BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE	)	Docket 14-001
	)	**DAKOTA RURAL ACTION'S, ROSEBUD SIOUX TRIBE'S, STANDING ROCK SIOUX TRIBE'S, CHEYENNE RIVER SIOUX TRIBE'S AND INDIGENOUS ENVIRONMENTAL NETWORK'S JOINT MOTION FOR STAY OF PROCEEDINGS**

Dakota Rural Action ("DRA") the **Rosebud Sioux Tribe** ("Rosebud"), the **Standing Rock Sioux Tribe** ("Standing Rock"), the **Cheyenne River Sioux Tribe** ("Cheyenne River") and the **Indigenous Environmental Network** ("IEN") (DRA, Rosebud, Standing Rock, Cheyenne River and IEN are hereinafter collectively referred to as the "Movants"), by and through counsel, hereby collectively move the South Dakota Public Utilities Commission (the "Commission") for an order to stay these proceedings: (1) pending final federal action to either approve or deny the permit needed by TransCanada Keystone Pipeline, LP ("TransCanada") for the proposed Keystone XL pipeline (the "Pipeline") to cross the international border between the United States and Canada; and (2) pending a final investigation by the Canadian National Energy Board (the "NEB") with respect to serious complaints made regarding engineering safety issues with respect to TransCanada's pipelines.

Introduction

The Movants contend that a stay of these proceedings is necessary and appropriate since it will permit the Commission to have highly material and relevant information before it for

determination of the propriety of re-certification of the conditions contained in the Commission's Amended Final Decision and Order dated June 29, 2010 (the "Original Permit"), and by staying the proceedings pending federal action, in the event the United States government denies TransCanada a permit to build the Pipeline across the US/Canadian border, the time, money, energy, and effort spent by the Commission and all parties to these proceedings will have been wasted.

A Stay of Proceedings Pending Federal Action is Appropriate

Final approval by the President of the United States for the proposed cross-border Pipeline is a prerequisite to TransCanada's ability to construct the proposed Pipeline in the United States, including South Dakota. For proposed petroleum pipelines that cross international borders of the United States, the President, through Executive Order 13337, directs the Secretary of State to decide whether a project serves the national interest prior to the President making a final decision whether to grant or deny a Presidential Permit. No decision has been made and, depending on the source, whether or not the Presidential Permit will be approved or denied is an open-ended question.

Given the fact that pipelines are long-term assets forming part of our nation's energy infrastructure and, once in service, typically remain in service for decades, a permitting decision is not one that is lightly made. TransCanada's first application for the Pipeline was submitted to the federal government on September 19, 2008, and the US State Department's Final EIS was published on August 26, 2011. The proposed route included the same US-Canada border crossing as is currently proposed, but had a different pipeline route through the United States, which included crossing the Sand Hills Region of Nebraska. On May 4, 2012, TransCanada filed a new Presidential Permit application for the Pipeline. The proposed Pipeline has a new route and a new

stated purpose and need (see US Dept. of State, *Final Supplemental Environmental Impact Statement*, January 2014, p. ES-3).

The Movants suggest that due to the uncertainty of when, if ever, a national interest finding from the US State Department may be issued, not to mention when, if ever, a decision as to issuance or denial of a Presidential Permit is made, there is no way of knowing how many months or years will transpire prior to any federal approval of the Pipeline. The intervenors filing this motion therefore move the Commission to stay further proceedings in HP 14-001 because moving forward with TransCanada's petition for certification is not justified in that it defies the principle of judicial economy in that significant time, energy, effort and resources will have been wasted by all parties in the event of non-approval. On this basis, the Commission's best course of action is to stay the proceedings pending final federal action with respect to the grant or denial of a Presidential Permit.

A Stay of Proceedings Pending the Outcome of Canadian National Energy Board Investigation of TransCanada is Appropriate

Of critical importance for the Commission in its re-certification determination is whether the evidence shows TransCanada can and will comply with the Amended Conditions set forth in the Original Permit. The safety and integrity of the proposed Pipeline is a key issue the Commission needs to carefully examine in making its decision. The safety of TransCanada's pipelines, and the proposed Pipeline in particular, has been called into serious question. The testimony of Evan Vokes, a former TransCanada pipeline engineer, which was filed by DRA in these proceedings, details how TransCanada's corporate culture values profits over pipeline safety. See Testimony of Evan Vokes, attached hereto as **Exhibit 1**. TransCanada's corporate culture is a significant issue in these proceedings and should be of concern to the Commission. Mr. Vokes, in

testifying before the Canadian Standing Senate Committee on Energy, the Environment and Natural Resources on June 6, 2013, stated that:

> "I found that TransCanada had a culture of noncompliance, deeply entrenched business practices that ignored legally required regulations and codes. What I have documented is a mix of politics and commercial interests that has resulted in the false public claims of exceptional industry practice." See, **Exhibit 2**, p. 1.

Although Mr. Vokes's findings resulted in a NEB investigation of TransCanada's practices, apparently not much changed at TransCanada. Just within the past few weeks, on March 25, 2015, Reuters reported in an exclusive story that the NEB was launching yet another investigation into TransCanada over its safety practices, these concerns having been flagged by yet another TransCanada employee. Reuters news service reported that:

> "Canada's energy regulator is investigating up to **a dozen new allegations** of natural gas pipeline **safety-code violations** at TransCanada Corp (TRP.TO), according to documents reviewed by Reuters. The regulator, the National Energy Board (NEB), and the company confirmed an investigation is under way but offered few details of the allegations. It marks the **second time in recent years the regulator has probed safety practices** at Canada's second largest pipeline company following complaints by a whistleblower." See **Exhibit 3**, p. 1 (emphasis added).

These allegations are serious, as they go to the heart of TransCanada's public statements about the safety of the proposed Pipeline and the ability, or for that matter, even the willingness of TransCanada to really do what it takes to build a pipeline that will not put the land and scarce water resources of South Dakota at risk.

The people of South Dakota and Commission should have the benefit of examining the evidence being uncovered by Canada's NEB in its investigation of TransCanada, because it directly implicates the safety and integrity of the proposed Pipeline, a subject that is squarely within the scope of the conditions to the Original Permit. The Commission owes it to the citizens of South Dakota to examine these issues in light of the risks posed by pipeline leaks and spills to the state's land and increasingly scarce water resources. Because it is unrealistic for the

Commission to examine all of the evidence various former TransCanada employees have provided or are currently providing to the NEB within the time frame set by the Commission for these proceedings, a stay of these proceedings is warranted until such time as the NEB completes its investigation into TransCanada's practices and makes the evidence uncovered from that investigation available for examination.

Conclusion

The Commission has the authority to stay these proceedings and should do so in light of two compelling reasons. First, it makes no sense for the Commission or the intervenors in this matter to expend the time and resources preparing for and conducting what will inevitably be a large-scale discovery fight, evidentiary hearing, and appeal to South Dakota's courts when we have no idea whether or not a Presidential Permit will even be granted. Under these circumstances, going forward with these proceedings would violate the key jurisprudential precept of judicial economy. Second, the existence of what is now a second NEB investigation into TransCanada's safety practices and an alleged corporate culture that values money over safety warrants staying these proceedings until such time as the parties and the Commission can examine evidence uncovered by the NEB's investigation.

Respectfully submitted,

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Exhibit 1, Testimony of Evan Vokes on Behalf of Dakota Rural Action.

Exhibit 2, Transcript of testimony before the Canadian Standing Senate Committee on Energy, the Environment and Natural Resources on June 6, 2013.

Exhibit 3, DeSouza, *Exclusive: Canada regulator probing TransCanada over safety allegations*, Reuters, March 25, 2015.

EXHIBIT 1

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

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

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.

EVAN VOKES

April 2, 2015
Date

EXHIBIT 2

Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources

Issue 47 - Evidence - June 6, 2013

OTTAWA, Thursday, June 6, 2013

The Standing Senate Committee on Energy, the Environment and Natural Resources met this day, at 8:06 a.m., to study the current state of the safety elements of the bulk transport of hydrocarbon products in Canada.

Senator Richard Neufeld (*Chair*) in the chair.

[*English*]

The Chair: Welcome to this meeting of the Standing Senate Committee on Energy, the Environment and Natural Resources. My name is Richard Neufeld, a senator from British Columbia and chair of this committee. I would like to welcome honourable senators, any members of the public with us in the room and viewers all across the country who are watching on television.

I would now ask senators around the table to introduce themselves, beginning with my deputy chair, Grant Mitchell from Alberta.

Senator MacDonald: Senator MacDonald, Nova Scotia.

[*Translation*]

Senator Ringuette: Pierrette Ringuette from New Brunswick.

Senator Massicotte: Paul Massicotte from Montreal.

[*English*]

Senator Seidman: Judith Seidman from Montreal, Quebec.

Senator Unger: Betty Unger, Alberta.

Senator Wallace: John Wallace, New Brunswick.

Senator Patterson: Dennis Patterson, Nunavut.

The Chair: Thank you. I would also like to introduce our staff: the clerk, Lynn Gordon, on my left, and our two Library of Parliament analysts, Sam Banks and Marc LeBlanc.

On November 28, 2012, our committee was authorized by the Senate to initiate a study on the safe transportation of hydrocarbons in Canada. The study will examine and compare domestic and international regulatory regimes, standards and best practices relating to the safe transportation of hydrocarbons by transmission pipelines, marine tanker vessels and railcars.

Our committee has held 14 meetings on this study to date. We have also travelled to Calgary; Sarnia; Hamilton; St. John, New Brunswick; Halifax; and Point Tupper, Nova Scotia.

Today, I am pleased to welcome, in the first segment of our meeting, Evan Vokes. Mr. Vokes, we have set aside about 20 minutes for your presentation, so that gives time for the senators to ask questions. Thank you for being here. I appreciate you spending your time, when you probably have a very busy schedule of your own, to come here and speak to us about your experiences.

Evan Vokes, as an individual: Thank you very much. I appreciate the opportunity to testify today on the safety of pipeline construction and operation in Canada.

I am trained as both a tradesman and a professional engineer, with a Master of Science in materials engineering. I worked at TransCanada for five years as an engineering specialist before I was dismissed without cause in 2012. I was one of the few core TransCanada employees directly involved in the technical acceptance of work on pipeline projects with values from thousands of dollars to billions of dollars, but all pipelines share the same technical challenges and quality requirements.

I found that TransCanada had a culture of non-compliance, deeply entrenched business practices that ignored legally required regulations and codes. What I have documented is a mix of politics and commercial interests that has resulted in the false public claims of exceptional industry practice.

As described in their book *We Are Here*, TransCanada details the so-called rightsizing of the corporation, which resulted in layoffs for engineering, audit and inspection staff as the outcome of a new business plan. This new business plan never reflected the regulations but was enshrined in the practice of engineering and supply chain operations as how business should be conducted, with the company desiring to take no accountability.

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I had indirectly worked for TransCanada before I became an employee in 2007, and so I experienced a change in perception, from the accepted public image to the reality of what the TransCanada business model was. At this time, the quality problems were known to management, with several quality failures in the United States and Canada.

My experiences reporting internally as an employee were marked by exposure to situations that were not in compliance with regulation. On the first project, with up to a 100 per cent repair rate, I identified a serious code violation and I was forced to retract that code violation. The second situation I identified is a commercial requirement for customer data confidentiality that was not being observed. It is that one there.

Intimidation and coercion were the TransCanada management tools I experienced in my first months at TransCanada, as the written communications were very different from the oral instructions. The first compliance changes I tried to make were for technical compliance as part of a quality improvement investigation in 2007. In 2008 I was being reassigned into non-destructive examination. I had identified serious welding problems to my managers. The proof of unsupported welding procedures was included in an official internal audit to improve quality at TransCanada. Lack of control of the inspection process was also identified as a central requirement. As an outcome of the internal report, I put forward a design basis memorandum to start the control of inspection, which management did not implement. That would be Exhibit D.

The second compliance phase of my efforts was changing behaviour from the top down through engineering standards. As I took on more responsibility for the non-destructive examination role, with the attendant increase in accountability, my mentor showed me a court order against TransCanada business practice for violating the regulations. That is the Westpath.

I started working at changing the engineering documentation by consensus, which resulted in a small victory but not full compliance. A significant functional problem was that projects still could not directly hire non-destructive examination, since the company lawyers had designated the task as supply chain management accountability. Initially no vendors were in place for compliance, but with peers at the functional level of supply chain management we implemented a new database with no official permission.

Incidents related to business strategies were getting more serious, with major engineering scandals within the Keystone and Bison projects that resulted in substandard materials being used in the Keystone project and a brand new pipeline that blew up in the United States.

The third compliance phase was to approach project managers to achieve voluntary compliance. The overall response from the project managers was silence as they carried on standard business practices instead of correcting their actions. Several classic examples of projects refusing to comply occurred in 2009, and these are Exhibits H and I.

When the National Energy Board finally stepped in on welding and pressure testing violations, they limited the scope to 12 non-compliant welding procedures and 7 non-compliant pieces of pipe on the Cutbank project. We found that there were actually 100 welding procedures that were signed off by a senior subject matter expert when they did not meet code. Welding is the core competency of a pipeline company, so these events created a crisis within engineering as senior management did not step in to stop the practices that were exposed.

After the failure of compelling the projects towards voluntary compliance, the fourth compliance step was approaching middle management. A direct confrontation with management by a project manager I influenced and direct action by myself finally seemed to be starting to put this to an end. That is Exhibit L.

I was astounded when the chief executive officer sent a letter outlining his disappointment with the Bison and Keystone projects, when I saw many projects struggle after circumventing quality control measures. Even our state-of- the-art industry pipeline system that won awards at the International Pipeline Conference was having serious quality control problems. The more I looked into the business practice, the more the regulation violations were exposed as the root cause and the worse the pressure was to stop my investigations.

The fifth compliance stage was to reply to the CEO to stop these practices, but what I got instead was serious pressure to step into unsound practice. In particular, a witch hunt for a pressure vessel inspection that did not meet the code and the quality manager of Keystone pipeline circumventing regulation were both extreme experiences. Those are Exhibits N and O.

Currently, there are some issues related to commercial risk decisions that will be coming forward out of the United States related to serious breaches of construction quality that reflect poorly on our export industry.

The sixth compliance stage was the internal audit. I was forced out of the building before I could finish submitting all the documentation. Rather, the TransCanada staff who broke the law were retained and contributed to the audit when I could not defend my points. I had fought a protracted battle with TransCanada management and lost, with the regulation and code violations appearing in the internal audit.

As the seventh compliance step, I contacted the regulator about a formal complaint. I was requested to get the written, formal complaint in as the message had gone right to the top and that my allegations were being taken seriously. This is Exhibit P. This complaint submission resulted in a short discussion on how the National Energy Board got what they wanted after consultation with TransCanada about the internal audit, even though the complaint outlined how the internal audit contained code and regulation violations.

This inaction for such a serious matter resulted in the eighth compliance step — taking my message to the media. Indeed, I believe the only reason for the enforcement letter on the National Energy Board website was as a result of media queries investigating my complaints.

The letter to Dan King at TransCanada was not reflective of the severity or the scope of what was in the complaint. No court orders were issued nor corrective action suggested on most of the important points in the complaint. Who is accountable? In a recent CBC pump stations story, the National Energy Board stated that they were not accountable.

In essence, my complaint suffered the same response that the National Energy Board provided to the Cutbank project, which document you have, where serious problems were incorrectly scoped and responded to via emails as opposed to publicly transparent investigative paths that were expressed to this committee previously. The National Energy Board Act outlines the expectations of the court orders and enforcement for offences as outlined under section 128.

The TransCanada testimony that my complaints were administrative is false, as the complaints were both substantive and the documentation proves TransCanada took significant public safety risks. This is evidence that the National Energy Board's voluntary compliance model has moved compliance backwards in the last 10 years.

Indeed, the complaint had little effect on the quality plan of the National Energy Board itself, as senior management of the National Energy Board has appeared in front of this committee telling stories of compliance. The reality from both my formal complaints and looking at various submissions on the National Energy Board website shows serious violations occur repeatedly and no follow-up action is taken.

The Enbridge Southern Lights pipeline, the Enbridge Line 14b and currently KXL in Texas are demonstrations of the breach of social responsibility the

public can expect in the future. These pipelines are examples of the lack of enforcement during construction, resulting in brand new pipelines that need integrity work either before or shortly after being placed in service.

Professionals practising engineering is not mandated under the National Energy Board Act or regulations, but it is professional engineers who have the knowledge, the duty of care and the will to drive forward technology and safe pipelines. Most engineered infrastructure such as pipelines remain in service long after the designers and those who have constructed them have retired. The risk to the public and other stakeholders is managed through the industry standard, the code, which is formally accepted by the regulator as a legal instrument.

I believe that the goal-oriented onshore pipeline regulations with their yes or no answers are the best possible safety measure for the public if the laws are enforced and a professional subject matter expert is accountable.

In conclusion, TransCanada PipeLines has a culture of non-compliance and deeply entrenched business practices that ignore the legally required regulation and codes. What I have documented from the pipeline industry is that the mix of politics and commercial interests has resulted in false public claims of exceptional industry practice when the reality is that industry struggles to comply with code and regulation, rather operating as a risk-based industry with no enforcement or accountability.

I call upon the committee to ensure inclusion of engineering accountability into the act. I call upon the National Energy Board to enforce the laws of Canada, and I will submit to the committee the CD of evidence.

The Chair: Thank you, Mr. Vokes, for that presentation. I appreciate it. We will begin with questioning. I will go to my deputy chair, Senator Mitchell.

Senator Mitchell: Thank you, Mr. Vokes. I would like to get more specific. I would like to go through a couple of your points and see if you can give me a specific example. You mentioned the first situation and the second situation. The first situation, I think you said early in your presentation, was serious code violations.

Mr. Vokes: Yes.

Senator Mitchell: Could you give me an example of a code violation?

Mr. Vokes: A regulation violation will do. The Kevin Widenmaier email — I believe it is Part G — is a classic one, where we talked about how we went and had fittings that never met code. Actually, not only did they not meet the code, they never met two regulations: the Onshore Pipeline Regulations paragraph 14 and the Onshore Pipeline Regulations paragraph 15. They never actually met the code of construction. There are 1,200 fittings on the Keystone pump station, some of which do not meet the strength requirement of the engineering design.

Senator Mitchell: You said 1,200 on the Keystone?

Mr. Vokes: Yes, 1,200 fittings.

Senator Mitchell: How do you know they do not meet that?

Mr. Vokes: When they were doing hydro testing in the United States, the coding cracked off one of the elbows and it is very obvious. Another classic example of that is when I was at Fort McMurray at the beginning of my career at TransCanada. Some days we were having repair rates of up to 100 per cent when I was learning the business. I went and started tracking the automatic ultrasonic testing, and I could see it was actually one welder in particular that was causing the problem. We looked at the problem. We pulled back the cover and the welder was actually welding on one side of the bevel. That was very serious because there are thousands of welds in the ground and it is hard to go back and dig them all up. Of course, the natural thing to do is to make sure a person retracts that sort of statement.

Senator Mitchell: When you talked also in your presentation about substandard materials, would that also be referencing these —

Mr. Vokes: The fittings from Keystone, yes. That was not the first time. We had big problems with lack of inspection with DL Flange. That should have been the wake-up message with TransCanada. Then we went on to having exactly the same problems on one of the alternative integrity validation pipelines, with fittings from Ezeflow Inc. That also had exactly the same metallurgical problems that we would subsequently see with the Canadoil fittings.

Senator Lang: I would like to ask a general question, and it has to do with your having your engineering degree. Obviously there are other engineers involved in the company and in other companies with respect to having the duties that you had. Is there a concern by your organization, on behalf of those who have engineering degrees, that this type of practice is going on within the pipeline industry? I am asking this question because I noticed in one of the emails on June 27, 2011, that you state: "I would not stake my PEng on this regardless of how few welds there are." In other words, you were talking about your professional integrity and credentials.

Are there other concerns by other engineers? Do they have to sign off on these particular projects?

Mr. Vokes: That is very correct. Even though I cannot prove it, I was told some things very directly about how things would happen if I carried on the way I would.

Senator Lang: You did not answer my question. My question had to do with other engineers in the business that you are in. Do they share the same concern you have? Their professional credibility is in question if this is true, because they have to sign off, similar to you.

Mr. Vokes: If you look at the email from Chris Penniston in your package, you will see I went and addressed a responsible engineer that his approach to welding procedures was technically wrong and he wrote back and told us that we would do it anyway. My young peer Chris Penniston told him that we were not doing it that way, that he could do it himself.

Yes, other people are concerned. There are a lot of people. I had large support within TransCanada. I did not have support at the management level; I certainly had support at the functional level. The CD will show there are quite a few people who supported me.

Senator Lang: This has to do with your testimony in April before the three-member panel of the U.S. State Department regarding the application for the Keystone XL project. You stated that TransCanada had used the wrong standard for station welding for years in the U.S. and the company had a poor safety culture.

First, could you tell me what has taken place since — that is, has anyone verified your testimony to that panel, from what you said? Second, what steps on the U.S. side are they taking with respect to seeing whether that is true or not?

Mr. Vokes: I have not heard back from PHMSA lately, but the last time I talked to my contact in the United States, the initial complaint to PHMSA was

with a lawyer in the United States trying to figure out what they will do to have TransCanada do a remediation effort for welds that are accepted with too long flaw lengths.

Senator MacDonald: Thank you, Mr. Vokes. I want to give you credit for coming forward. It is not easy to be a whistle-blower. Everyone wants to marginalize you and cast out your motivations.

You mentioned that over the past five years you have been steeped in the culture of what is the minimum we must do to meet the regulation and code. I would suggest that when it comes to private industry, when we are dealing with safety regulations, private companies are always motivated by profit —

Mr. Vokes: I would concur.

Senator MacDonald: — and finding return to their investors. I think there is always the danger that companies will try to meet the minimum requirements. That is why we have to make sure the minimum requirements are substantial enough to make a difference.

I want to speak to you directly about the pipeline system. As you know, there is a big discussion going on about reversing the east to west pipeline and bringing bitumen west to east. It is important for this country to get bitumen to market. I also think it is important to do it safely. With the present pipeline that is there, which they are looking at right now, what is the relative age of that pipeline in terms of different sections? Do you think that pipeline can be safely converted to carry bitumen to the East Coast of Canada?

Mr. Vokes: The first thing is I do not actually know the relative age of the pipeline. I do know the relative types of construction techniques used for that pipeline. In-line inspection without close oversight can be a risk. We saw that on Enbridge's Norman Wells pipeline. They had run in-line inspection on that line for many years before the massive slow leak was discovered. The important thing is that nowhere in the code of regulation does it talk about what you have to set to the recording threshold at for the in-line inspection. In the east to west pipeline, every one of those welds was probably going to be a shielded metal arc weld that has a little piece of the weld sticking through it called the internal reinforcement. That sticks into the pipe. Any defects can hide underneath that reinforcement and are difficult to detect with in-line inspection, as Enbridge demonstrated on the Norman Wells pipeline. It can be done safely if you pay close attention to the detail. The question is this: They are in control of it; they really want to get their line into service. "Trust me" is not much of a strategy for making sure that the in-line inspection is actually valid.

Senator MacDonald: One more question. Do you think the argument is there that if we want to take bitumen to market across the country — a big country, a long run — the safest approach would be to build a brand new pipeline specifically for bitumen?

Mr. Vokes: I believe that is absolutely the safest way to do it. Regarding conversion of Line 1 for TransCanada, that pipeline has known hard spots on it and we cannot find it with in-line inspection. You will notice that the majority of the ruptures recorded on the National Transportation Safety Board's website have to do with Line 1 and Line 2 of TransCanada. Those are about the last pipelines on earth that I think should be converted to carry bitumen. I do not have a problem with what is in the pipeline. I have a problem if it comes outside the pipeline.

Senator Unger: Thank you, Mr. Vokes, for your presentation.

I just have some general questions.

At the beginning of your presentation, you make the statement that while you are not faultless, you have led a sustained attempt. Why would you make that comment?

Mr. Vokes: As I learned about what we were doing, I made mistakes along the way. It is unfortunate because under the engineering act, — the code of ethics — an engineer is required to know the codes and regulations they work under. I was never properly introduced to the codes and regulations. Part of what I did at the beginning was to follow the lead of others, and, in the past, I have actually given advice based on the way we did business, rather than on what the code actually said.

In the end, I was not faultless. I told you about the very first project, when I retracted my statements on the welding quality. Even though I was an engineer in training at that point in time, I should never have retracted those statements because what I saw was real. They were really not following the welding procedure. We knew they were not following the welding procedure because they had the 100 per cent repair rate. Those sorts of situations are areas where, due to pressure, I stopped and did not follow through.

Senator Unger: You are a member of APEGA. Does the organization agree with you? Where do you stand in regard to your relationship with your engineering association?

Mr. Vokes: I was talking to a board member recently who said that, based on what I have done, they have changed their approach.

My complaint to APEGA was suspended because they needed it to be a clearer approach. It has taken me almost a year. I almost have it ready for resubmission. This is very difficult — you have to understand — because I am actually naming people who have done some very nasty things, and it is nothing to be taken lightly. Unfortunately, APEGA has spent a long time, for lack of a better description, looking at people building sheds in backyards, when the reality is that there are some very serious engineering travesties going on in industry. A classic example is what happened at Deer Creek Energy in Fort McMurray. Somebody should have stepped in and properly dealt with that problem. To have a company operating outside of its permitted procedures and blowing a hole that large in the ground and then to have my professional organization not step up to the plate on something that severe is a little hard to watch.

Senator Unger: You are basically taking on your professional organization.

Mr. Vokes: I do not know if it is that. It is just that they have never actually dealt with anything quite this large before, and that is what the problem is. There certainly have been challenges with the professional organization. It is not that anybody there thinks what I am doing is wrong. It is just that it is difficult to deal with.

Senator Unger: We have been told that the pipelines have a safety record of 99.9 per cent. You paint a very bleak picture of the pipeline industry in Canada and probably, by extension, into the United States.

How do you rationalize these two very diverse points of view?

Mr. Vokes: It is amazing. It is like a large act of providence. I have been on several projects that were very nearly disastrous. Under the category of things that are very nearly disasters, I am surprised that there actually are not more accidents. At the end of my career at TransCanada, with the self-inspected welders, when I was told what they were doing, the exact same practices that we were doing in 2011, we were doing in the 1970s, and it resulted in a pipeline rupture in 1992. The problem is that, with pipelines, it waits a long time. Many times with the pipelines, it has to be disturbed before anything will happen. There has to be ground movement or something like that. There are thousands of cracks in the system; it is just which

ones will become the problem. It is low probability and high consequence.

Senator Unger: You used the term "very nearly disastrous." How would you know that?

Mr. Vokes: If you had an 80 per cent through-wall crack in a very large pressure vessel and you only found it because the inspector went out and had a look, that is very nearly disastrous for a plant that does not have a fire suppression system.

Senator Massicotte: Thank you, Mr. Vokes, for being with us. I also compliment you for coming and speaking out on your concerns.

Senator Unger was basically on the same track. We hear you. I have to admit it is very detailed, probably beyond our scope to follow your reasoning, but we know you are sincere. Yet, we look at the history of incidents and accidents for TransCanada, and there is nothing alarming there.

How can we respond to you? How about NEB? Have they done something about your comments? They are probably better positioned to analyze, in detail, your argument. What is happening there?

Mr. Vokes: I believe the NEB can answer for themselves what they have done. I really cannot say what they have done because I have not seen much that they have done. I can respond to what you were saying about the near accidents.

There was a rupture at Beardmore, Ontario, in January 2011. Since all of you live in Ontario, it is good to know that you just about ran out of gas. The reason we ran out of gas is that, years previously, we had taken money out of the integrity budget. My peers in integrity could not get money back into the budget until we had a rupture at Englehart, Ontario, that burned the siding off of a house. We started putting money back into the integrity program. Then we had the rupture at Beardmore, Ontario, and did not have anything in place to put the lines back into service, and you were running out of gas. We were importing gas from the United States at that point in time. People have no idea how close they come. It does not have to be reported.

Senator Massicotte: How do you explain your superiors' behaviour? No one purposely makes mistakes. No one purposely becomes irresponsible. You allege that, since the merger of TransCanada, the culture of safety is not there. How do you explain that? Are they just a bunch of incompetents?

Mr. Vokes: In the emails that you possess in front of you right now, I probably would not call what Mr. Lazor did incompetent. I would probably find another definition. What he was doing, in that particular condition, was certainly not following anything to do with the code and —

Senator Massicotte: That is one individual. You are talking about corporate culture and about a dominant problem at TransCanada. How come no one is responding to your comments?

Mr. Vokes: I cannot comment on what TransCanada's actions are. I know there was one executive who did seem to take what I said seriously, but other than that, there are many other executives who behaved differently, in particular, when I brought up section 54. Even though I was right, the personal attacks were uncalled for.

How did they respond? I do not know, personally, how people respond. I just wanted to have code compliance because, at the end of the day, I was the accountable person. They were not the accountable people.

Senator Massicotte: When you look at TransCanada and compare them to the other pipeline companies, from what we see, the history of incidents or consequences compares quite well. Is that to suggest that this lack of corporate security or safety within the culture of TransCanada is the same everywhere else?

Mr. Vokes: A very classic example is the Enbridge Southern Lights Pipeline. That pipeline suffered material problems during the manufacture, and then it suffered construction quality problems during construction.

They built a twin to this line, called 14B, in Wisconsin, and it had construction problems.

Senator Massicotte: You are saying that this is an endemic problem, not only at TransCanada. The whole industry is not following code and being unprofessional. All of them.

Mr. Vokes: They are taking risks.

Senator Massicotte: All of them?

Mr. Vokes: They are taking risks because they know that the probability is low. When the probability is low, you keep hoping that you can extend it farther.

Senator Massicotte: To summarize, do you think all pipeline companies are being reckless with safety and are all the same?

Mr. Vokes: On the National Energy Board site, with its unresolved issues and summarizing offences by the various energy pipeline companies, I think it is very clear.

Senator Wallace: Thank you, Mr. Vokes.

When I listened to what you have had to say, you obviously have great passion and I have no doubt whatsoever your motivation in bringing this forward is for the good of all. When I do listen to you, and some of my colleagues have touched upon this, you seem to have very serious concerns with the competency of TransCanada, other pipeline companies, the National Energy Board, the engineering professional association, and I am wondering in that list if you have similar concerns about provincial regulatory bodies that are also involved in these matters. Do you have concerns about their competency as well?

Mr. Vokes: I will not address that at this meeting because I never dealt that much with provincial regulation.

Senator Wallace: To put it mildly, that is a very broad, sweeping indictment from top to bottom of all regulatory and industry participants in pipeline transportation. However, that is your opinion.

Whether it is engineers, lawyers, accountants, there are varying opinions on just about everything out there. Did you encounter any other professional engineers who would have opinions contrary to yours on these issues you have raised? We understand you believe very strongly in what you have to say, but have contrary opinions been put forward by other qualified professional engineers?

Mr. Vokes: The TransCanada internal audit contained contrary opinions.

Senator Wallace: I am asking whether independent engineering firms have voiced opinion on what your conclusions have been.

Mr. Vokes: Part of the reason for going down this path was some of the comments that came back from external engineering companies where they knew that some of what we are doing was not right and they were the ones who pointed it out; for example, section 17, not inspecting all the wells. One of the points came from an engineer from Cimarron Engineering who said what we were doing in our specifications did not meet the regulations.

Senator Wallace: I understand the NEB found some of the allegations you made were verified by TransCanada's internal audit process. I understand that.

Mr. Vokes: That is correct, some of them were.

Senator Wallace: I have listened to the serious allegations you make, but are we to accept that at face value? I am asking if any other contrary opinions have been expressed by other professional engineering associations. I am not going to get into weighing who is right and who is wrong, but have you encountered that as you have brought forward these issues? Have other professional engineers voiced opinions that would differ from your own on these very serious matters?

Mr. Vokes: Yes, certainly; the responsible engineer I worked with at TransCanada was very adamant about voicing a different opinion.

Senator Wallace: Was he on employee of TransCanada?

Mr. Vokes: Yes, he was an employee of TransCanada.

Senator Wallace: What about engineering firms that would not be employees of TransCanada but would be independent engineering firms? Have any of those voiced opinions contrary to your own on these matters?

Mr. Vokes: I have never contacted any of them.

Senator Wallace: Has no other engineering firm voiced an opinion that you have heard?

Mr. Vokes: I have never engaged in a conversation on that.

Senator Wallace: Did you hear of any comment they might have made?

Mr. Vokes: I talked to Group 10 Engineering before they did their assessment of the ERCB and I showed them the GC113 TransCanada audit. We went through that and I showed him where that audit did not meet the regulations, but we did not have a discussion on whether it was legitimate or not. I know that is not exactly what you asked. That is a conversation I did undertake though.

Senator Wallace: The internal audit process that TransCanada conducted in July of 2012 did confirm some of the allegations that you made. Did TransCanada have a regular internal audit process dealing with these matters of safety? Would it be done annually, periodically or was the July 2012 internal audit by TransCanada an anomaly?

Mr. Vokes: That is interesting because the last time I actually heard where they did an in-depth investigation within TransCanada was in 2007 where they brought a man by the name of Stan Gaillard to look at quality improvement after a series of failures. I and several of my peers contributed to that audit and identified that there were some areas of serious shortcomings. That is the last real technical audit we had.

We had external audits, such as the GC113 audit performed by PricewaterhouseCoopers. When you go through the GC113 audit, it is short of technical substance certainly in the areas that I would have expected. For instance, it never directly addressed section 53, which says you shall audit, and we had no real audit program in place at all in TransCanada, and it never addressed section 54 on independence of inspection.

There were many shortcomings, yet we have this audit report. Everyone says we have been audited, but when you read the audit report, where is the conformity to the code? The reality was different from the audit.

Senator Ringuette: Mr. Vokes, I commend your courage. You must feel like David against Goliath. I have to admit, I am very disturbed by your testimony this morning. I am very familiar with the code of ethics within the engineering profession and it is commendable.

My big concern right now is the National Energy Board. Canadians put their trust in the National Energy Board being the body that will make certain that the system is optimal and secure. I am assuming that your complaint has been sent to the National Energy Board.

Are we in a bubble in which, for the sake of the oil industry, our eyes are closed, our ears are closed and we — I say "we" as a country — just want to push ahead and never mind the future result?

Could you explain the relationship of your complaint with the National Energy Board's response and the industry? We need to be concerned if the system to protect Canadians is not right.

Mr. Vokes: The most important thing the National Energy Board did is put the inclusion of whistle-blower protection in the regulations recently. That is a very important thing.

The second thing that is missing is this: What is the point of putting in a complaint if there is no change? That is the really important point. The regulations are brilliant as far as I am concerned. The lineup between the onshore pipeline regulations and the code is incredible if you understand it. I operated in a condition where we were following the corporate practice and that is what we did. In the emails that you have, you have people talking about the corporate practice, and the corporate practice was not what was in the code.

The question is even if it is low risk, should I embrace my corporate practice when the regulations say not to do that? That is clearly an ethical breach. They say it is low risk. I do not care if it is low risk. The point is that it is not in the code; it is not in the regulation. How much of a danger is it? A lot of it does not pose much of a danger at all, but a couple of things were pointed out in the National Energy Board complaints that were very high risk. I mentioned the self-inspected company welders. What they were doing was high risk, especially from the stories I got back from them. On that subject, there is definitely cause for public concern there.

There is the TransCanada pig launchers' story. We could not see the welds for the scraper bars when our contractor was hiring his own inspection, and no one said a word about that for 10 years. I might have a problem standing by a TransCanada pig launcher nowadays, but I think that there are many people who intend to do the process correctly, and that is the only thing that saves us. Regardless of my poor experiences with some individuals, there are still a lot of people who would like to do it right.

The Chair: Senator Ringuette, I still have others. The question lasted quite long, as did the answer.

Senator Seidman: Most of my questions have been asked already. I must say that I am sitting here with enormous respect for you and for the courage that it has taken to come forward.

I am thinking about all the testimony that we have had here from pipeline companies saying that safety is their number one priority. They have described to us many aspects of this — their plans, their responses, their oversight, their quality control and all these things. I suppose there are many adjectives to describe my feelings about your testimony here, such as confused, disappointed and worried about Canadians' safety as we look at building an increasingly larger infrastructure across the country.

Being futuristic, and thinking about what we can do — this is not a good story; there is no question about that — however, we do have the NEB and we do have a regulatory framework, and they do have oversight capabilities. What I would like to know from you is, based on your experiences, what would you recommend in terms of further regulatory steps that the NEB can take to ensure some kind of better oversight?

Mr. Vokes: The first and most important thing is the key to making sure that the regulations and codes are carried out, which is inspectors. The United States is good with the concept of the OQ qualified operators. I do like that concept, where people are formally trained and accountable and allowed to stop the work regardless of how much of a schedule disaster it is.

If I have a safety violation where a person may become hurt, the National Energy Board regulations allow me to stop the work. If I have code violations, everyone says, "Don't worry. Get it done. Deal with it later." That is the wrong attitude. We see a lot of that.

If you go back through the cases on the National Energy Board website and how they are dealt with, and if you ask questions like did they follow the regulation, did they follow the code, the answer is overwhelmingly no. That is why they have problems. Did they get it done? Yes. Can they keep it in service? Yes.

The projects are broken down into three parts: cost, schedule and quality. If you do not take care of the quality you will get either cost or schedule. That is pretty much the way it is. I have seen some well-done projects and project managers who go through the effort to ensure they follow the regulations as best they can, and I have seen others who are trying to do the minimum code and underachieve.

The second thing is the concept of engineering. That concept is important because in the front of every code is a forward that says following the code might not necessarily be the best thing to do because you can still make mistakes. We have a lot of people who make decisions based on commercial points that are not necessarily in the best interests of the long-term viability of the pipeline. For instance, all of our in-service welding was qualified on low-strength materials, but the pipeline materials are high-strength low alloys. Welding on high-strength alloys is more risky than welding on carbon steel. For years we have all these in-service welding procedures that were qualified on this group over here and we are using them over there. It is legal under the code, but it makes no engineering sense at all, if it was a risk. You can fix it with money; you can fix it with time; but you have to have the desire to go forward and actually implement some of these things.

One of the things I was doing at TransCanada that was good for pipeline safety — and, in the end I was getting good project managers who were allowing me to use it — is using automated ultrasonic testing on pipelines where we normally would use radiography. Radiography has poor detection of the most serious pipeline defect cracks, whereas automated ultrasonic testing allows us to find all the cracks. Even though it did not seem economical at the beginning, we moved over to this technology and we did well. We did not do well financially, but we did well on actually improving the quality and the safety of the pipeline.

Senator Patterson: Many of my questions have been answered. I would like to thank you for your evidence.

Could you outline your educational background leading to your qualifications as a professional engineer, please?

Mr. Vokes: Sure. I was terrible at high school. I am serious; 63 overall, in math, 33. I loved working with metal, so I worked in machine shops and pulled lots of wrenches. I am a very practical sort of guy. I was a very good welder when I was young but did not want to do welding for a living, so I became a machinist. I was part way through my machining career and I decided to take up the trades of millwright and journeyman. Unfortunately, a shoulder injury precluded me from carrying on. Back in the days when I could hardly pick up a cup of coffee, they challenged me and said they wanted to buy some technology but I would have to be an engineer. So I signed up for engineering school and in one year I did all my high school upgrading and went to engineering school. I did a research project while I was there on the same pipeline. I was coming out of Red Deer one day while I was going to school and I saw a big hammerhead in the sky. It was a pipeline that blew up out by Nordegg, Ram River. I did the research work on that on the stress and cracking because I knew a lot about machining. We did a novel paper at that point in time. He then made me an offer I should have refused, and I did a master's degree with him. I did a lot. I worked in a lot of labs. I do not have children so I have been passionate about my work.

Senator Patterson: Thank you very much for your candour. I would not want to talk about my high school math marks in public.

To elaborate further, you were a welder and a machinist. Did you get a journeyman licence?

Mr. Vokes: Yes. I am a journeyman machinist. I did not get my journeyman as a millwright. Because I did welding in a machine shop, we were not allowed to have defects in our welds.

Senator Patterson: Which province was that in?

Mr. Vokes: That was in Alberta. I am interprovincial: I am a red seal.

Senator Patterson: Which school of engineering did you go to?

Mr. Vokes: I did both my degrees at the University of Alberta.

Senator Patterson: I am a U of A graduate as well.

Senator McCoy: Thank you for the integrity of your spirit and your courage going forward.

As a point of clarification, I thought I heard you say Cimarron Engineering. You made a comment earlier about them. They are a third-party, independent engineering firm?

Mr. Vokes: That is correct.

Senator McCoy: Could you repeat what you said about them?

Mr. Vokes: There was an error in our specifications, and a young engineer at Cimarron Engineering had enough fortitude to stand up and tell the project manager there was an error. We looked at the specification and indeed we had an error. I did the research on it, and we had an error.

Senator McCoy: What I am hearing, then, is there are third-party, independent engineers who share your opinion.

Mr. Vokes: There certainly are. There was actually another one. There was the problem with the engineering specification in the United States, which actually was caught by a non-destructive examination contractor, because he read the specification and said there is a problem with it. He brought it back to us, and indeed we had that same problem for three years and used that same specification for those three years.

The Chair: We have run out of time. There were some second-round questions that we will have to bypass. I just want to take the opportunity to ask a couple of questions, if I could, Mr. Vokes.

You spoke earlier about fittings and valves that were substandard, I believe — I am saying this in my words, not yours — that were used in the U.S.

Mr. Vokes: That is correct.

The Chair: Would you please explain to me, is the U.S. also very lax in how they do pipelines? We kind of get that drift — at least I do — from your presentation, that Canada is. What you are saying is that the U.S. is just as bad. Have any engineering firms or associations in the U.S., similar to Senator Wallace's question, stood up and said, "Yes, we agree with you, Mr. Vokes; it is terrible in the U.S. also"? Can you verify that? Can you tell me whether that happened or not?

Mr. Vokes: Surprisingly, if you say it is terrible you do not work in the industry anymore. I think they have made that fairly clear. Certainly fighting back does not work very well.

I will tell you how terrible it was. We hired UniversalPegasus to oversee inspection of the Bison Pipeline. I was not involved in this but just saw the outcome of it. They fired UniversalPegasus partway through building a pipeline from the inspection tasks. Currently, in the United States, TransCanada is building the KXL and everyone has heard about the 57 special conditions. However, what we have is a brand new pipeline that has dents and is being cut out. Dents are hard to put in a pipeline. You have to leave something in the ditch. The code is clear about not leaving things in the ditch. The 57 special conditions require that you run a quality control program so you would take the rocks out of the ditch, yet we have dents in a brand new pipeline.

The Chair: I am asking you if an engineering association in the U.S. has agreed with your submission that the U.S. is not doing it properly, nor is Canada. Is there an association? I understand about dents in pipelines. I have been around the oil and gas industry for a good part of my life.

Mr. Vokes: Absolutely. PHMSA has a record of Kenneth Lee's public presentation about how not to build a pipeline. He has a serious collection of pictures and events, including one of TransCanada's pictures, in his presentation about things that should not be done to build a pipeline.

The Chair: There is an engineering association in the U.S. that backs up what you are saying?

Mr. Vokes: There certainly is a regulatory association.

The Chair: Regulatory, but not an engineering association?

Mr. Vokes: Engineering has very little.

Senator Massicotte: I would like to qualify your question.

The Chair: Yes, quickly.

Senator Massicotte: How about the pigs? They do this a couple of times a year. Would they not come up with the same conclusion?

Mr. Vokes: As I was saying earlier when asked about the east-to-west pipeline, the pigs are amazingly accurate sometimes. The owner company actually gets to determine what the recording threshold is. Understanding that you cannot see under the weld reinforcement very well, at every girth weld there is weld reinforcement that comes through. We do not have perfect probability of detection. We are very good at detecting external corrosion on the outside of the pipeline. That is the highlight of what the in-line inspection is good at. I am not the expert on in-line inspection, but I do know some of the things it does. It can find some long-seam defects. It is good at finding external corrosion. It is not very good at finding defects in girth welds. Those need to be found when you construct a pipe.

Senator Massicotte: In your opening statement you said that the person operating that determines the degree of measurement they want. Are you suggesting that they purposely put those criteria reasonably high so they do not detect serious deficiencies?

Mr. Vokes: I would suggest that people should ask how the same pipeline is pigged multiple times without finding the defect that later leads to a long-term leak that was occurring all along.

The Chair: Thank you, Mr. Vokes, for taking time out of your busy schedule. We appreciate your testimony.

Welcome to the second half of our meeting of the Standing Senate Committee on Energy, the Environment and Natural Resources. We are continuing our study on the safe transportation of hydrocarbons in Canada. I am pleased to welcome, from Wave Point Consulting Limited, Darryl Anderson, Managing Director.

Mr. Anderson, welcome. Thank you for taking time out of your busy schedule to come and present your remarks. I look forward to them. We will have a brief period for you to make remarks and then we will go to questions.

Darryl Anderson, Managing Director, Wave Point Consulting Limited: To the chair and members of the Standing Senate Committee on Energy, the Environment and Natural Resources, I consider it a privilege and a pleasure to be here to discuss with you the maritime transportation of hydrocarbons. I speak to you this morning as an individual who came of age, academically and professionally, during perhaps the last great influential period where Canadian parliamentarians examined some of the issues that are before us today. I am referring to what is known as the Brander- Smith report. I think most people in the room have read it.

I had the privilege of graduating from university in 1989, and I truly say that I am a child of my times. I have also been fortunate enough to have watched the changes in energy development, technology and transportation that have occurred since that point.

In the slides and the presentation I have given you, I have tried to just highlight some of the many international regulations that are currently in place to govern tankers. This material draws on the insights of my colleagues, K. Joseph Spears, a maritime lawyer, and a former mentor of mine from

Australian Maritime College and a tanker captain, Dr. Devinder Grewal. Some of you may have read some of the information that my colleagues and I have published.

In completing my opening remarks, I wish to stress that I will be responding to your questions based on my personal experience of living on Canada's West Coast for the last 49 years, and including a variety of occupations along the way. I did spend some years in Alberta Energy, working on international trade and energy issues, so I know something of the complexity of the task ahead of you. Perhaps most important regarding answering your questions, I will do so as an individual who is blessed with the opportunity to study maritime transportation policy issues from a Canadian and international perspective.

Suffice it to say that the ideas in the presentation may help establish Canada as an undisputed leader in the safe transportation of hydrocarbons. Thus, I have already revealed my bias by telling you that I believe we can be leaders in the world in terms of ocean governance and safe and sustainable shipping, and this must be the cornerstone of a robust Canadian energy and environmental strategy.

I would also like to preface our dialogue by saying that Canada's changing energy trade prospects present a great opportunity and tremendous responsibility.

Before coming here this morning, I had an opportunity to review many of the speakers' remarks. I must say how we respond to environmental issues in the transport of hydrocarbons will take a combination of applying the best practices from both the domestic and the international realms, and I dare say it will require a collaborative approach, which I believe is a Canadian trait when it comes to problem solving.

I look forward to receiving your questions. I would just like to guide you through some basic structure of the presentation, and then we can immediately go into question and answer.

You have seen my introduction. We provided a framework. "We" is my colleague Joe Spears and I, and we have been working on maritime policy issues for many years. I am a graduate of Australian Maritime College, so I have gotten to know Dr. Devinder Grewal quite well over the years. Missing from a good portion of the debate and literature is the question of whether there is a framework for analyzing these complex problems. We hear no shortage of advocacy groups wanting A, B, C, D — and the list probably goes longer than the alphabet that I am familiar with — but we wanted to step back and ask, "Is there a framework?"

I must confess that in our framework we talk about prevention, response, mitigation and restoration. However, most of the work I do is in the first three stages; I am not an expert on oil spills in the environment and restoring that. We recognize that it is an important issue. The work we have presented today is really focused on the front three stages.

In that, we must also recognize that we have heard the expression "world-class standards" and other frames to describe a target people are aiming for, but I think it is important to note there is not one universal approach. When you review the literature — and I compiled on the plane yesterday around a hundred different research sources that are legitimate on this topic, minimum — what we find is that there is very little written in cross-jurisdictional comparisons.

However, I have included some papers at the back that I think are some of the outstanding pieces of work. Marlene Calderón Veiga from Portugal is probably the world's leading researcher. I will tell you the reason she became such an expert. She is from Portugal, and you might remember that, a few years ago, there were a couple of incidents off Portugal where they had oil spills. She was doing her master's degree in maritime transportation. I think it is funny how someone in Portugal was also a child of her times in doing an oil spill — and I look back on the West Coast, and we often find that our professional interests are rooted in that personal experience.

There are some characteristics that emerge from both her research and our research, and I would like to summarize them here for you today.

When it comes to oil spill preparedness and response, there have to be cascading and complementary layers of federal and state policy regulation and operational response. There is no one country in the world that tries to do it all. Second, the way they play out in the kind of resources you need — and we can get into it in more detail — but when I talk about a complementary approach, those regimes that are more robust have those cascading and clearly defined roles. You also need active roles and networks of expertise, and that includes both at the federal level and scientific information.

The key thing to remember is that we need regular reviews to recognize and update capability. While all of us have read the Brander-Smith report, do I dare ask whether anyone in the room had read the Brander-Smith report five years before this time, when we were talking about energy exports, or was I one of the few nerdy kids in high school who actually read it at the time? It is good work because it inspires, but that is a bit of a gap between readings. I have to share my copy now because they are hard to find; it is getting more popular.

It is also clear that for the more robust regimes, prevention is better than responding. Everyone agrees. However, when you do need to respond, it has to be quick, practised, measured and effective.

Finally, do not underestimate the need for a robust and well-informed regulatory system. It is crucial for enforcement.

You will notice that I used the term "robust." Quite often people ask me what standard is better. We could go to the American standard — and I immediately joined our pipeline date here. We are talking about minimum standards. The European approach is for prescribed outcomes. I think we have to bring clarity to what we want in Canada. However, regardless of that, you need a well-informed regulatory system.

Finally, I would like to make brief comments on the use of tanker exclusion zones. When we look at regulatory regimes around the world, the use of large areas to exclude tankers over large areas is generally not found. There are provisions for specific areas to exclude tankers and enhance their environmental practice.

Those are some high-level summary data. The rest of the presentation is essentially information to say, "Darryl and company, how did you get there?" I turn it over to you and your colleagues for questions.

Senator Mitchell: I hope this is within your area of expertise; from listening to you, it probably is. Given the West Coast, which is certainly in the spotlight right now for marine transportation, is a huge expanse, if you had a spill in some isolated area along the coast, how would you ever anticipate centres close enough to get there quickly enough?

Mr. Anderson: That is the real challenge. I think on slide 14 I talk about how much tanker traffic there is and what it might mean. That is the real challenge in the West Coast. I have a background in transportation logistics. When we did the literature search, I thought I could find a logistic model on how to deploy resources, and there is not one. I will tell you how countries address it. There is no question that if you go on the south coast — and I live in Victoria and I can watch the ships — we are well covered there. Twenty minutes outside of Victoria, you are in the middle of nowhere. I know, because there is no cellphone coverage.

When I started my career I had the pleasure of working with the Fisheries and Oceans Small Craft Harbours, so I have been to almost every small-craft harbour on the coast. However, there used to be a coastal tug-and-barge and logging industry, and the whole works. I remember one year, when the forest industry collapsed, and they did not bring those tugs and barges. That was the winter we talked about regular garbage in remote communities: The winter of my discontent.

It is clear one of the things we identified is that you will need different resources on the north coast.

One thing that is fundamental to understand is that we have had tankers in Canadian waters for a long time. The tankers from Valdez, Alaska, regularly travelled through Canadian waters. What is fundamentally different about the proposals for oil tankers in LNG is that we are now shifting that activity away from what is essentially our territorial scene — our exclusive economic zone — and shifting it into our coastal waters, our internal seas.

One of the things that few people do not recognize is that the Oceans Act has an obligation for the precautionary principle. We can argue whether you can, and how far you should, extend that precautionary principle right through to our exclusive economic zone. My colleague and I have looked at that with some legal scholars. In our exclusive economic zone is the thin edge of the wedge of how aggressively you can apply the principle. Where our ports are located — Kitimat, Prince Rupert, Vancouver — is the heart of internal seas. We have not really come up with how to address that precautionary principle. There has been no real systematic study of the resources you need. You clearly need aircraft, and you clearly need the other kind of resources for quick response.

The silent recommendation from the Brander-Smith inquiry is whether there is enough shipping traffic on the north coast of British Columbia to warrant an emergency tug assistance standby that is dedicated. If we go to Washington State, there is one in Neah Bay, Washington State, that is now funded by industry but started by government. In Australia — the Great Barrier Reef — they have a cascading system and put a higher level of protection on the Great Barrier Reef, and they have standby emergency tug assistance, not only for tankers but also for all vessels. There are standby emergency tugs in European countries as well. We could go on with quite a list of resources, but, if we read the newspaper a couple of days ago, the Canadian Coast Guard was in such a state that their existing inventory was 25 years out of date. I think they read this report. They have not done a great job of keeping up. I really suggest that they are not ahead of the curve at this point. I am not saying they are behind, but it does require some level of effort to get there. I am the kind of guy who worries that you could actually physically build a pipeline in a shorter time than it would take our institutions to be ready.

Senator Mitchell: How could you characterize the risks of tanker traffic in and out of Vancouver's harbour? Let us say Kinder Morgan becomes successful.

Mr. Anderson: We have not had an incident in Canada for a very long time, so it is very low. On page 10, I have a chart of the types of incidents. These are worldwide. One of the things that have happened, due to all of the international rules, is that the number of tanker incidents worldwide has gone down really low. We do know from worldwide experience that, at a place like Kinder Morgan, in Vancouver Harbour, if you were to have a tanker incident, it would be more likely to occur during loading, unloading and discharging — small, spill-related issues. That is kind of what our current regulatory environment contemplates. Very small spills, which are fuel, occur when tankers get bunkered. There are other operations. You will notice that, in the column here, we have "unknown." Unknown is not really unknown. Let us do the math on the supply chain. I am either at the port, at the terminal or bunking. I am either in confined waters or on the seas. The category of "other" is really responding to seas. What I see missing from the risk assessments, whether it is Kinder Morgan or anyone else — and I have done a little bit of work with Fairplay and it can be done with AIS data — you can break out incidences in the data now to describe exactly where they are and fine-tune your risk models. That has not been done in Canada.

Senator Lang: I was not going to ask this question, but I will to follow up on Senator Mitchell's point.

I do find interesting the Port of Vancouver and the oil tanker traffic going in there. One aspect that you have not touched on is that the number of tankers going into Vancouver is almost 50 per cent less than it was 10 years ago, in my understanding, because of the size of the tankers.

Mr. Anderson: Yes.

Senator Lang: It would seem to me that, for individuals such as yourself, with the expertise you have, very important factors with respect to calculating risk would be the fact that there is less traffic, the fact that there has been less traffic, the fact that the tankers are larger and compartmentalized and the fact that there are more technical services with respect to the total shipping industry. Is that not correct?

Mr. Anderson: Yes. We have not denied any of those points.

Senator Lang: I am not asking you to deny it. I do not understand why individuals such as yourself are not pointing this out because those on the other side of the question, who do not want any tanker traffic, are not bringing this information out so that the public can have a fair debate over the question of safety.

Mr. Anderson: Yes. I am a researcher, not an advocate. I am a policy researcher.

On page 12, we have gone broader and looked at the location of Pacific Northwest, including Vancouver and San Juan. You will see that we say that, even if Kinder Morgan proceeds, you will not see that much more increase in traffic.

Specifically into Vancouver, I could list all the kinds of terminal and operational procedures that I have on this page. It is in my notes, sorry, not yours. All those things exist, from tug escorts to training, navigational aids, vessel traffic schemes. They have clear, narrow requirements, pilotage, transit windows, traffic safety controls and decision- support tools. All of those things exist in Vancouver that account for the safety record.

I began my remarks by saying that we hardly have any incidents in Canada. The real issue now becomes whether you can you take that experience from Port Metro Vancouver and extend it to areas where we do not have port authorities and that same level of infrastructure and human capacity. You are right in terms of all of the things that exist in Port Metro Vancouver.

Senator Lang: I want to ask for a general statement from you. In your opening remarks, you say: ". . . may help establish Canada as an undisputed leader in the safe transportation of hydrocarbons." Further on, you say: "I believe we can be leaders in the world in terms of ocean governance."

We have had witnesses here, prior to your coming, who basically said that, if we are not leading, we are definitely one of the leaders in the world with respect to how we handle our marine traffic and our safety record.

I would like to ask you further, in order to become number one, as opposed to being in the top five or six countries around the world, what exactly would you do, if you were in charge, to make us number one?

Mr. Anderson: On page 17, I have a slide there called "Opportunities for Value Creation." I think the point that we make in the subsequent slide is that there are some other very specific recommendations we could walk through. We are not suggesting in our research that Canada needs to adopt every

single thing on this. In my opening remarks, I said that with great opportunity comes great responsibility. The more traffic you have, the more likely it is that you will have to go into the toolbox to apply some of these tools. The appendix that we have is actually a compendium of stuff at the back. You will see, at different phases of the risk management, where you can dip down in tools.

I will give you an example, let us say Washington State. The federal government announced in March that they will move to incident command structure. That was a long request of the Province of British Columbia. When you talk with the folks in Washington State, they have been at it systematically since Exxon Valdez. They do not necessarily use a formal risk strategy in answering the question about how to allocate resources, but they do numerous scenarios at the state and county levels, including tribes and work with the U.S. Coast Guard. When you talk to them candidly, they have had growing pains. Where they are at now and where they started 20 years ago are two different places. I am saying that incident command structure is a great place to start, but, unless you fund it with resources, do the training and drill it down into the community, you are not far. Washington State also has an emergency tug assist program. That is another example of excellence. We are not, in our research, saying that Canada is bad. What we are saying is are there opportunities to do better. For instance, Norway has prescribed standards. In Norway, we have to distinguish between ship-source oil pollution spills and the offshore. I am referring to ship-source oil pollution here. They have a national program where local municipalities have a defined level of responsibility for handling waste oil. I asked that of a response organization, and they said that that is the shipowner's responsibility. I used to work with Fisheries and Oceans, and every year on the Queen Charlotte Islands the fishing fleet would change their oil. I had no legal place to dispose of that oil. If you go back through the Department of Justice's and Fisheries and Oceans' records for, roughly, 1991 — you can ask for the records — you will basically find, "Dear Mr. Anderson, you are currently breaking the law. I suggest you stop breaking the law." I am a servant of the Crown. Every year, the fishing fleet changed, and that was small amounts of oil.

Getting back to the north coast, we do not have places where you can dispose of the oil readily. Those are just some examples. We can walk through the slides and be more specific in other areas.

Senator MacDonald: Thank you for being here.

In regard to spill response, I do not think there is any doubt that the regulatory system is stronger. The ships are certainly better constructed, but of course, all ships are liable to experience catastrophic problems. Any ship can sink. The *Titanic* was not supposed to sink, but it went down on its maiden voyage.

When it comes to a catastrophic loss of heavy oil, should part of the response be that there are certain ports on both the East and the West Coast that the largest vessels perhaps should not go out of when alternative ports are available that provide an environment more conducive to accepting and responding to a catastrophic loss of petroleum?

Mr. Anderson: You will find in the statistics that catastrophic loss seldom occurs at the location of where the port is. They tend to be during the at-sea voyage or on the approach segment. Therefore, I do not worry too much about the location of the port because by the time you have done the technical standards and all the other work, you have that one nailed pretty well; you have spent a lot of time and energy thinking about it.

What I worry about, though, is the opposite scenario, a catastrophic spill and unintended consequences where we have a poorly defined port-of-refuge policy and a remote location may have to respond to an incident from a passing ship. Do we have the right resources for that?

At the loading or discharging location of a marine terminal, the marine engineers and everyone else do a very good job of that. Citing a terminal is not an easy task. I hope I have answered your question.

Senator MacDonald: Somewhat, but I have a quick follow-up. I will give an example. You are well versed in this stuff; I am sure you are familiar with the loss of the *Arrow* in Chedabucto Bay in 1970 and the *Kurdistan* in 1979. The *Kurdistan* was lost off the Strait of Canso; it was heading to the refinery in Quebec. People hardly knew it disappeared; there was almost no residue. If that ship had gone down in the St. Lawrence River, it would have been a much different scenario, no question about that.

I am curious, on the West Coast — I know most of the your work is on the West Coast — if there was a large, catastrophic event, what would the difference be in a catastrophic event in Kitimat as opposed to one in Prince Rupert?

Mr. Anderson: That is where we talk about the ship to location. Right now, there are not the resources to deal with what is being contemplated. That is not to say the proponents do not have plans, but for a catastrophic loss on the north coast, currently we have gone through the voluntary tanker exclusion zone to deal with tankers because they were travelling further out in our territorial seas. We thought if we put in aerial surveillance and pushed them out further, that would be adequate. Those tools have worked in that situation.

As soon as you move inland, however, those tools become much less effective. You need other tools for a quick response, and you need to look beyond probability and frequency analysis. You need other risk management tools, which have been identified in the presentation.

Without people on the ground planning these things in the early stages, it is really difficult to do it. The marine world is known for doing things as a result of experiences from those types of incidents. When I talk to my aviation friends, they kind of have a different view of the world.

Senator Unger: Thank you, Mr. Anderson. This is very interesting.

I am from Alberta. On May 31, the Government of B.C. officially opposed the Northern Gateway because it was concerned with the pipeline route and spills. Do you share the province's safety concerns and response capacity?

Mr. Anderson: There are aspects of the province's issues that they have, but I do not speak to any one party's particular response to those issues.

If you were to ask whether the province's standards meet any of the issues that we have fully addressed in the research that my colleagues and I are doing, I would like to compare them the other way and say there is still room for improvement. I do not want to criticize someone else's effort. I want to say, "Darryl, you are short of your own efforts here, and this is the reason why." I like to do the comparison the other way.

Senator Unger: What about concern about shipping dilbit? Does that raise a different set of concerns?

Mr. Anderson: I get emails from people all the time on the environmental side who are concerned about the properties of dilbit, absolutely, not so much on the shipment and transport but when it gets into the water. That is one area my colleagues and I — you need a biology background and not necessarily a shipping background — are concerned about.

I think it is a legitimate concern. I am aware that testing has been done. I am also aware that a fair amount of that product has already been shipped out of Kinder Morgan, and they may be in a better position in Vancouver to answer that question about the properties of it. When it gets into the actual marine environmental impact, it is not my area of expertise.

Senator Unger: Would that particular product be best shipped to the Port of Vancouver or further up the coast?

Mr. Anderson: I do not believe it is a question of the location of where it is shipped; it is a characteristic of the oil in the water and the marine environment that is the concern. If I were to ship it anywhere, I would want to know a lot about the marine environment to which I am shipping it rather than actually making it a terminal location decision. The ships, pipeline and railcars can handle those products; it is what happens when it gets into the natural environment that is a concern.

Senator Unger: Thank you.

Senator Wallace: As you mentioned at the outset, the oil spill response regime we have in Canada resulted from changes to the Canada Shipping Act in the mid-1990s, and that was based on the Brander-Smith report. The spill response regime we have in Canada seems to be very comprehensive. It is clear on where the responsibility for spill response lies and the need to have response organizations be properly equipped, with the proper expertise to respond and so on.

Do you have any comment on the effectiveness of that regime in place today? Obviously, if there will be increased tanker traffic on the West Coast, it will build on that, but could you comment on the effectiveness and the capabilities of the regime as it exists today?

Mr. Anderson: I thought I would acknowledge that with the changes to the recent legislation, they offer a unified command. As it exists today, one key difference in Canada compared to the United States, even in Australia, actually, and the U.K., we have a polluter pay principle. At the beginning of the exercise, when the decisions have to be made, the polluter takes the lead role. Remember how I said in my opening remarks that a fast, efficient response is really needed? There is a tendency in Canada to ask, "Who is in charge here?" If you go to the U.S. and you point to a port captain and the U.S. Coast Guard commander, make no mistake, they are in charge.

The polluter still pays. If you have ever dealt with a U.S. port commander, they are in charge. In Canada, on a large- scale exercise, it is doubtful sometimes whether we have that same level of authority in those really tough choices, if it required beaching a vessel or taking a vessel that was in distress to a remote community, both to save property and reduce damage, if that was a really hard choice.

The U.K. has a model where they have the state's representative for salvage and intervention that has that authority in decision making. The concept is that other jurisdictions do a bit better job and are more effective, including Australia, at that early-stage response because time is everything.

In Canada, we have been fortunate because we have not had to test it, but if you ask people deep down if we are really up for game day on a big one, we would probably have a range of opinions, and I would rather see a unanimous group of opinions.

Senator Wallace: We heard yesterday from the Western Canada Marine Response Corporation, which has a spill response capability of 26,000 tonnes. The Canada Shipping Act requires a minimum spill response of 10,000 tonnes. Tankers that might pass on the West Coast could be as large as 300,000 tonnes. Do you have comments on the appropriateness of a 26,000-tonne response capability?

Mr. Anderson: That gets back to a philosophy of minimum standards versus prescribed outcomes. In terms of minimum standards, the Western Canada Marine Response Corporation does an excellent job. I know their people and I have had their training as a port person.

The question is, do we want a minimum standard approach, in which case we continue to do what we are doing? Having had discussions with them, the question, even if we have that response standard, is this: Have we done a model or created a scenario for the best places to deploy those resources in Canada? We have not done that.

Norway uses a risk management model from Sweden. They do not have a prescribed minimum standard. Rather, they work closer to a prescribed outcome approach based on spills and what their shipping traffic would be. The response organizations are capable. What target are we shooting for? I am not one to believe that the size of the ship represents the biggest risk. You will see that we also reference coastal barges and tanks. It is an often overlooked segment, but any remote community in Canada will take fuel in by barge. Ultra-large crude carriers get everyone's attention because they are so big, but I do not think we will see all tanks go simultaneously. Statistically, the evidence is not there.

Senator Wallace: In responding to an incident, the location of the response equipment would be critically important because of the obvious need for speed. Should it be left to the response organizations to decide where these resources should be located or should it be is imposed by regulatory authority or some combination of the two working together?

Mr. Anderson: It should be a combination of the two. I used the word "collaboration." This is a perfect example of collaboration. In my presentation I talked about value creation and opportunities. I would be the first to admit that if we tried to tackle this alone with a regulatory approach, we would fail. The reason is that people on the ground doing the technical work have the best understanding. No amount of second guessing by guys like me will get oil out of the ground. You need the right regulatory framework in collaboration with the people that do the work in the best jurisdictions in the world; and Canada is robust in that category of bringing those parties to bear and making those kinds decisions. Our record can be proud and strong, and other countries around the world are looking to us. That is why this work of the committee is important.

Senator Wallace: Thank you.

Senator Massicotte: On page 6 of your presentation, you talk about how tankers are governed internationally relative to the context. Summarize what we should take from that. What should we change relative to the way we govern ourselves internationally?

Mr. Anderson: Very little. The international approach fundamentally for the last 20 years has been on prevention, and the statistics prove it. We see worldwide great uniformity during the prevention stage of oil spill response and tanker and shipping governance. Canada has had some leaders in the IMO, so we are very good at that stage. Where countries start to diverge and differ significantly is during the mitigation, restoration and response stages — the latter stages — because of the domestic rules and regulations and the amount of shipping traffic.

From an international perspective, I would be one of the first to argue that the international community has done a very good job in this regard. I live in Victoria, where I have quite a few friends in environmental organizations that do not believe that fact, so I try not to have those discussions on the school playground. The evidence is clearly before us.

Senator Massicotte: Senator Lang raised the point about page 15 of your presentation where you say "somewhat" in quotations. The evidence we have is that there had been a significant decrease in Vancouver even with the opening of a pipeline should that occur. The result would still be significantly less than it was even seven or eight years ago.

Mr. Anderson: On page 12, I reference that the location of tanker traffic in the Strait of Juan de Fuca includes the straits going into it, and not just Vancouver, because the south coast of British Columbia has U.S. traffic coming in. I am trying to say generally on this point that one or two individuals have a condominium above a certain bridge in Vancouver, and they talk about a 70- or 80-fold increase in tanker traffic into Port Metro Vancouver.

They happened to pick the lowest point in the recession. If you go back over a times series and look at this, in that whole body of water we would have to have a response regime. We have ebbed and flowed, but we are not talking about huge spikes in traffic.

Senator Massicotte: The evidence we have, even 15 years ago, is that the relative traffic, even with the proposed pipeline, would be less than it was historically.

Mr. Anderson: I do not think you would find that in terms of the specific Kinder Morgan. There is a range of increase in traffic at a bit of a different location.

Senator Massicotte: You can choose a certain location, but obviously our concern is more macro.

Mr. Anderson: That is why I included the chart on page 12.

Senator Patterson: The federal government announced in March this year a new initiative to improve tanker safety, World-Class Tanker Safety System. With that initiative, there was a commitment to additional research on the impact of diluted bitumen on the marine environment. We have had some witnesses raise concerns about the impact of that product on the marine environment. Would you have any comments on whether current spill response organizations are equipped to respond to a bitumen spill?

Mr. Anderson: I was part of a presentation where the Western Canada Marine Response Corporation demonstrated to an audience how they handled the situation, but it did not come from a ship but from a pipeline above land.

The one area that is not my expertise is when that product hits the water.

Senator Patterson: Our system for tanker liability and compensation in Canada combines domestic and international funds. We have been told by Transport Canada that they are reviewing the adequacy of the amount of the ship-source pollution fund. Do you have any comments on whether the current tanker liability and compensation system is adequate and whether that ship-source pollution fund should be increased?

Mr. Anderson: I will preface it by saying that, I believe in 2015, the IMO will make changes overall that will increase those limits.

One of the charts shows where tanker spills occur. The liability limits when dealing with a small spill during terminal loading or bunkering at that stage of the journey are more likely to be adequate in an area that is not too heavily populated or where there is not a lot of valuable property because they are small-scale incidents. Marine terminal operators are certified response organizations and they have to have equipment. All the resources are right there to deal with those small-scale incidents.

However, a question remains unanswered, and I have seen some of the analytical work but am hesitant to draw a firm conclusion. There probably could be a scenario where those liability limits are not right. What people are missing in the discussion is not the adequacy of the liability limits but the key issue in public policy that we have moved to a strict liability regime that facilitates payment of money versus litigation where you had to prove your claim going the other way.

Let us focus on the public policy of strict liability for shipowners, and then if we need to fine-tune it in a specific situation based on real risk analysis, let us do it. Let us not lose sight of the important principle of having to litigate and prove a claim like you have to do in other parts of the world where they have not signed on to that. That would be three steps backwards. I am not suggesting you do it, but people often focus on the amounts. In some situations, people truly do not know but there is an important legal principle that went before determining the amount.

Senator Seidman: Thank you very much for your substantive presentation. I do agree with what you said very early on in your presentation that prevention is better than responding.

I was going to hone in on something in particular, but I would like to focus on your response to another colleague around the table regarding the chain of command. If I recall correctly, we have heard here that, very clearly, the Coast Guard is in charge at the top of the chain of command. You suggested that is not the case. I am referring to a spill response when there is actually a crisis and emergency that needs responding to and it is critical to know who is in command.

Mr. Anderson: The Coast Guard is in command, but in our system of polluter pays, the Coast Guard passes judgment on the adequacy of the polluter's efforts. If they are deemed inefficient, they can take action.

We have really dedicated people in the Coast Guard. It is not an easy call in a situation to say that someone's efforts are inadequate. While you want to give people the benefit of the doubt, time goes by.

I have an article here I will read for the committee. It is the U.S. Secretary of State's representative for Maritime Salvage and Intervention in the U.K. Australia has a separate system. In a catastrophic event, people talk about salvage at the end of the process and not the beginning; there is a government official that has the power to direct the resources of the polluter that pays, and their decisions are binding and final.

That is a very different level of accountability than our Coast Guard basically getting into a legal fight with their lawyer saying, "We are stepping in," and the other party saying, "No, we are in command here." It came about out of OPA-90 in the United States that the U.S. government did not want to go down that other road. In Canada, we adopted something between the American and the European approaches and we thought, "We will give them the benefit of the doubt."

Senator Seidman: You say here that a robust and well-informed regulatory system is crucial for enforcement. Is there something that could be done in the regulatory system to improve enforcement and chain of command?

Mr. Anderson: The structure we have in Canada is great. How we have resourced it so our people can practise in different scales in the North, on the north coast of British Columbia — we do some joint exercises. Therefore, we have that part of the regulatory structure right, but we have tended to starve our institutions of the capacity to do what is the right structure. That is my opinion.

Senator Seidman: You mentioned practice, and that was going to be my question in terms of prevention. That is a sort of preventative approach in that you practise, and that you have to practise based on effectiveness, so there is a certain sort of basis for what you are practising. It could be a scientific basis or whatever is out there in terms of best practices from experiences internationally or even nationally.

In your understanding of the way things work, is there sufficient research and development, and a sufficient basis right now and sharing of best practices for practice and effective practice?

Mr. Anderson: In Canada, I think the answer is "no." If I were to go south of the border into Washington State, the answer would be "yes." There is

good cooperation with the province.

I think it is known in the part of the application of the knowledge rather than knowing there is some real secret here that we need to do. It is like many things in life: We know what to do, but do we get around to doing it consistently enough? I am also concerned that we will have a generational change in people. If you do not have experience with this — doing it and practising — learning on the job is not where you want to do it.

All this literature that we have cited is existing literature. If I can find it, I am sure the policy people can find it, but it is implementing. Having been inside the federal system and provincial governments, we in Canada tend to downplay this type of policy research, which is why my colleagues and I have tended to pick up our pens.

Senator Seidman: You are saying application of knowledge. That is interesting. That means sharing of best practices, and then having people actually implement and practise what these are.

Mr. Anderson: We tend to have a body of knowledge that is sufficiently robust regarding knowing what to do. Around the world other countries look to Canada and other jurisdictions for doing it. However, clearly Australia, Washington State and Norway put into practice much more what they are doing. One could argue they are more coastal states, and we will save that for another time as to the reason why.

The Chair: I have a question, and then I will go to the second round.

You said that tankers from Valdez regularly travel through Canadian waters. Where does that happen?

Mr. Anderson: They are going out from southern Alaska through our exclusive economic zone. Some will travel to California and some will go to one of the five refineries in Washington State. They use the Strait of Juan de Fuca.

The Chair: It is the Strait of Juan de Fuca you are referring to?

Mr. Anderson: Yes, but they will also use our exclusive economic zone, beyond the voluntary tanker exclusion zone. It is somewhere between the territorial sea and our exclusive economic zone. Outside the voluntary tanker exclusive zone, they will transit Canadian waters. This is why aircraft and surveillance are important, because they are out a long way from shore.

The Chair: We just had the response organization answer that question, and they say that they stay out of the 200- mile limit from Valdez and would only enter Canadian waters in the Strait of Juan de Fuca. Would that be correct?

Mr. Anderson: More or less, yes.

The Chair: You are saying they stay out of the 200-mile —

Mr. Anderson: Until they come into the approach —

The Chair: I want to get that straight; I do not want to mix it up with the economic zone.

Mr. Anderson: They will stay outside, and then when they come in, they will pass through our exclusive economic zone and territorial sea, and into the strait.

The Chair: Okay, good. Thank you.

When you talked about the fishing fleet and your experience on north coast with no place to deposit your used oil, I guess that goes to the old saying that a fishing fleet pollutes more than anyone in our waters. It is my personal experience from before I got into politics, which was quite a while ago — 25 years ago — that if you sold lubricants, you had to provide a place to actually bring them to. In fact, I was required to do that. That was 25 years ago. Can you explain what you meant by that?

Mr. Anderson: I started before the legislation came, and I had that. The reality is that fishing boats, particularly when they are in remote fishing areas, will have bought their lubricants. However, you get a combination of supplies and people down before you go fishing and they want to change oil. Quite frankly, they get an opening and they will change their oil and, let us say, it is their best intention to come back to it. Yet, when you have to catch the fish, sometimes coming back to get your oil you have left in a five-gallon drum is little bit further down the list.

The Chair: I guess anybody can use that for an excuse. The reality is that you have to. That regulation is in British Columbia. We can make all kinds of reasons why they cannot, but the regulation is that you should deposit it in a safe container. Hopefully, that meets with everyone's mindset to actually do that. I will leave it there.

Senator Mitchell: Are barges double-hulled?

Mr. Anderson: Some are. There may be a few that are not. I am trying to think history-wise if that is true.

There is also a large amount of fuel and other refined products that go back from the refinery — and aviation fuel, et cetera — between Puget Sound and Washington State. Therefore, if there are any single-hulled barges — The bigger issue is that I think they moved to double-hulled barges, but it is not illegal to put an oil tanker truck on top of a barge and transit.

I do not know how many people are familiar with Port McNeil and Robson Bight, where Leroy Trucking had a little incident and a barge went down and spilled right in an environmentally sensitive area. They have been creative in getting around the technical requirements for barging and doing something that you just shudder.

Senator Wallace: Mr. Anderson, I wanted to clarify your comment. You seemed to leave the impression that maybe there is confusion in the Canadian requirements as to who is in charge in the event of a spill occurrence, who is actually giving the direction. My understanding is that before any tanker carrying oil can enter Canadian waters, the shipowner would be required to prove that it has a contract with a response organization, and that that contract clearly sets out who is responsible, who is in command and the spill response capabilities that would be provided. That is my understanding.

If the Coast Guard felt at any time the response by the vessel owner or the response organization was inadequate, then Coast Guard, as you point out, could step in and take over. However, I just wanted to clarify. My understanding is that under the Canada Shipping Act, it does establish who is in command, who is responsible and who calls the shots.

Mr. Anderson: That is indeed how the Canada Shipping Act works. If it worked exactly like it does on paper, we would have no need for aerial surveillance to find those mystery spills where it is not clear. The closer the oil spill occurs to a terminal or the vessels in transit or in port, the system

works really well. What you get is the potential for a large-scale event where it may not be an oil tanker but an oil spill from another vessel and you do not know the owner of it. Even though everyone has the paperwork, they will deny knowledge of it. The Coast Guard then has to decide: Do we step in now or spend more effort trying to find out who the legal owner is?

The Chair: Thank you, Mr. Anderson, for your presentation. We appreciate your taking time out of your busy schedule to come here.

(The committee adjourned.)

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Related: GLOBAL ENERGY NEWS

Exclusive: Canada regulator probing TransCanada over safety allegations

A depot used to store pipes for Transcanada Corp's planned Keystone XL oil pipeline is seen in Gascoyne, North Dakota November 14, 2014.
REUTERS/ANDREW CULLEN

(This March 18 story corrects paragraph nine to show audit had been scheduled, not prompted by allegations)

By Mike De Souza

(Reuters) - Canada's energy regulator is investigating up to a dozen new allegations of natural gas pipeline safety-code violations at TransCanada Corp (TRP.TO), according to documents reviewed by Reuters.

The regulator, the National Energy Board (NEB), and the company confirmed an investigation is under way but offered few details of the allegations.

It marks the second time in recent years the regulator has probed safety practices at Canada's second-largest pipeline company following complaints by a whistleblower.

Documents reviewed by Reuters showed the allegations include faulty or delayed repairs, sloppy welding work and a failure to report key issues to the regulator.

TransCanada declined to provide details about the allegations, but noted someone previously raised them within the company, prompting an internal investigation that is continuing.

Spokesman Davis Sheremata said that TransCanada was working diligently to gather relevant information to share with the regulator, but that it did not see any of the allegations

representing either an immediate or long term threat to the public or its assets.

"We make it clear to all of our staff and contractors that we will not tolerate anything that undermines the safety and reliability of our facilities," he said.

The company's safety practices previously came under scrutiny over allegations raised publicly in 2012 by a former employee, Evan Vokes, who worked as an engineer for the company for five years. He left TransCanada in 2012 after he approached the regulator with his complaints.

Those allegations prompted the NEB to investigate his complaints within a scheduled audit. The audit, released in February 2014, confirmed some of those complaints and called on the company to address its oversight weaknesses in areas such as risk assessment, inspections and management review.

Rival company, Enbridge (ENB.TO) has also been criticized by regulators over safety and management practices following a 2010 incident that spilled more than 20,000 barrels of heavy crude into Michigan's Kalamazoo River. In a separate incident, the regulator recently fined Enbridge C$200,000 ($157,617) for causing environmental and property damage and breaking conditions of a permit for construction work in 2014 in Manitoba.

Safety lapses, if confirmed, could put natural gas pipelines at increased risk of ruptures or explosions, said Najmedin Meshkati, a University of Southern California engineering professor who specializes in oil and gas industry safety issues.

In a Feb. 25, 2015 letter sent by the regulator to the whistleblower, the regulator said that it learned of the allegations in March 2014 and was taking them "very seriously," but that it had not flagged any immediate safety concerns.

The whistleblower, a former TransCanada employee, allowed Reuters to view the letter, but asked not to be identified.

According to a summary document prepared by a senior NEB official, the investigation was reviewing an allegation that TransCanada took several months to repair pipeline damage caused by a construction crew in May 2013 about 150 km (93 miles) north of Calgary, and also failed to report it to the regulator.

Another allegation describes sloppy repairs to a major line, the North Central Corridor, which serves companies in the oil sands. This natural gas pipeline had been damaged following an October 2013 explosion near Wabasca, Alberta.

TransCanada's network of more than 68,000 km of natural gas pipelines tap into virtually all major gas supply basins in North America. It has had some significant ruptures on these lines in recent years, including the 2013 explosion and another in 2014, still under investigation. One of the company's brand new lines in Wyoming also ruptured in 2011.

The new allegations come at a time when the Canadian pipeline operator awaits the final U.S. administration verdict on its long-debated Keystone XL oil pipeline.

TransCanada has been pushing to expand its operations in recent years, proposing two major pipelines for oil and gas distribution to eastern Canada.

It has also been tapped to build two new multibillion-dollar pipelines to carry natural gas from northeastern British Columbia to proposed liquefied natural gas export terminals on the Pacific coast.

($1 = 1.2689 Canadian dollars)

(Editing by Jeffrey Hodgson and Tomasz Janowski)

CERTIFICATE OF SERVICE

I hereby certify that on this 7th day of April 2015, the foregoing document on behalf of Dakota Rural Action in Case Number HP 14-001, was filed on the Public Utilities Commission of the State of South Dakota e-filing website. Also on this day, a true and accurate copy of the foregoing was transmitted via email to the following:

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