



OF-Surv-OpAud-T309-2017-2018 01  
11 April 2018

Mr. William R. Stedman  
Chief Executive Officer  
TEML Westspur Pipelines Limited  
Suite 3100 – 715 5<sup>th</sup> Avenue SW  
Calgary, AB T2P 2X6  
Email: [REDACTED]

Dear Mr. Stedman:

**Final Audit Report (Audit) for Tundra Energy Marketing Limited –  
Westspur Pipelines Limited (TEML)**

The National Energy Board (NEB or the Board) has completed its Final Audit Report of TEML. TEML was provided with the Draft Audit Report on 13 March 2018 and TEML responded on 28 March 2018 that it had no comments to provide on the Draft Audit Report. Since the Board had no comments to consider, no changes were made to the Draft Audit Report and its Appendices.

The findings of the Audit are based upon an assessment of whether TEML was compliant with the regulatory requirements contained within:

- the *National Energy Board Act* and its associated regulations, including;
- the *National Energy Board Onshore Pipeline Regulations (OPR)*;
- any conditions contained within applicable Board certificates or orders issued by the Board (collectively referred to as, Legal Requirements).

This Audit was focused primarily on 12 legal requirements, but not limited to, OPR sections 32-35 and 6.5 (1) (c), (d), (e), (f) and (t), as well as relevant clauses within CSA Z662 as presented in Appendix 1 of the Final Audit Report.

TEML was required to demonstrate the adequacy and effectiveness of the methods it has selected and employed within its management system and programs to meet the regulatory requirements listed above. The Board has enclosed its Final Audit Report and associated Appendices with this letter. The Board will make the Final Audit Report public and it will be posted on the Board's website.

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Within 30 days of the issuance of the Final Audit Report by the Board, TEML is required to file a Corrective and Preventative Action Plan (CAPAP), which describes the methods and timing for addressing the Non-Compliant findings identified through this audit, for approval.

The Board also will make the CAPAP public and will continue to monitor and assess all of TEML's corrective actions with respect to this audit until they are fully implemented. The Board will also continue to monitor the implementation and effectiveness of TEML's management system and programs through targeted compliance verification activities as a part of its regulatory mandate.

If you require any further information or clarification, please contact Ken Fortin, Lead Auditor, at 587-538-2150.

Yours truly,

*Original signed by*

Sheri Young  
Secretary of the Board

c.c. 



Suite 210, 517 Tenth Avenue SW  
Calgary, Alberta  
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**Tundra Energy Marketing Limited Westspur Pipelines Limited (TEML)**  
**Hazard and Risk Assessment as related to Emergency Management**

**Compliance Verification Activity: 1718-345**

**File: OF-Surv-OpAud-T309-2017-2018 01**

**Date: 11 April 2018**



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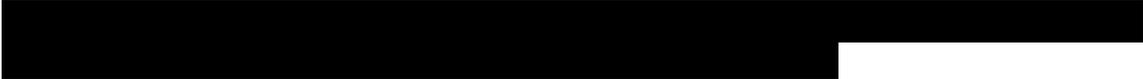
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Sheri Young  
Secretary of the Board

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## Executive Summary

In accordance with Section 49(3) of the *National Energy Board Act* (NEB Act), the National Energy Board (NEB or the Board) conducted a compliance audit of Tundra Energy Marketing Limited Westspur Pipelines Limited (TEML). The audit took place from 22 November 2017 to 13 March 2018.

This audit is one in a series of focused audits that the Board is conducting to examine certain components of the company emergency management program related to the identification and mitigation of hazards. The key objective of this audit was to verify that TEML is developing the fundamental components of its emergency management program in order to mitigate the hazards and risks associated with their facilities and activities. In particular, this audit examined the identification and control of hazards within a company's:

- Emergency procedures manuals;
- Emergency related contingency and/or site-specific plans; and
- Emergency exercise programs.

The Board conducted the audit using the protocols attached in Appendix I of this report. During the audit, the Board assessed whether TEML's documentation, processes and activities complied with the legal requirements contained within:

- The *National Energy Board Act* (NEB Act);
- The *National Energy Board Onshore Pipeline Regulations* (OPR); and
- Canadian Standards Association Z662-15 *Oil and Gas Pipeline Systems* (CSA Z662-15).

The audit focused on 12 legal requirements primarily focusing on, but not limited to, OPR sections 32-35 and 6.5 (1) (c), (d), (e), (f) and (t), as well as relevant clauses within CSA Z662 as presented in Appendix 1. Of those, there were three in which the Board did not identify any compliance issues; and nine where non-compliances were identified.

### [Link to Summary\\_of\\_audit\\_Findings](#)

The Board notes that the TEML system was acquired in September 2016. Over the last year, TEML has developed a new management system and programs reflecting its operations and assets. As the revised TEML management system was approved in June 2017, the management system and related EM program documentation reviewed during the audit was not fully implemented. The audit found that TEML has developed and documented its corporate wide integrated management system but it has not implemented all of the required processes at the EM Program level. This lack of implemented management system processes at the EM Program level resulted in the majority of the non-compliances identified.



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In conducting this review, the Board has determined that TEML's emergency management documentation, related practises and exercises were developed to address and control the majority and most significant of the company's emergency management related hazards and associated risks.

Within 30 days of the Final Audit Report being issued, TEML must develop and submit a Corrective and Preventative Action Plan (CAPA Plan) for Board approval. The CAPA Plan must outline how TEML intends to resolve the non-compliances identified by this audit to prevent recurrence and the timeline in which corrective and preventative actions will be completed. The Board will verify that the corrective and preventive actions are completed in a timely manner. The Board will continue to monitor the implementation and effectiveness of TEML's management system and programs through targeted compliance verification activities as part of its ongoing regulatory mandate.

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## 1.0 Introduction

In accordance with Section 49(3) of the *National Energy Board Act* (NEB Act), the National Energy Board (NEB or the Board) conducted a compliance audit of TEML Westspur Pipelines Limited (TEML). An overview of the audit process and an explanation of definitions and abbreviations can be found in Appendices II to IV.

### 1.1 Audit Objective

The objective of this audit was to verify that TEML is developing key components of its required Emergency Management (EM) Program consistent with the hazards and risks associated with its facilities and activities for its NEB regulated pipeline assets.

### 1.2 Audit Scope

The audit scope included the relevant requirements of the NEB OPR, primarily focusing on, but not limited to, OPR sections 32 to 35 and 6.5 (1) (c), (d), (e), (f) and (t), as well as relevant clauses within CSA Z662-15. The key components of the TEML's EM Program that were reviewed during this audit were:

- EM Program;
- Emergency procedures manuals;
- Emergency related contingency and/or site-specific plans; and
- Emergency exercise programs

In particular, this audit included an assessment of the following management system elements with the scope limited by the criteria and assessed areas listed in Appendix I:

- Policies and Goals;
- Management of Change;
- Training and Competency;
- Document Control;
- Inspection and Monitoring
- Hazard Identification, Risk Assessment and Control;
- Hazard Inventory; and
- Contingency planning.

### 1.3 Audit Criteria

The Board assessed whether TEML complied with the legal requirements contained within:

- The *National Energy Board Act* (NEB Act);
- *The National Energy Board Onshore Pipeline Regulations* (OPR); and
- Canadian Standards Association Z662-15–*Oil and Gas Pipeline Systems* (CSA Z662-15).

The specific legal requirements and audit criteria are listed in Appendix I.

## 2.0 Audit protocol design

The focused audit protocol used for this series of audits is based on the OPR Management system requirements found in Section 6 of the OPR.

In the audit protocol (Appendix I), TEML's EM Program was audited against the relevant legal requirements to answer the question:

- Is the company developing key components of its emergency management program to address the hazards and risks associated with its facilities and activities?

Audit Protocol (AP) questions were assigned a numbering system from AP-01 to AP-12.

As this is a focused audit, not all protocol items assessed the management system processes in their entirety. In AP-01 to AP-06 and AP-12, only the input and/or output of the processes as applicable to the scope of this audit were assessed while verifying the linkages between the emergency management program and the management system processes are in place.

For AP-07 to AP-11, the audit assessed the management system processes as applied to the EM Program to ensure the EM Program had effective, documented and implemented processes to identify, analyze and mitigate hazards and potential hazards. These sections include a detailed assessment of hazard identification and related requirements as per the OPR section 6.5(1) (c) to (f).

## 3.0 Company Overview

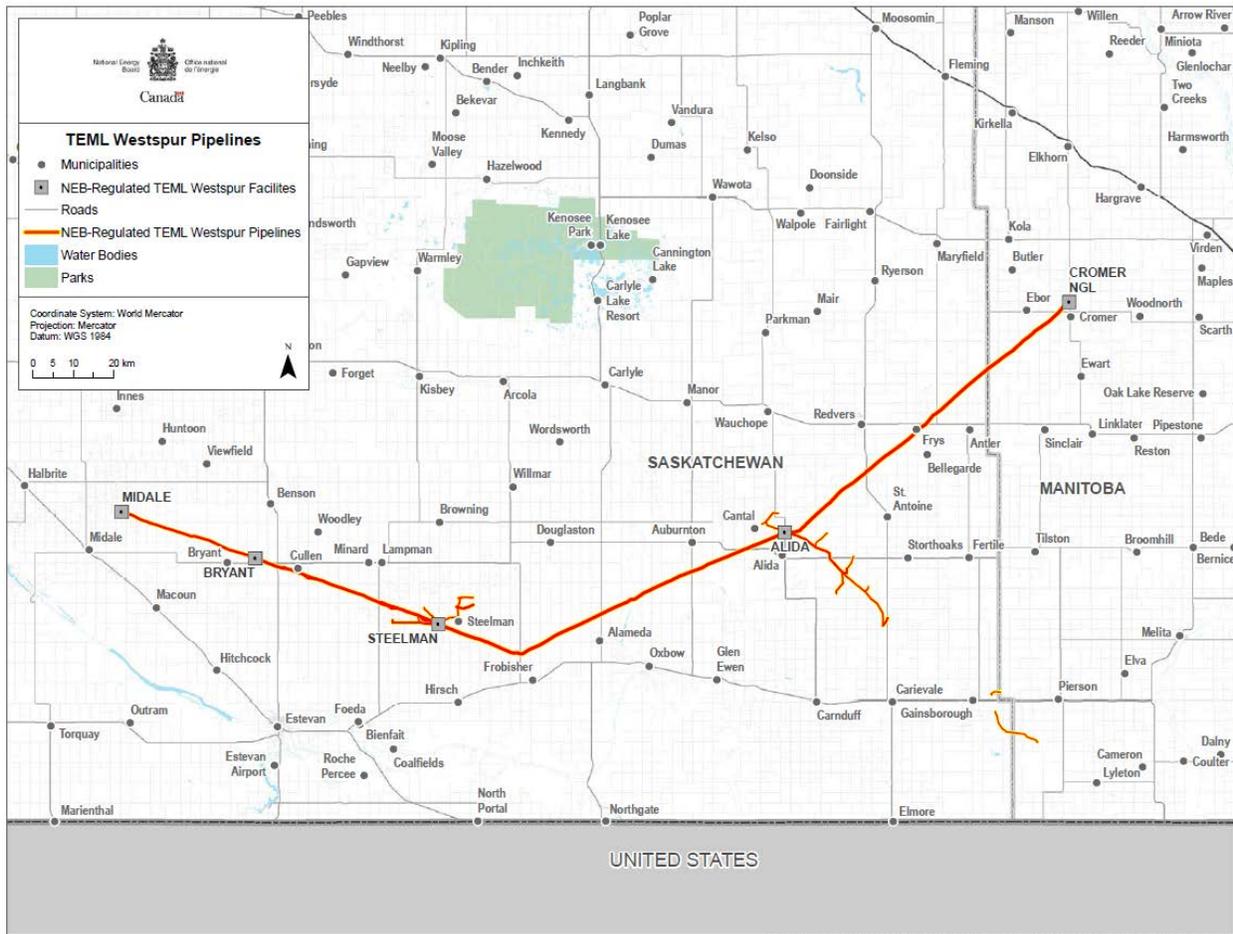
TEML Westspur Pipelines Limited is a legal entity owned by Tundra Energy Marketing Limited which is a privately-owned pipelines and midstream marketing company.

Tundra Energy Marketing Limited's business includes transportation of commodities through pipelines and rail, facilities for storage, and marketing. Its system includes approximately 545 kilometers of trunk line and 1,800 kilometers of crude oil and liquids gathering pipelines.

The NEB regulates TEML Westspur Pipelines Limited which consists of approximately 463 kilometers of pipelines, four terminals and three pump stations. This system transports crude oil and natural gas liquids.

Tundra Energy Marketing Limited has been operating as a midstream service provider since 2005. TEML Westspur Pipelines Limited was acquired from Enbridge Income Fund in September 2016. TEML's head office is located in Calgary, Alberta with field operations located in Cromer, Manitoba, and Estevan, Saskatchewan.

## Map of TEML's System Regulated by the NEB



Map produced by the NEB, December 2017. The map is a graphical representation intended for general informational purposes only.

#### 4.0 Summary of Audit Findings

Reference	OPR Requirement and Compliance Status
<p><b>AP-01</b></p> <p>1.1 Policy and Commitment Statement</p>	<p><b>OPR s. 32 (1):</b> A company shall develop, implement and maintain an emergency management program that anticipates, prevents, manages and mitigates conditions during an emergency that could adversely affect property, the environment or the safety of workers or the public.</p> <p>The Board was informed during the interviews that the <i>Emergency Management and Security Management Program</i> (EMSMP) had only been provided to TEML senior management and that the roll out of the EMSMP was being scheduled to align with the other protection programs and associated training protection programs, which will happen later in 2018. Further, there is no evidence of approval in the EMSMP document, nor is there a signoff section within the document as required by TEML’s EMSMP Program section 10.4.2</p> <p>The Board has determined that TEML is in non-compliance with OPR s. 32 (1).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-02</b></p> <p>1.1 Policy and Commitment Statement</p>	<p><b>OPR s. 32 (1.1):</b> The company shall develop an emergency procedures manual, review it regularly and update it as required.</p> <p>Based on the assessment conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to the requirements of OPR s. 32(1.1)</p> <p><b>Status: No Non Compliances Identified</b></p>
<p><b>AP-03</b></p> <p>3.2 Management of Change</p>	<p><b>OPR s. 6.3 (1):</b> The company shall establish documented policies and goals for meeting its obligations under section 6, including (b) goals for the prevention of ruptures, liquid and gas releases, fatalities and injuries and for the response to incidents and emergency situations.</p> <p>Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to this requirement.</p> <p><b>Status: No Non Compliances Identified</b></p>
<p><b>AP-03</b></p> <p>3.2 Management of Change</p>	<p><b>OPR s. 6.5 (1) (i):</b> establish and implement a process for identifying and managing any change that could affect safety, security or the protection of the environment, including any new hazard or risk, any change in a design, specification, standard or procedure and any change in the company’s organizational structure or the legal requirements applicable to the company;</p>

	<p>The Board was informed during the audit interviews that the asset management software used by Enbridge, which included an MOC module, was not part of the acquisition. In the absence of an automated MOC, all changes were being communicated and managed manually using company email, meetings, tabletops, and by company newsletters. The Board was informed that there was no formal MOC process or procedure used for deciding on or implementing these changes. TEML stated that it is scheduled to have its new software implemented by the end of February 2018. Until this happens, changes will not follow the corporate MOC process.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (i).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-04</b></p> <p>3.3 Training and Competence</p>	<p><b>OPR s. 6.5 (1) (j):</b> establish and implement a process for developing competency requirements and training programs that provide employees and other persons working with or on behalf of the company with the training that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment;</p> <p>Although TEML demonstrated that it has a process for developing competency requirements and training programs, the company did not demonstrate that the process has been established or implemented for the EM Program.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5(1) (j).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-05</b></p> <p>3.5 Documentation and Doc Control</p>	<p><b>OPR s. 6.5 (1) (o):</b> establish and implement a process for preparing, reviewing, revising and controlling those documents, including a process for obtaining approval of the documents by the appropriate authority;</p> <p>Although TEML demonstrated that it has developed a process for preparing, reviewing, revising, controlling, and obtaining approval of documents, the company did not demonstrate that the process has been established or implemented within the EM Program.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (o).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-06</b></p>	<p><b>OPR s. 6.5 (1) (u):</b> establish and implement a process for inspecting and monitoring the company’s activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified;</p>

<p>4.1 Inspection Measurement and Monitoring</p>	<p>TEML has demonstrated that it has implemented a process for inspecting and monitoring the company’s activities to evaluate the adequacy and effectiveness of the Emergency Management Manuals, contingency plans and exercises and for taking corrective and preventive actions if deficiencies are identified.</p> <p>Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to this requirement.</p> <p><b>Status: No Non-Compliances Identified.</b></p>
<p><b>AP-07</b></p> <p>2.1 Hazard Identification</p>	<p><b>OPR s. 6.5 (1) (c):</b> establish and implement a process for identifying and analyzing all hazards and potential hazards;</p> <p>Although TEML has developed an <i>Integrated Management System (IMS)</i> document which includes a process to identify and analyze hazards and potential hazards, it was confirmed during the interviews that the process is not fully established or implemented in identifying hazards that could lead to emergency events</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (c).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-08</b></p> <p>2.1 Hazard Identification</p>	<p><b>OPR s. 6.5 (1) (d):</b> establish and maintain an inventory of the identified hazards and potential hazards;</p> <p>At the time of the audit, TEML indicated that the hazards and risks identified and analyzed had not been revised since the transfer of assets. TEML advised that it intends to develop its own Risk Register, or revise the current one to reflect hazards and potential hazards that are applicable to TEML assets.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (d).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-09</b></p> <p>2.1 Hazard Identification</p>	<p><b>OPR s. 6.5 (1) (e):</b> establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions;</p> <p>The Board was informed that, at the time of the audit, the process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions had not yet been implemented within the EM Program.</p>

	<p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (e).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-10</b></p> <p>2.1 Hazard Identification</p>	<p><b>OPR s. 6.5 (1) (f):</b> establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks;</p> <p>Although TEML demonstrated that it has various controls in place to prevent, manage and mitigate identified hazards and risks, it did not demonstrate that it has established and implemented a process for developing and implementing controls.</p> <p>TEML currently does not have a formal agreement in place with a third party to provide the necessary resources to fight a tank fire. At the time of the audit, TEML indicated that it is working to establish an agreement with Firemaster which includes determining an approximate time for extinguishment and equipment that is available in the response area. TEML could not demonstrate that it has developed and implemented the controls to prevent, manage and mitigate the risks associated with tank fires or large secondary containment fires.</p> <p>In addition, TEML did not provide evidence to demonstrate how the outputs of the process are used in the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (f).</p> <p><b>Status: Non-Compliant</b></p>
<p><b>AP-11</b></p>	<p><b>OPR s. 6.5 (1) (t):</b> establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations;</p> <p>Although TEML has contingency plans mentioned within its IMS and has provided examples of contingency plans that have been developed to support emergency response, the company did not demonstrate that it has a documented process for developing contingency plans for abnormal events that may occur during emergency situations.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (t).</p> <p><b>Status: Non-Compliant</b></p>

<b>AP-12</b>	<p><b>CSA Z662-15 clause 10.5.2.1 - CSA Z662-15 clause 10.5.2.4</b></p> <p>The Board verified through a review of documentation and through interviews with TEML personnel that TEML demonstrated it met the requirements assessed as required in CSA Z662-15.</p> <p>Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to these CSA Z662-15 requirements.</p> <p><b>Status: No Non-Compliances Identified</b></p>
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## 5.0 Conclusion

This focussed audit was designed to examine particular aspects of EM Programs related to the identification and mitigation of hazards using the 12 protocol items listed in the audit protocol. In the case of TEML, the Board identified three aspects without any compliance issues; and nine where non-compliance with the requirements was noted.

The TEML system was acquired by Tundra Energy Marketing Limited in September 2016. Over its first year of ownership, TEML has developed a new management system which was approved for implementation in June 2017. The Board notes that TEML continued to follow some of the previous owner’s EM documentation, procedures, equipment and activities during this transition. These legacy activities and documents were provided for review during the audit. In the interest of verifying that safety was being maintained during the transition, the Board reviewed these documents and activities and found that TEML’s Emergency Management Manual, emergency management related activities and exercises appeared to address and control the majority and most significant of the company’s emergency management related hazards and associated risks. It is important to note that the Board’s findings regarding TEML’s EM Program primarily reflects the company’s stage in developing and applying its management system. It does not necessarily reflect the lack of technical management activities being undertaken to execute its EM Program.

In addition, TEML indicated that, at the time of the audit, it was in the process of reviewing and revising its EM Program documentation to confirm its suitability for ongoing use with its operations and the new management system. TEML has developed and documented an integrated management system to be applied to its protection programs, including the EM Program. At the time of the audit, however, the Board noted that many of the new management system processes had not been implemented within the EM Program. In cases where TEML could not demonstrate implementation, a non-compliance was noted.

Notwithstanding the circumstances related to the change in ownership, there is no grace period within the OPR to allow for implementation. Therefore, in order to be found in compliance with the OPR, the Board requires TEML to have a management system to be fully implemented at the time of the audit including at the EM Program level.

When reviewing the results of this audit, the Board is of the view that, despite the number of non-compliances, TEML's EM Program has practices, activities and procedures in place that are adequate.

### **Corrective Action Plan Submission**

TEML is required to develop a Corrective and Preventive Action Plan (CAPA Plan) with timelines for completion to rectify the deficiencies noted in this report within 30 days of the date of this report.

The Board will post this Final Audit Report and the approved CAPA Plan on its website.

## Appendix I – Audit Assessment Tables

<p><b>Topic:</b> <u>National Energy Board Onshore Pipeline Regulations (OPR): Section 32(1)</u></p>		
<p><b>NOTE:</b> Given the scope of this audit, the elements and regulatory requirements examined will be related to the hazards and potential hazards that would initiate emergency or contingency responses.</p>		
<p><b>Regulatory Requirement: OPR s. 32 (1):</b> A company shall develop, implement and maintain an emergency management program that anticipates, prevents, manages and mitigates conditions during an emergency that could adversely affect property, the environment or the safety of workers or the public.</p>		
<p><b>32 (1.1):</b> The company shall develop an emergency procedures manual, review it regularly and update it as required.</p>		
<p><b>Criteria Element 1:</b></p> <p>Requirements:</p> <ul style="list-style-type: none"> <li>• The company must establish and implement an emergency management program that anticipates, prevents, manages and mitigates conditions during an emergency.</li> <li>• The company must establish and implement an emergency management procedures manual that anticipates, prevents, manages and mitigates conditions during an emergency.</li> </ul>		
<p><b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.</p>		
Item Number	Indicators of Compliance	Assessment
AP-01	<p>Can the company demonstrate that they have developed, implemented, and maintains an emergency management program that anticipates, prevents, manages and mitigates conditions during an emergency?</p> <p>Can the company demonstrate that they have developed an emergency procedures manual that anticipates, prevents, manages and mitigates conditions during an emergency?</p> <p>Can the company demonstrate that they review the emergency procedures manuals on a regular basis and update the manuals as required?</p>	Non-Compliant

## Summary Assessment Notes

### TEML Integrated Management System (IMS)

TEML has developed an Integrated Management System (IMS) which was approved by the President & CEO, and released on 19 June 2017. The document states that it was developed to “provide a consistent framework for the design, development and implementation of protection programs, as well as for the cyclical planning, implementation, review and adjustment of operational activities to effectively address risks, manage resources and achieve desired outcomes.”

According to the documentation, the IMS has been developed to:

- apply to the company’s protection programs for safety, security, integrity, environmental protection, emergency management and damage prevention;
- to provide coordination between the company’s management system and protection programs; and
- to address hazards and risks that affect the pipeline systems within its scope.

During the audit interviews, TEML acknowledged that, due to the infancy of the IMS and the newly developed TEML Emergency Management (EM) Program, the processes outlined within the IMS had not been applied to or integrated into the EM Program.

### Emergency Management Program

TEML EM Program document includes the company’s Security Management Program and is titled *Emergency Management & Security Management Program* (EMSMP).

As described within its Purpose, the EMSMP is intended to provide a framework for the design, development and implementation of the company’s EM Program and its Security Management Program. The EMSMP applies to all of Tundra Energy Marketing Limited’s operating assets, including the NEB regulated TEML Westpur Pipelines Limited System.

The EMSMP includes direction, responsibility and accountability in implementing the elements of the TEML IMS. Several processes related to Hazard Identification, Risk Assessment and Control within the context of Emergency Management and Security Management are described as being under the accountability of the Health, Safety, Security, and Environment Department.

Operational controls managed by the EMSMP are described in the document as being achieved through TEML rules, standards and procedures, each of which are discussed within the document. Operational controls are described as established through the implementation of the EMSMP planning processes, the process to include inputs from (ongoing) hazard and risk assessment activities, investigations, and audit and inspection activities.

The EMSMP document includes the elements to address the OPR requirement to anticipate, prevent, manage and mitigate conditions during an emergency that could adversely affect property, the environment or the safety of workers or the public. The revision history of the EMSMP document indicates that it was released 29 September 2017; however, at the time of the audit the EMSMP had not been rolled out to TEML. The Board was informed during the interviews that the EMSMP had only been provided to TEML senior management and that the roll out of the EMSMP was being scheduled to align with the other protection programs and associated training protection programs, which will happen later in 2018. Further, there is no evidence of approval in the EMSMP document, nor is there a signoff section within the document as required by TEML's EMSMP Program section 10.4.2. As such, the EMSMP is not considered to be implemented as required per OPR s. 32 (1).

TEML advised the Board that it plans to have the EMSMP fully implemented by the end of First Quarter (Q1) 2018.

#### Emergency Procedures Manual

TEML has developed an Emergency Procedures Manual (EPM) - Version 1.0 (2017). This Manual provides details on the actions that TEML will take in the event of an emergency.

The EPM is maintained on the TEML internal server providing all company employees read access. Controlled hard copies of the manual are limited to the TEML Emergency Operations Centre (located in Estevan, SK), the TEML Incident Command Post (located in Carlyle SK) and, in accordance with the OPR requirement, the NEB (Calgary, AB). The EPM states that each of the plan holders will receive automatic updates as required.

TEML also maintains other plans including Tactical Control Point plans and Facility Emergency Response Plans.

TEML's emergency response management approach is based on the *Incident Command System (ICS)*. As such, the EPM includes ICS principles, roles and responsibilities directly within the manual. Within the ICS structure, TEML is a member of Unified Command and coordinates the various agencies with authority and/or organizations, and non-government responders to create an integrated response team. Under the auspices of Unified Command, the EPM includes a section on roles and responsibilities for each of the provincial and federal government agencies, spill cooperatives and contractors who may be called in to assist with the emergency response.

TEML's EPM includes response considerations and guidance for responding to spills and gas releases including various means to control and capture released product(s). The non-redacted version of the manual also includes a contact listing of personnel, complete with phone numbers and anticipated Incident Command System (ICS) positions in the event of an emergency event. The manual also includes contact numbers of potentially impacted neighbouring stakeholders including:

- local hospitals;
- regional RCMP/police services;
- related government agencies;
- First Nations;
- other oil and gas companies in the region; and
- applicable Oil Spill Cooperatives.

The cover page of the document identifies the Manual as Version 1.0 and is dated 2017. The record of revisions for the EPM is included within the manual on page 12. At the time of the audit, there were no records of revision as the EPM has not been through a revision cycle yet. The Manual is required to be reviewed regularly and updated when necessary.

Based on the assessment conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to the requirements of OPR s. 32 (1.1) relating to the EM Manual.

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 32 (1), as the EMSMP is not a fully implemented program. The Board requires that a CAPA Plan be developed to address this non-compliance.

**Topic: Management System Sub Element 2.3 - Goals, Objectives and Targets**

**NOTE:** Given the scope of this audit, the elements and regulatory requirements examined will be related to the hazards and potential hazards that would initiate emergency or contingency responses.

**Regulatory Requirement: OPR s. 6.3 (1):** The company shall establish documented policies and goals for meeting its obligations under section 6, including (b) goals for the prevention of ruptures, liquid and gas releases, fatalities and injuries and for the response to incidents and emergency situations.

**Criteria Element 1:** Requirement for the company to demonstrate that it has established documented goals for the prevention of ruptures, liquid and gas releases, fatalities and injuries and for the response to incidents and emergency situations.

**Assessed Area:** The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.

Item Number	Indicators of Compliance	Assessment*
AP-02	Can the company demonstrate that it has developed goals related to its hazards and risks for its Emergency Management Manuals, contingency plans and Emergency Management exercises?	No Non-Compliances Identified.

**Assessment Notes**

TEML has set company-wide goals as: zero ruptures, zero releases, zero injuries, zero fatalities, and systematic and effective response to incidents and emergency situations.

In 2017, the corporate goals specific to emergency management included:

1. Create integrated management systems.
2. Integrate EPM and Emergency Management Program documents.
3. Increase membership of emergency response teams.
4. Complete at least five emergency response exercises.

According to TEML, all of these goals were met or exceeded in 2017. The Board was informed during audit interviews that goals, objectives, and targets are measured and reported to TEML Management. At the time of the audit, TEML provided records for review demonstrating it has achieved its 2017 corporate goals for emergency management.

TEML also completes the annual NEB Pipeline Performance Measures to measure the effectiveness of its EM Program. This includes reporting on exercises, communications, training and competency, and coordination of these activities.

Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to this requirement.

<b>Topic: Management System Sub Element 3.3 – Management of Change (MOC)</b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (i):</b> establish and implement a process for identifying and managing any change that could affect safety, security or the protection of the environment, including any new hazard or risk, any change in a design, specification, standard or procedure and any change in the company’s organizational structure or the legal requirements applicable to the company;		
<b>Criteria Element 1:</b> Requirement for the company to establish and implement a process for identifying and managing any change that could affect safety, security or the protection of the environment, including any new hazard or risk.		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment*</b>
AP-03	Can the company demonstrate that it has established and implemented a process for identifying and managing any change that could affect safety, security or the protection of the environment, including any new hazard or risk, as it relates to the ongoing development of Emergency Management Manuals, Contingency Plans and Emergency Management Exercises?	Non-Compliant
<b>Assessment Notes</b>		
<p>TEML’s Management of Change (MOC) process, including the process overview and process steps related to MOCs is outlined in TEML’s Integrate Management System (IMS) document. MOC information related to Emergency Management is provided within the Emergency Management &amp; Security Management Program (EMSMP) document.</p> <p>As stated within the EMSMP document, “the EMSMP utilizes TEMLs corporate Management of Change (MOC) program and controlled documents are subject to the corporate MOC process.” The document details how the corporate MOC program “provides a process for managing changes and modifications at facilities to ensure that potential hazards related to the change are identified, and integrity, safety, and operability are maintained.”</p> <p>The EMSMP states that “MOC requirements apply to the following changes and modifications:</p> <ul style="list-style-type: none"> <li>• Change to original design / operating parameters</li> <li>• Change to legal requirements</li> <li>• Changes to operating processes and procedures</li> <li>• Change to equipment, piping, instrumentation, or electrical components</li> <li>• Any repair or replacement, except when the replacement is with identical parts and equipment (or properly rated and specified)</li> <li>• Change to alarm settings, interlocks, and process trips</li> <li>• Change to relief valve setting or capacity</li> <li>• Changes to location or type of safety and protective equipment (detection systems, alarms, fire suppression, etc.)</li> <li>• Change to materials being processed or utilized in the process</li> <li>• Installation of new flow lines, or other change in inlet rate”.</li> </ul>		

Since the acquisition from Enbridge, TEML has completed several changes to its emergency management program to address the particulars of the new company and operatorship. Some of these changes included the development of a TEML Integrated Management System, a TEML Emergency Management Program, and a TEML Emergency Preparedness Manual developed specifically to address all assets within the system.

TEML also reviewed the emergency equipment resources inventory to verify that the allocation and placement of equipment was in line with identified strategic areas in order to reduce response times. Emergency response teams were also updated with more members due to the increased size and footprint of the company and coverage area.

To communicate the sale of certain South Prairie Region assets from Enbridge to TEML, a letter explaining the transaction was sent to stakeholders on 11 October 2016. Stakeholders included rural municipalities, towns, and cities. In addition, letters were sent to emergency response agencies explaining TEML's ongoing and sustained ability to respond to emergencies, along with information brochures and access to the Emergency Procedures Manual (EPM). This letter was followed up with a phone call conversation which included a discussion of the transition of assets to TEML.

The Board was informed during the audit interviews that the asset management software used by Enbridge, which included a Management Of Change (MOC) module, was not part of the acquisition. In the absence of an automated MOC, all changes were being communicated and managed manually using company email, meetings, tabletops, and by company newsletters. The Board was informed that there was no formal MOC process or procedure used for deciding on or implementing these changes.

TEML has recently acquired data management software to augment its MOC process and is presently going through testing. This new software will include an incident management module and a documentation control module. TEML stated that it is scheduled to have its new software implemented by the end of Q1 2018. Until this happens, changes will not follow the corporate MOC process as described above; however, changes will be addressed by working with subject matter experts and communicating changes through email, face to face discussion, and company newsletters. As TEML has not implemented its MOC process, it is non-compliant with the OPR s. 6.5 (1) (i).

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (i). The Board requires that a CAPA Plan be developed to address this non-compliance as it relates to the EM Program.

<b>Topic: Management System Sub Element 3.4 – Training, Competence and Evaluation</b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (j):</b> establish and implement a process for developing competency requirements and training programs that provide employees and other persons working with or on behalf of the company with the training that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment;		
<b>Criteria Element 1:</b> Requirement for the company to establish and implement a process for developing competency requirements and training programs that provide employees and others working with or on behalf of the company with the training that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment</b>
AP-04	Can the company demonstrate that it has a process for developing competency requirements and training programs as required for, and within, the Emergency Management Program?	Non-Compliant
<b>Assessment Notes</b>		
<p>TEML’s Training, Competence and Evaluation (TC&amp;E) Process is described within the TEML Integrated Management System (IMS) document. The IMS details processes, responsibilities, and accountabilities for training and for the evaluation of competency of TEML personnel.</p> <p>The IMS TC&amp;E process includes;</p> <ul style="list-style-type: none"> <li>• development or updating job descriptions;</li> <li>• competency requirements for the position;</li> <li>• identification of training requirements;</li> <li>• assessment and verification of qualifications and competencies;</li> <li>• review of roles and responsibilities to ensure awareness of expectations;</li> <li>• annual reviews of performance; and</li> <li>• retention of training records.</li> </ul> <p>TEML Emergency Management and Security Management Program (EMSMP) document states that “TEML is responsible for ensuring that personnel who may be responsible to responding to emergency incidents, or be responsible for managing legal requirements, are aware of their responsibilities and are trained and deemed <u>competent</u> to conduct the activities required for their job”.</p> <p>The EMSMP outlines the processes to be used to identify, evaluate and review training needs for all personnel working for, or on behalf, of TEML. The process is intended to determine specific emergency management and security training needs, and is to be conducted at least annually by the TEML HSSE Department. The EMSMP also details roles and responsibilities in delivering and monitoring implementation of required training.</p>		

The Board was informed that since the acquisition of assets from Enbridge, TEML has increased the number of personnel available to respond to emergencies, the amount of formal training including spill response, fire response, and Incident Command System (ICS) and the number of exercises. In 2017, TEML completed 30 emergency response exercises to train and test responders' abilities to respond to various emergency events. These exercises included;

- Tabletops;
- ice slotting;
- fire drills;
- man-down drills;
- tornado drills; and
- equipment drills using boats, boom, fast flowing water equipment, and decontamination equipment.

A training matrix is provided in the TEML Emergency Procedures Manual that identifies required emergency management training requirements for Field Operations, the Field Response Team, the Incident Management Team, and for Office Staff. The section also covers each of the training courses, including duration of course, frequency of recertification and overview of the training provided by each course.

TEML's process for developing competency requirements is outlined in the TEML IMS. Implementation of the process is discussed within the TEML EMSMP. The Board was informed that competency sign-off has been created to include knowledge testing through a quiz, and practical assessments by a competent person.

As outlined within the IMS, the EMSMP is responsible for working with the Human Resources team to identify and develop the competency requirements applicable to the implementation of the EMSMP. During audit interviews, TEML indicated that it was in the process of developing competencies related to emergency management. According to TEML, the identification of emergency management critical tasks is ongoing which encompasses dedicated emergency response personnel and field operations staff. Once those critical tasks have been identified, they will be a part of the employees' competency based learning package and will be assessed by a competent evaluator. TEML expects the process to be fully implemented in 2018.

Although TEML demonstrated that it has a process for developing competency requirements and training programs, the company did not demonstrate that the process has been established or implemented as required as it relates to the EM Program.

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (j). The Board requires that a CAPA Plan be developed to address this non-compliance.

<b>Topic: Management System Sub Element 3.6 – Documentation and Document Control</b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (o):</b> establish and implement a process for preparing, reviewing, revising and controlling those documents, including a process for obtaining approval of the documents by the appropriate authority;		
<b>Criteria Element 1:</b> Establish and implement a process for preparing, reviewing and controlling documents.		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment*</b>
AP-05	Can the company demonstrate that it has established and implemented a process for preparing, reviewing and controlling documents and that it uses the process for the Emergency Management Manuals and Contingency Plans?	Non-Compliant
<b>Assessment Notes</b>		
<p>TEML’s Documentation and Document Control Process (DDCP) is described within the TEML Integrated Management System (IMS) document. The IMS details processes, responsibilities, and accountabilities for preparing, reviewing, revising, controlling, and for obtaining approval of documents.</p> <p>TEML Emergency Management and Security Management Program (EMSMP) document states that all records generated that are applicable to the Emergency Management Program shall be generated, retained, maintained and disposed of in accordance with TEML IMS and TEMLs Record Retention Schedule.</p> <p>As outlined within the program, EMSMP documents shall be reviewed and approved prior to release. All controlled EMSMP documents must have a space on the front page of the document for the reviewer and approvers to sign off that the document was approved. Further, the EMSMP includes details of that which must be included in the document header to ensure document control.</p> <p>During its review, the Board identified examples where this document control process was not implemented. The Board noted that several of the main EM Program documents did not conform to the document control process. For example, the TEML EMSMP document (Rev 00, 29-09-2017) was not signed off, nor did it have space on the front page for sign offs as required by TEML’s EMSMP Program, section 10.4.2. In addition, the header of this document did not include document control details as required by EMSMP section 10.4.3.2.</p> <p>Another example was the TEML Emergency Procedures Manual (EPM). In this case, the document did not contain verification of approval of, nor was there a signoff section within the document, as required by TEML’s EMSMP Program, section 10.4.2. However, in this case, the cover page of the document does identify the Manual as Version 1.0 and is dated 2017, and the record of revisions was included within the Manual on page 12.</p>		

The Board was informed that the EPM was signed by a TEML Director by email; however, the email provides evidence of approval to file a cover letter to the NEB, but does not demonstrate approval of the EPM.

Emergency management documents are prepared within the HSSE Department and subject matter experts are consulted for technical information. These documents are controlled by providing limited printed copies, and providing password protected and read only options for electronic copies. The Emergency Procedures Manual is maintained on the TEML internal server, providing all company employees read access. Controlled hard copies of the manual are limited to the TEML Emergency Operations Centre (located in Estevan, SK), the TEML Incident Command Post (located in Carlyle SK) and the NEB (Calgary, AB). The manual states that each of the plan holders will receive automatic updates as required.

As outlined within the EMSMP, Emergency Management Program controlled documents shall be reviewed once every calendar year, with intervals no longer than 18 months. Due to the date creation of the emergency management documents, an annual review has not yet been performed.

Although TEML demonstrated that it has developed a process for preparing, reviewing, revising, controlling, and obtaining approval of documents, the company did not demonstrate that the process has been established or implemented within the EM Program.

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (o). The Board requires that a CAPA Plan be developed to address this non-compliance.

<b>Topic: <u>Management System Sub Element 4.1 – 1 Inspection, Measurement and Monitoring</u></b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (u):</b> establish and implement a process for inspecting and monitoring the company’s activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified;		
<b>Criteria Element 1:</b> Establish and implement a process for inspecting and monitoring the company’s activities to evaluate the adequacy and effectiveness of the Emergency Management Manuals, contingency plans and exercises and for taking corrective and preventive actions if deficiencies are identified.		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment</b>
AP-06	Can the company demonstrate that it has established and implemented a process for inspecting and monitoring the company’s activities to evaluate the adequacy and effectiveness of the Emergency Management Program and for taking corrective and preventive actions if deficiencies are identified?	No Non-Compliances Identified.
<b>Assessment Notes</b>		
<p>TEML’s Inspection, Measurement and Monitoring Process is described within the TEML Integrated Management System (IMS) document.</p> <p>TEML’s <i>Emergency Management and Security Management Program</i> (EMSMP) document details inspection, measurement and monitoring activities that may be completed to evaluate the adequacy and effectiveness of TEML’s EM Program including the adequacy and effectiveness of associated manuals, plans, and exercises.</p> <p>As stated in the EMSMP, the Health, Safety, Security and Environment (HSSE) Department is responsible for monitoring and evaluating the effectiveness of the Emergency Management &amp; Security training program. Methods listed that may be used include: course rating forms, post-training tests, and reviewing of incident and exercise (after) action reports. The EMSMP states that the HSSE Department is also responsible for continuous improvement of the training program, which may include modifying or changing training materials, instructors, content and/or locations.</p> <p>The EMSMP states that routine and informal inspections are completed regularly by TEML supervisors, contract inspectors, and TEML employees, including emergency response team members. Not all routine or informal inspections are recorded, but rather are conducted as a job responsibility.</p>		

Types of formal documented inspections and assessments include:

- terminal inspections;
- lease custody transfer site inspections;
- EM Program equipment inspections;
- hazard identification and loss prevention observations; and
- emergency response exercises.

Terminal and Lease Custody Transfer site (LACT) Inspections are conducted on a regular basis to document and correct any non-compliances with Health, Safety and Security policies and standards.

TEML indicated that it documents and stores its inspection and maintenance records on internal servers and has a computerized maintenance management system that monitors and tracks all maintenance activities. At the time of the audit, TEML personnel informed the Board that the recently acquired data management software was going through user testing. TEML stated that it is scheduled to have its new software implemented by the end of February 2018.

As outlined in the Emergency Procedures Manual, TEML performs maintenance on its response equipment on a regular basis and/or during and after an exercise or real event. Maintenance performed includes: ensuring adequate equipment fluid levels, performance checks, seasonal readiness, operability of moveable and running equipment and components, inspection for wear and tear, and lubrication. Specialized equipment is sent out to certified shops or mechanics for inspection or repair.

TEML explained that it inspects its emergency response equipment monthly, in addition to before and after exercises and equipment deployments, and during Field Response Team maintenance days. The Emergency Response Trailer Monthly Inspection for the month of March 2017 includes maintenance items and verification of availability of equipment and provides evidence to demonstrate implementation of TEML's inspection program. Completion of Emergency Response Trailer Monthly Inspections was also verified by the Board during a visit of TEML's facilities in Carlyle.

The EMSMP describes the conducting of Emergency Response exercises as a means to gauge the effectiveness of TEML's Emergency Management Program and associated training programs. In 2017, TEML completed 30 Emergency Response exercises. These exercises included:

- tabletops;
- functional exercises;
- full-scale response;
- ice slotting;
- fire drills;
- man-down drills;
- tornado drills; and
- the testing of working with response equipment, such as boats, lake equipment, fast flowing water equipment, and decontamination equipment.

Emergency drills and full scale emergency exercises are documented, each of which include debriefings to identify deficiencies or possible improvements. Equipment deployments and tabletops are monitored by the exercise director for effectiveness by setting exercise objectives, and by referencing and using the emergency response plan(s).

TEML stated that exercise objectives are measured and tested through knowledge, understanding, and/or demonstration. For example, if an equipment deployment is being exercised at a listed control point, the exercise would include an evaluation of the effectiveness of the location by: assessing access, working points, and staging areas. Exercise evaluation guides are used to document exercise objectives, capability targets, and critical tasks and are used during full-scale and functional type exercises.

All exercises include the ability for participant feedback. Exercise evaluation guides combined with Hot Wash notes (an immediate after-action discussion and evaluation of performance), are used to evaluate the exercise and compile an After-Action Report. TEML advised that corrective items from exercises are tracked via Action Tracker Reports which are issued to applicable personnel when assigning tasks. Follow-up for completion is the responsibility of the Exercise Director. TEML advised that participant feedback is considered when updating the emergency management procedures and emergency management training.

The log of an exercise completed at Rafferty Reservoir on 15 March 2017, provided to the Board, demonstrated that exercise objectives are discussed, documented, and where applicable, are implemented. The document also demonstrates that participant feedback is provided and documented following the completion of the exercise. Objectives and participation feedback were also demonstrated when the NEB observed an ice slotting exercise at the Rafferty Reservoir on 11 January 2018.

As TEML is in its first year of a triennial exercise schedule, exercise evaluations of full-scale and functional types of exercises were not available at the time of the audit.

TEML's Integrated Management System (IMS) includes an internal audit process which describes the process for conducting audits of the management system and protection programs, and for taking corrective and preventive actions if deficiencies are identified. The IMS states that internal audits must be completed at least every three years. The IMS Management Review process details conducting an annual management review of the management system and protection programs and for ensuring continual improvement. The results of the Management Review are to be captured in an annual report signed by the accountable officer. The report must describe the performance of the management system in meeting its obligations and achievement of goals, objectives and targets.

As the TEML EM Program and TEML Emergency Procedures Manual have been only recently developed for the new company, the program and manual have not been reviewed for adequacy and effectiveness yet.

TEML has demonstrated that it has implemented a process for inspecting and monitoring the company's activities to evaluate the adequacy and effectiveness of the Emergency Management Manuals, contingency plans and exercises and for taking corrective and preventive actions if deficiencies are identified.

Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to this requirement.

<b>Topic: <u>Management System Sub Element 2.1 Hazards Identification, Risk Assessment and Control</u></b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (c):</b> establish and implement a process for identifying and analyzing all hazards and potential hazards;		
<b>Criteria Element 1:</b> Requirement for the company to establish and implement a process for identifying and analyzing all hazards and potential hazards;		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment*</b>
AP-07	Can the company demonstrate a process for identifying and analyzing all hazards and potential hazards?	Non-Compliant
<b>Assessment Notes</b>		
<p>TEML has developed a process for identifying and analyzing hazards and potential hazards, which is outlined in TEML's Integrated Management System (IMS). As stated in the IMS, the process defines a consistent approach for identifying and analyzing all hazards and potential hazards across the TEML Pipeline Systems as they relate to safety, security and protection of the environment. The Board was informed that at the time of the audit, this process had not yet been implemented.</p> <p>TEML stated that new hazards can be identified with project development, engineering, and construction departments, and with submission of near miss and Hazard ID's, and safety meetings. These hazards are reviewed by the program owner.</p> <p>TEML stated that personnel can use Hazard ID forms to identify hazards. This process may be utilized during exercises, emergencies, or other applicable emergency work.</p> <p>Hazards and potential hazards related to the Emergency Management Program are identified through activities such as exercises, equipment deployments, and inspections. TEML has a permit to work process that is completed prior to performing an exercise, and includes a list of potential hazards related to the activities being performed. The Field Level Hazard Assessments (FLHA) for two Emergency Response exercises completed at: Alameda Reservoir Control Point #13 on 20 July 2017 and Rafferty Marina on 7 September 2017, were reviewed by the Board. The FLHA is a checklist with potential hazards that need to be considered prior to completing the emergency response exercise.</p>		

Integrity related hazards which may elicit an Emergency Response, are identified and assessed as part of the Integrity Management Program (IMP). The Board was informed that TEML's IMP is being developed based on the original Enbridge IMP; however, it is being revised to reflect TEML's assets, programs, and format. The TEML IMP is expected to be completed by the end of January 2018. Integrity related hazards which have been identified include: 60-80 geotechnical and geo-hazards, watercourses through the TEML system, and hazards identified through incident investigations. Hazards within the IMP are identified through a variety of means, including: contracted regular aerial patrols, the cathodic protection program, and the chemical program. TEML advised that the IMP inspection program implemented under Enbridge is planned to be continued under the new (TEML) ownership.

The Board was informed that a Hazard Operability Study (HazOps) is completed on new projects to identify and analyze hazards and potential hazards. Pre-job hazard assessments are completed on a regular basis; however, they are largely focussed on safety related hazards. Process Hazard Analysis (PHAs) may be completed with new construction and equipment system modifications, which can include an emergency management element. If emergency management is consulted, hazards and potential hazards, as they relate to emergency management, can be applied.

Although TEML has developed an IMS document, which includes a process to identify and analyze hazards and potential hazards, it was confirmed during the interviews that the process is not fully established or implemented in identifying hazards that could lead to emergency events, which is in non-compliance with OPR s. 6.5 (1) (c).

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (c). The Board requires that a CAPA Plan be developed to address this non-compliance.

<b>Topic: <u>Management System Sub Element 2.1 Hazards Identification, Risk Assessment and Control</u></b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (d):</b> establish and maintain an inventory of the identified hazards and potential hazards;		
<b>Criteria Element 1:</b> Requirement for the company to establish and maintain an inventory of the identified hazards and potential hazards;		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment</b>
AP-08	Does the company have and maintain an inventory of the identified hazards and potential hazards	Non-Compliant
<b>Assessment Notes</b>		
<p>TEML provided a documented inventory of identified hazards and potential hazards titled the Hazard and Risk Register that was established and maintained by the previous owner. At the time of the audit, TEML indicated that the hazards and risks identified and analyzed had not been revised since the transfer of assets. TEML advised that it intends to develop its own Risk Register, or revise the current one to reflect hazards and potential hazards that are applicable to TEML assets. The target date for this revised inventory depends on the progress in implementation of hazard identification processes.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (d). The Board requires that a CAPA Plan be developed to address this non-compliance.</p>		

<b>Topic: <u>Management System Sub Element 2.1 Hazards Identification, Risk Assessment and Control</u></b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (e):</b> establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions;		
<b>Criteria Element 1:</b> Requirement for the company to establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment</b>
AP-09	The company must have a documented process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions;	Non-Compliant
<b>Assessment Notes</b>		
<p>Within its Integrated Management System (IMS), TEML has developed a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions. The process step “Evaluate Risk” within the Hazard Identification, Risk Assessment and Control section of the IMS, states that that “Risks in the TEML Hazard and Risk Register are evaluated against TEML Risk Acceptance Criteria”. As discussed earlier in this report, the TEML Hazard and Risk Register had not yet been developed to apply exclusively to TEML hazards and risks. The Board was informed that the TEML Risk Management tools and the Risk Acceptance Criteria are also being developed to apply to TEML operations, assets, hazards and risks.</p> <p>The Board notes that the Risk Register provided for review had limited information in the “Consequence Description”. In the Board’s view, this consequence description may not be sufficient to demonstrate that the consequence to the workers, the public and the environment for the hazards identified had been properly assessed. The Risk Register also did not include an assessment of the likelihood of such hazard resulting in the possible consequences. The Board further notes that an effective risk assessment must include both an assessment of the probability and consequences associated with the identified hazards.</p> <p>As part of the audit, the Board reviewed Risk ID TEML-014 for tank fires as it was captured in the Risk Register. In that case, from the environmental, public and worker safety perspective, the Consequence Description for tank fires was listed only as “safety concerns”. As this evaluation of consequence did not include an adequate assessment of potential consequences related to the environment, worker and public safety, the Board is of the view that it was incomplete and inadequate.</p>		

The Board was informed that, at the time of the audit, the process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions had not yet been implemented within the EM Program. As such, this process does not meet OPR requirements.

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (e). The Board requires that a CAPA Plan be developed to address this non-compliance.

<b>Topic: <u>Management System Sub Element 2.1 Hazards Identification, Risk Assessment and Control</u></b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (f):</b> establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks;		
<b>Criteria Element 1:</b> Requirement for the company to establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks;		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment</b>
AP-10	The company must have a documented processes for: (1) developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks; and for (2) communicating those controls to anyone who is exposed to the risks;	Non-Compliant
<b>Assessment Notes</b>		
(1) <u>Process for Developing and Implementing Controls</u>		
<p>TEML has developed a Hazard Identification, Risk Assessment and Control Process, which is outlined in TEML’s Integrated Management System (IMS). This process states that it includes the need to “Develop and implement controls to prevent, manage and mitigate the identified hazards and the risks, and communicates those controls to anyone who is exposed to the risks”.</p> <p>The “Treat Risk” process step is designed to indicate that risk treatment activities must be identified to modify or control the nature and extent of the risk. Further, it describes the process step as; “evaluating, selecting, preparing and implementing one or more treatment options that affect the consequence, likelihood, or both sides of the risk equation”.</p> <p>The Board was informed that at the time of the audit, this process had not yet been implemented for the EM program and therefore, TEML could not provide or demonstrate how the outputs of the hazard identification and risk evaluation processes are used in the development and maintenance of its EM Program, Emergency Management Manuals, contingency plans and Emergency Management exercises.</p> <p>Although the IMS process for developing and implementing controls has not been implemented at the EM Program level, TEML’s Emergency Management &amp; Security Management Program (EMSMP) does follow an existing interim process for implementing operational controls in emergency management activities. Operational controls managed by the EMSMP rely on rules, standards and standard operating procedures, each of which is described in the EMSMP. The EMSMP states that the process includes inputs from ongoing hazard and risk assessment activities, near miss and incident investigations results and audit and inspection results.</p>		

As one of the controls to manage a pipeline release into a high risk water body, TEML has pre-identified spill control points throughout its pipeline system to facilitate a timely emergency response, product containment and recovery in the event of a pipeline release. During exercises, control points are tested to ensure that the area is suitable for emergency response. A total of 117 control points are strategically placed within the TEML pipeline systems and are verified every five years.

During the audit the Board noted that TEML has emergency response plans for its terminals which include plans for tank fire emergencies. However, as TEML does not possess the necessary resources for fighting a tank fire, it does not have the capacity to execute those plans on its own. Also, TEML currently does not have a formal agreement in place with a third party to provide the necessary resources to fight a tank fire. At the time of the audit, TEML indicated that it is working to establish an agreement with Firemaster, which includes determining an approximate time for extinguishment and equipment that is available in the response area.

In light of the foregoing, TEML could not demonstrate that it has developed and implemented the controls to prevent, manage and mitigate the risks associated with tank fires or large secondary containment fires, which is in non-compliance with OPR s. 6.5 (1) (f).

## (2) Process for Communicating Controls

TEML uses several formal and informal methods to communicate controls related to emergency management to its staff. For example, staff safety meetings, tailgate meetings, and safety shares are examples of communication methods used by TEML to inform employees of controls that can be used if exposed to identified hazards or risks. Controls are communicated to all personnel at emergency response exercises during safety briefings, tactical briefings, and during the exercise itself if, and when, appropriate.

The Field Level Hazard Assessments (FLHA) for emergency response exercises completed at Alameda Reservoir Control Point #13 on 20 July 2017, and at Rafferty Marina on 7 September 2017 were reviewed by the Board. Each FLHA also included a list of possible controls to be communicated to personnel completing the exercises.

TEML has a Public Awareness Program (PAP) that communicates with the public and with potential response partners. PAP coordinates with emergency management employees to annually contact fire departments, police departments and detachments, EMS and hospitals to provide them information on the hazards and controls associated with the products transported and stored by TEML. TEML stated that it developed its PAP program while operating as Enbridge, and has committed to continue the program under TEML. The program includes personal contact delivery of messaging with all landowners on a three-year cycle, and personal contact with emergency responders, municipalities, excavators, and employees annually.

The TEML Public Awareness Contact Form completed following contact with Maryfield EMS, Alameda Fire Department, and Wallace District Fire Department, were provided for the Board to review during the audit. The form states that it is to be used for documenting baseline public awareness meetings with emergency response agencies, including:

- Fire Departments;
- Police;
- Emergency Management Offices/Agencies;
- 911 Dispatch Centres;
- Medical Facilities; and
- Community Emergency Response Coordinators (CEMC).

The form reviewed provided a checklist of items to review with the contact including a review of hazards at local facilities and a review of TEMLs Emergency Response Program, including available equipment and human resources, and preventative/mitigative methods and emergency preparedness methods. The TEML Record of Contact 2017 shows that mail-outs and phone calls were made to 46 EMS locations and nine Police/RCMP detachments. Mail-outs were sent to four hospitals and five health centres.

Local landowners, members of the local aboriginal community, response agencies, and government agencies are regularly invited to attend emergency response exercises as a means to communicate the hazards and risks, and provide an understanding of the controls that TEML has in place to manage its risks.

An example of Public Awareness communication provided for Board auditor review is a publication titled *Keeping in Touch for Emergency Responders*. This publication includes contact information, an overview of the TEML pipeline system, and information on hazards and identification of hazards, training and exercises completed by TEML personnel. This publication has been distributed to the public and to emergency response agencies throughout Saskatchewan and Manitoba, and has been posted on the TEML website.

Although TEML demonstrated that it has various controls in place to prevent, manage and mitigate identified hazards and risks, it did not demonstrate that it has established and implemented a process for developing and implementing controls.

In addition, TEML did not provide evidence to demonstrate how the outputs of the process are used in the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.

As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (f). The Board requires that a CAPA Plan be developed to address this non-compliance.

<b>Topic: <u>Management System Sub Element 2.1 Hazards Identification, Risk Assessment and Control</u></b>		
<b>Regulatory Requirement: OPR s. 6.5 (1) (t):</b> establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations;		
<b>Criteria Element 1:</b> Requirement for the company to establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises.		
<b>Item Number</b>	<b>Indicators of Compliance</b>	<b>Assessment</b>
AP-11	The company must have a documented process to establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.	Non-Compliant
<b>Assessment Notes</b>		
<p>TEML mentions the development and implementation of contingency plans within its Integrated Management System (IMS) within the process step to develop and implement risk control processes.</p> <p>During the audit, TEML explained that consultation with internal engineering and construction groups includes discussion of informal and development of formal contingency plans for abnormal events that could result in emergency situations. Depending on the risk of the project, the contingency plan developed or discussed may vary. TEML proposed that the Emergency Procedures Manual is a contingency plan itself, and contains supplemental Facility Emergency Response Plans to assist in developing response strategies and contingency plans.</p> <p>TEML’s 117 spill control points throughout its pipeline system may be considered to be a potential outcome of contingency planning to provide quick emergency response and product containment and recovery in the event of a pipeline release. Establishing and maintaining multiple control points throughout the pipeline system provides flexibility and adaptability in response, in the event of an abnormal condition that may impact an effective emergency response.</p> <p>Although TEML has contingency plans mentioned within its IMS and has provided examples of contingency plans that have been developed to support emergency response, the company did not demonstrate that it has a documented process for <u>developing</u> contingency plans for abnormal events that may occur during emergency situations.</p> <p>As it relates to the EM Program, the Board has determined that TEML is in non-compliance with OPR s. 6.5 (1) (t). The Board requires that a CAPA Plan be developed to address this non-compliance.</p>		

<b>Topic: CSA Z662-15 10.5.2 Pipeline Emergencies</b>		
<p><b>Regulatory Requirement: OPR s. 4 (1):</b> When a company designs, constructs, operates or abandons a pipeline, or contracts for the provision of those services, the company shall ensure that the pipeline is designed, constructed, operated or abandoned in accordance with the applicable provisions of</p> <p>(b) CSA Z276, if the pipeline transports liquefied natural gas;</p> <p>(c) CSA Z341 for underground storage of hydrocarbons;</p> <p>(d) CSA Z662, if the pipeline transports liquid or gaseous hydrocarbons; and</p> <p>(e) CSA Z246.1 for all pipelines.</p>		
<b>Criteria Element 1: CSA Z662-15 10.5.2 Pipeline emergencies clauses 10.5.2.1, 10.5.2.2, 10.5.2.3, 10.5.2.4</b>		
<b>Assessed Area:</b> The outputs of the process as related to the development and maintenance of Emergency Management Manuals, contingency plans and Emergency Management exercises		
<b>Item Number</b>	<b>Requirements</b>	<b>Assessment*</b>
AP-12	<p><b>CSA Z662-15 - clause 10.5.2.1</b></p> <p>Operating companies shall establish emergency procedures that include</p> <p>a) procedures for the safe control or shutdown of the pipeline system, or parts thereof, in the event of a pipeline emergency; and</p> <p>b) safety procedures for personnel at emergency sites.</p> <p><b>Note:</b> <i>Appropriate emergency procedures related to the pipeline, as determined in conjunction with community agencies, should be included.</i></p> <p><b><u>Assessment Notes</u></b></p> <p>TEML stated that it has emergency procedures for the safe control and shutdown of the pipeline system for different types of scenarios. They are documented in TEML’s Control Centre Procedures and in TEML’s EPM.</p>	No Non-Compliances Identified.

	<p>As outlined within the TEML Emergency Procedures Manual (EPM), TEML’s pipeline is monitored 24/7 at the Estevan Control Centre. Control Centre Operations (CCO) is responsible to take appropriate and reasonable actions to ensure that a release does not occur if abnormal conditions exist. CCO has documented procedures for the safe control and shutdown of the pipeline in the event of an emergency. Station Isolation-Pipeline procedure was provided for the Board to review. This procedure outlines steps for CCO operators to take to provide appropriate response when station isolation is required during routine operations or emergency situations.</p> <p>In the event of a pipeline emergency, or upon notification of a release, CCO will limit the potential of a release, or minimize its impact through actions such as, but not limited to:</p> <ul style="list-style-type: none"> <li>• isolation of the affected pipeline</li> <li>• shutdown of the affected pipeline</li> <li>• depressurization methods</li> <li>• notifications to appropriate internal and external parties</li> <li>• supporting responders</li> </ul> <p>Also stated in the EPM is that the primary objective of incident response is prioritizing the safety of responders and the public.</p> <p>Employees can access these procedures via electronically from the TEML Control Centre or via hard copies issued in applicable documents. Emergencies requiring dispatch of the Incident Command Post, all pertinent documentation including the EPM, ICS Forms, etc. are stored.</p> <p>For field employees requiring assistance during a shutdown of the pipeline, contact can be made to the Control Centre. Control Centre operators and employees requiring to use these procedures have been trained through in-house mentoring, emergency response exercises, and specialized control centre operator training. A Pipeline Operations On-Call Schedule is developed and issued weekly ensuring 24/7 response to any emergency situations.</p> <p>The Board verified through a review of documentation and through interviews with TEML personnel that the company has emergency procedures that include the safe control or shutdown of the pipeline system, or parts thereof in the event of an emergency, and include safety procedures for personnel located at emergency sites.</p>	
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**CSA Z662-15 - clause 10.5.2.2**

Operating companies shall regularly consult and inform the public and agencies to be contacted during an emergency (e.g., police and fire departments), as appropriate, about the hazards associated with its pipelines.

**Note:** *If community emergency response plans exist, appropriate methods to consult and inform the public can be determined in conjunction with the community agencies.*

**Assessment Notes**

During an emergency, the public will be contacted and informed of the pipeline hazards through external communication practices outlined in the EPM. Generally this process will be under the direction of the Public Information Officer (PIO) and may be in the form of an incident hotline, incident specific website, and/or community centre. The frequency of the updates will vary depending on the severity of the incident.

The EPM describes how the Public Information Officer (PIO) must coordinate with the Incident Commander, the Liaison Officer (LNO) and the Crisis Management Team (CMT) to ensure that factual messages are provided to employees, the public, and the media. The PIO is responsible for providing the CMT with situational updates throughout an emergency, and communication updates are provided to the media and to the public as significant developments occur. Releases and updates must be coordinated with the regulatory bodies to ensure consistency and accuracy of information.

Detailed within the EPM, “during an incident, people contacted within the EPZ and/or response zones must receive regular communication in order to keep them informed of the situation and actions being taken. They should be kept updated on the effects the incident may be having on people in the area; description of products involved and short and long term effects; and any actions they should take if they start to experience adverse effects.”

For NGL releases, the EPM states that, “in the event of an emergency, residents would receive notification and appropriate measures to be taken. Communication would be the responsibility of the Liaison officer, PIO, or designate”.

	<p>Through interviews and document review, the Board verified that the company regularly consults and informs the public and agencies to be contacted during an emergency (e.g., police and fire departments), as appropriate, about the hazards associated with its pipelines. The company also consults with and provides awareness training with agencies to be contacted or involved during an emergency.</p> <p><b>CSA Z662-15 - clause 10.5.2.3</b></p> <p>Operating companies shall prepare an emergency response plan and make relevant sections or information therein available to local authorities.</p> <p><b>Note:</b> <i>CAN/CSA-Z731 should be used as a guide for the preparation of emergency response plans.</i></p> <p><b><u>Assessment Notes</u></b></p> <p>TEML has developed an Emergency Procedures Manual (EPM) - Version 1.0 (2017). This manual provides details on the actions that TEML will take in the event of an emergency.</p> <p>The EPM is maintained on the TEML internal server providing all company employees read access. Controlled hard copies of the manual are limited to the TEML Emergency Operations Centre (located in Estevan, SK), the TEML Incident Command Post (located in Carlyle, SK) and the NEB (Calgary, AB). The ERM states that each of the plan holders will receive automatic updates as required.</p> <p>The EPM is made available online to all external agencies, local emergency services and members of the public with some information such as employee and resident contact information being redacted to protect the privacy of individuals.</p> <p>Even though the ERP is not directly available on the TEML website, the website does provide an online means to request for a copy of the plan.</p>	
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	<p>The Board verified through a review of documentation and through interviews with TEML personnel that the company makes relevant sections of the Emergency Response manuals or information therein available to local authorities. Manuals and information is provided posted on the company website and distributed digitally and/or hard copy through a controlled system to ensure current information is provided.</p> <p><b>CSA Z662-15 clause 10.5.2.4</b></p> <p>Operating companies shall have verifiable capability to respond to an emergency in accordance with their emergency procedures and response plans and shall demonstrate and document the effectiveness of such procedures and plans.</p> <p><b><u>Assessment Notes</u></b></p> <p>TEML owns and has access to a variety of spill recovery equipment located strategically throughout its operations. The Board verified TEML’s spill response equipment located in Carlyle (SK). This is the main site for the storage of spill response equipment. The site included typical equipment necessary for spill response such as an incident command trailer, equipment trailer and sea cans, boats, booms, absorbent materials, skimmers, and ice operations equipment.</p> <p>TEML has trained personnel, some of who are on-call and others who are available, to respond and support the response to incidents. TEML Pipeline Operations On-Call Schedule provides evidence to demonstrate commitment of human resources to be able to respond to an emergency event.</p> <p>TEML is also an active member of the Saskatchewan and Manitoba Oil Spill Cooperatives and has a Mutual Aid Agreement for Emergency Response Assistance with Enbridge Bakken Pipelines Limited. The Mutual Aid Agreement with Enbridge outlines agreed assistance which may be provided to respond to an emergency. This may include the use of foam stored at Enbridge’s facilities.</p>	
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	<p>The Government of Saskatchewan and the Office of the Fire Commissioner are also able to provide assistance in a major response related to tank fires. These agencies would work with the various stakeholders involved to coordinate actions. Another major role the government would take is dealing with impacts such as: evacuations, impacts to essential services, and liaising with impacted communities and other government ministries.</p> <p>A listing of emergency response resources, including those to provide tank firefighting services and associated equipment is maintained in TEML’s Emergency Response Directory (ERD-2017).</p> <p>The effectiveness of emergency response plans and procedures is tested through emergency response exercises and actual events requiring utilization of response plans and procedures. To date, 19 emergency response exercises have been completed for the 2017 year, testing TEML’s plans for effectiveness and response procedures.</p> <p>The Board verified through a review of documentation, and through interviews with TEML personnel that the company regularly assesses its capability to respond to an emergency in accordance with its emergency procedures and response plans, and the company demonstrates and documents the effectiveness of procedures and plans, through Management Reviews, audits, exercises, drills and in the reviews following actual emergency events.</p>	
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**Assessment Notes**

Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to these CSA Z662-15 requirements.

## Appendix II – Audit Process Overview

### NEB Purpose and Audit 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. In order to assure that pipelines are designed, constructed, operated and abandoned in a manner that ensures: the safety and security of the public and the company's employees; safety of the pipeline and property; and protection of the environment, the Board has developed regulations requiring companies to establish and implement documented management systems applicable to specified technical management and protection programs. These management systems and programs must take into consideration all applicable requirements of the NEB Act and its associated regulations. The applicable Legislation and Regulations which come under the NEB's mandate, responsibilities and powers include:

- *National Energy Board Act* and associated regulations;
- *Canada Oil and Gas Operations Act* and associated regulations;
- *Canada Petroleum Resources Act* (sections 28 and 35) and associated regulations;
- *Oil and Gas Operations Act* and associated regulations; and
- *Petroleum Resources Act* and associated regulations.

Additional regulatory requirements are contained within:

- The *Canada Labour Code, Part II*, and the *Canada Occupational Health and Safety Regulations*; and
- Any conditions contained within applicable certificates or orders issued by the Board.

To evaluate compliance with its regulations, the Board audits the management system and programs of regulated companies. The Board requires each regulated company to demonstrate that they have established and implemented, adequate and effective methods for proactively identifying and managing hazards and risks. The Board's management system requirements are described within the *National Energy Board Onshore Pipeline Regulations* (OPR), sections 6.1 through 6.6.

### Background

The NEB expects pipeline companies to operate in a systematic, comprehensive and proactive manner that manages risks. The Board expects companies to have effective, fully developed and implemented management systems and protection programs that provide for continual improvement.

As required by the OPR, companies must establish, implement and maintain effective management systems and protection programs in order to anticipate, prevent, mitigate and manage conditions that may adversely affect the safety and security of the company's pipelines, employees, the general public, as well as the protection of property and the environment.

During the audit, the Board reviews documentation and samples records provided by the company in its demonstration of compliance and interviews corporate and regionally based staff. The Board also conducts separate but linked technical inspections of a representative sample of company facilities as necessary. This enables the Board to evaluate the adequacy, effectiveness and implementation of the management system and programs. The Board bases the scope and location of the inspections on the needs of the audit. The inspections follow the Board's standard inspection processes and practices. Although they inform the audit, inspections are considered independent of the audit. If unsafe or non-compliant activities are identified during an inspection, they are actioned as set out by the Board's standard inspection and enforcement practices.

After completing its field activities, the Board develops and issues a Final Audit Report. The Final Audit Report outlines the Board's audit activities and provides evaluations of the company's compliance with the applicable regulatory requirements. Once the Board issues the Final Audit Report, the company must submit and implement a Corrective Action Plan to address all non-compliances identified. Final Audit Reports are published on the Board's website. The audit results are integrated into NEB's risk-informed lifecycle approach to compliance assurance.

The Board informed TEML of its intent to audit its NEB regulated facilities on 22 November 2017. Following this notification, Board audit staff contacted TEML personnel to arrange and coordinate this audit. The Board provided TEML with an audit plan, protocol and information to assist TEML in preparing for the audit and to guide the company in providing applicable documentation and records to demonstrate its compliance. TEML established a digital access portal for Board staff to review documentation and records.

### **Audit Activities**

On 22 November 2017, the Board informed TEML of its intent to audit. Board staff then provided TEML with an overview of the NEB audit process, the audit criteria, a request for documentation and a list of questions to answer relevant to the objectives and scope of the audit. The NEB conducted its assessment based on the responses provided by the company and the evidence gathered during the audit.

Board staff was in contact with company staff on a regular basis to arrange and coordinate this audit. TEML established a digital access portal for Board staff to review documentation and records.

On 30 November 2017, an opening meeting was conducted with TEML staff in Calgary, Alberta to provide and confirm understanding of the Board's audit objectives, scope and process, and to set the agenda for audit interviews and field verification activities.

From 9 to 10 January 2018, interviews were conducted in Estevan, Saskatchewan. During the interviews, Board staff provided TEML daily summaries which included requests for additional documentation and interviews. On 11 January 2018, NEB auditors witnessed TEML conducting an emergency response exercise on ice and verified the company response equipment located in Carlyle, Saskatchewan.

On 26 January 2018, Board staff held an audit close-out meeting with TEML representatives. At this meeting, Board staff and TEML staff discussed potential non-compliances identified during the audit. At that time the company was provided with the opportunity to present additional evidence to rectify these potential non-compliances. On 2 February 2018, TEML confirmed that it had no additional information or comments to provide in relation to the potential non-compliances.

## Appendix III – Terminology and Definitions

(The Board has applied the following definitions and explanations in measuring the various requirements included in this audit. They follow or incorporate legislated definitions or guidance and practices established by the Board, where available.)

**Adequate:** The management system, programs or processes complies with the scope, documentation requirements and, where applicable, the stated goals and outcomes of the NEB Act, its associated regulations and referenced standards. Within the Board’s regulatory requirements, this is demonstrated through documentation.

**Audit:** A systematic, documented verification process of objectively obtaining and evaluating evidence to determine whether specified activities, events, conditions management systems or information about these matters conform to audit criteria and legal requirements and communicating the results of the process to the company.

**Compliant:** The company has demonstrated that it has developed and implemented programs, processes and procedures that meet legal requirements.

**Corrective Action Plan:** A plan that addresses the non-compliances identified in the audit report and explains the methods and actions that will be used to correct them.

**Developed:** A process or other requirement has been created in the format required and meets the described regulatory requirements.

**Effective:** A process or other requirement meets its stated goals, objectives, targets and regulated outcomes. Continual improvement is being demonstrated. Within the Board’s regulatory requirements, this is primarily demonstrated by records of inspection, measurement, monitoring, investigation, quality assurance, audit and management review processes as outlined in the OPR.

**Established:** A process or other requirement has been developed in the format required. It has been approved and endorsed for use by the appropriate management authority and communicated throughout the organization. All staff and persons working on behalf of the company or others that may require knowledge of the requirement are aware of the process requirements and its application. Staff has been trained on how to use the process or other requirement. The company has demonstrated that the process or other requirement has been implemented on a permanent basis. As a measure of “permanent basis”, the Board requires the requirement to be implemented, meeting all of the prescribed requirements, for three months.

**Finding:** The evaluation or determination of the compliance of programs or elements in meeting the requirements of the *National Energy Board Act* and its associated regulations.

**Implemented:** A process or other requirement has been approved and endorsed for use by the appropriate management authority. It has been communicated throughout the organization. All staff and persons working on behalf of the company or others that may require knowledge of the requirement are aware of the process requirements and its application. Staff has been trained on how to use the process or other requirement. Staff and others working on behalf of the company have demonstrated use of the process or other requirement. Records and interviews have provided evidence of full implementation of the requirement, as prescribed (i.e. the process or procedures are not partially utilized).

**Inventory:** A documented compilation of required items. It must be kept in a manner that allows it to be integrated into the management system and management system processes without further definition or analysis.

**List:** A documented compilation of required items. It must be kept in a manner that allows it to be integrated into the management system and management system processes without further definition or analysis.

**Maintained:** A process or other requirement has been kept current in the format required and continues to meet regulatory requirements. With documents, the company must demonstrate that it meets the document management requirements in OPR, section 6.5 (1) (o). With records, the company must demonstrate that it meets the records management requirements in OPR, section 6.5 (1) (p).

**Management System:** The system set out in OPR sections 6.1 to 6.6. It is a systematic approach designed to effectively manage hazards and reduce risk, and promote continual improvement. The system includes the organizational structures, resources, accountabilities, policies, processes and procedures required for the organization to meet its obligations related to safety, security and environmental protection.

(The Board has applied the following interpretation of the OPR for evaluating compliance of management systems applicable to its regulated facilities.)

As noted above, the NEB management system requirements are set out in OPR sections 6.1 to 6.6. Therefore, in evaluating a company's management system, the Board considers more than the specific requirements of section 6.1. It considers how well the company has developed, incorporated and implemented the policies and goals on which it must base its management system as described in section 6.3; its organizational structure as described in section 6.4; and considers the establishment, implementation, development and/or maintenance of the processes, inventory and list described in section 6.5 (1). As stated in sections 6.1 (c) and (d), the company's management system and processes must apply and be applied to the programs described in section 55.

**Non-Compliant:** The company has not demonstrated that it has developed and implemented programs, processes and procedures that meet the legal requirements. A corrective action plan must be developed and implemented. **Procedure:** A documented series of steps followed in a regular and defined order thereby allowing individual activities to be completed in an effective and safe manner. A procedure also outlines the roles, responsibilities and authorities required for completing each step.

**Process:** A documented series of actions that take place in an established order and are directed toward a specific result. A process also outlines the roles, responsibilities and authorities involved in the actions. A process may contain a set of procedures, if required.

(The Board has applied the following interpretation of the OPR for evaluating compliance of management system processes applicable to its regulated facilities.)

OPR section 6.5(1) describes the Board's required management system processes. In evaluating a company's management system processes, the Board considers whether each process or requirement: has been established, implemented, developed or maintained as described within each section; whether the process is documented; and whether the process is designed to address the requirements of the process, for example a process for identifying and analyzing all hazards and potential hazards. Processes must contain explicit required actions including roles, responsibilities and authorities for staff establishing, managing and implementing the processes. The Board considers this to constitute a common *5 w's and h approach* (who, what, where, when, why and how). The Board recognizes that the OPR processes have multiple requirements; companies may therefore establish and implement multiple processes, as long as they are designed to meet the legal requirements and integrate any processes linkages contemplated by the OPR section. Processes must incorporate or contain linkage to procedures, where required to meet the process requirements.

As the processes constitute part of the management system, the required processes must be developed in a manner that allows them to function as part of the system. The required management system is described in OPR section 6.1. The processes must be designed in a manner that contributes to the company following its policies and goals established and required by section 6.3.

Further, OPR section 6.5 (1) indicates that each process must be part of the management system and the programs referred to in OPR section 55. Therefore, to be compliant, the process must also be designed in a manner which considers the specific technical requirements associated with each program and is applied to and meets the process requirements within each program. The Board recognizes that a single process may not meet all of the programs; in these cases it is acceptable to establish governance processes, as long as they meet the process requirements (as described above) and direct the program processes to be established and implemented in a consistent manner, that allows for the management system to function as described in 6.1.

**Program:** A documented set of processes and procedures designed to regularly accomplish a result. A program outlines how plans, processes and procedures are linked; in other words, how each one contributes to the result. A company regularly plans and evaluates its program to check that the program is achieving the intended results.

(The Board has applied the following interpretation of the OPR for evaluating compliance of programs required by the NEB regulations.)

The program must include details on the activities to be completed including what, by whom, when, and how. The program must also include the resources required to complete the activities.

## Appendix IV – Abbreviations

AO: Accountable officer  
AP: Audit Protocol  
CAP: Corrective Action Plan  
CAP: Competency Assessment Plan  
CAPA: Corrective and Preventive Action  
CCO: Control Centre Operations  
CEMC: Community Emergency Response Coordinators  
CEMP : Corporate Emergency Management Program  
CLC: Canada Labour Code, Part II  
CMT: Crisis Management Team  
COHSR: Canada Occupational Health and Safety Regulations  
CSA Z662-15: CSA Standard Z662 entitled *Oil and Gas Pipeline Systems*, 2015 version  
DDCP: Documentation & Document Control Process  
EHS: Environment, Health and Safety  
EM: Emergency Management  
EMP: Emergency Management Program  
EMS: Emergency Medical Service  
EMSMP: Emergency Management & Security Management Program  
EPM: Emergency Procedures Manual  
EPP: Environmental Protection Plan  
EPZ: Emergency Planning Zone  
ERP: Emergency Response Plan  
ERTMI: Emergency Response Trailer Monthly Inspection  
ESD: Emergency Shutdown  
FLHA: Field Level Hazard Assessment  
HazOp: Hazard Operability Study  
HR: Human Resources  
HSMP: Health and Safety Management Plan  
HSSE: Health, Safety, Security and Environment  
IC: Incident Commander  
ICS: Incident Command System  
ID: Identification  
IMS: Integrated Management System  
IR: Information Request  
LACT: Terminal and Lease Custody Transfer site  
LNO: Liaison Officer  
LPO: Loss Prevention Observations  
MOC: Management of change  
NEB: National Energy Board  
OPR: *National Energy Board Onshore Pipeline Regulations*  
NGL: Natural Gas Liquids  
PAP: Public Awareness Program  
PHA: Process Hazard Analysis  
PIO: Public Information Officer

SCBA: Self Contained Breathing Apparatus  
SME: Subject Matter Expert  
TC&E: Training, Competence and Evaluation  
TEML: TEML Westspur Pipelines Limited  
UAT: User Acceptance Testing

## Appendix V – Documents and Records Reviewed

The following documents were reviewed as part of the audit:

2017 December 6 IMT TTX ExPlan  
2017 Exercise Tracksheet  
2017 March 15th Equipment Deployment ExPlan  
2017 May 3 Equipment Deployment ExPlan  
2017 November 16 Steelman Operations Tabletop ExPlan  
2017 September 7 Equipment Deployment ExPlan  
Action Tracker Report - July 5, 2017 Exercise  
Alameda 2017 ROC  
Corporate-Department Goals - Emergency Management 2017  
Daily Summary Request - Information Requests - January 10, 2017 - 6a,b,c,d,e,f  
Daily Summary Request Response - AP-01  
Daily Summary Request Response - AP-02  
Daily Summary Request Response - AP-03  
Daily Summary Request Response - AP-04  
Daily Summary Request Response - AP-05  
Daily Summary Request Response - AP-06  
Daily Summary Request Response - AP-07, 08, 09, 10  
Daily Summary Request Response - AP-11  
December 2017 Inspection Form  
Email chain of approval for EPM  
Emergency Management & Security Management Program - 2017 - Rev 00(1)  
Emergency Management & Security Program Document List  
Emergency Response Plan - Loss of Containment - Hydrottest with Methanol -  
02.07.2017  
Emergency Response Training Statistics – As of 16 November 2017  
EMERGENCY SHUTDOWN - PIPELINE (3.0.0 Published) - 2017-12-04  
Equipment List 15-Jan-18  
ERD - 2017  
Facility Emergency Response Plan - Alida - 2017  
Facility Emergency Response Plan - Midale-2017  
Facility Emergency Response Plan - Steelman-2017  
FLHA - Lake Response - September 7, 2017  
Hazard Assessment - July 20, 2017, Alameda Exercise  
IR - AP01 Response  
IR - AP02 Response  
IR - AP03 Response  
IR - AP04 Response  
IR - AP05 Response

IR - AP06 Response  
IR - AP07 Response  
IR - AP08 Response  
IR - AP09 Response  
IR - AP10 Response  
IR - AP11 Response  
IR - AP12 Response  
Keeping in Touch for Emergency Responders Brochure  
Keeping in Touch Pipeline Safety and Emergency Information Brochure  
Letter for Municipalities and Emergency Response Agencies  
Letter to Stakeholders  
Mailout 2017  
Maryfiled EMS 2017  
Minutes - May 3, 2017  
Monthly Inspection for month of March 2017  
Natural Gas Liquids and Product Ignition Evaluation  
Natural Gas Liquids and Product Ignition Quiz  
NEB Audit Tentative Schedule  
Objectives from March 15, 2017  
Pipeline Operations On-Call Schedule - Dec. 7 - Dec. 13  
Project Specific ERP - PL-03100  
Public Awareness Program  
RE\_ Emergency Procedures Manual - Recent Updates  
RE\_ Emergency Response Plan Form Submission - INAC  
Signed - TEML IMS - Rev.00 - 19-06-2017  
Station Isolation - Pipeline (2.0.0 Published) - 2017-12-04  
TEML EPM - 2017 Private  
TEML Equipment and Resource Map  
TEML Risk Register  
Terminal Inspection Check Sheet - Midale - November 2017  
Tundra Energy Safety Share  
Wallace District-Virden 2017 ROC  
Working on Ice



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## Appendix VI – Company Representatives Interviewed

Company Representative Interviewed	Job Title
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]