Pipeline Safety on Trial

The stakes are high for everyone in the Keystone pipeline debate.

By Allen Best

EMINENT DOMAIN became a prickly issue in Nebraska when the legislature gave oil pipeline companies sweeping authority over it. Connell and other ranchers and farmers don’t understand how a foreign company could threaten them with eminent domain before getting permission from the U.S. government to build the U.S. portion. "While we hope to acquire this property through negotiation, if we are unable to do so, we will be forced to invoke the power of eminent domain," said TransCanada’s attorney, David Domina, speaking to landowners in early May. "That was April 2011. They refused in June. Connell got an updated, time-limited offer of $160,641, but even that’s too little. "There’s everything to lose and not anything to gain," he says. Karl and Kevin Connell own a 4,400-acre ranch along the wild, scenic Niobrara River, on the edge of Nebraska’s Sand Hills region. The 150 head of cattle graze on grass that can grow as high as a horse’s belly. By the fall of 1998, 150 head of cattle grazed on grass that can grow as high as a horse’s belly. By the fall of 1998, the steers bulge to an average 600 pounds. In the Keystone XL pipeline, he seems to know every yucca plant and sea oats growing in the sand, if not the Environmental Protection Agency’s definition of the Sand Hills. The pipeline will also cross the Ogallala Aquifer, a vast body of water-soaked sands, some interconnected, that span the Great Plains from South Dakota to Texas. Some, but not all, scientists have downplayed the threat of a spill to the aquifer.

Mixing oil and water

These concerns have been most prominent in the state’s iconic Sand Hills. It’s a region of 10,600 square miles of loping hills composed of loose, porous sand and dotted by thousands of ponds and lakes. The water table is high, about 10 feet below ground for 65 miles of the route originally proposed by TransCanada in a 2008 application to the U.S. Department of State.

A prominent Nebraska attorney, David Domina, speaking to landowners in early May, said that TransCanada could eventually win and that they should focus on the terms of the easements for the Keystone XL such as defining the company’s liability. He offered to represent them.

Environmental harms also troubles the landowners. Although greenhouse gases are rarely mentioned, water and soil are. Ranchers and farmers remain skeptical about how well these crucial ingredients for the state’s primary export, meat, can be protected from pipeline spills.

A major addition, the proposed Keystone XL oil pipeline, has met with stiff opposition and was stopped by the Obama administration.

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TRANSCANADA, THE CALGARY-BASED ENERGY COMPANY, FIRST OFFERED Karl Connell and his brother $15,000 for the right to bury a 36-inch oil pipeline across their ranch. That was April 2011. They refused. In June, Connell got an updated, time-limited offer of $160,641, but even that’s too little. "There’s everything to lose and not anything to gain," he says.

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In November 2011, TransCanada offered to skirt the Sand Hills. The new route for the Keystone XL pipeline will still cross sand, if not the Environmental Protection Agency’s definition of the Sand Hills. The pipeline will also cross the Ogallala Aquifer, a vast body of water-soaked sands, some interconnected, that span the Great Plains from South Dakota to Texas. Some, but not all, scientists have downplayed the threat of a spill to the aquifer.

An overarching question is whether rural regions have enough muscle and savviness to protect their interests. Stopping at court houses in Nebraska and Kansas along the proposed Keystone XL route, I was struck at how ill-equipped local officials were to deal with a major new intrusion. One part-time planner confided that she needed to learn more. Other counties have adopted zoning regulations, but say they are intimidated. "We cannot afford to fight TransCanada," says Jen Daniel, a planning commissioner in Rock County, along the original Keystone XL route. "We don't have the money in this county to fight it. We don't have the money as individuals to fight it."

TransCanada gives grants to extension agents, emergency preparedness offices, and fire departments, and can be counted to pitch in at summer festivals. It has also bought non-stop television and radio advertisements, including spots at football games of the Cornhuskers—close to a state religion in Nebraska.

John K. Hansen, president of the Nebraska Farmers Union and the former owner of a crop insurance agency, says that TransCanada has heavily lobbed legislators. Forms filed with the Nebraska Accountability and Disclosure Commission show that in the final three months of 2011, when the legislature convened in special session to adopt laws governing the pipeline routing, lobbyists representing the company spent $530,000, more than half lumped under the heading of “miscellaneous expenses.” How-
an environmentalist. "We like their money. We like the way they can get the word out. But we want to maintain an arm’s length from them." Holt County updated its zoning regulations to cover pipelines. The revised Keystone XL route will bisect the county, and landowners were particularly concerned about harm to their topos. "Once you’ve disturbed that surface, it’s hard to get anything to grow back on it unless you put topsoil on it," explains Gene Kelly, chair of the planning commission. The zoning regulations specify that topsoil removed for the pipeline must be restored—and new topsoil imported, if there is a deficiency. Holt County also wanted to address liability, "to put the onus on pipeline developers and operators in case of spills. The regulations give the county a stick, including the power to shut down the pipeline, and regulations specify the pipeline company’s responsibility for removing the pipeline at the end of its useful life. Oil spills will draw notice, but the county wanted local leverage for lesser problems. "If somebody has a problem, it’s easier to get it addressed at the local level than to get somebody from Washington out here," says Kelly.

Pipeline perils
Pipeline safety is on trial in the Nebraska debate. BPS 2010 Deepwater Horizon disaster in the Gulf of Mexico has been noticed, as has the 2011 failure of an ExxonMobil pipeline in the bed of the flooding Yel- lowstone River in Montana.

Cynthia Quarterman, administrator of the Pipeline and Hazardous Materials Safety Administration, the lead federal agency responsible for pipeline safety, told a congressional committee in July 2011 that the rupture in the Yellowstone River pipeline shows why "pipeline safety requirements should be strengthened." In January, Congress gave her agency authority to write regulations to address automatic shut-off valves and to levy higher civil penalties for pipeline failures that result in injury, death, or significant environmental damage. Most worrisome to the opponents of the Keystone XL is the 2010 failure of a pipeline in Michigan that was transporting dil- uted bitumen, the crude oil from Alberta’s $650 million. In its native state, bitumen has a heavy, tar-like texture. It is heated to 150 degrees and diluted with other substances and then pumped to refineries at pressures of up to 1,440 pounds per square inch. The process is energy intensive: Electrical utilities have had to install new high-voltage transmission lines to run the dual 5,500-horsepower pumping stations. "It’s a big load. It’s not like running a house or two with air condition- ing," says Stacy Kreamer, a business manager for Wester Energy in Kansas. At his ranch along the Niobrara River, Karl Connell says he has been thinking about these and other things “every day, all day, for the last four years.” The new route for Keystone XL will bisect his ranch after the prevailing wind from the northwest, the soil quickly erodes, exposing the pipelines. “I’ve spent the last 30 years trying to repair a pasture that my father overgrazed,” said Connell.

TransCanada’s pipeline could do much worse damage to this pasture than his cattle do, he believes. The company would dig a trench eight to 10 feet deep and 20 feet wide, burying the pipeline and then cov- ering it with four feet of material. Getting grass reestablished over soil would be “very, very hard,” he says.

Does the buck stop here?
The federal government has responsibility for the safety of interstate fuel pipelines, and the 2.5 million miles of pipes in the U.S. have far fewer spills than transport by railroad or pipelines. “When you look at how many tens of thousands of pipelines [there are] and how much they transport, the chances of any one failing in any given spot is really, really small,” says Carl Weimer, executive director of the Pipeline Safety Trust, a nonprofit oversight group. But failures are conspicuous. In 1999, a pipeline spilled 227,200 gallons of gasoline into two creeks in Bellingham, Washington, creating a bomb that killed three people and sent smoke billowing 50,000 feet into the air. In California, a natural gas pipeline explosion in 2010 killed eight and destroyed 38 homes in San Bruno, 12 miles south of downtown San Francisco. The pipeline owner, Pacific Gas and Electric, agreed to “significant” indicate that individual companies have “too much wiggle room” in how they monitor pipelines for safety, he says. He wants precise performance standards. Unlike safety, control over pipeline routes is diffused. The Federal Energy Regulatory Commission controls routes for natural gas pipeline. Routing of oil pipelines is left to states. Local governments can, using their power of zoning, steer routes of pipelines. The federal government gets involved in routes only when pipelines cross the international border into the U.S.

Very big business
Two big oil plays in North America are responsible for most of the new pipelines now being considered. One is on the Bakken oil sands. The pipeline, owned by Canada’s Enbridge Energy Partners, spilled crude oil into a tributary of the Kalamazoo River. People living within two miles of the spill site were urged to evacuate. According to a report issued in July by the National Trans- portation Safety Board, the spill had two main causes: Enbridge’s failure to consider pipeline problems during safety checks and lax federal oversight.

The EPA reported that it collected 1.2 million gallons of oil as well as 187,000 cu- bic yards of soil and debris. But much of the crude oil, being heavier than water, settled to the river bottom, where 200 acres of oil remains, resisting cleanup. Enbridge has estimated the cost of cleanup at $765 million, well above its insurance coverage of $650 million.

Pipeline bullying
Pipeline safety is on trial in the Nebraska debate. BPS 2010 Deepwater Horizon disas- ter in the Gulf of Mexico has been noticed, as has the 2011 failure of an ExxonMobil pipeline in the bed of the flooding Yel- lowstone River in Montana. Pipeline protests have increased as pipelines carry oil from the Bakken oil fields up to the North Dakota pipeline hub at Cushing, Oklahoma. Alberta’s bitumen—the other big oil play—is harder to extract from its source. Petroleum engineers struggled for decades, succeeding only in 1967, when a subsidiary of Philadelphia-based Sun Oil began strip- mining the oil sands from below the water- soaked boreal forests. Experts increased...
Coming to Kansas

In Kansas, Keystone II caught local officials flat-footed because they had not dealt with oil pipelines before. “We were thinking about the revenue, maybe property taxes generated for our county. We didn’t think about the public health issues,” says Brad Homman, administrator of Dickinson County. The Keystone II, he notes, will be carrying more bitumen than the older Keystone I, which has been carrying diluted bitumen since early 2011, will leak—and the leaks will go undetected. Monitors in Calgary are meant to detect reduced pressure, triggering a shut-off of oil. But monitors like this have failed elsewhere. And there are questions about whether diluted bitumen has properties that may confuse the monitors. 

In a 2011 paper entitled “Tar Sands Pipeline Impacts: Natural Resources Defense Council and other organizations argued that pipelines carrying dilbit (the shorthand name for diluted bitumen) must be regulated differently than those carrying crude oil from conventional sources. The dilbit “is a highly corrosive, acidic, and potentially unstable blend of thick raw bitumens and volatile natural liquid gases containing an estimated 15 to 20 times higher acid concentrations than conventional crude and five to 10 times as much sulfur as conventional crude.”

The report says the mixture of light, gaseous condensate and thick, heavy bitumen can become unstable at high temperatures, creating gas bubbles within the pipeline. This can deform pipelines made more vulnerable by the corrosive properties of the bitumen. Alberta from 2002 to 2010 had 16 times the number of spills attributed to internal corrosion as compared to the U.S., the study reports. That statistic, says the NRDC, raises the question of whether dilbit will cause the same corrosion problems in the U.S. as the Alberta tar sands.

Dickinson and the five other Kansas counties adopting permitting procedures to the Keystone II have a measure of control over Keystone I. There was a lot of gray area, says Homman, about which government entity has authority in charge. “There’s a big question over who has the whip over this hog,” he says.

Homman worries that the pipeline, which as mentioned, was designated bitumen since early 2011, will leak—and the leaks will go undetected. Monitors in Calgary are meant to detect reduced pressure, triggering a shut-off of oil. But monitors like this have failed elsewhere. And there are questions about whether diluted bitumen has properties that may confuse the monitors.

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