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FOR IMMEDIATE RELEASE:

Safety Concerns
TransCanada XL Pipeline Project

Introduction

TransCanada Corporation's Energy and Pipeline President, Alex Pourbaix, told the U.S. House of Representatives Committee on Energy and Commerce, the company's proposed XL pipeline project will be "safe". He testified on May 23, 2011.[1]

Mr. Pourbaix's congressional presentation devoted only four paragraphs to safety. He devotes six paragraphs to environmental issues and makes one mention, in one sentence, of Nebraska's Sandhills and its Ogallala aquifer.

Many reading the testimony will likely say Pourbaix added nothing to quell concerns about the pipeline's safety, or about its environmental impact. So, let's see what he did say.

On Safety

There is little reassurance in these comments of TransCanada's senior pipeline official. They comprise at least 25 percent of his message on safety:

> In the event of a disruption, Keystone has a sophisticated series of overlapping computerized leak detection systems that can quickly detect loss of pressure in the pipeline. The pipeline can be quickly shut down

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[1] The testimony may be read at http://democrats.energycommerce.house.gov/sites/default/files/image_uploads/Testimony_EP_05.23.11_Pourbaix.pdf

> remotely from the Operational Control Center and emergency response personnel, pre-staged along the length of the pipeline route, can be quickly deployed with all necessary response assets. As required by the Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, Keystone must prepare a comprehensive emergency response plan and submit it to PHMSA for approval prior to commencing operations.

Of course, "disruption" means "rupture" or "spill" or "disaster". Nor is their much reassurance in the comment that TransCanada has agreed to adopt 57 standards recommended by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration. This sub-agency covers the entire U.S. It has five "pipeline" offices in the continental U.S., and it lists a total of eight investigators for the entire country.[2]

The 57 standards for this pipeline supplement are what Mr. Pourbaix called,

> "…comprehensive pipeline safety regulation under the jurisdiction of the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA)."

Before this platitude can offer comfort, it is worthwhile to read the federal regulations. There is not a lot of assurance to be derived from such an exercise. For example, this is the sum total of the federal safety regulations governing flanges that hold links of the XL pipeline together:

> Each component of a flange connection must be compatible with each other component, and the connection as a unit must be suitable for the

[2] http://www.phmsa.dot.gov/inspect-enforcex

service in which it is to be used.[3]

Where branches of the pipeline connect, this is the sole governing federal safety standard:

> Each pipeline system must be designed so that the addition of any fabricated branch connections will not reduce the strength of the pipeline system.[4]

Mr. Pourbaix told Congress that "These regulations specify pipeline material and qualification standards, minimum design requirements, required measures to protect the pipeline from internal, external corrosion, and many other aspects of safe operation." He did not tell them how limited the directions are! Nor did the TransCanada official trouble Congress with word of the safety-testing required. It is shocking:

> Pipe size. Number of tests. Larger than 12 ¾ inch (324 mm) nominal outside diameter one test for each 50 lengths.

This means integrity testing 1 per 1000 feet of 20 foot pipe length, or five tests per mile.[5] But there would be 50 flanges, 50 joints, hundreds of bolts and possible many adjustments to elevations and directional straightness across a single section of land or mile of pipe. American Society for Testing and Materials (ASTM)[6], a private organization, promulgates the standards for pipe welds and quality and strength. Pipe inspection during installation is required, but without meaningful standards:

> No pipe or other component may be installed in a pipeline system unless it has been visually inspected at the site of installation to ensure that it is not

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3 49 CFR § 195.126.
4 49 CFR § 195.122.
5 49 CFR § 195.105, internal design pressures.
6 ASTM: American Society for Testing Materials. The ASTM's standards are adopted by 49 CFR Pt 195. ASTM is a nonprofit, private organization.

> damaged in a manner that could impair its strength or reduce its serviceability.[7]

Suffice it to say, the federal regulations are spotty and of dubious enforcement. This means there are significant risks that the regulations and agency touted by Mr. Pourbaix are deficient, and without substantive enforcement power. One more example makes the point. Welders on the pipeline must be “qualified”. They may not use miter joints except to achieve deflections needed to match land contours.

> A miter joint is not permitted (not including deflections up to 3 degrees that are caused by misalignment).[8]

The 57 special criteria cited by Mr. Pourbaix were not embraced by TransCanada with open arms. They were accepted as Mr. Pourbaix’s subordinate Executive Vice President of Operations and Major Projects, Donald Wishart said, "If we didn't agree to these 57, we might not be allowed to operate."[9]

The 57 special criteria may be read in TransCanada’s Supplemental Environmental Impact Statement, at Appendix C.[10] One of the criteria is selected as an example here.

> Pipe Seam Quality Control: Keystone must prepare and implement a quality assurance program for pipe weld seams. The pipe weld seam tests must meet the minimum requirements for tensile strength in API 5L for the appropriate pipe grade properties. A pipe weld seam hardness test

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7 49 CFR § 195.206.

8 49 CFR § 195.216.

9 Comments of Mr. Wishart in a recent interview at the IHS Cambridge Energy Research Associates conference in Houston, reported at http://www.epcengineer.com/news/post/4008/transcanada-agrees-to-extra-safety-steps-for-proposed-pipeline-expansion.

10 http://www.keystonepipeline-xl.state.gov/clientsite/keystonexl.nsf/SDEIS_Appendix%20C_PHMSA%20Special%20Conditions.pdf?OpenFileResource

> using the Vickers hardness testing of a cross-section from the weld seam must be performed on one length of pipe from each heat. The maximum weld seam and heat affected zone hardness must be a maximum of 280 Vickers hardness (Hv10). The hardness tests must include a minimum of three readings for each heat affected zone, three readings in the weld metal and two readings in each section of pipe base metal for a total of thirteen readings. The pipe weld seam must be 100% UT inspected after expansion and hydrostatic testing per APL 5L.

There is certainly some metallurgy, and some engineering, in the 57 criteria, but there is nothing to suggest these specifications will work when laying pipe in the shifting sands and ground waters of the Ogallala aquifer or Nebraska Sandhills. But, dented pipe can be used. Other repairs required are to be scheduled for attention in 60 to 180 day intervals, even if noted during construction.[11] It is hard to see these "assurances" as special as compared with the risks to two admittedly very special geographic formations that TransCanada wants to cross with its pipeline.

The Sandhills; The Aquifer. The Risks.

The security of the Ogallala aquifer and the Sandhills region are entrusted largely to these sketchy regulations. Some assessment of their value is important to understand the adequacy, or inadequacy, of the safety assurances given by TransCanada's president.

First the Sandhills are unique… so much so that it has been the subject of presidential investigations.[12] What they hold as answers to questions residing deep within the minds of people

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[11] Id., Pt III.

[12] See, Axel Rydberg, *Flora of the Sandhills of Nebraska*, (Harvard Press 1893) and III US National Herbarium No. 3 (1895). See also, Mangan et al, *Response of Nebraska Sandhills*, 63 Climate Change Nos 1-2, 49-90 US Dept of Interior (2004).

is a matter of ongoing revelation.[13] Second, the Ogallala aquifer is one of the world's largest aquifers, it covers an area of approximately 174,000 miles.[14] It supplies 70% of all water used in the state of Kansas.[15] This is only a small fraction of total dependence on the Ogallala aquifer, which serves as a prime water source for the states of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Colorado, New Mexico, and Wyoming.[16]

Nothing in TransCanada's Supplemental Environmental Impact Statement and its Appendix C suggests focus on the unique construction and maintenance issues associated with burying a huge oil pipeline below fragile surfaces slowing, but not halting, the shifting sands and geologic activity of the Sandhills. No awareness of the risks of pipeline shifts under the surface, as weight, vibration, and phenomenon including ground water levels, cause thrusts and heaves in and against the pipeline.

The resources at stake are of undeniable importance. The risks posed by the proposed pipeline are great. The precautions purportedly taken thus far are viewed as slight and insufficient. TransCanada has not illustrated focus on basic construction issues. It has not demonstrated that there is sufficient protection of the aquifer and the Sandhills to justify crossing them. An alternative route, at a modest deviation in distance and route, deserves much more consideration.

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13 See, Sullivan, Janet. 1994. Nebraska Sandhills prairie. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). http://www.fs.fed.us/database/feis/ [2011, May 30].

14 Dennehy, K.F. (2000). *"High Plains regional ground-water study: U.S. Geological Survey Fact Sheet FS-091-00".* USGS Retrieved 2008-05-07.

15 Kansas Geological Survey Public Information Circular No 18, http://www.kgs.ku.edu/Publications/pic18/index.html

16 Gutendag, Geohydrology of the High Plains Aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, USGS Numbered Paper 13454.

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