

National Energy
Board



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**National Energy Board *Onshore Pipeline Regulations, 1999 (OPR-99)*
Final Audit Report for Integrity Management Programs**

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TransCanada PipeLines Limited
and National Energy Board-Regulated Subsidiaries (TransCanada)
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Canada

Executive Summary

The safety of Canadians and protection of the environment is paramount for the National Energy Board (Board or NEB) when considering the performance of its regulated companies. The NEB requires regulated companies to anticipate, prevent, mitigate and manage any hazards and risks associated with their operations. The Board holds these companies accountable for safety and environmental outcomes in the public interest.

The NEB uses a risk-informed approach to identifying which regulated companies, facilities and activities require regulatory oversight, and which compliance tool is appropriate. Management Systems audits are an effective tool to proactively detect and correct a company's non-compliances before these non-compliances have any opportunity to grow and potentially impact public safety or environmental protection.

This report documents the Board's focused audit of TransCanada's Integrity Management Programs (IMPs) as they apply to its NEB-regulated pipeline facilities. The Board had previously scheduled an audit of TransCanada's Integrity Management Programs to start in the second quarter of 2013. As a result of allegations of regulatory non-compliance brought to the Board by a then employee of TransCanada (complainant), the Board advanced the timing of its audit and integrated an assessment of the allegations within the scope and technical protocols developed for the audit. The Integrity Management Program audit was conducted between November 2012 and August 2013.

Over the course of this audit, the Board conducted a detailed assessment of NEB management system requirements as they relate to TransCanada's integrity management programs. TransCanada was required to demonstrate the adequacy and effectiveness of its IMPs as well as its compliance with NEB requirements through interviews with company personnel, and the provision of adequate supporting documentation and records.

The Board's audit was conducted following its Audit Protocol, which identifies Management System elements. These elements are further broken down into sub-elements. Each sub-element reflects a number of regulatory requirements. The NEB requires companies to be fully compliant with one hundred percent of the regulatory requirements of a sub-element being assessed. If a company's program is found to be deficient with respect to any regulatory requirement, the entire sub-element will be found Non-Compliant.

The Board is of the view that the processes presently used by TransCanada have identified the majority, and most significant, of its hazards and risks.

The Board finds TransCanada to be compliant in five sub-elements of the audit, those being Organizational Structure, Roles and Responsibilities; Training, Competence and Evaluation; Operational Control-Normal Operations; Corrective and Preventive Actions; and Internal Audit.

The Board finds TransCanada to be non-compliant in four sub-elements of the audit, those being Hazard Identification, Risk Assessment and Control; Operational Control-Upset or Abnormal Operating Conditions; Inspection, Measurement and Monitoring; and Management Review.

With regards to concerns presented to the Board by the complainant, the audit has confirmed that in response to these allegations, TransCanada has developed and implemented a program of actions with the goal of correcting and preventing similar occurrences. The Board notes that a number of the allegations of regulatory non-compliance were identified and addressed by TransCanada only after the complainant's allegations were made and were not proactively identified by the company's management system. Details of the Board's assessment for each complainant allegation are contained in Element 4.4, Internal Audit, in Appendix II of this Final Audit Report.

The Board will make the Final Audit Report public and will post it to the Board's external website. TransCanada will be required to submit a Corrective Action Plan (CAP) to address the Non-Compliant findings identified through this audit, for approval, within 30 days of the Final Audit Report being issued by the Board. TransCanada's CAP will also be made public.

The Board will continue to monitor and assess all of TransCanada's corrective actions until they are fully implemented. The Board will also continue to monitor the overall implementation and effectiveness of TransCanada's IMPs and management system through targeted compliance verification activities as a part of its on-going regulatory mandate.

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1.0 Audit Terminology and Definitions

Audit: A systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

Corrective Action Plan (CAP): Addresses the non-compliances identified in the Audit Report and explains the methods and actions which will be used to “correct” them.

Compliant: A program element meets legal requirements. The company has demonstrated that it has developed and implemented programs, processes and procedures that meet legal requirements.

Finding: The evaluation or determination of the adequacy of programs or elements in meeting the requirements of the NEB Act and its associated regulations.

Non-Compliant: A program element does not meet legal requirements. The company has not demonstrated that it has developed and implemented programs, processes and procedures that meet the legal requirements. A corrective action must be developed and implemented.

Procedure: A documented series of steps followed in a regular and defined order allowing individual activities to be completed in an effective and safe manner. The procedure will also outline roles, responsibilities and authorities required for completing each step.

Process: A systematic series of actions or changes taking place in a definite order and directed towards a result.

Program: A documented set of processes and procedures to regularly accomplish a result. The program outlines how plans and procedures are linked, and how each one contributes towards the result.



2.0 Introduction: NEB Purpose and Framework

The NEB's purpose is to promote safety and security, environmental protection, and efficient energy infrastructure and markets in the Canadian public interest within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

The NEB takes a proactive approach to management of hazards and risks. The NEB's compliance verification activities allow it to identify potential issues with regulated companies and, if necessary, address them with appropriate enforcement measures. Actions include conducting compliance verification activities such as inspections, compliance meetings, emergency exercises, investigations, and audits such as this one.

The NEB requires that each company be able to demonstrate the adequacy and implementation of the methods they have selected and employed in order to proactively identify and manage hazards and risks to achieve compliance. To evaluate compliance, the NEB undertakes audits of its regulated companies. Following the audits, companies are required to submit and implement a Corrective Action Plan (CAP) to address and mitigate non-compliances identified. The results of the audits are considered as a part of the NEB's risk-informed life cycle approach to compliance assurance.

A risk-informed approach enables the NEB to further assess and understand risks to public or worker safety and the environment as a result of pipeline operations. It also allows for public resources to be utilized in the most productive and responsible way possible.

The Board's audit was conducted following its Audit Protocol, which identifies Management System elements. These elements are further broken down into sub-elements. Each sub-element reflects a number of regulatory requirements. The NEB requires companies to be fully compliant with one hundred percent of the regulatory requirements of a sub-element being assessed. If a company's program is found to be deficient with respect to any regulatory requirement, the entire sub-element will be found Non-Compliant.

3.0 Background

Since November of 2012, NEB auditors and inspectors have visited field facilities and TransCanada's head office auditing the adequacy and effectiveness of TransCanada's integrity management programs in order to assess its compliance with the *National Energy Board Act* (NEB Act)¹, other regulations and industry standards such as the Canadian Standards Association (CSA). The targeted audit was thorough and included all of TransCanada's NEB-regulated subsidiaries.

This audit constituted a focused assessment of TransCanada's IMPs as they apply to its NEB-regulated pipeline facilities. The audit scope addressed the following management system sub-elements as they relate to TransCanada's IMPs:

- Hazard Identification, Risk Assessment and Control;
- Organizational Structure, Roles and Responsibilities;
- Training, Competence and Evaluation;
- Operational Control-Normal Operations;
- Operational Control-Upset or Abnormal Operating Conditions;
- Inspection, Measurement and Monitoring;
- Corrective and Preventive Actions;
- Internal Audit; and
- Management Review.

The TransCanada subsidiaries included in the scope of this audit included specifically:

- TransCanada PipeLines Limited;
- TransCanada Keystone Pipeline GP Ltd.;
- Trans Québec & Maritimes Pipeline Inc.;
- Foothills Pipe Lines Ltd.; and
- NOVA Gas Transmission Ltd.

These subsidiaries hold the certificates for TransCanada's NEB-regulated facilities, which include the Canadian Mainline (operating under TransCanada Pipelines Limited), Keystone Pipeline (operating under TransCanada Keystone Pipeline GP Ltd.), TQM Pipeline System (operating under Trans Québec & Maritimes Pipeline Inc.), Foothills System (operating under Foothills Pipe Lines Ltd.), and the Alberta (NGTL) System (operating under NOVA Gas Transmission Ltd).

¹ On 17 July 2013, the NEB issued an updated Management System and Protection Program Audit Protocol. As this audit was ongoing at that time, it was continued under the former Audit Protocol, which is reproduced in Appendix II.

On 1 May 2012, the Board received a submission from a complainant outlining allegations of regulatory non-compliance against TransCanada. The Board initiated actions to investigate and confirm there were no immediate threats to public safety or the environment stemming from these allegations. In light of the concerns being brought forward, the Board advanced the timing of a TransCanada audit previously scheduled to begin in the 2nd quarter of 2013 and integrated an assessment of the allegations within the scope and technical protocol developed for that audit.

4.0 Audit Objectives and Scope

The scope of the audit included an assessment of whether TransCanada was fulfilling the requirements set out in:

- the NEB Act;
- the OPR-99²;
- *CSA Z662-11, Oil and Gas Pipeline Systems*; and
- TransCanada's policies, practices and procedures.

More specifically, the audit examined nine sub-elements of the NEB management system requirements as they relate to TransCanada's integrity management programs. These sub-elements were selected using the Board's risk-informed approach to focus the scope of the audit on areas that have previously been shown to have the highest rates of non-compliance among NEB-regulated companies and to expedite and focus the assessment of the IMP technical programs in light of the allegations.

In order to assess compliance with the sub-elements, TransCanada was required to demonstrate the adequacy and effectiveness of its IMPs as well as its compliance with the requirements listed above through interviews with company personnel and the provision of adequate supporting documentation and records.

As noted, the audit protocol was modified to specifically evaluate the allegations of regulatory non-compliance brought to the Board by the complainant. This included, but was not limited to:

- confirmation that TransCanada's practices around welding inspections and non-destructive examination meet NEB requirements to be performed by a certified, third party reporting directly to TransCanada, independent of the contractors performing the work;

² On 10 April 2013, the OPR-99 was amended and renamed the *National Energy Board Onshore Pipeline Regulations* (OPR). As this audit was ongoing at that time, it was continued under the OPR-99 and all references in this audit report are to the OPR-99 unless otherwise noted. Development of IMPs is also required under the OPR and any Non-Compliant finding in this audit under OPR-99 would also be a Non-Compliant finding under the OPR. TransCanada was also audited to the requirements of *CSA Z662-11, Oil and Gas Pipeline Systems*. These requirements remained unchanged during the audit.

- examination of the revisions TransCanada has made to its internal practice of engineering guidance and determination as to whether or not it meets NEB requirements;
- evaluation of the specific remediation measures that have been implemented based on the findings in TransCanada's internal audit;
- determination of whether or not TransCanada's revised inspection processes meet the requirements set out in the OPR-99;
- evaluation of the new training program for inspectors on new non-destructive examination procedures to determine its adequacy; and
- review of the job description for the new Quality Assurance/Quality Control Manager and confirmation of his/her responsibilities.

5.0 Audit Process

On 8 November 2012, an opening meeting was conducted in Calgary, Alberta with representatives from TransCanada to discuss the Board's audit objectives, scope and the process, and to develop a schedule for conducting the staff interviews and site verifications. The interviews at TransCanada's head office and field verifications were carried out between November 2012 and July 2013. At the end of each day, daily summaries with action items were provided to TransCanada. On 27 August 2013, an Audit close-out meeting was conducted at the NEB office, where the results of the audit, including an outline of the draft audit non-compliances, were reviewed with TransCanada.

Since that time, the Board has been reviewing and assessing the information collected during the audit including written submissions, transcripts of interviews with company personnel, and the provision of adequate supporting documentation.

For a list of TransCanada representatives interviewed and meeting attendees, refer to Appendix III. For a list of documents and records reviewed, refer to Appendix IV.

6.0 Audit Results – Summary

The following summary represents a high-level overview of the Board's audit findings. The detailed findings of the NEB's assessments for each of the nine sub-elements of TransCanada's IMPs evaluated in this audit are provided in Appendix II. The Board's assessment of the complainant's allegations of regulatory non-compliance can be found in Appendix II, Sub-element 4.4 – Internal Audit.

Hazard Identification, Risk Assessment and Control

The Management System Audit Sub-Element 2.1, Hazard Identification, Risk Assessment and Control, refers to the regulations that require a company to have procedures to identify all possible hazards, to assess the degree of risk associated with the hazards and to implement control measures to minimize or eliminate risk.

TransCanada has implemented a system to identify and manage its operating and maintenance risk. Risks are calculated by incorporating the probability of events and the potential magnitude of the consequences. Records indicate that for pipelines and facilities, work is planned and risk-assessments are conducted with consideration given to safety, health, and the environment. TransCanada's process for threat identification was reviewed for all threats and was assessed to be compliant with the requirements.

The audit identified only one area of non-compliance in the sub-element of hazard identification, risk assessment and control. TransCanada developed a new management program for high pressure piping in gas facilities. This new program has been assessed and is adequate in terms of its content, but has not yet been fully implemented throughout all of TransCanada's facilities.

Management System Audit Sub-Element Finding: Based on the incomplete implementation of the required high pressure station piping program, TransCanada is assessed to be non-compliant with the requirements of the OPR-99 and CSA Z662-11, and is therefore non-compliant with this audit sub-element.

Organizational Structure, Roles and Responsibilities

The Management System Audit Sub-Element 3.1, Organizational Structure, Roles and Responsibilities, refers to the regulations that require a company to have an organizational structure that allows its management and protection programs to effectively function. It also requires companies to have clear roles and responsibilities, which may include responsibilities for the implementation of these programs.

TransCanada has approximately 310 employees performing work related to its integrity management programs across its Canadian pipeline system. This is complemented by approximately 80 field technicians who execute integrity-related activities.

The audit determined that for gas and liquid pipeline IMPs, roles and responsibilities are well-defined and have adequate, dedicated resources. The audit also assessed TransCanada's revised plant IMP, now known as the Facility, Integrity and Reliability Management Program (FIRM), and found that it addresses the roles and responsibilities that were lacking in the previous version.

Management System Audit Sub-Element Finding: Based on documents reviewed and interviews with personnel, TransCanada was able to demonstrate that it was in compliance with the requirements of the OPR-99 and CSA Z662-11, and is therefore compliant with the requirements of this audit sub-element.

Training, Competence and Evaluation

The Management System Audit Sub-Element 3.3, Training, Competence and Evaluation, refers to the regulations that require a company to have a documented training program for employees and contractors related to the company's management and protection programs. Training programs are expected to include program-specific policies, emergency preparedness, environmental response and information on the potential consequences of not responding appropriately. Training must also evaluate the competency to ensure knowledge requirements have been met.

Based on documents and records reviewed, the audit determined that TransCanada has developed effective methods to manage the training and qualification of its employees and contractors.

Management System Audit Sub-Element Finding: Based on documents reviewed and interviews with personnel, TransCanada was able to demonstrate that it was in compliance with the requirements of the OPR-99 and CSA Z662-11, and is therefore compliant with the requirements of this audit sub-element.

Operational Control – Normal Operations

The Management System Audit Sub-Element 3.6, Operational Control – Normal Operations, refers to the regulations that require a company to establish and maintain a process to develop, implement and communicate measures meant to mitigate, prevent and protect against the hazards identified in sub-sections 2.0 and 3.0. This includes measures to proactively reduce or eliminate risks and hazards at their source.

The audit determined that TransCanada's threat management programs provide a listing of appropriate integrity measures for managing identified risks and threats. Some of these threats include but are not limited to: pipeline corrosion; construction and manufacturing; weather and outside forces; and mechanical damage.

Management System Audit Sub-Element Finding: Based on documents reviewed and interviews with personnel, TransCanada was able to demonstrate that it was in compliance with the requirements of the OPR-99 and CSA Z662-11, and is therefore compliant with the requirements of this audit sub-element.

Operational Control – Upset or Abnormal Operating Conditions

The Management System Audit Sub-Element 3.7, Operational Control – Upset or Abnormal Operating Conditions, refers to the regulations that require a company to establish and maintain procedures to identify potential upset or abnormal operating conditions, accidental releases, incidents and emergency situations.

TransCanada has implemented a number of processes and procedures to identify potential upset or abnormal operating conditions. TransCanada's pipeline infrastructure is monitored remotely 24 hours a day, 365 days a year using a Supervisory Control and Data Acquisition (SCADA) system and is backed up by an onsite standby system. In the event that both of these systems fail due to a catastrophic event, a secondary control centre at a different location contains full duplicate primary and secondary back-up systems.

This audit also determined that TransCanada's pressure-limiting and relieving systems, leak detection, gas quality, alarm call-out, shutdown devices and valve operation systems were all adequate and compliant with the OPR-99 and CSA-Z662-11 requirements.

While over-pressure protection for TransCanada's oil pipeline systems was found to be adequate, the Board has determined the NOVA Gas Transmission Ltd (NGTL) system is not conducting sufficient inspections or audits of its customer installations to ensure that the system is operated in compliance with the OPR-99 and CSA-Z662-11 requirements. Based on that system's history of over-pressure incidents and the fact that TransCanada has not fully implemented its plan of action to verify compliance with requirements, the company is not in compliance with the OPR-99 and CSA-Z662-11 requirements and is therefore not in compliance with this audit sub-element.

Management System Audit Sub-Element Finding: Based on the documents assessed and interviews with personnel for programs related to over-pressure protection systems on the Alberta (NGTL) System, TransCanada is assessed to be non-compliant with the requirements of the OPR-99 and CSA Z662-11, and is therefore non-compliant with this audit sub-element.

Inspection, Measurement and Monitoring

The Management System Audit Sub-Element 4.1, Inspection, Measurement and Monitoring, refers to the regulations that require a company to develop and implement surveillance and monitoring programs including contract work being performed on behalf of the company. These programs are expected to include measures for evaluating a company's management and protection programs.

Based on documents and records reviewed, the audit determined that TransCanada has developed and implemented a number of effective inspection, measurement and monitoring programs.

Other sections of this sub-element were identified as non-complaint with regulatory requirements due to inadequate or incomplete program implementation. This included:

- TransCanada's position that ongoing monitoring of all shipped commodities for sour crude on the Keystone pipeline is not required since recent testing confirmed the current non-sour nature of these products;
- TransCanada's inability to produce sufficient evidence proving the adequacy of its ongoing integrity management programs for corrosion on unpiggable sections of the NGTL system; and
- background descriptions for the facility pipe inspection program that were too generic and did not provide the level of specificity required for adequate, effective and consistent implementation.

Management System Audit Element Finding: Based on the documents assessed and interviews with personnel as it relates to: monitoring of Hydrogen Sulfide (H₂S) in crude oil in the Keystone Pipeline; monitoring of external corrosion on the Alberta (NGTL) System's unpiggable pipelines; and the integrity monitoring of below-ground station piping on all of TransCanada's facilities, TransCanada is assessed to be non-compliant with the requirements of the OPR-99 and CSA Z662-11, and is therefore non-compliant with this audit sub-element.

Corrective and Preventive Actions

The Management System Audit Sub-Element 4.2, Corrective and Preventive Actions, refers to the regulations that require a company to have a process to investigate incidents or any non-compliance that may occur, including a process to mitigate any potential or actual impacts arising from the non-compliances. The company is also required to develop procedures to analyze incident data in order to identify deficiencies and opportunities for proactive improvement.

During the course of this audit, TransCanada provided evidence of its analysis of possible incident types. The company also demonstrated it had compiled and analyzed key performance indicator data in order to assess trends and establish root causes of incidents.

When issues or incidents are identified, the Board noted that TransCanada's internal non-compliance and incident reporting processes were adequate but could be more detailed in the areas of preventative action and information sharing across the company. TransCanada has committed to improving the level of detail in these items.

Management System Audit Sub-Element Finding: Based on documents reviewed and interviews with personnel, TransCanada was able to demonstrate that it was in compliance with the requirements of the OPR-99 and CSA Z662-11, and is therefore compliant with the requirements of this audit sub-element.

Internal Audit

The Management System Audit Sub-Element 4.4, Internal Audit, refers to the regulations that require a company to develop and implement a documented process for auditing its management and protection programs and procedures. The audit process is expected to include and manage training and competency requirements for staff carrying out the audits and be conducted on a regular basis.

Internal audits of TransCanada's IMPs are conducted by personnel that are independent of the areas to be audited or by a contracted third party. Quarterly field-based compliance audits are conducted at multiple locations across Canada. All audit findings are tracked and are required to be resolved. Findings are also categorized as either site-specific or systemic and responsibility for these is assigned accordingly. The progress of resolving audit findings is monitored and escalated where necessary.

Management System Audit Sub-Element Finding: Based on documents reviewed and interviews with personnel, TransCanada was able to demonstrate that it was in compliance with the requirements of the OPR-99 and CSA Z662-11, and is therefore compliant with the requirements of this audit sub-element.

Management Review

The Management System Audit Sub-Element 5.1, Management Review, refers to the regulations that require a company to formally review its management and protection programs for continuing suitability, adequacy and effectiveness. Reviews are expected to be based on appropriate documentation and records, be formal and documented, and occur on a regular basis.

The audit concluded TransCanada has undertaken several initiatives aimed at reviewing its IMPs. These include:

- Designating an executive to be accountable for management review;
- Having appropriate levels of responsibility and accountability at each level of the organization; and
- Participation in industry associations in order to share learnings and best practices.

Some of the non-compliances identified during the audit, such as insufficient overpressure protection and management of hazards associated with external corrosion, illustrate the results of a management review process that was not entirely effective. This element of the audit also included a review of the allegations presented by the complainant along with the corroborating internal review by TransCanada resulting from that complaint (see section below, Allegations of Non-Compliance).

Management System Audit Element Finding: Based on the documents assessed and interviews with personnel as related to Management Review, TransCanada is assessed to be non-compliant with the requirements of the OPR-99 and CSA Z662-11, and is therefore non-compliant with this audit sub-element.

Allegations of Non-Compliance

On 1 May 2012, the Board received a submission from a complainant outlining allegations of regulatory non-compliance against TransCanada's integrity management practices. These concerns were brought to the Board's attention after the complainant had voiced similar concerns through TransCanada's internal mechanisms.

The Board had previously scheduled an audit of TransCanada's Integrity Management Programs to start in the second quarter of 2013. As a result of allegations of regulatory non-compliance brought to the Board by a then employee of TransCanada (complainant), the Board advanced the timing of its audit and integrated an assessment of the allegations within the scope and technical protocols developed for the audit.

The Board's IMP audit conducted a detailed assessment of TransCanada's procedures as well as records of any corrective and preventative actions taken by TransCanada to address the allegations. Details of the Board's verification for each complainant allegation are contained in the audit sub-element 4.4, Internal Audit, in Appendix II of this Audit Report. The Board's audit has confirmed that the company has developed and implemented actions to correct and prevent similar occurrences for those issues confirmed to be valid. The Board's audit also identified that some of the complainant's allegations did not reflect issues of non-compliance with the regulatory requirements.

The Board assessed relevant company procedures along with records of any corrective and preventative actions taken to address the allegations. The Board also assessed TransCanada's internal investigation relating to its compliance with technical standards and procedures and notes that many of the allegations of regulatory non-compliance identified by the complainant were confirmed by TransCanada's internal audit.

The Board's audit has confirmed that as of the close of this audit, TransCanada has developed and implemented actions to correct and prevent similar occurrences for confirmed non-compliances identified by the complainant.

The Board finds that TransCanada's practices and procedures to deal with reporting of employee concerns at the time of the audit were not effectively implemented, supporting the Board's Non-Compliant finding with the audit sub-element 5.1 Management Review.

A detailed listing of the Board's assessment of each allegation has been documented in Appendix II, 4.4 Internal Audit.

Management System Audit Sub-Element Finding: See Finding for audit sub-element 4.4 – Internal Audit above.

7.0 Conclusions

NEB-regulated companies must demonstrate a proactive commitment to continual improvement in safety, security, and environmental protection. Pipeline companies under the Board's regulation are required to incorporate integrity management programs into their day-to-day operations. These programs include the tools, technologies and actions needed to ensure that pipelines are safe and remain that way over time. Integrity management programs enable pipeline companies to predict and prevent failures.

The Board has determined that TransCanada is compliant in five sub-elements of this audit including:

- 3.1 Organizational Structure, Roles and Responsibilities;
- 3.3 Training, Competence and Evaluation;
- 3.6 Operational Control-Normal Operations;
- 4.0 Corrective and Preventive Actions; and
- 4.4 Internal Audit.

The Board has determined that TransCanada is non-compliant in four sub-elements of the audit including:

- 2.1 Hazard Identification, Risk Assessment and Control;
- 3.7 Operational Control-Upset or Abnormal Operating Conditions;
- 4.1 Inspection, Measurement and Monitoring; and
- 5.1 Management Review.

The Board is of the view that the processes presently used by TransCanada have identified the majority, and most significant, of its hazards and risks. Notwithstanding this, the audit identified that the non-compliant findings are related to the following contributing factors:

- recognition of all potential hazards and integrating them into the program sub-elements that have been found to be non-compliant, and
- issues related to TransCanada's internal management practices. Examples of these include: over-reliance on lagging indicators; inadequate consideration of NEB safety advisories notifying where hazardous conditions existed and regulatory requirements were not being met; and ineffective implementation of internal practices to address the complainant's issues prior to Board notification.

With respect to the Board's investigation of the complainant's allegations of regulatory non-compliance against TransCanada integrity management practices, the Board's assessment has confirmed that TransCanada has now developed and implemented actions to correct and prevent similar occurrences for the confirmed issues. The NEB recognizes that even with a solid regulatory framework, it cannot be everywhere at every moment. That is why the Board encourages concerned individuals to voice their safety concerns with companies internally and, when necessary, to bring them to the attention of the Board.

The Board is also investigating certain steel pipe and fittings installed on the Keystone Pipeline with the potential to exhibit lower than specified yield strength. This investigation remains ongoing. Resolution of the investigation and any required remedial actions will be determined outside the audit.

An effective and well-implemented Integrity Management Program is only part of the overall requirement for NEB-regulated companies. As of the time this audit report is released, separate and concurrent audits of TransCanada's Safety, Environmental Protection, Emergency Management, Crossings and Public Awareness programs remain ongoing. The Board will make this Final Audit Report public and it will be posted on the Board's website.

TransCanada will be required to submit a CAP for Board approval within 30 days of the Final Audit Report being issued, detailing how the company will address findings of non-compliance identified in this audit. The Board will conduct further compliance verification activities to confirm that the improvements outlined in the CAP are being proactively implemented in an expedient manner and on a system-wide basis.