Prevalence, age of pipelines in state raise safety concerns *Arkansas Democrat-Gazette*

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The 65-year-old Pegasus pipeline that spilled thousands of gallons of oil into a Mayflower subdivision a short distance from Lake Conway on Good Friday should be capable of handling the heavy Canadian crude it was moving from the Midwest to the Gulf Coast, analysts and industry members say.

But some environmentalists claim that the heavy crude the Pegasus line was carrying is likely too much for the pipeline to handle.

Owned by Exxon Mobil Pipeline Co., the 20-inch pipeline stretches 850 miles from Patoka, Ill., to Nederland, Texas. The pipeline enters Arkansas from Missouri north of Pocahontas and runs about 300 miles to the Texas line near Ashdown in Little River County. Along its route, the pipeline crosses 13 miles of the Lake Maumelle watershed, the drinking-water source for 400,000 people in central Arkansas.

On March 29, the Pegasus pipeline ruptured in a yard between two homes in a cul- de-sac of a neighborhood in Mayflower.

Residents of 22 homes were evacuated, and a group of Exxon Mobil workers arrived and began to remove the oil that had spilled into yards, roads and ditches.

The residents, who still do not know when they will be able to return home, have begun to question what will now happen to their homes and when it will be safe to return to them.

Exxon Mobil said Thursday that about 19,000 barrels of water and oil have been siphoned from the area.

The U.S. Environmental Protection Agency has categorized the spill as major, involving more than 250 barrels of oil.

Scrutiny of documents and interviews show that industry members, analysts and environmentalists are divided on what effect the oil – also called diluted bitumen and tar-sands oil — has on pipelines and how often the pipelines carrying the oil should be inspected.

AGING PIPELINE

The Pegasus pipeline was built in 1948 to transport oil north from the U.S. Gulf Coast to Midwest refineries. It was shut down in 2002 by Exxon Mobil and reopened four years later after the company reversed the flow south.

On Tuesday, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration ordered Exxon Mobil to stop operating the Pegasus pipeline until the agency is satisfied with all of the pipeline repairs. In the order, the agency cited the age of the pipeline, the 2006 change in direction of flow and

uncertainties surrounding the cause of the spill.

"After evaluating the foregoing preliminary findings of fact, I find that continued operation of the Pegasus Pipeline without corrective measures would be hazardous to life, property, and the environment," Jeffrey D. Wiese, associate administrator for pipeline safety, said in the order.

The entire pipeline, designed to carry as much as 95,000 barrels of oil a day, remains out of service, and the agency has opened an investigation into the cause of the leak.

"The age of a pipeline may or may not contribute to a pipeline leaking based on the operation and maintenance history of the pipeline," said Jeannie Layson, a spokesman for the pipeline agency.

If the Pegasus pipeline is maintained and inspected frequently, age should not affect its ability to transport oil, said Robert McFadden, a pipeline engineering consultant with REM Pipeline Consultants LLC in Texas.

"As long as the maintenance is handled correctly, age shouldn't be an issue," McFadden said.

The Pipeline and Hazardous Materials Safety Administration said it last inspected the Pegasus pipeline in 2012.

On Monday, the Arkansas Democrat-Gazette submitted a Freedom of Information Act request for documents from the agency regarding inspections of the pipeline. In response, the agency said there is a backlog of requests and that the agency must respond to them in the order they are received.

"We will provide the records to you as they become available but cannot provide a final response within 20 days," said Marilyn Burke, the administration's Freedom of Information Act program manager.

MIXED INSPECTION ROLES

No state agency inspects the Pegasus pipeline. The Arkansas Oil and Gas Commission and the Arkansas Public Service Commission regulate natural-gas pipelines in Arkansas, but not pipelines carrying crude oil.

The Pegasus pipeline is inspected by Exxon Mobil and the Pipeline and Hazardous Materials Safety Administration.

Exxon Mobil last inspected the pipeline in February, but the results are not yet available, said company spokesman Kim Jordan. Also, the company inspected the Mayflower section of the pipeline on July 21, 2010, when the company used a device to

record information about the pipeline's internal condition. The pipeline was last pressure-tested in 2006.

The 2010 test and the pressure test found no evidence of metal loss or deformation anomalies in the area where the pipe failed, Jordan said last week.

James Williams, an energy analyst and owner of the consulting firm WTRG Economics near Russellville, said the pipeline's age could mean there's some corrosion, but it should not be an issue as long as there are frequent inspections.

"Older pipelines have greater problems, or more frequent problems," he said. "There's nothing inherently wrong with using an old pipeline, but you really should inspect it more frequently," Williams said.

Likewise, analysts and industry members said the reversal of oil flow should have had minimal impact on the Pegasus pipeline.

"If you reverse the flow of the pipeline, it really doesn't do anything to the pipeline proper," Williams said. "Does your hose care which way water flows through it?"

He said the reversal could affect the pipeline if the amount of pressure was changed.

Some disagree with Williams' assessment.

"The reversal, I believe, leads to a kind of different pressure and changes on the pipeline," said Devorah Ancel, an attorney for the Sierra Club. "Clearly our regulations have not kept up with the type of unstable materials that come into the system."

HEAVY OIL

The Pegasus pipeline moves Wabasca heavy crude that is pumped from beneath northern Alberta, Canada.

Jordan, Exxon Mobil's spokesman, said the pipeline was not carrying "tar-sand oil," which comes from the Athabasca Oil Sands and is tied to the debate over the construction of the Keystone XL pipeline that would carry Athabasca oil from Canada to Texas.

Williams, the Russellville analyst, said Wabasca heavy oil is produced from the Wabiskaw Sandstone and is similar to oil from the nearby Athabasca Oil Sands.

"Pipelines are the safest way to transport oil and gas. This is important to remember as the news of our pipeline accident comes up in the debate over the proposed Keystone XL pipeline," said Ken Cohen, vice president of public and government affairs for Exxon Mobil, in a post about the Mayflower spill on the company's blog Wednesday.

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"Also important to remember is that claims that crude from the Canadian oil sands is more corrosive and destructive to pipelines are not true," Cohen said. "Studies have shown no pipeline releases of oil sands crude … caused by internal corrosion."

Cohen said diluted bitumen has the same chemical properties as heavy crude from California and Mexico.

Ancel said that on March 26, the Sierra Club submitted a petition to the EPA and the Pipeline Hazardous Materials Safety Administration, requesting updated pipeline-safety and spill-response regulations that would address the risks and hazards associated with transporting diluted bitumen through pipelines. That was three days before the Mayflower oil spill.

The petition asks for safety requirements for pipelines carrying diluted bitumen to be stronger than for those carrying conventional crude oil, disclosure of the chemical composition of diluted bitumen and revision of spill-prevention requirements to ensure detection systems do not fail.

"We've seen that pipelines moving tar sands … have significant problems," said Anthony Swift, an attorney with the National Resources Defense Council, an environmental action group.

He said bitumen, which is very thick even when diluted, generates frictional heat that increases the risk of corrosion.

"The U.S. pipeline system is aging," Swift said. "As a pipeline gets older, the likelihood of problems increase, but we've been having problems with new pipelines carrying this oil."

Lawrence Durio, a certified industrial hygienist in Baton Rouge, disagreed, saying the heat that is used to make heavy-oil flow isn't hot enough to cause corrosion.

The Pipeline and Hazardous Materials Safety Administration has a contract with the National Academy of Sciences to conduct a study about the effect diluted bitumen has on pipelines.

The results of the study, which was required by the Pipeline Safety, Regulatory Certainty and Jobs Creation Act of 2011, will be presented to Congress by July.

If the research finds that diluted bitumen is more likely to weaken a pipeline, then the committee conducting the study will review the federal hazardous liquid pipeline facility regulations to determine if they are sufficient to reduce the risk of a release, according to the National Academy of Sciences website. The academy said the members of the committee "won't be able to comment on the study until it is released to the public ."

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The committee conducting the study has met five times since July, 23, 2012, with the latest meeting held Thursday.

MICHIGAN SPILL

"We also know that when these spills happen, the impact of tar-sands spills can potentially be more negative," Swift said, referring to a 2010 oil spill in Michigan.

In the 2010 case, a 30-inch pipeline owned by Enbridge Energy Partners LLP, ruptured near Marshall, Mich., dumping about 819,000 gallons of heavy crude into Talmadge Creek and the Kalamazoo River, a tributary for the Lake of Michigan, according to the EPA.

Heavy rains caused the Kalamazoo River to top dams and carry the oil 35 miles. Cleanup of that spill is ongoing, and Enbridge projects that the total cost of the cleanup will be $995 million. Exxon Mobil has not said how much it will cost to clean up the Mayflower spill.

The EPA ordered Enbridge last month to dredge the Kalamazoo River to get at the remaining oil.

Larry Springer, spokesman for Enbridge, said the heavy Canadian crude that flowed into the river is still there because it attached to debris, such as sticks, and sank to the riverbed.

"In our opinion, [Canadian crude] is no different than any other heavy oil in water," he said. "The issue on the cleanup is more to do with the debris."

Durio, the industrial hygienist, said that when the heavier oil gets into water it tends to be stickier, but it doesn't run as far downstream as lighter crude does.

But, he said, "Some crude oil is heavier than water."

Durio said the weight of the Canadian oil makes it easier to clean up than light crude on land.

"Frankly, the heavier oil typically stays in one place," he said.