haven't been announced.

—Jennifer Levitz, Alexandra Berzon and Kris Maher contributed to this article.

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