



VIA EMAIL

June 28, 2010

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Re: Request for Investigation of Possible Use of Substandard Steel in the Keystone Pipeline

Dear Sirs:

We have reason to believe that TransCanada Keystone Pipeline, L.P., (“TransCanada”) may have used defective steel pipe in the construction of the recently completed Keystone Pipeline. Documents released by you indicate that Welspun Corp. Ltd (“Welspun”) supplied a significant amount of defective steel to the steel pipe market in 2007 and 2008. During this period, Welspun supplied TransCanada with almost half of the steel pipe used to construct the Keystone Pipeline. While we cannot be certain that Welspun provided defective steel to TransCanada, the facts indicate that further investigation and testing by the Pipeline and Hazardous Materials Safety Administration (“PHMSA”) is necessary, and that reasonable precautions should be implemented pending a final resolution of this matter.

Our conclusions are based on review of the 3,710 pages of information provided by PHMSA in response to our Freedom of Information Act Request of September 2, 2009 (“FOIA Request”). This request concerned Advisory Bulletin ABD-09-01, entitled “Potential Low and Variable Yield and Tensile Strength and Chemical Composition Properties in High Strength Line Pipe” (“Advisory Bulletin”), issued by PHMSA on May 21, 2009. It sought all documents related to your issuance of the Advisory Bulletin and your efforts to investigate and respond to the low-strength steel problem. You provided documents in response to the FOIA Request in March and May 2010, over six months after we submitted the request to you. We sincerely appreciate the efforts PHMSA’s staff undertook to respond to our request, but are concerned that the passage of time has nonetheless hindered our timely participation in your efforts.

From our review, it seems likely that PHMSA has additional documents related to this matter that have not been disclosed. Since we do not have access to a full record, we do not know the answers to a number of important questions or the full extent of PHMSA's efforts. Regardless, the information you provided contains sufficient evidence to justify further inquiry. After reviewing the FOIA documents, we produced the attached report entitled, "Use of Substandard Steel by the Pipeline Industry from 2007 to 2009." This report summarizes the information disclosed to us by PHMSA.

In 2007 and 2008 Boardwalk Pipeline Partners, L.P. ("Boardwalk") and Kinder Morgan, Inc, received substantial amounts of defective pipe and used this pipe to construct a number of high-pressure natural gas pipelines. This defective pipe failed to comply with the American Petroleum Institute Grade 5L X70 standard ("API 5L X70 Standard"). Due to low-strength, at least one and possibly two pipe joints ruptured when subjected to required hydrotesting. Hundreds of other joints did not rupture, but did expand beyond PHMSA standards indicating that they were fabricated with substandard steel. To fix this problem, PHMSA required Boardwalk and Kinder Morgan to remove and replace hundreds of pipe joints.

Although a number of pipe and steel mills are implicated, it appears that Welspun, an Indian steel pipe manufacturer, produced the lion's share of this defective pipe. Welspun, for example, was responsible for 88% of the expansion anomalies found in the Boardwalk pipelines. However, at least one other pipe mill produced substantial amounts of substandard pipe using steel from two steel mills, and a few other mills produced small amounts of low-strength pipe. The problem was widespread enough that PHMSA issued the Advisory Bulletin industry-wide.

Of concern to us is not primarily what PHMSA has done, but rather what PHMSA may have left undone. Specifically, the FOIA documents contain no determination by PHMSA of the root cause of the defective steel problem. Further, there is no description of a systematic effort by PHMSA to track the distribution of potentially defective pipe from the responsible pipe mills to U.S. pipelines constructed between 2007 and 2009. While PHMSA may have taken these actions, we are concerned because the documents provided by PHMSA do not indicate that it has done so.

The evidence you provided indicates that there is good reason for PHMSA to undertake a systematic industry-wide investigation of this problem. Yet the documents you provided relate only to your investigation of certain Boardwalk and Kinder Morgan pipelines and contain little to no indication of investigations of pipelines constructed by other companies between 2007 and 2009. For example, we are aware that PHMSA issued a document entitled, "Interim Guidelines for Confirming Pipe Strength in Pipe Susceptible to Low Yield Strength for Liquid Pipelines," on October 6, 2009. This document describes how pipeline companies should investigate this problem. However, neither it nor any other document reviewed by us describe which, if any, pipeline operators are required to comply with these "guidelines." Given this uncertainty, we seek clarification that PHMSA's review has been both systematic and thorough.

Reasons for Concern that the Keystone Pipeline May Contain Defective Pipe Steel

We are specifically concerned about the Keystone Pipeline, which was completed late last year and is just about to start operations. None of the FOIA documents indicate that

PHMSA conducted any investigation of the possible use of defective pipe in the Keystone Pipeline.

This being said, we recently learned in a phone call with PHMSA that it has decided to require TransCanada to conduct a high resolution deformation scan of the Keystone Pipeline. We are also aware that PHMSA has decided to require that a related pipeline, TransCanada’s Keystone XL Pipeline, conduct a high resolution deformation tool run. We are somewhat surprised to learn of your investigation of the Keystone Pipeline, since none of the FOIA documents indicate any review of this pipeline. Further, we have no documentation about the nature of the test you will perform, the timing of the test, or TransCanada’s agreement to conduct this test. We support PHMSA’s decision to conduct high resolution deformation testing of both Keystone Pipelines, but, given the following facts, believe that additional investigation and precautionary actions are warranted.

Much of the Keystone Pipeline Was Constructed Before Discovery and Full Investigation of the Defective Steel Problem

As shown below, the Keystone Pipeline was constructed in the same timeframe as the seven Boardwalk and Kinder Morgan pipelines investigated by PHMSA, most of which were proven to contain defective steel. Further, PHMSA did not discover this problem until early 2009 and did not complete data collection and testing until the second half of 2009, well after most of TransCanada’s pipe was in the ground. No press reports indicate that TransCanada rejected or returned any pipe to Welspun in 2009, nor have we heard of any excavation of pipe after construction, so presumably TransCanada installed all of the pipe provided to it by Welspun.

Pipeline	Sub-stand ard Pipe?	3Q 07	4Q 07	1Q 08	2Q 08	3Q 08	4Q 08	1Q 09	2Q 09	3Q 09	4Q 09
TransCanada Keystone Pipeline	?					[Red bar spanning from 3Q 08 to 4Q 09]					
Kinder Morgan Louisiana Pipeline	Yes			[Blue bar spanning from 1Q 08 to 4Q 08]							
Kinder Morgan Midcontinent Express Pipeline	Limit ed					[Blue bar spanning from 4Q 08 to 3Q 09]					
Kinder Morgan Rockies East Pipeline	No				[Blue bar spanning from 2Q 08 to 4Q 09]						
Boardwalk East Texas Pipeline	Yes	[Brown bar spanning from 3Q 07 to 2Q 08]									
Boardwalk Gulf Xing/MS Loop Pipeline	Limit ed				[Brown bar spanning from 2Q 08 to 2Q 09]						
Boardwalk Southeast Pipeline	Limit ed		[Brown bar spanning from 4Q 07 to 2Q 09]								
Boardwalk Fayetteville/Greenville Pipelines	Yes				[Brown bar spanning from 2Q 08 to 4Q 08]						

Almost Half of the Pipe Used in the Keystone Pipeline Was Made by Welspun

According to a *New York Times* article published on April 16, 2009, Welspun fabricated 47% of the pipe in the Keystone Pipeline. As noted above, Welspun was responsible for a very large proportion of the defective pipe provided to Kinder Morgan and Boardwalk.

Welspun Fabricated Pipe for TransCanada at About the Same Time as it Fabricated Defective Pipe for Boardwalk and Kinder Morgan

Photos of Welspun pipe joints used in the Keystone Pipeline show that they were fabricated between early 2007 and late 2008. This likely was the same period during which Welspun fabricated defective pipe for Boardwalk and Kinder Morgan. It is reasonable to assume that Welspun's quality control failures may have affected production of pipe for TransCanada.

The Steel Pipe in the Keystone Pipeline Was Fabricated to the Same Industry Standard as that Required by Boardwalk and Kinder Morgan

The pipe in the Keystone Pipeline was fabricated to the same API 5L X70 Standard as the Boardwalk and Kinder Morgan pipelines. The documents PHMSA provided suggest that the root cause of the defective pipe may have been mis-formulation of steel or mis-fabrication during the pipe steel rolling process, both of which are unrelated to the diameter of the pipe produced or the ultimate purpose of the pipeline. Although the Keystone Pipeline is a 30-inch diameter crude oil pipeline and the known defective pipe was installed in 36-inch and 42-inch diameter natural gas pipelines, it is our understanding that the size difference and the ultimate type of product carried do not change steel or pipe mill quality control processes. An API 5L X70 Standard steel pipe can be used to contain either natural gas or oil.

PHMSA Ordered Boardwalk and Kinder Morgan to Remove Hundreds of Joints of Defective Pipe and Reduce Operating Pressures Pending Repair

PHMSA ordered the excavation, testing, removal, and replacement of hundreds of pipe joints. Boardwalk agreed to remove and replace 305 pipe joints, and Kinder Morgan removed and replaced 7,100 feet of defective pipe joints. Further, pending repair, PHMSA down-graded the maximum pressure of impacted pipelines from an 80% design factor to a 72% design factor. The nature of this response indicates that the defects were significant and potentially dangerous.

Hydrotesting Alone Is Not Sufficient to Discover Defective Pipe

The extent of the low strength steel pipe problem in the Kinder Morgan and Boardwalk pipelines was not detected by hydrotesting, which suggests that hydrotesting alone does not provide adequate assurance of steel quality. Instead, PHMSA required high resolution deformation testing. As noted, we support PHMSA's decision to require high resolution deformation testing of the Keystone Pipeline.

Market Conditions May Have Adversely Impacted Industry Quality Control

TransCanada allegedly experienced large development cost overruns during construction of the Keystone Pipeline. Three of TransCanada's shippers stated in sworn court filings that TransCanada claimed a 145% cost overrun in Canada and a 92% cost overrun in the U.S. Any remedial efforts by TransCanada to investigate possible low-strength steel would exasperate these cost overruns. Further, the industry has stated that pipeline construction market conditions were "almost unprecedented" over the past few years. For example, Welspun's steel pipe sales figures grew by almost 50% in both 2007 and 2008. Given these market conditions, there is a substantial risk that production of defective pipe was not an isolated problem but rather resulted from systemic quality control failures.

The Keystone Pipeline Is Very Large and Designed to Operate at Very High Pressures and Therefore Is Dangerous

The 30-inch diameter Keystone Pipeline runs 1,025 miles from the Canadian border to Illinois and will operate at nearly 1,500 psi, making it one of the longest, largest, and highest pressure crude oil pipelines in the country. The force exerted by the crude oil on the pipe steel is tremendous. PHMSA granted the Keystone Pipeline a waiver to stress its pipe steel up to 80% of its maximum strength, rather than up to 72%, as required by existing regulations. Any major rupture would have substantial human and environmental impacts, and even a pinhole leak could severely harm property and the environment. Given the size and operating pressure of the Keystone Pipeline, PHMSA must require that it conform to the highest construction and operational standards.

In these circumstances, it is reasonable to be concerned that TransCanada may have used defective steel pipe in the construction of the Keystone Pipeline, and that such use could pose a serious risk to people and property along the pipeline. Yet none of the documents sent by PHMSA mention any investigation of the Keystone Pipeline. In all the thousands of pages of FOIA documents, the Keystone Pipeline is mentioned only once, specifically in the title of a document included in a list of reference materials provided in a report produced by a Boardwalk consultant. TransCanada, the operator of the Keystone Pipeline, is mentioned only in a list of companies participating in industry responses to the Advisory Bulletin. None of the documents provided by PHMSA as late as May 2010 state that PHMSA has made any effort to investigate the quality of the steel used in the Keystone Pipeline.

Industry Response to Defective Pipe Steel

We also find no comfort in the industry response to the pipe steel problem, as described in the FOIA documents. Specifically, the Interstate Natural Gas Association of America Foundation ("INGAA Foundation") responded to the Advisory Bulletin by preparing a White Paper. None of the documents you provided showed an organized response by an oil company trade association, suggesting that the industry's response to this problem is being coordinated by the natural gas industry through the INGAA Foundation.

The White Paper contains the industry's recommended approach for its members' investigations of whether or not their existing pipelines (including the Keystone Pipeline) contain defective steel:

- 1) based on experience during normal operations, determine whether there is a known history of low mechanical properties or excessive expansion of steel pipe;
- 2) if such history exists, then conduct an in-line inspection ("ILI") during the next regularly scheduled assessment of the pipeline; and
- 3) if the ILI shows expansions greater than "X%" amount ("X%" is not specifically defined by the White Paper, which states only that it may be about 1%) then the company must "evaluate and mitigate" the expansions, apparently within one year of the analysis; however, the industry has not identified what "evaluate and mitigate" means, when the one-year period tolls, or what actions might be required based on differing degrees of pipe failings.

Thus, the industry recommends that TransCanada conduct an inspection of the Keystone Pipeline for expansion anomalies only if its "normal" review of pipe data or information discovered during normal operations indicates that a threat of expanded pipes exists. However, the industry makes no recommendations about the type of in-line inspection required, and it specifically states, "This step does not contemplate extraordinary evaluations or inspections, but rather relies on those normally conducted as operations and maintenance activities." It also does not draw any line for when pipe is so weak that it must be removed or specify a timeframe for removal.

The White Paper recommends a business-as-usual approach. It does not call for any special investigation unless and until normal operations discover the existence of low-strength pipe. It recommends that pipeline companies be allowed to decide for themselves whether to inspect, how to inspect, and when and how to repair pipelines if low-strength steel is discovered. It ignores evidence related to the production of substandard pipe by specific steel and pipe mills as this evidence might be applied to specific pipeline construction projects. In short, as regards pipelines constructed between 2007 and 2009, the industry seems to have an "if it ain't broke don't fix it" attitude.

TransCanada's response to the Advisory Bulletin appears to be very much in accordance with the industry response. TransCanada described its response to the Advisory Bulletin in a June 1, 2009, letter to the South Dakota Public Utilities Commission ("SDPUC"), sent twelve days after PHMSA issued the Advisory Bulletin. In this letter TransCanada generally asserts that:

- it is already in compliance with the Advisory Bulletin;
- its quality control requirements meet or exceed the API 5L X70 Standard;
- it has taken the steps outlined in the Advisory Bulletin for "over 30 years;"
- "There have been no hydrostatic test failures on line pipe that have occurred in the pipe mills producing pipe for the Keystone order;" and
- it has "considered whether it is advisable to utilize expansion detection methods and has determined that such methods are not necessary or advisable."

TransCanada provides no description of how its quality control measures differed from those implemented by Boardwalk and Kinder Morgan, or how they exceed the API 5L X70 Standard.

Given that this letter was written just twelve days after publication of the Advisory Bulletin, it appears that TransCanada did not intend to change any of its quality control measures or conduct any detailed investigation of this risk. Also, it appears that TransCanada did not intend to conduct high resolution deformation testing of the Keystone Pipeline.

As for TransCanada's statement that "There have been no hydrostatic test failures on line pipe that have occurred in the pipe mills producing pipe for the Keystone order," we first note that this statement is far from clear. It may be an assertion that neither of the two hydrotests caused by weak Kinder Morgan and Boardwalk pipe were in pipe fabricated by one of the Keystone Pipeline's suppliers. The veracity of this statement depends on whether the Kinder Morgan hydrotest failure was caused by weak pipe not provided by Welspun. Since PHMSA provided us with no detailed information about this hydrotest, we are unable to determine if TransCanada's statement is correct. Regardless, we note that TransCanada did not acknowledge that one of its pipe suppliers, Welspun, was deeply involved in the weak pipe problem.

This letter gives all appearance that TransCanada intended to take no steps beyond its normal procedures to ensure that the Keystone Pipeline complied with federal pipe steel requirements. Such response is completely inadequate in light of the FOIA documents and the potentially deadly results of a catastrophic failure of the Keystone Pipeline.

Requested Phmsa Actions

The landowners who host the Keystone Pipeline on their properties have good cause to be concerned about the integrity of this pipeline. PHMSA has a duty to fully investigate whether the Keystone Pipeline contains low-strength steel pipe. Therefore, we request that PHMSA investigate the possible use by TransCanada of defective steel in the Keystone Pipeline by taking the following actions:

- Require TransCanada to conduct a high resolution in-line inspection of the Keystone Pipeline before the start of regular operations and provide the results of such high resolution in-line inspection to the public;
- Reduce the operating pressure of the Keystone Pipeline to a design factor of 72% or less pending completion of all testing and any required remediation.
- Require TransCanada to disclose to PHMSA and the public the identity of all steel and pipe mills whose products were used in Keystone Pipeline;
- Disclose all communications between PHMSA and TransCanada related to its possible use of defective pipe steel, its compliance with the Advisory Bulletin, and any testing or remediation efforts related to low strength steel, including but not limited to deformation testing of the Keystone Pipeline;
- Disclose all hydrotest results for the Keystone Pipeline;

- Disclose all unreleased data related to production of defective pipe steel by pipe mills, including but not limited to Welspun, and any steel mills that provided defective steel plate or coil for API 5L X70 or higher grade steel pipe for use in U.S. hazardous liquid and natural gas pipelines construction between 2007 and 2009;
- Disclose all data related to the root cause of the low strength pipe steel; and
- Publish a public report that identifies the root cause of the low strength pipe steel and describes the measures taken by PHMSA and the pipeline industry to ensure that undiscovered defective steel did not end up in U.S. pipelines.

If you have already performed such investigation and/or imposed any additional requirements on the Keystone Pipeline but failed to provide us with relevant documents, we request that you provide these documents as soon as possible. We also request that you meet with us to discuss this matter, so that we can provide our clients and constituents with assurance that their persons, families, and properties are safe.

Any use by TransCanada of defective steel in the Keystone Pipeline would be a violation of federal law. Absent investigation and appropriate near-term mitigation, there is good cause to believe that TransCanada may be in violation of Conditions 1 through 9 of its April 30, 2007, Special Permit, and therefore in violation of 49 U.S.C. 60118(c) and 49 CFR § 190.341.

As importantly, should the Keystone Pipeline contain defective steel, it would put the safety, welfare, and property of adjacent landowners and communities at risk.

We appreciate your consideration of this matter and urge your prompt response.

Very truly yours,



Paul C. Blackburn
Staff Attorney

att: Report, *Use of Substandard Steel*
by the Pipeline Industry from 2007 to 2009