

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

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IN THE MATTER OF THE PETITION OF	)	
TRANSCANADA KEYSTONE PIPELINE,	)	Docket 14-001
LP FOR ORDER ACCEPTING	)	
CERTIFICATION OF PERMIT ISSUED IN	)	<b>TESTIMONY OF EVAN VOKES ON</b>
DOCKET HP09-001 TO CONSTRUCT THE	)	<b>BEHALF OF DAKOTA RURAL</b>
KEYSTONE XL PIPELINE	)	<b>ACTION</b>
	)	

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**Statement for the South Dakota Public Utilities Commission**

The current management of TransCanada is in my opinion, a very significant technical threat to the safety of pipelines, including the proposed KXL pipeline through South Dakota and Nebraska.

I have a Master’s Degree in Materials Engineering and worked for five years at TransCanada Pipelines; I witnessed both firsthand and from the sidelines the effects of their political/business decisions that flew in the face of common sense and science. In 2012, I was terminated without cause, as I was pointing out how wrong the business model followed by management of this corporation was and what a threat to public safety they were. The reason why an employee such as myself knows so much is that my small department of 12 engineers operated as a small Engineering Specialist company within the corporation, although project managers did not have to engage us for projects. Our department owned many of the engineering specifications and my name appeared on several of these specifications, or I was a contributor to many core engineering specifications. As such, I saw the successes but more frequently, we saw the failures and firefighting required when a pipeline project was in trouble. I have given testimony on the public record before the Canadian Senate where I answered the question; what I did to stop the problem. The fact is the problem has not stopped because the same players are carrying on the same way.

Currently, in 2015, I have had to help another ex-TransCanada Pipelines employee that was being harmed by TransCanada and the National Energy Board after he spent a year bringing forward major code violations that were an immediate threat to the public, yet in the recent Reuters stories, in their official communications, TransCanada and the National Energy Board maintain the farcical position that nothing is wrong. As I have seen the evidence, TransCanada’s and the regulators response to an employee’s serious engineering allegations were not dealt with for over a year and some still are not. It reminds me of the recent crash landing of an AirCanada Flight in Halifax Nova Scotia, where the political powers called an obvious crash landing that destroyed a large commercial jet, “a hard landing” regardless of the fact that the plane contacted terra firma remote to the runway.

I have presented a lot of material over the last few years that is preserved as part of the permanent public record, but for now I want to start with a rupture of a new generation pipeline called the North Central Corridor Buffalo West section, consisting of 30 miles of 36 inch pipe that was the

best technology the world can expect to see from a technical engineering perspective. This TransCanada pipeline provides fuel gas to the Oil Sands extraction in Fort McMurray Alberta and is very relevant as it ruptured in October 2013 as a result of cost/schedule decisions that were made by my peers and project managers in August 2008, and the regulators not dealing with a major problem and falsification of documentation with this line in 2009. The last insult to public safety was after the line ruptured, when the regulators and TransCanada reported that no one was within 30 miles of the site – notwithstanding the existence of documentation showing that people were literally standing on rupture site hours before it blew up.

Notwithstanding all the other construction deficiencies, the long lead materials were understrength and failed pressure testing before construction commenced months later. Ordering new materials for large diameter pipelines takes quite a while. I did not know that the failed materials were used in North Central Corridor to preserve the construction schedule until PHMSA flagged expanded fittings on the Keystone Phase II expansion. When I was shown pictures of the metallographic cross sections of both Buffalo West and Keystone failed fittings in 2010, it was obvious that the necessary quality control steps were also ignored when the Keystone fittings were ordered. Approximately 600 of these fittings are in service in United States and an equal number in Canada. Neither PHMSA nor the National Energy Board have made a positive action requiring replacement of these substandard fittings since discovering them, regardless of the fact that this problem has now resulted in a rupture on North Central Corridor Buffalo West. From a purely metallurgical pipeline point of view there is no functional difference between an oil or gas pipeline. The only difference is in how the fluid is moved mechanically. However, the use of substandard materials have a further meaning in that the Keystone phase II pump-stations did not meet the minimum federal regulations or engineering design for construction, and the PHMSA special permit for construction which required mandatory quality control was not adhered to.

I had a history of involvement with Keystone from initial construction that persists to the present day as engineering work persists for incredibly long periods. I was heavily involved in the construction of Keystone in Canada for the 500 miles of new construction, spending over one month directly on-site for the automated ultrasonic inspection of girth welds. On Keystone Phase II we were forced into allowing the Keystone project to allow substandard inspection techniques at the direction of the then-Director of Engineering.

While my primary responsibility was Non-Destructive Examination, because of my flexibility afforded with respect to education and industry experience, my engineering opinions were engaged for materials and welding engineering consultations, information requests, and nonconformance dispositions. As such, my Engineering group had a ring-side seat to a most spectacular event, the deterioration of quality management practices in both Canada and United States on a pipeline with mandatory quality control. My peers and I were constantly overruled by management on code violations and other technical matters (which I can prove), while the Keystone project became a legend in inefficiency. Some of the examples of unskilled practice of engineering I saw submitted to regulators have had serious repercussions – yet no one has been held accountable. After fighting many levels of managers, I wrote a response to an invitation from CEO Russ Girling, who was surprised these projects were working out so poorly. I pointed out that many of these events were no surprise to me and my peers, but just the way science was working itself out independently of the “learned” opinions and business practices of managers.

I can assure you that trying to correct a management path at TransCanada was career-ending as I pointed out the misdeeds of company officials and managers. I sought the truth and made a series of information requests to the National Energy Board while I was still employed by TransCanada that resulted in my procuring documents that show clearly that TransCanada has too close a relationship and direct influence with regulators so as to allow TransCanada to ignore law. This situation has allowed and will continue to allow TransCanada to construct its pipelines in a manner which too often ignores quality control issues necessary for the pipeline to be capable of being operated in a manner which would be safe for the environment and in compliance with applicable laws, regulations and permit conditions. Indeed, PHMSA is aware of many of these misdeeds, such as entire pipeline sections that do not have a legitimate code-compliant inspection, yet the pipelines remain in service.

Significantly, and for example, the information requests reveal a problem with the original SNC Lavalin Engineering design of the Keystone pumpstations. I found out about this problem in 2011 when a TransCanada lawyer sent me information showing that the corporation victimized an inspector for a practice of contractor self-inspection. It was the Keystone project, and TransCanada lawyers that told the regulator they were implementing contractor self-inspections in a PowerPoint presentation months earlier. When things went wrong, they blamed the inspectors for a management policy for which I can produce evidence of both occurrence and response. There are many engineering problems with Keystone that persist unrectified to the present day, such as salt induced microcracking on large amount of pipe that was ordered for the Keystone XL section. I can show the pictures but I can't tell exactly which pipe it is.

If I had to pick an immediate threat to public safety, I could not, nor could anyone else; but I can tell you that there are hundreds of incidences of code violations and forbidden construction practices by TransCanada that are buried in ditches across North America and figuratively in files that many people take home containing proof, in case they become problems. Many of these problems are immediate danger issues waiting for something to disturb them before they propagate into failed pipelines, but they may never become problems.

On the Gulf Coast section of Keystone, the violations were obvious and were documented by landowners, activists and PHMSA, just the same as they always are. For instance, TransCanada maintains that they are just doing due diligence by removing 200 anomalies (which is a politically correct way of saying substandard workmanship) from the pipeline as sections. I have been on larger pipeline jobs here no anomalies had to be cut out, as the defects are reflective of construction contractors not following the code of construction and inspectors not enforcing rules. When TransCanada told everyone that the removal was due diligence, it wasn't. Removal of the sections containing those 200 anomalies have now resulted in 400 welds that are not pressure tested, which is the fundamental test to make sure the pipeline is safe to operate. After I was dismissed from TransCanada a former work peer forwarded a TransCanada Keystone project post mortem and ad nauseam, the PowerPoint repeats the same endless message that things will get better on the Keystone Gulf Coast project with all the lessons learned on Keystone I, II and Bison. If so, why was Keystone Gulf Coast just the same, and how will this renamed section of Keystone XL be better?

In the post mortem presentation, there were pictures where the pipe has fallen off the skid piles, and many references to substandard inspections, but additionally there are TransCanada internal reports showing incompetence in inspection that I did not write.

Keystone Gulf Coast pipe was photographed by landowners and activists with an extensive list of problems as follows: pipe falling off the skid piles or ready to fall off skid piles, heavy equipment marks consistent with collision with the pipes, serious coating damage present from the pipe not being handled according to minimum standards, repair coatings were shown as incorrectly applied, and extensive evidence of pipes installed on top of large rocks. The Non-Government Organization, Public Citizen, has hundreds of photographs of code violations and even the Houston Chronicle printed pictures of a code violation holding up construction activities in a manner that would soon be resulting in damage to the pipe. Humorously, the subject of the Houston Chronicle news article covered delays to the Keystone pipeline schedule while they were repairing the very subject matter of the photograph.

During Keystone Gulf Coast construction, I had written a letter to PHMSA admonishing them for substandard engineering oversight on Gulf Coast, which then issued warning letters for substandard practices to TransCanada. Obviously the same practices that CEO Russ Girling wrote about to us employees in 2011 are still at play – so how has any of this improved over the years before, during and after my presence at TransCanada? For all the promises, what has PHMSA done to proactively stop substandard pipeline from being buried? Keystone Gulf coast should have been pressure tested a second time, as it is now high risk.

The classic example is the 2010 Bison Wyoming to North Dakota project, where TransCanada directors called us into the pipeline project after the quality management people left the project for unknown reasons. It was a technical disaster and even PHMSA saw what a joke the inspection was as evidenced by the PHMSA inspection reports. There was so much wrong that it was going to be death by a thousand cuts. Essentially the environmental concerns were so overwhelming that the project could not maintain quality control measures. In response, TransCanada simply let the contractor do its own thing. The pipe was installed with dents, gouges, and welds that did not meet the minimum code requirements so they could avoid nesting schedules of owls and other environmental concerns; but PHMSA once again said nothing. During the initial phases of remediation after this pipeline was put into service, I was asked three times to write letters to PHMSA stating that dents were not associated with welds when the evidence in fact showed that dents were associated with welds. There is a strong documented history that the pressure by TransCanada managers to write a favorable report only stopped when the pipeline ruptured.

PHMSA's failure report of this pipeline is a travesty of engineering as it was a failure of inspection under the mandatory quality assurance system that led to the pipe being struck by a large excavator four times in one mile that caused the rupture. There are so many more lethal problems left with the line that a reoccurrence is likely. The report fails to address the adjacent weld that tore out as it was one of the welds with insufficient inspection. It is not relevant that PHMSA report could not conclude the metallurgical mechanism of the gouge that caused the failure. Gouges are lethal defects in any pipeline code. As part of my effort to stop the madness, I had even gone as far as to send TransCanada internal audit committee very clear pictures of Bison code and safety violations that were sanctioned by project management; yet the committee claimed the pictures were of

insufficient resolution. It could not be any clearer that what I saw and photographed, and PHMSA reported on, were all sanctioned by project management personal, who were all promoted after the pipeline ruptured.

All of these and many more problems are forbidden by TransCanada policies, but in reality are sanctioned by managers as low risk problems that benefit project cost and schedule. These sanctioned activities benefited managers before, during, and after my tenure at TransCanada. Many of these decision makers are non-professional or are professionals that have made very unskilled engineering decisions. Regardless of who made the decision, science does not care but rather asks its own questions based on matters of fact. TransCanada loves putting forward information far from the truth, but my story has been confirmed multiple times by both science and the regulators – refuting the position TransCanada takes in public.

As a comparison, you do not have to believe in gravity for it to work. Similarly, TransCanada’s “experts” will tell the Commission that my opinion has no relevance. However, this does not change the fact that TransCanada is a corporation with no responsible direction. This is the future South Dakota faces as it makes the decision to permit construction of the Keystone XL Pipeline.

I would be happy to **testify before** the South Dakota Public Utility Commission and to produce evidence to support my claims, as this is a public safety issue that will not be going away anytime soon.

  
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EVAN VOKES

April 2, 2015  
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Date

