

National Energy  
Board



Office national  
de l'énergie

444 Seventh Avenue SW  
Calgary, Alberta  
T2P 0X8

***National Energy Board Onshore Pipeline Regulations, 1999 (OPR-99)***  
**Final Audit Report**  
**for Integrity Management, Safety, Environmental Protection, Emergency Management,  
Crossings and Public Awareness Programs**

**File Number: OF-Surv-OpAud-W102-2011-2012 01**

Westcoast Energy Inc., carrying on business as  
Spectra Energy Transmission (Westcoast)  
Suite 2600, 425 - 1<sup>st</sup> Street SW  
Calgary, AB T2P 3L8

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Canada

## **Executive Summary**

As part of its compliance verification program, the National Energy Board (NEB or Board) conducted an audit of Westcoast's Integrity Management, Safety, Environmental Protection, Emergency Management, Crossings and Public Awareness Programs (Programs) as they apply to its pipeline facilities. These Programs, and their content, are required to be developed under the *National Energy Board Act* (NEB Act), the *Canada Labour Code* (CLC), and their associated regulations.

This audit is one of a series of three audits being undertaken by the Board with respect to NEB regulated facilities operated within Spectra Energy's organization. The others are: the NEB *Processing Plant Regulations* Audit of the McMahon Gas Plant and the concurrent audit of Spectra Energy's Alberta, Saskatchewan and Manitoba NGL pipeline facilities (SET-PTC). These audits identified that Spectra Energy is operating its facilities using a common organizational and technical management structure for all of the facilities noted. The findings are therefore similar in each audit and the individual audit reports reflect this. During the audit, the Board reviewed and evaluated each set of facilities based on the individual activities, as well as the associated hazards and risks, as reflected in the individual audit reports.

The audit identified that Westcoast is implementing technical programs to manage and control the hazards associated with its pipeline facilities. The audit did, however, identify a number of non-compliant findings. The majority of the non-compliant findings relate to Westcoast's lack of formal, proactive and systematic identification, review and management of its legal requirements and its safety and environmental hazards, across its Programs. The audit identified that the majority of hazards had been included in Westcoast's procedures and practices; however, these hazards were primarily identified by Westcoast staff either through personal knowledge or in the operating permits issued by other regulatory bodies, rather than through required systematic reviews and assessment processes. This has resulted in Westcoast being unable to demonstrate that its Programs are compliant. The Board is of the view that these non-compliance findings do not pose an undue hazard during the development and implementation of a CAP to address the deficiencies.

The Board notes that within the management system elements of its audit protocols there are conceptual linkages between sub-elements. As a result, a finding of non-compliance in a particular sub-element may necessarily result in multiple findings of non-compliance within each Program area. This is particularly evident in this audit due to Westcoast's non-compliant hazard identification and assessment practices. The Board has identified each of the linked sub-element findings to assist Westcoast in implementing all necessary corrective actions to its Programs to ensure safety management and environmental protection.

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## 1.0 Introduction: NEB Purpose and Framework

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

To evaluate compliance with its regulations, the NEB undertakes audits of its regulated companies. Following the audits, companies are required to submit and implement a CAP to address and mitigate all findings of non-compliance. The results of the audits are applied to the NEB's risk-informed life cycle approach to compliance.

The NEB requires that each company be able to demonstrate the adequacy and implementation of the methods they have selected and employed to achieve compliance.

## 2.0 Audit Terminology and Definitions

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

**Corrective Action Plan:** Addresses the non-compliances identified in the Audit Report and explains the methods and actions which will be used to "correct" them.

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

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

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

**Finding:** The evaluation or determination of the adequacy of programs or elements in meeting the requirements of the NEB Act, Part II of the CLC, and their associated regulations.

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

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

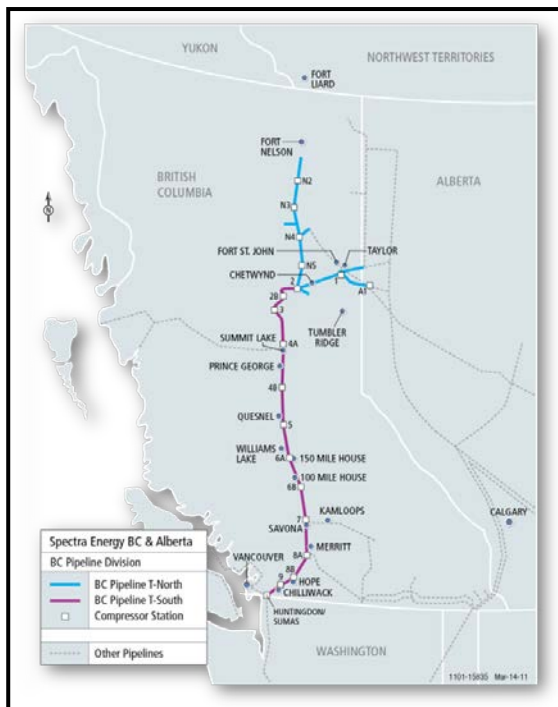
### 3.0 Background

This audit is one of a series of three audits being undertaken by the Board with respect to NEB regulated facilities operated within Spectra Energy's organization. The others are: the NEB *Processing Plant Regulations* Audit of the McMahon Gas Plant and the concurrent audit of Spectra Energy's Alberta, Saskatchewan and Manitoba NGL pipeline facilities (SET-PTC). These audits identified that Spectra Energy is operating its facilities using a common organizational and technical management structure for all of the facilities noted. The findings are therefore similar in each audit and the individual audit reports reflect this. During the audit, the Board reviewed and evaluated each set of facilities based on the individual activities, as well as the associated hazards and risks, as reflected in the individual audit reports.

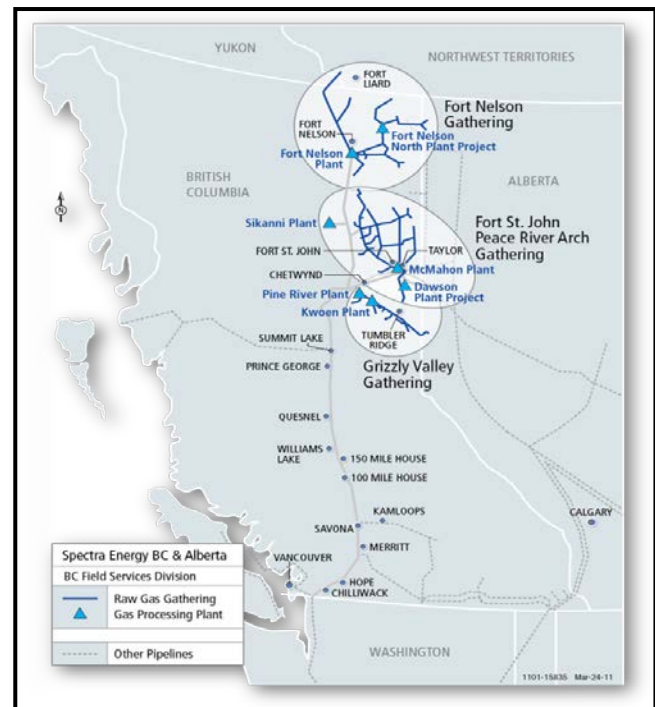
Westcoast holds the certificate and the assets for the Westcoast pipeline system, which is owned and operated by Spectra Energy. Spectra Energy has ownership of several different pipeline systems in Canada and the United States. With respect to the Westcoast pipeline system only, Spectra Energy sometimes refers to itself as Spectra Energy Transmission West, Spectra Energy Transmission BC or Spectra Energy BC Pipeline and Field Services. As such, the job titles of employees interviewed, as well as the titles of documentation reviewed, reflect these variations.

The Westcoast pipeline system is comprised of both pipeline and gas processing facilities, as shown in Figures 1 and 2. This OPR-99 audit included an assessment of Westcoast's Integrity Management, Safety, Environmental Protection, Emergency Management, Crossings and Public Awareness Programs (Programs) as they apply to its pipeline facilities.

**Figure 1 – SET-West**



**Figure 2 – SET-BC**



### 4.0 Audit Objectives and Scope

The scope of the audit included an assessment of whether Westcoast was fulfilling the requirements of the:

- NEB Act;
- OPR-99;
- NEB *Pipeline Crossing Regulations*, Part I and Part II
- CLC Part II;
- *Safety and Health Committees and Representatives Regulations* made under Part II of the CLC;
- *Canadian Occupational Health and Safety Regulations* (COHSR) made under Part II of the CLC; and
- Westcoast's policies, programs, practices and procedures.

Westcoast was also required to demonstrate the adequacy and effectiveness of the methods selected and employed within its Programs to meet the regulatory requirements above.

## 5.0 Audit Process

| <b>Audit Activities</b>  |
|--|
| <ul style="list-style-type: none"> <li>• Audit Opening Meeting (Calgary, AB) – 23 November 2012</li> <li>• Head Office Interviews (Calgary, AB; Charlie Lake, BC; Vancouver, BC) – 23-30 November 2012.</li> <li>• Field Verification:               <ul style="list-style-type: none"> <li>○ T-North Inspections (Dig #6; 16 km 36" MML2 Piggings Facility (Sending/Receiving); Cypress Compressor Station N4).</li> <li>○ T-South Inspections (Hope Compressor Station 8B; Savona Compressor Station 7; Tunkwa Lake and Huntingdon/Sumas Meter Stations).</li> <li>○ T-South ROW, and Compressor Stations 7 &amp; 8A.</li> <li>○ Fort St.John/Fort Nelson Mainlines and N3 Compressor Station.</li> <li>○ Aerial inspection from Huntington Metre station to Portia.</li> <li>○ Site inspection Savonna.</li> </ul> </li> <li>• Audit Pre-Close-Out Discussion (Calgary, AB) – 9 January 2013</li> <li>• Final Audit Close-Out Meeting (Calgary, AB) – 15 January 2013</li> <li>• Draft Audit Report issued 7 February 2013</li> <li>• Westcoast comments submitted to the Board 6 March 2013</li> </ul> |

The Board chose to audit Westcoast by utilizing a risk-informed approach that included a review of previous compliance history. On 23 November 2012, an opening meeting was conducted with representatives from Westcoast in Calgary, Alberta to discuss the objectives, scope and process of the audit, and to initiate the development of a schedule for conducting the audit site visits and staff interviews.

Daily debriefs were held at the end of each day of both head office interviews and field verification, to communicate issues to Westcoast representatives. On 9 January 2013, an Audit Pre-Close-Out Discussion was conducted at Westcoast's offices in Calgary, where the results of the audit, including an outline of the draft audit non-compliances, were presented to Westcoast.

At that time, the Board's auditors invited Westcoast to provide any documentation that may mitigate, or negate, any non-compliances. A Final Audit Close-Out Meeting was held on 15 January 2013. Westcoast offered no concerns with the Board's findings as they were presented. The Board's Draft Audit Report was issued on 7 February 2013. On 6 March 2013, Westcoast submitted comments on the Draft Audit Report. These comments were reviewed by the Board and have been addressed, where appropriate, in the Appendices.

For a list of Westcoast representatives interviewed, refer to Appendix VII. For a list of documents and records reviewed, refer to Appendix VIII.

## **6.0 Audit Results – Summary by Program Area**

The audit identified a number of findings across the Programs that were evaluated. A summary of the findings in each Program area is as follows:

### ***Integrity Management Program***

Westcoast demonstrated that it has an Integrity Management Program (IMP) for its pipeline facilities. However, Westcoast has not met the Board's expectations for a complete, robust and fully implemented IMP. Of particular note were the non-compliances with respect to management system sub-elements 4.4 - Internal Audit and 5.1 - Management Review.

Review of the non-compliant sub-elements and Westcoast's IMP, as implemented, indicates that the deficiencies generally do not reflect a complete system failure in any area. The audit identified that Westcoast's IMP includes and mitigates the majority of possible hazards to the pipeline system.

For details associated with the assessment of the management system elements of the IMP, refer to Appendix I: Westcoast Integrity Management Program Audit Evaluation Table.

### ***Safety Program***

Westcoast demonstrated that it has an established Environmental, Health and Safety Management System (EHS MS) with many elements and processes that allow for continual improvement. The EHS MS contains procedures for identified work tasks typically encountered by Westcoast personnel. Westcoast holds various meetings and completes reports which monitor and document the EHS MS safety component. Westcoast has also implemented a record retention process which includes: appropriate types of records to be retained; retention and disposition timeframes; and disposal methods.

Although Westcoast's EHS MS has many of the elements required in a management system, Westcoast has not met the Board's expectations for a complete, robust and fully implemented Safety Program.

For details associated with the management system elements of the Safety Program, refer to Appendix II: Westcoast Safety Program Audit Evaluation Table.

### ***Environmental Protection Program***

The audit of Westcoast's Environmental Protection (EP) Program revealed a number of non-compliant areas. The non-compliant sub-elements generally appear to be related to one of two basic deficiencies: a lack of formal and systematic procedures for the identification and evaluation of all legal requirements, as well as its environmental hazards and aspects; and a lack of professional environmental resources for the development and implementation of the EP Program.

The deficiencies identified do not reflect a complete system failure in any area. As Westcoast's EP Program utilizes reaction-oriented initiatives, it captures and mitigates most of the environmental hazards and aspects resulting from Westcoast's operations.

For details associated with the assessment of the management system elements of the EP Program, refer to Appendix III: Westcoast Environmental Protection Program Audit Evaluation Table.

### ***Emergency Management Program***

Review of the Emergency Management (EM) Program for the Westcoast pipeline facilities indicates that, while there are a number of non-compliant findings assigned, the company has a reasonably developed EM Program. The documents and records demonstrate that the company is ensuring that its staff, and potentially involved agencies, public and mutual aid partners, are appropriately informed and/or trained. Westcoast's EM records indicate that its staff have planned and carried out at least 50 learning and informative activities in each of the last two years.

Westcoast's management demonstrated that the company has resourced the EM Program and involved itself in oversight and implementation at high levels. It was noted that implementation of key EM Program elements is included in the company's performance pay measures.

Review of the non-compliant findings made by the Board indicates, with the exception of the finding associated with sub-element 3.4 Communications, that the non-compliant findings are related to the formal development and implementation of company-wide management system procedures which, by rule, apply to the EM Program. During the audit, however, Westcoast EM staff demonstrated that many of the deficient program requirements were being undertaken on a less formal basis by the EM staff. With respect to sub-element 3.4, the deficiency does not reflect a systematic lack of communications processes and procedures but relates to the lack of development of a key individual communication practice. This was related to the need to develop and implement safety messaging for callers reporting potential incidents. Following the identification of this deficiency, Westcoast staff identified that the company would start developing the corrective actions regardless of the Board's audit evaluation of the issue as it was viewed as a learning. The Board will monitor the implementation of this mitigation.

For details associated with the assessment of the management system elements of the EM Program, refer to Appendix IV: Westcoast Emergency Management Program Audit Evaluation Table.



### ***Crossings Program***

Westcoast was able to demonstrate that it has established a program to support the effective management of third party excavation and construction around its pipelines. Deficiencies noted in the Crossings Program do not relate to its implementation, rather, to its lack of integration within Westcoast's EHS MS. The rationale for the findings of non-compliance for the policy, management of change, legal requirements and internal audit sub-elements points to a lack of formalized oversight that exists between the Crossings Program and the rest of the Westcoast EHS MS.

For details associated with the assessment of the management system elements of the Crossings Program, refer to Appendix V: Westcoast Crossings Program Audit Evaluation Table.

### ***Public Awareness Program***

Westcoast was able to demonstrate that it has established a Public Awareness (PA) Program to support effective communication with and education of third parties who live and work near the pipelines. Deficiencies noted in the PA Program do not relate to the program's implementation, rather to its lack of integration with the EHS MS. The rationale for the findings of non-compliance in the policy, legal requirements, management of change, internal audit and management review sub-elements are indicative of a lack of formal inclusion of the PA Program into the broader Westcoast EHS MS.

For details associated with the assessment of the management system elements of the Public Awareness Program, refer to Appendix VI: Westcoast Public Awareness Program Audit Evaluation Table.

## **7.0 Conclusions**

The audit identified that Westcoast is undertaking work to manage and control the hazards associated with its facilities, processes and activities. Notwithstanding this, the audit identified a number of non-compliant findings. The majority of the non-compliant findings relate to Westcoast's lack of formal, proactive and systematic identification, review and management of its legal requirements, and its safety and environmental hazards across its Programs. The audit identified that the majority of hazards had been included in Westcoast's procedures and practices; however, these hazards were primarily identified by Westcoast staff either through personal knowledge or in the operating permits issued by other regulatory bodies, rather than through required systematic reviews and assessment processes. This has resulted in Westcoast being unable to demonstrate that all its Program sub-elements are compliant. With respect to these findings, the Board is of the view that the processes presently used by Westcoast have identified the majority, and most significant, of its hazards and risks. The Board is of the view that these non compliance findings do not pose an undue hazard during the development and implementation of a CAP to address the deficiencies.

## 8.0 Audit Findings Table

For evaluation purposes, the NEB management requirements have been organized in a table format and include the following five elements and sixteen sub-elements:

- 1.0 Policy and Commitment
  - 1.1 Policy and Commitment Statements
- 2.0 Planning
  - 2.1 Hazard Identification, Risk Assessment and Control
  - 2.2 Legal Requirements
  - 2.3 Goals, Targets and Objectives
- 3.0 Implementation
  - 3.1 Organizational Structure, Roles and Responsibilities
  - 3.2 Management of Change
  - 3.3 Training, Competence and Evaluation
  - 3.4 Communication
  - 3.5 Documentation and Document Control
  - 3.6 Operational Control – Normal Operations
  - 3.7 Operational Control – Upset or Abnormal Operating Conditions
- 4.0 Checking and Corrective Action
  - 4.1 Inspection, Measurement and Monitoring
  - 4.2 Corrective and Preventive Actions
  - 4.3 Records Management
  - 4.4 Internal Audit
- 5.0 Management Review
  - 5.1 Management Review

These elements and sub-elements are arranged to match standard management system elements to aid in the evaluation of the requirements. The Programs were audited against each of these elements and sub-elements. The detailed findings of these assessments are provided in the audit evaluation tables appended to this OPR-99 Final Audit Report. A summary of these results is presented in the Westcoast Audit Findings Table that follows.

The Board notes that within the management system elements of its audit protocols there are conceptual linkages between sub-elements. As a result, a finding of non-compliance in a particular sub-element may necessarily result in multiple findings of non-compliance within each Program area.

| Westcoast Audit Findings Table                                 |                                  |                     |  |                                   |                       |                               |
|--|----------------------------------|---------------------|--|-----------------------------------|-----------------------|-------------------------------|
| Management System Element                                      | I – Integrity Management Program | II – Safety Program | III – Environmental Protection Program | IV - Emergency Management Program | V – Crossings Program | VI – Public Awareness Program |
| <b>1.0 POLICY AND COMMITMENT</b>                               |                                  |                     |  |                                   |                       |                               |
| 1.1 Policy & Commitment Statement                              | Compliant                        | Compliant           | Compliant                              | Compliant                         | Non-Compliant         | Non-Compliant                 |
| <b>2.0 PLANNING</b>  |                                  |                     |  |                                   |                       |                               |
| 2.1 Hazard Identification, Risk Assessment and Control         | Compliant                        | Non-Compliant       | Non-Compliant                          | Compliant                         | Compliant             | Compliant                     |
| 2.2 Legal Requirements   | Non-Compliant                    | Non-Compliant       | Non-Compliant                          | Compliant                         | Non-Compliant         | Non-Compliant                 |
| 2.3 Goals, Objectives and Targets                              | Non-Compliant                    | Compliant           | Compliant                              | Compliant                         | Compliant             | Compliant                     |
| <b>3.0 IMPLEMENTATION</b>                                      |                                  |                     |  |                                   |                       |                               |
| 3.1 Organizational Structure, Roles and Responsibilities       | Compliant                        | Non-Compliant       | Non-Compliant                          | Compliant                         | Compliant             | Compliant                     |
| 3.2 Management of Change                                       | Compliant                        | Non-Compliant       | Non-Compliant                          | Non-Compliant                     | Non-Compliant         | Non-Compliant                 |
| 3.3 Training, Competence and Evaluation                        | Compliant                        | Compliant           | Non-Compliant                          | Compliant                         | Non-Compliant         | Compliant                     |
| 3.4 Communication  | Non-Compliant                    | Non-Compliant       | Non-Compliant                          | Non-Compliant                     | Non-Compliant         | Non-Compliant                 |
| 3.5 Documentation and Document Control                         | Compliant                        | Non-Compliant       | Non-Compliant                          | Compliant                         | Compliant             | Compliant                     |
| 3.6 Operational Control-Normal Operations                      | Compliant                        | Compliant           | Non-Compliant                          | N/A                               | Compliant             | Compliant                     |
| 3.7 Operational Control-Upset or Abnormal Operating Conditions | N/A                              | Compliant           | Compliant                              | Compliant                         | Compliant             | Compliant                     |
| <b>4.0 CHECKING AND CORRECTIVE ACTION</b>                      |                                  |                     |  |                                   |                       |                               |
| 4.1 Inspection, Measurement and Monitoring                     | Compliant                        | Compliant           | Non-Compliant                          | Compliant                         | Compliant             | Compliant                     |
| 4.2 Corrective and Preventive Actions                          | Non-Compliant                    | Non-Compliant       | Compliant                              | Compliant                         | Compliant             | Compliant                     |
| 4.3 Records Management   | Compliant                        | Non -Compliant      | Non-Compliant                          | Compliant                         | Compliant             | Compliant                     |
| 4.4 Internal Audit   | Non-Compliant                    | Non-Compliant       | Non-Compliant                          | Non-Compliant                     | Non-Compliant         | Non-Compliant                 |
| <b>5.0 MANAGEMENT REVIEW</b>                                   |                                  |                     |  |                                   |                       |                               |
| 5.1 Management Review  | Non-Compliant                    | Non-Compliant       | Non-Compliant                          | Non-Compliant                     | Non-Compliant         | Non-Compliant                 |

## 9.0 Abbreviations

CAP: Corrective Action Plan

CLC: *Canada Labour Code Part II*

COHSR: Canada Occupational Health and Safety Regulations

EHS MS: Environment, Health and Safety Management System

EM: Emergency Management

EP: Environmental Protection

IMP: Integrity Management Program

NEB: National Energy Board

OMS: Operations Management System

Management Program

OPR-99: National Energy Board *Onshore Pipeline Regulations, 1999*

SET: Spectra Energy Transmission

Westcoast: Westcoast Energy Inc., Carrying on Business as Spectra Energy Transmission

**APPENDIX I**  
**WESTCOAST ENERGY INC., CARRYING ON BUSINESS AS SPECTRA ENERGY TRANSMISSION (WESTCOAST)**  
**INTEGRITY MANAGEMENT PROGRAM AUDIT EVALUATION TABLE**

**Introduction and Definitions**

Throughout the Westcoast Integrity Management Program (IMP) Audit Evaluation Table, reference is made to the following main documents related to the integrity programs of the parent company Spectra Energy, also referred to as Spectra Energy Transmission (SET). These documents are:

1. The SET BC Pipeline and Field Services Pipeline Integrity Program (SET-BC PIP), which refers to the Alberta and British Columbia pipeline systems; and
2. The SET BC Pipeline and Field Services Pressure Equipment Integrity Management Program (SET-BC PEIM), which refers to the above ground pressure equipment and pressure piping facilities for the compressor and meter stations in Alberta and British Columbia.

In these documents, the following definitions were provided with respect to the pipelines and facilities for Westcoast:

- SET-West refers to Westcoast facilities located in Alberta and British Columbia; and
- SET-BC refers to Westcoast facilities located in British Columbia.

Also, throughout this IMP Audit Evaluation Table, any italicized text corresponds to excerpts taken directly from Westcoast documents.

## **1.0 POLICY AND COMMITMENT**

### **1.1 Policy and Commitment Statements**

**Expectations:** The company shall have a clearly articulated policy and leadership commitment approved and endorsed by management (the Policy).

#### **References:<sup>1</sup>**

OPR-99 sections 4, 47 and 48

CSA Z662-11 Clauses 3.1.2(a) and 3.2

#### **Assessment:**

##### **SET-BC PIP**

With respect to sub-element 1.1 Policy and Commitment, the SET-BC PIP contains the management statement in Section 1 of the document as follows:

*“The Pipeline Integrity Program (PIP) is a process for setting policy and expectations for all Pipeline and Field Services personnel involved in the operation and maintenance of our pipelines. Highly reliable pipelines and quality pipeline integrity practices are critical to the success of Pipeline and Field Services business. Everyone who is engaged in the operation, maintenance and reliability of our assets has a personal responsibility for getting pipeline integrity right. Line managers should follow this document in order to comply with Pipeline and Field Services pipeline integrity policies.”*

This policy and commitment statement is signed by the Vice President, Operations, General Manager, Field Services, and General Manager, Pipeline, Midstream and NGL.

##### **SET-BC PEIM**

The SET-BC PEIM, Section 1 contains a management statement setting the policy and expectations for all personnel involved in the pressure equipment in above ground facilities.

This management statement, signed by the Vice President SET-West Operations, states:

<sup>1</sup> Each “Reference” in this table contains specific examples of the “legal requirements” applicable to each element but are not necessarily a complete list of all applicable legal requirements.

*“Management shall follow this document in order to comply with Pipeline and Field Services (PLFS) Pressure Equipment Integrity Policy and the applicable regulatory requirements.”*

### **SUMMARY**

Policy and commitment statements exist for the Westcoast pipeline system. However, as general observation, the two statements as written may appear to lack a strong management direction with current wording (i.e. the use of “should” versus “shall”).

During interviews with Westcoast staff, they indicated that the Operations Management System (OMS) outlines the management commitment and the roles of Operations personnel. The OMS information is located on the Westcoast’s intranet site, the Source; however the policy and commitment document is not located on the Source.

Both management and employees contributed to the development of the OMS. The IMP policy and commitment fits into the hierarchy of the SET policy and commitments. The OMS is informally reviewed by management with employees but there is no formal communication plan for the various policy and commitment statements. The management system element of communication is reviewed and assessed under 3.4 Communication in this audit evaluation table.

Westcoast meets the requirements for policy and commitment in its IMP. Based on documents reviewed and interviews, Westcoast was able to demonstrate that it has policy approved and endorsed by senior management and the policy commits to continual improvement and is communicated throughout the organization and it has met the requirements of this audit sub-element.

**Compliance Status:** Compliant

## **2.0 PLANNING**

### **2.1 Hazards Identification, Risk Assessment and Control<sup>2</sup>**

**Expectations:** The company shall be able to demonstrate a procedure to identify all possible hazards. The company shall assess the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs

<sup>2</sup> Hazard: Source or situation with a potential for harm in terms of injury of ill health, damage to property, damage to workplace environment, or a combination of these. Risk: Combination of the likelihood and consequence(s) of a specified hazardous event occurring

(management and protection programs). The company shall be able to implement control measures to minimize or eliminate the risk.

**References:**

OPR-99 sections 4 (2), 39, 40, 41

CSA Z662-11 Clauses 3.1.2(f), 3.2(a), 3.2(b), 10.5.1.1(d) and 16.2

**Assessment:**

**SET-BC PIP**

With respect to this sub-element, Section 3.0 Scope of the SET-BC PIP states that *“This Program addresses the routine integrity activities for both operating and deactivated pipelines in the BC Pipeline and Field Services Division of SET-BC. The PIP considers all hazards that may cause significant damage or deterioration to the pipelines. This document is applicable to the entire SET-BC pipeline system with the exception of pressure vessels, associated pressure piping, compressors and associated equipment, and pipeline valves.”*

Section 10.0 Pipeline Risk Assessment of the SET-BC PIP contains a general statement: *“Risk assessment principles, in various forms, have been the foundation of integrity management. Risk assessments can vary in scope or complexity and use different methods or techniques. For SET-BC a key role of performing a formal risk assessment of the pipeline system is to validate the effectiveness of the Pipeline Integrity Program and identify any deficiencies or needed changes in the integrity program.*

*SET-BC risk assessment considers several variables and attributes with regards to eight threats and three consequences. These threats are; external corrosion, internal corrosion, manufacturing defects, ground movement, third party damage, incorrect operations, construction threat and stress corrosion cracking. The consequence types are; safety, economic loss, and environmental loss.*

*SET- BC has selected the Dynamic Risk – Risk Analyst Program as the primary risk assessment software. This is a comprehensive tool that performs pipeline risk assessment calculations and analysis. This ability allows SET- BC to identify the primary risk drivers and plan mitigation accordingly.”*

**SET-BC PEIM**

The SET-BC PEIM does not speak directly to risk assessment, but does reference the Risked-Based Inspection approach used for pressure vessels and pressure piping. Section 14.2 Inspection Management Guidelines, states the following:



*“The PLFS Inspection Management Guidelines drive the inspection and RBI process. Inspection management software is used to manage technical data and records for pressure equipment. Inspection requirements and frequencies are established and maintained through the risk based module within this program.”*

### **SUMMARY**

The statements quoted in the SET-BC PIP indicate that Westcoast identifies many of the hazards to its pipeline by way of its current monitoring and inspection programs. Westcoast provided an example of a documented hazard identification supporting the rationale for including or excluding industry recognized hazards and a documented risk assessment assessing the degree of risk associated with these hazards.

Documentation reviewed as an example of the hazard identification and risk assessment for CS7 to CS8 on the 30” pipeline confirmed that a comprehensive integrity relative risk analysis was performed and had evaluated seven standard threats. The consequences of a pipeline failure as a result of these threats were also evaluated in the areas of impact on population, environment and business.

Based on documents reviewed and interviews, the Company was able to demonstrate that it has a documented procedure to identify all possible hazards. Westcoast was able to demonstrate that it has assessed the degree of risk associated with these hazards.

**Compliance Status:** Compliant

### **2.2 Legal Requirements**

**Expectations:** The company shall have a verifiable process for the identification and integration of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements which includes updating the management and protection programs as required.

### **References:**

OPR-99 sections 4, 6, 40 and 41(1)

CSA Z662-11 Clause 3.1.2(h)(i) and 3.2

**Assessment:****SET-BC PIP**

The SET-BC PIP document, Section 2 states that Westcoast is committed to operating and maintaining its pipeline system in a responsible manner that complies with the requirements of CSA Standard Z662 and the National Energy Board *Onshore Pipeline Regulations*. Other than the statement in Section 2, there is no documented procedure for reviewing and updating revisions to legal requirements. However, Westcoast personnel have representations on regulatory committees (e.g., Canadian Standards Association (CSA Z662-11 and CSA B51-09) technical committees and the International Pressure Equipment Association (IPEA), so that they are informed on current and upcoming regulations and industry best practices.

**SET-BC PEIM**

In terms of pressure equipment and pressure piping, the SET-BC PEIM, Section 5 Regulatory Requirements, states that:

*“PLFS designs, constructs, operates, maintains and decommissions all of its pressure equipment in accordance with the requirements of CSA B51, the National Energy Board PPR and the applicable provincial regulatory Safety Codes, Acts and regulations”.*

Appendix B of the PEIM references standards and codes applicable to and referenced within the PEIM. There are additional industry codes and standards that have not been listed in Appendix B. While these codes and standards are not strictly regulated and are not required to be included, Westcoast relies on Risked Based Inspection (RBI) methodology and there is no reference to the API standards which are considered critical to the RBI process. These include:

- API RP 571 Damage Mechanisms Affecting Fixed Equipment in the Refining Industry
- API RP 572 Inspection Practices for Pressure Vessels
- API RP 573 Inspection of Fired Boilers and Heaters
- API RP 574 Inspection Practices for Piping System Components
- API Std 579-1/ASME FFS-1 Fitness-For-Service
- API RP 577 Welding Inspection and Metallurgy
- API RP 580 Risk-Based Inspection
- API RP 581 Risk-Based Inspection Technology
- API Std 653 Tank Inspection, Repair, Alteration, and Reconstruction

Also not included are the following National Association of Corrosion Engineers (NACE) publications:

- NACE MR0175/ISO 15156, Petroleum and natural gas industries—Materials for use in H<sub>2</sub>S-containing environments in oil and gas production.
- RP0296-2004, Guidelines for Detection, Repair, and Mitigation of Cracking of Existing Petroleum Refinery Pressure Vessels in Wet H<sub>2</sub>S Environments
- NACE RP0502-2002, Pipeline External Corrosion Direct Assessment Methodology
- NACE RP0775-2005, Preparation, Installation, Analysis, and Interpretation of Corrosion Coupons in Oilfield Operations
- NACE SP0169-2007 (formerly RP0169), Control of External Corrosion on Underground or Submerged Metallic Piping Systems
- NACE SP0572-2007 (formerly RP0572), Design, Installation, Operation, and Maintenance of Impressed Current Deep Anode Beds
- NACE TM0284-2003, Evaluation of Pipeline and Pressure Vessel Steels for Resistance to Hydrogen-Induced Cracking

Also not included are the following publications from the Canadian Gas Association (CGA) and the Canadian Association of Petroleum Producers (CAPP):

- CGA OCC-1 2005 Control of External Corrosion on Buried or Submerged Metallic Piping System
- CGA OCC-2 1989 Control of Internal Corrosion of Pipeline Systems that Transport Sour Gas
- CAPP 2009-0010 Internal Corrosion Oilfield Water
- CAPP 2009-0011 External Corrosion Buried Pipelines
- CAPP 2009-0012 Internal Corrosion Oil Effluent
- CAPP 2009-0013 Internal Corrosion Sour Gas
- CAPP 2009-0014 Internal Corrosion Sweet Gas
- CAPP 2009-0019 Impressed CP design for safety
- CAPP 2009-1035 CP Electrical Installations

### **SUMMARY**

As with the API standards, the NACE, CGA and CAPP industry standards and best practices are not strictly legal requirements. However SET should include reference to them in its PEIM, in its PIP, and possibly in its Standard Operating Practices (SOP), where

appropriate, because they contain valuable information that is technically relevant to its inspection, monitoring and mitigation programs. During interviews with some of the operations personnel, it was evident that they were not aware of many of these publications and that they could have benefited from the knowledge of these in the implementation of the Westcoast IMP programs referenced in the publications.

The SET-BC PIP has not included a formal documented and verifiable process for the identification and integration of its legal requirements other than references imbedded in its Introduction. SET-BC does not have a documented procedure for reviewing and updating revisions to the legal requirements.

Based on documents reviewed and interviews with staff, the Company was not able to demonstrate that it had identified its legal requirements or had integrated its regulatory obligations into its IMP.

**Compliance Status:** Non-Compliant

### **2.3 Goals, Objectives and Targets**

**Expectations:** The company shall have objectives and quantifiable targets relevant to the risks and hazards associated with the company's facilities and activities (i.e. construction, operations and maintenance). The objectives and targets shall be measurable and consistent with the Policy and legal requirements and ideally include continual improvement and prevention initiatives, where appropriate.

### **References:**

OPR-99 sections 40, 47 and 48

CSA Z662-11 Clauses 3.1.2(h)(ii) and 3.2

### **Assessment:**

#### **SET-BC PIP**

With respect to goals, objectives and continuous improvement, Westcoast has established five key performance indicators (KPI) relevant to its IMP. Section 11: Program Performance Indicators of the PIP states: *"In order to regularly assess the success of program implementation SET-BC has developed a slate of Program Performance Indicators which will be assessed annually:*

- *Number of Third Party Pipeline Contacts*

- *Number of Pipeline Repairs as per CSA Z662*
- *Number of pipeline leaks and failures.*
- *Percentage of acceptable corrosion coupon readings*
- *Number of geotechnical incidents that require repair or stress mitigation.”*

### **SET-BC PEIM**

The SET-BC-PEIM does not contain a section on Goals, Objectives and Targets or on Key Performance Indicators.

### **SUMMARY**

The Westcoast systems integrity group indicated during interviews that the integrity performance indicators outlined in the PIP were recently collected and presented to SET management. The performance indicators were also reviewed with the Pipeline Operations and Maintenance Manual (POMM) team. The POMM team was asked to consider what performance indicators would be useful from a regional perspective and to forward any suggestions or ideas to the System Integrity group.

During the annual Information Exchange meeting with SET, the Systems Integrity group presented the KPI trends, which they provided as evidence of satisfactory implementation of the Integrity Program in achieving the program objectives. Westcoast also provided KPI scoring and tracking (SET OSC Monthly Scorecard - 2011 and 2012.pdf and SET-West OSC STIP Scorecard - December 2011.pdf), but these were related to OH&S key performance indicators and will be assessed by the Safety Discipline in this audit.

In response to the Draft Audit Report, Westcoast provided the OSC STIP Scorecard for December 2012 which included one performance metric related to its IMP, Cathodic Protection (CP) Effectiveness (Transmission). This performance metric indicated that 78 of 78 CP surveys were completed but that five areas were identified (November 2012) as not meeting the accepted CP criteria. It further indicated that, of the five remediation projects developed, none of them had been completed at the time of the December Scorecard issuance. This lack of immediate response is to be expected given the timeframe.

Although the SET-West STIP Scorecard contains one performance metric for its IMP, it does not contain any KPIs for its Pressure Equipment Integrity Program.

During the audit, Westcoast presented the KPI's for corrosion coupons which indicated that 100% of the coupons met the target of less than 1 MPY, but examination of historical corrosion coupon results indicated that not all coupons met this key performance indicator target. Therefore, Westcoast has not accurately tracked or reported one of its KPIs for its IMP.

In response to the Draft Audit Report, Westcoast explained that the discrepancy in the historical corrosion coupon results versus the reported KPIs was due to Westcoast having provided the Board's auditors with unfiltered data (i.e., corrosion coupon data from both the flowing pipeline, and from launching and receiving barrels). Westcoast clarified in its comments that the KPI target is based entirely on flowing pipeline coupon data and that, until recently, pipeline corrosion coupon data was the only data available. Westcoast indicated that, within the last couple of years, it has begun to install coupons in the launching and receiving barrels, and has determined that the same KPI target is not achievable in the relatively stagnant barrel environment. To ensure it is able to measure corrosion rates on its sending and receiving barrels, Westcoast indicated that, over the next few years, it will be installing coupon holders on most of the barrels in the gathering systems. Westcoast further indicated that, based on its limited data set, it appears that a barrel coupon KPI of more than 2 MPY may be reasonable; however, until it has more experience with this application, it is not able to state a specific barrel corrosion coupon KPI. Westcoast committed to clarifying that the KPI referenced in its IMP refers only to corrosion coupons in the flowing pipeline.

Westcoast's comments on the Draft Audit Report provided some clarification on the coupon information; however, as Westcoast is still in the process of determining an appropriate target for its KPI with respect to barrel coupons, the adequacy and effectiveness of this target with respect to Westcoast's IMP could not be assessed.

In March 2012, the Board posted its **Pipeline Performance Measures Reporting Requirements** stating that operating companies are required to annually report on the new performance measures commencing in 2013. The requirement to report on the new performance measures is in addition to current reporting required under the Onshore Pipeline Regulations, 1999 and the Pipeline Crossing Regulations, Part I and Part II. Part IV of the posted document specifies the reporting requirements for Integrity Management. In the posted information, it was stated that the Board expects companies, in their management systems, to set out objectives and targets that are company-specific and based on company variables. In addition, companies are expected to strive for continual improvement and to adjust targets as required.

Since the SET-BC PEIM does not have a documented Goals, Objectives and Targets for the Integrity Management Program for its pressure equipment and the SET-BC PIP has not accurately tracked or reported its Key Performance Indicators, Westcoast has not met the requirements for the audit sub-element of Goals, Objectives and Targets.

Based on documents reviewed and interviews with operations staff, the Company was not able to demonstrate that it was in

compliance with audit sub-element 2.3 Goals, Objectives and Targets.

**Compliance Status:** Non-Compliant

### **3.0 IMPLEMENTATION**

#### **3.1 Organizational Structure, Roles and Responsibilities**

**Expectations:** The company shall have an organizational structure that allows its management and protection programs to effectively function. The company shall have clear roles and responsibilities, which may include responsibilities for the implementation of the management and protection programs.

#### **References:**

OPR-99 sections 40, 47 and 48

CSA Z662-11 Clauses 3.1.1, 3.1.2(b) and 3.2

#### **Assessment:**

##### **SET-BC PIP**

Section 6 of the SET-BC PIP dated October 2011 details the Responsibilities, Leadership & Accountability for the Pipeline Integrity Program, which includes:

- *6.1 General Leadership & Accountability statement;*
- *6.2 Personnel Responsibilities;*
  - *6.2.1 President, Spectra Energy Transmission – West*
  - *6.2.2 Vice President of Operations, Spectra Energy Transmission – West*
  - *6.2.3 General Manager of Operations*
  - *6.2.4 Area Directors*
  - *6.2.5 Director of Operations Engineering*
  - *6.2.6 Regional Managers and other Managers in Operations*
  - *6.2.7 Team Leaders of Pipeline Operations*
  - *6.2.8 Director of (System) Integrity*

##### **SET-BC PEIM**

Section 6 of the SET-BC PEIM dated June 30, 2008 “*clarifies the Accountabilities within the PLFS for the Pressure Equipment Integrity Management Program*”, which includes:

- *6.1 President, SET-West*
- *6.2 Vice President, SET-West Operations*
- *6.3 General Manager, SET-West Operations*
- *6.4 Director Operations*
- *6.5 Director, SET-West Operations Engineering*
- *6.6 Manager, SET-West Assets*
- *6.7 Manager, SET-West Plant Integrity*
- *6.8 Manager, Operations*
- *6.9 Team Leader, PLFS Operations and Maintenance*
- *6.10 PLFS Operations and Maintenance Staff*
- *6.11 Chief Power Engineer*
- *6.12 Chief Inspector*
- *6.13 Integrity Specialist*

Appendix D of this document contains a schematic organization chart which illustrates these generic positions in the SET hierarchy. 16 organization charts received from the Source supported the organizational structure and the roles and responsibilities for the development, implementation and management of the integrity program. It is noted that the organizational chart in Appendix D is dated 30 June 2008 and there have been some organizational changes within Westcoast with respect to the IMP and PEIM.

### **SUMMARY**

In addition, Westcoast provided the information on Organizational Structure, Roles and Responsibilities for the Integrity Team members, including the Director of Integrity, Integrity Specialist, Integrity Engineer, Senior Integrity Technologist, Integrity Technologist, Senior Geotechnical Technologist, Geotechnical Technologist, Geotechnical Engineer and Integrity Specialist. The Westcoast organizational structure, including that of the Integrity Team, with its roles, responsibilities and accountabilities, meets the requirements of this audit sub-element.

Based on documents reviewed and interviews with operations staff, Westcoast was able to demonstrate that it was in compliance with



the requirements of this audit sub-element.

**Compliance Status: Compliant**

**3.2 Management of Change**

**Expectations:** The company shall have a management of change program. The program should include:

- identification of changes that could affect the management and protection programs;
- documentation of the changes; and
- analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.

**References:**

OPR-99 section 6

CSA Z662-11 Clause 3.1.2 (g)

**Assessment:**

**SET-BC PIP**

During the Processing Plant Audit, Spectra provided the Management of Change (MOC) document dated 2010-11-02, which outlined a consistent approach for operations to ensure that changes to assets were appropriate and that the processes were documented to comply with all regulatory requirements. The MOC process outlined the triggers for invoking this process, the accountabilities and responsibilities of various departments and personnel to ensure that changes were evaluated for all aspects to ensure that no new or additional hazards were being created with a specific change for any discipline.

**SET-BC PEIM**

Section 13 of the SET-BC PEIM, Management of Change, states “*SET has a Management of Change (MOC) process in place to ensure that any modifications made to pressure equipment are done safely and in accordance with good operating practices. All PRD replacements are subject to the MOC process. The MOC process is located on the SET network.*”

**SUMMARY**

The Spectra Energy BC Pipeline and Field Services Standard Operating Practice (SOP), reference number 23.1, effectively deals with Management of Change. This SOP contains a brief description of the scope and purpose of MOC and provides a link to the MOC

program on “The Source”. The SOP refers to BC Pipeline and Field Services and Westcoast indicated that the MOC program applies to all Spectra operations.

Based on documents reviewed and interviews with operations staff, Westcoast was able to demonstrate that it was in compliance with the requirements of this audit sub-element.

**Compliance Status:** Compliant

### **3.3 Training, Competence and Evaluation**

**Expectations:** The company shall have a documented training program for employees and contractors related to the company’s management and protection programs. The company shall inform visitors to company maintenance sites of the practices and procedures to be followed. Training requirements should include information about program-specific policies. Training should include emergency preparedness and environmental response requirements as well as the potential consequences of not following the requirements. The company shall determine the required levels of competency for employees and contractors. Training shall evaluate competency to ensure desired knowledge requirements have been met. Training programs should include record management procedures. The training program should include methods to ensure staff remains current in their required training. The program should include requirements and standards for addressing any identified non-compliances to the training requirement.

**References:**

OPR-99 sections 4, 18, 29 and 46

CSA Z662-11 Clauses 3.1.2(c), 3.2 and 10.2.1

**Assessment:**

**SET-BC PIP**

The SET-BC PIP, Section 7.0 Training and Qualifications states the following: *“The goal of this section is to ensure that all employees are competent to perform their assigned tasks. It is the responsibility of each Team Leader within Pipeline Operations to ensure that qualified personnel are assigned to perform activities that affect pipeline integrity. Employees training needs have been assessed and documented specific to their job role. Employee training plans are developed based on job tasks and compliance to each task shown. This includes safety and technical training. Safety training requirements and vendor training are found at: <https://thesource.spectraenergy.com/businesses/westca/oms/Pages/JobSpecificTrainingRequirements.aspx>”*

*Training is developed and delivered following a standard approach for operational manuals, procedures and employee evaluation requirements and their continued updates. Training manuals are used throughout the organization along with self-evaluation and mentor based assessments where the mentor assess employee in area of the manual content. All training is tracked through the use of the company Learning Management System (LMS).*

*Pipeline Integrity Program: Each Team Leader, Pipeline Operations, and the Director of Integrity shall identify all staff involved with activities that affect the integrity of the pipeline. All such staff will receive training on the content and intent of the Pipeline Integrity Program.”*

### **SET-BC PEIM**

The SET-BC PEIM, Section 11.0 Competency and Training states the following: *“This section defines the required competency and training of personnel who perform work under and impact the effectiveness of this program. This includes employees and contract personnel. This section outlines the scope and responsibilities of personnel who perform work under this program.”*

### **SUMMARY**

In response to an Audit Information Request (AIR), Westcoast personnel stated *“Being rolled-out in 2012 is the Pipeline Operator Qualification Training Program which will address all training and competency requirements noted in section 7 of the PIP. The LMS will be used to managed and report out on employee status in this training program. Contractors granted Spectra Energy employee status and required to take this training will also be tracked in the LMS.”*

During an inspection of the Rosedale Compressor Station (CS9 – T South) for an underground piping inspection program, Westcoast indicated that all of the NDE (Acuren) and recoating (OMH) personnel had the proper training and competency to conduct the inspection and recoating of the underground piping. The project leader provided the training and certification records for the contract personnel.

Based on documents reviewed and interviews with operations staff, the Company was able to demonstrate that it was in compliance with the requirements of the audit sub-element 3.3 Training, Competence and Evaluation.

**Compliance Status:** Compliant

### 3.4 Communication

**Expectations:** The company shall have an adequate, effective and documented communication process(es):

- to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs policies, goals, objectives and commitments;
- to inform and consult with interested persons about issues associated with its operations;
- to address communication from external stakeholders;
- for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons;
- to communicate the program's roles and responsibilities to interested persons.

**References:**

OPR-99 Sections 4, 18, 28, 29, 40, 47 and 48

CSA Z662-11 Clauses 3.1.2(d) and 3.2

**Assessment:**

**SET-BC PIP**

The SET-BC PIP does not have a specific section detailing the communication requirements of the organization, but Section 6 of the SET-BC PEIM document details the Responsibilities, Leadership & Accountability for the Pipeline Integrity Program with responsibilities relevant to communication.

**SET-BC PEIM**

The SET-BC PEIM does not have a specific section detailing the communication requirements of the organization, but Section 6 of the document details the Responsibilities, Leadership & Accountability for the Pipeline Integrity Program with responsibilities relevant to communication.

**SUMMARY**

Westcoast does not have a formal Communication Plan, however as part of its response to the Board's AIR #7, Westcoast stated that the following communication processes take place:

- a) An annual SOP and Integrity Program review involving all directors, managers, team lead system integrity and other subject matter experts;

- b) A monthly Pipeline Integrity Conference call chaired by System Integrity with invitations to directors, managers, team leads and field technicians;
- c) The annual pipeline integrity workshop (typically 40 to 50 attendees);
- d) Frequent integrity presentations to the Operations Steering Committee; and
- e) Other special topic meetings initiated as required by System Integrity.

While there are ad hoc communication processes in place, they are not fully effective in achieving the desired end result of a formal Communication Plan.

Based on documents reviewed and interviews with operations staff, the Company was not able to demonstrate that it was in compliance with the requirements of the audit sub-element 3.4 Communication.

**Compliance Status:** Non-Compliant

### **3.5 Documentation and Document Control**

**Expectations:** The company shall have a documentation and document control process that supports its management and protection programs. The documentation shall be reviewed and revised at regular and planned intervals. Documents shall be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.

#### **References:**

OPR-99 sections 4, 27, 47, 48  
CSA Z662-11 Clauses 3.1.2(e)(f), 3.2 and 10.5.1.1(a) to (d)

#### **Assessment:**

#### **SET-BC PIP**

Section 8 of the SET-BC PIP, Documents states “*General; Documents and documentation are an important part of the Pipeline Integrity Program. In addition to this program document, more detailed Integrity Plans may be developed, as appropriate, to manage specific integrity threats or specific types of damage. The details of integrity activities and general operations activities are contained*

*in the Standard Operating Practices (SOPs). Other integrity records are located in GIS, SAP, or regional operations offices. Integrity Programs, Plans and Practices Both this Integrity Program and the SOPs are maintained by the System Integrity Team located at the Vancouver office. The PIP and SOP's are located on the SET-BC intranet"*

**SET-BC PEIM**

Section 7.0 of the SET-BC PEIM, Documentation and Data Control states: *"This section clarifies the approach for controlling the documentation and data related to pressure equipment integrity management."*

**SUMMARY**

Document review is an integral part of the audit process and at the Board's request, Westcoast provided scores of documents that illustrated Spectra's adherence to the requirements for documentation and document control.

Based on documents reviewed and interviews with operations staff, the Company was able to demonstrate that it was in compliance with the requirements of the audit element Documentation and Document Control.

**Compliance Status:** Compliant

**3.6 Operational Control-Normal Operations**

**Expectations:** The company shall establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address the risks and hazards identified in elements 2.0 and 3.0. The process shall include measures to reduce or eliminate risks and hazards at their source.

**References:**

OPR-99 sections 4, 27, 36, 37, 39 and 40  
 CSA Z662-11 Clause 3.1.2(f), 3.2 and 10

**Assessment:**

**SET-BC PIP**

With respect to the requirements of Operations Control-Normal Operations, Section 9.11 of the SET-BC PIP, Overpressure Protection and 9.11.1 Gas Control stated the following: *“Guidelines for Receipt Point Overpressure Protection: BC Pipeline and Field Services pipelines and all systems delivering gas into Spectra must meet the requirements of CSA Z662-11. There are guidelines for Receipt Points that aid in protecting the pipelines from over pressure according to CSA Z662-11 Section 4.18. These include system requirements for Pressure Control systems and for Over pressure Protection systems.*

**SET-BC PEIM**

With respect to the requirements of Operations Control-Normal Operations, Section 16 of the SET-BC PEIM, Overpressure Protection and Protective Devices stated *“This section reviews the approach for ensuring that all pressure relief devices (PRDs) are serviced at the required intervals, proper procedures are followed in removing the devices and each device is returned to the original or other appropriate location.”*

**SUMMARY**

Westcoast provided documents and records indicating that PRDs serving the pipeline and facilities were regularly serviced and inspected on an interval of 3 years. The service records are being stored in Visions<sup>TM</sup> software, which is used to manage the servicing, inspection and surplus inventory records.

In addition, with respect to gas quality and measurement, during interviews and document review, the audit found the following:

The Westcoast Measurement Group:

- Is responsible for any sites that tie-in to mainline or gathering systems
- Provides oversight of 3rd party overpressure control and over pressure protection.
- Enforces the General Terms and Conditions Agreement (GTCA)
- Enforces the Measurement Policy
- Has specific key performance indicators (KPIs) to evaluate its effectiveness

- Has been internally audited twice

The General Terms and Conditions Agreement (GTCA) sets out:

- Requirements for pressure control and pressure relieving that comprise an overpressure protection system

The Measurement Policy sets out:

- What data is to be collected and sent to Westcoast on an annual basis
- What pressure control and pressure relief devices are considered acceptable  
(Note: Westcoast does not allow line losses as a means to control the pressure)

Observations regarding gas control:

- Moisture content is monitored manually, however the more susceptible/riskier lines have online moisture analyzers
- Receipt points on mainline have automatic analyzers and automatic shut in devices

Other general observations:

- Westcoast regularly conducts inspections of its producers
- Producers send Westcoast any request to ship additional products into the system (i.e., frac fluid).

Based on documents reviewed and interviews with operations staff, the Company was able to demonstrate that it was in compliance with the requirements of the audit element Operations Control-Normal Operations.

**Compliance Status:** Compliant

**3.7 Operational Control-Upset or Abnormal Operating Conditions**

**Expectations:** The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (for example, after emergency events).

**References:**

OPR-99 sections 4, 32, 37, 40 and 52



CSA Z662-11 Clauses 3.1, 3.2, 4.18, 10.9.5

**Assessment:**

The evaluation of this audit element for the Safety and Emergency Management Programs (Appendix II and IV) has verified that Westcoast has developed and implemented an emergency preparedness and response plan. The Spectra Energy Standard Operating Practice 13.1 Emergency and Incident Response Procedures refers to the Emergency Management Manual located on the Portal and outlines the initial actions that must be taken, the roles and responsibilities of the Emergency Response Team and the documentation that should be completed in response to an incident. There are no additional requirements for this management system element for the Integrity Management Program.

**Compliance Status:** Not-Applicable

**4.0 CHECKING AND CORRECTIVE ACTION**

**4.1 Inspection, Measurement and Monitoring**

**Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs and should, at a minimum, address legal requirements as well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs.

**References:**

OPR-99 sections 4, 27, 28, 36, 37, 39, 47, 48, 53 (1) and 54 (1)

CSA Z662-11 Clauses 3.1.2(h)(i), 3.2, 9 and 10

**Assessment:**

**SET-BC PIP**

The SET-BC PIP, Section 9 Integrity Elements contains the requirements of the inspection, measurement and monitoring programs. These are: Corrosion Protection & Mitigation, Corrosion Coupons and Chemical Inhibitors, Pipeline Re-coating, Excavations, Major Re-coat Projects, Pipeline Inspection by 1 In-Line Inspection, Defect Assessments, Non-Inline Inspectable Facility Piping, SCC Management, Right of Way Monitoring/Patrols, Aerial Surveys and Geotechnical Survey, Excavations, Bridge Crossings and Aerial Pipeline Crossings

**SET-BC PEIM**

The SET-BC PEIM, Section 14.2 Inspection Management Guidelines details the requirements for pressure vessels and pressure piping. This includes: Inspection Management Software, Risk Based Inspection, Corrosion Monitoring and Mitigation Methods, Inspection Plans, NDE and Control of Monitoring and Measurement Devices.

**SUMMARY**

Based on documents reviewed and interviews with operations staff, the Company was able to demonstrate that it was in compliance with the requirements of the audit element Inspection, Measurement and Monitoring.

**Compliance Status:** Compliant

**4.2 Corrective and Preventive Actions**

**Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to:

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

The company shall develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in

its management and protection programs and procedures.

**References:**

OPR-99 sections 4, 6 and 52

CSA Z662-11 Clauses 3.1.2(g) and 3.1.2(h)(i), 3.2, 10.3.6, 10.4.4 and 10.5

**Assessment:**

**SET-BC PIP**

The SET-BC PIP does not contain a specific section on Corrective and Preventive Actions, but does have Section 9.10 Incident Investigations which states *“To avoid repeated incidents it is necessary to thoroughly understand what caused the event. In those instances where the cause is not obvious and when materials or components are available, a detailed analysis shall be conducted under the direction of the System Integrity. The results of these analyses shall be shared with all pipeline personnel involved with integrity activities.”* During the audit interviews and documentation review, Westcoast provided information on Spectra Energy’s incident investigation and reporting processes and procedures as outlined in the Summary.

**SET-BC PEIM**

Section 17.0 of the SET-BC PEIM, Corrective and Preventative Actions, Accidents and Incidents, states: *“An Incident Notification System is located on the SET portal for documenting and tracking all incidents related to pressure equipment. Appropriate communication for reportable incidents is specified in the SET Emergency Response Plans (ERPs).*

This section outlines the requirements for Non-Conformance Reports / Corrective Action Plan (Appendix H) developed for all items identified as non-conforming during audits, inspections, site visits, etc. NCRs are reviewed regularly by Spectra Management and the Chief Inspector. The Area Operations Directors are responsible for ensuring the completion of the CAPS.

**SUMMARY**

- Westcoast has a well-developed and documented incident management process which includes:
  - Reporting criteria
  - Workflow processes
  - Responsibilities and Accountabilities
  - Mandatory training requirements
  - Management review process

- Process safety management key performance indicators
- Reporting and analysis, using API RP 754 for PSM guidelines.
- The audit found that the incident management data analysis, trending and reporting process is relatively new (developed in 2009) and is not yet mature (primary focus is on API RP 754 safety indicators versus management system indicators).
- The Incident/Emergency Reporting Procedure document that covers One Window Reporting for Federal and Provincial Incidents was demonstrated and reviewed on the Source.
- Spectra Energy personnel demonstrated and reviewed the Regulatory Incident Reporting Guidelines For On-Call Incident Reporting Supervisor document on the Source.
- The Incident Reporting Process document also stated the reporting criteria for federal and provincial reporting criteria for all types and causes of incidents.
- The audit reviewed the federal and provincial reporting criteria to ensure that they include the provincial and federal requirements for incident reporting.

Westcoast demonstrated it has documented procedures to :

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

However, the company did not demonstrate it has developed or implemented procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.

The audit analyzed Westcoast's incident data from 2005 to present and determined that there were identifiable trends in the systems (gathering and transmission pipelines), facilities and equipment and management system disciplines. Spectra Energy should have analyzed these data to identify trends, systemic issues and opportunities for improvement in its Integrity Management Program.

Based on documents reviewed and interviews with operations staff, the Company was not able to demonstrate that it was in

compliance with the requirements of the audit element Corrective and Preventive Actions.

**Compliance Status:** Non-Compliant

### **4.3 Records Management**

**Expectations:** The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.

#### **References:**

OPR-99 sections 4, 41 and 56

CSA Z662-11 Clauses 3.1.2(e), 3.2, 9.11, 10.4 and 10.5.1.1(c)

#### **Assessment:**

#### **SET-BC PIP**

Section 8.3 of the SET-BC PIP, Integrity Records Management Systems states “*SET-BC has developed a spatial data management system (SDMS) to support data associated with the pipeline assets. The basis of this system is a Geographic Information System (GIS) software program, which is used for capturing, storing, checking, integrating, manipulating, analyzing and displaying data related to the pipeline system and positions on the Earth's surface. In addition to geographical information and photography, this system is populated with asset information, operations and maintenance data, integrity data, right-of-way information, land owner information, and emergency response plans and data. While the majority of new integrity records are provided in electronic format, some are still received in hard copy only. An effort is being made to find a location where as many of these as possible can be included or electronically attached to the GIS system. Records of the maintenance activity are stored in SAP, a company-wide accounting, planning and records storage software. Information generated from the maintenance activity that is relevant to pipeline integrity is stored in (GIS) for analysis.*”

#### **SET-BC PEIM**

While there was no specific section in the SET-BC PEIM dealing with records management, the audit confirmed through interviews, document and record requests that Westcoast has developed and implemented a records management process. The records management process ensures that the appropriate and required records are maintained and were readily available upon request.

#### **SUMMARY**

Based on documents reviewed and interviews with operations staff, the Company was able to demonstrate that it was in compliance with the requirements of the audit element Records Management.

**Compliance Status:** Compliant

#### **4.4 Internal Audit**

**Expectations:** The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.

#### **References:**

OPR-99 sections 4, 53 and 55

CSA Z662-11 Clauses 3.1.2(c) and 3.1.2(h)(iii)

#### **Assessment:**

##### **SET-BC PIP**

Section 12 Audits of the SET-BC PIP states “*SET auditors regularly conduct audits of operations and the programs used by operations. The detailed charter of the Spectra Energy Audit Services Department can be found on the Spectra Intranet at [https://thesource.spectraenergy.com/company/policies/Audit/audit\\_services.pdf](https://thesource.spectraenergy.com/company/policies/Audit/audit_services.pdf).*

*Additional targeted audits may be requested by senior management as required. When the audit findings are associated with pipeline integrity System Integrity will assist with development of corrective action plans.”*

##### **SET-BC PEIM**

Section 6.0 Accountability of the SET-BC PEIM, and Subsection 6.5 Director, SET-West Operations Engineering states “*The Director of Operations Engineering is accountable to the VP of Operations to ensure the Pressure Equipment Integrity Management Program meets the requirements of the applicable regulatory authorities and all other applicable codes, standards and industry best practices, including applicable API and National Board codes and SET Engineering Specifications. The Director shall ensure that qualified personnel with technical knowledge and experience, review, maintain and audit the PEIM Program and are available to assist Operations and Maintenance personnel, led by the Directors of SET-West, to carry out the PEIM Program.”*

Section 10.3 Approved Vendors / Service Companies states “*Service Companies will be audited on a regular basis to ensure their qualifications and QC documentation are current and meet the intent of their registered QC manual.*”

### **SUMMARY**

Following review of the SET-BC PIP and SET-BC PEIM, the Board made an AIR for the latest internal or third party audits that would pertain to the Integrity Management Program and the management system requirements.

Westcoast’s response to the AIR was as follows:

*“It has been more than 5 years since the last internal Pipeline Integrity Program review. This was done by the Duke internal audit team. At that time only a few minor modifications to the cathodic protection requirements were recommended. An integrity effectiveness review was recently carried out on all Spectra pipeline integrity programs by a consulting team engaged by the Houston corporate auditing group. This report is still being finalized. We were recently advised that Spectra West will experience an internal audit of pipeline integrity during 2012.”*

During audit interviews, the audit found that:

- There has not been an internal audit of Westcoast’s systems since 2005.
- Westcoast has completed Assurance Reviews which do not examine evidence or documentation.
- Documents presented by Westcoast at the meeting did not demonstrate:
  - The methodology to determine appropriate frequency
  - Whether subject matter experts (SMEs) are involved in internal audits
  - That the audit results are incorporated into IMP.

In its comments on the Board’s Draft Audit Report, Westcoast advised that it has commenced an internal audit of Pipeline Integrity. This internal audit is still in progress and did not form part of the Board’s assessment of this sub-element.

Based on documents reviewed and interviews with operations staff, the Company was not able to demonstrate that it was in compliance with the requirements of the audit element Internal Audit.

**Compliance Status:** Non-Compliant

## **5.0 MANAGEMENT REVIEW**

### **5.1 Management Review**

**Expectations:** The company shall formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. This review should be formal and documented and should occur on a regular basis. The management review should include a review of any decisions, actions and commitments which relate to the improvement of the programs and the company's overall performance.

#### **References:**

OPR-99 sections 4, 40 and 55

CSA Z662-11 Clauses 3.1.2 (h)(iii) and 3.2

#### **Assessment:**

#### **SET-BC PIP**

Section 2 Introduction of the SET-BC PIP states *“Periodic evaluation will be carried out to ensure the program takes appropriate advantage of improved technologies and that the program utilizes the best set of prevention, detection and mitigation activities that are available for the conditions at that time. The performance indicators provide feedback to the programs, thereby allowing for continuous improvement of these programs. Periodically, audits are performed of the records to ensure all components of the PIP are satisfied and to assess the performance of the program. It is expected that this program will be continually evolving.”*

Section 6 Responsibilities, Leadership & Accountability and sub-section 6.1 Leadership & Accountability states *“Leaders in SET-BC which includes pipeline integrity are responsible for specific pipeline integrity management performance targets, as well as:*

- i. Integrity of the pipeline in the Leader's operating area*
- ii. Defining clear pipeline integrity roles and responsibilities*
- iii. Engaging the workforce in pipeline integrity*
- iv. Regular communication about relevant pipeline integrity issues*
- v. Ensuring the appropriate resources are in place*
- vi. Ensuring the Pipeline Integrity Management Program is fully implemented*
- vii. Measuring, reviewing and improving pipeline integrity performance”*



**SET-BC PEIM**

The SET-BC PEIM does not address the requirements for management review.

**SUMMARY**

As a result of audit interviews and document review, the audit found that:

- There is no specific section in the SET-BC PIP on Management Review other than the general statements previously described for Sections 2 and 6.1.
- Management review processes and procedures (e.g., Scorecard, Key Performance Metrics and Short-Term Incentive Pay) that were provided during the audit were not linked to the performance of the Westcoast IMP.
- In response to the Draft Audit Report, Westcoast provided the SET-West Occupational Steering Committee Short Term Incentive Pay (STIP) Scorecard for December 2012 (Scorecard) and commented that the Scorecard included Key Performance Metrics for Integrity and Measurement Compliance. The single performance metric described in the Scorecard was Cathodic Protection Effectiveness (Transmission). While this Scorecard describes one performance metric that is reviewed by management to monitor IMP performance, it was not adequate to demonstrate the required link between current management review processes and IMP performance, or that Westcoast is conducting regular management review of its IMP to assess its continued suitability, adequacy and effectiveness.
- There are ad hoc, non-formalized management reviews occurring; however, there are no documented processes for these (e.g. annual review of the PIP and SOP's, monthly IMP meetings, annual IMP workshops).

Based on documents reviewed and interviews with operations staff, the Company was not able to demonstrate that it was in compliance with the requirements of the audit element Management Review.

**Compliance Status:** Non-Compliant

**APPENDIX II**  
**WESTCOAST ENERGY INC., CARRYING ON BUSINESS AS SPECTRA ENERGY TRANSMISSION (WESTCOAST)**  
**SAFETY PROGRAM AUDIT EVALAUTION TABLE**

|   |                                 |   |
|---|---------------------------------|---|
| <b>1.0 POLICY AND COMMITMENT</b>  |                                 |   |
| <b>1.1 Policy and Commitment Statements</b>   |                                 |   |
| <b>Expectation:</b> The company shall have a policy approved and endorsed by senior management (the Policy). It should include goals and objectives and commit to improving the performance of the company.   |                                 |   |
| <b>References:</b> <sup>3</sup>   |                                 |   |
| OPR-99 Sections 4 & 47  | CSA Z662-11 Clause<br>3.1.2 (a) | Canada Labour Code<br>(CLC) Part II<br>125(1)(d)(i)-<br>(ii),125(1)(z.09) |
| <b>Assessment:</b>  |                                 |   |
| <p>Westcoast has an Environment, Health and Safety (EHS) Policy which has been approved and adopted by Spectra Energy Transmission’s president and chief executive officer. This EHS Policy serves as the foundation for all Westcoast activities by establishing a clear vision of EHS performance shared by the organization. The EHS Policy has been defined by senior management to demonstrate Westcoast’s commitment to the protection of the environment, and the health and safety of its employees.</p> <p>The EHS Policy is applicable throughout the EHS Management System (MS), which has been designed and implemented to ensure the five principles (Accountability, Stewardship, Standards, Performance and Communication) of the EHS Policy are achieved on a day-to-day basis.</p> |                                 |   |
| <b>Compliance Status:</b> Compliant   |                                 |   |

<sup>3</sup> Each “Reference” in this table contains specific examples of the “legal requirements” applicable to each element but are not necessarily a complete list of all applicable legal requirements.

## 2.0 PLANNING

### 2.1 Hazards Identification, Risk Assessment and Control<sup>4</sup>

**Expectations:** The company shall be able to demonstrate a procedure to identify all possible hazards. The company should assess the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs (management and protection programs). The company should be able to implement control measures to minimize or eliminate the risk.

#### References:

|                              |                                      |  |   |
|------------------------------|--------------------------------------|--|---|
| OPR-99 Sections 4(2) &<br>47 | CSA Z662-11 Clauses<br>3.1 and 3.1.2 | CLC Part II Sections<br>125(1)(s)(z.03)-(z.05),<br>125(1)(z.13)-(z.16) | Canada Occupational<br>Health and Safety<br>Regulations, SOR/86-<br>304, (COHSR) Sections<br>19.1(1), 19.3(1)-(2),<br>19.5(1)-(5) |
|------------------------------|--------------------------------------|--|---|

#### Assessment:

Document review determined that Westcoast has an established EHS MS. In 2009, Westcoast expanded its EHS MS to include a Hazard Management Program (HMP) which includes an Occupational Exposure Management Program as well as a task hazard analysis mechanism. The HMP also includes the development of a Critical Task Analysis Risk Evaluation Tool, a Workplace Exposure Assessment and Control Lists.

The HMP involves characterizing and ranking the relative risk of worker and/or company hazards for all Westcoast Similar Exposure Groups (SEG). SEGs are groups of workers that have the same general exposure profiles because of the similarity and frequency of the tasks they perform, the materials and processes with which they work, and the similarity in the way they perform the tasks. SEGs are broken down by: (1) operating area; (2) job description; and (3) job tasks (including job tasks that utilize contractors).

A Westcoast standard is in place for each critical practice (e.g., working at heights, lockout/tag out, ground disturbances, confined space and sour work). The Westcoast Critical Practice Standards are reviewed by the Health and Safety Department every three years

<sup>4</sup> Hazard: Source or situation with a potential for harm in terms of injury of ill health, damage to property, damage to workplace environment, or a combination of these. Risk: Combination of the likelihood and consequence(s) of a specified hazardous event occurring

to ensure supervisors and workers receive relevant job-specific training. According to Westcoast staff, the goal of critical practice standards is to allow staff to develop the ability and skill to see beyond the usual concerns of any given task into possible side effects and consequences. Westcoast has integrated this program training requirement for each critical practice along with recommended training tracked in Westcoast's Learning Management System (LMS).

Westcoast has developed a Self-Assessment Program. This program includes an updated inspection form available on the Westcoast intranet site (called the Source) which directs the observer to assess area conditions rather than assess specific hazards. A corrective action plan is also included with the updated form. Local Area Leadership delivered presentations on the program and updated EHS inspection forms.

Westcoast has developed and implemented a Violence Prevention in the Workplace Policy and Program. Westcoast employees receive Violence Prevention In the Workplace as well as EHS training when they are first hired and annually thereafter.

Westcoast has implemented the Operational Steering Committee (OSC) Technical Risk Watch Report at the OSC and Area levels. The objectives of the OSC Technical Risk Watch Report are to identify and manage technical risk, including:

- personal safety;
- process safety;
- reliability; and
- regulatory risk.

The goal is zero loss incidents and to demonstrate mindful leadership principles of knowing, and managing risks to Westcoast operations.

The Major Incidents Corrective Actions (MICA) Project has been initiated. The MICA project will review all formalized functions that are implemented and being followed at Westcoast. The MICA project's objective is to standardize the following:

- job safety analysis (JSA);
- planning;
- safe work practices;
- PPE; and
- safe work permits.

Subject matter experts from all Westcoast business units have been resourced to support the MICA project.

Westcoast's Contractor EHS Management Standard provides guidance for the registration, selection and oversight of all contractors

performing work for Westcoast. Westcoast contracts ISNetworld (ISN) to manage contractor pre-qualification. Westcoast has developed criteria for the pre-screening of contractors. The information requested from each contractor is used to evaluate general safety abilities. Safety information collected includes a contractor’s Total Injury Frequency Rate (TFR), company Health and Safety Manual, safety citations from a regulatory body, as well as Worker’s Compensation Board (WCB) rate sheets and WCB clearance letters. Safety manuals are reviewed by a third party, to help eliminate the perception of bias. ISN is not used to determine contractor training competency. Upon completion of the contract, the contractor's performance is reviewed and documented.

In reviewing the components of Westcoast’s hazard identification assessment and control strategy for worker safety, Westcoast was not able to demonstrate that it has completed and documented a hazard identification, risk assessment and control procedure to address the risks created by seismic activity for its assets and infrastructure.

**Compliance Status:** Non-Compliant

**2.2 Legal Requirements**

**Expectations:** The company shall have a verifiable process for the identification and integration of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements which includes updating the management and protection programs as required.

**References:**

|                             |                          |                               |                       |
|-----------------------------|--------------------------|-------------------------------|-----------------------|
| OPR-99 Sections 4, 6 and 47 | CSA Z662-11 Clause 3.1.1 | CLC Part II Section 125(1)(v) | COHSR Section 19.1(1) |
|-----------------------------|--------------------------|-------------------------------|-----------------------|

**Assessment:**

Westcoast has an EHS regulatory monitoring process for health and safety regulation changes. The EHS Regulatory Change Monitoring Process was implemented 29 September 2009. Westcoast contracts Templegate Information Services Inc. and Cyber Regs, subscription services for tracking legal initiatives and recent legal decisions (e.g., federal and provincial environmental initiatives, federal and provincial Occupational Health and Safety (OHS) initiatives, international initiatives, standards initiatives, other legal initiatives and recent legal decisions).

Although Westcoast’s Confined Space Entry training reflects the provincial Work Safe BC legislation, Westcoast is federally regulated. The federal regulations require staff to be trained to CLC Part II confined space entry standards. The Westcoast EHS MS Manual requires the review and evaluation of contractor health and safety work and communication plans, developed in advance of

work, to ensure they are appropriate to the risks of the work and ensure functional area integration for federal and provincial OHS requirements to ensure conflicts do not exist.

A review of Westcoast safety training is required to ensure federal legislation is reflected in all safety training and identified conflicts are eliminated. The audit also found that OPR-99 is not listed or referenced in the EHS Manuals.

The Operation Management System (OMS) includes: leadership and accountability programs, business planning, risk management, training and competency, incident management, management review and assurance programs. The OMS is linked to the Management of Change (MOC) process. The Scorecards are used to record voluntary regulatory instruments (Assurances of Voluntary Compliance or AVCs). However, it was noted that the Board Inspection Order (September 2012) was not recorded in the Scorecards. The OMS system needs to be applied to all of the safety-related systems to confirm that Board Inspection Orders are included in the overall score to address noted non-compliances.

Additionally, Westcoast has not submitted a maintenance safety manual to the Board, as required by OPR-99.

**Compliance Status:** Non-Compliant

### 2.3 Goals, Objectives and Targets

**Expectations:** The company should have goals, objectives and quantifiable targets relevant to the risks and hazards associated with the company's facilities and activities (i.e., construction, operations and maintenance). The objectives and targets should be measurable and consistent with the Policy and legal requirements, and ideally include continual improvement and prevention initiatives, where appropriate.

### References:

OPR-99 Section 47

CSA Z662-11 Clause  
3.1.2(h)(ii)

COHSR Section 19.1(1)

### Assessment:

Goals are tangible objectives for meeting Westcoast EHS Policy and principles. The goals represent a shift from identifying EHS hazards to improving overall EHS performance by continually setting and reaching targets. Each member of Westcoast's Leadership at

a level of Director or above develops and implements an annual personal Safety Action Plan. Formal staff goals for Active EHS Leadership (Leadership Safety Action Plans), which include: People Oriented Culture (Employee Recordable Injury Frequency, Employee Vehicle Incident Reporting and Contractor Recordable Injury Frequency); Physical Environment (Non-Recordable Incident Reporting and Recordable Incident Corrective Actions); and Environmental Impacts (Reportable Spills), are set to a yearly and a multi-year plan within the Spectra Energy (Westcoast) EHS Blended Scorecard, an internal document used to determine individual goals and targets. Westcoast's 'Zero Incident Culture' assigns incident reporting responsibility to all Westcoast employees and contractors.

Employees discuss objectives with their supervisor at the beginning of the year, at least once during the year, and again at the end of the year when the past year's performance is evaluated and objectives are established for the next year. Safety goals, targets and objectives have been identified for all staff and are included in individual job descriptions. Safety performance is included in the overall employee objectives and employees are provided recognition in meeting EHS performance objectives through a program known as Short Term Incentive Pay (STIP). The Accountability Management System and Performance Management goals and objectives are reviewed three times per year. STIP is linked to recorded injuries, vehicle incidents, contractor recordable incidents and environmental spills (considered a failure of process safety). Senior Management may not be eligible for Long Term Incentive Pay if targets are not met.

The audit found that the NEB Assurances of Voluntary Compliance (AVCs) are currently being tracked on the Scorecard; however, no targets for continual improvement have been established. Board Inspection Officer Orders and Board Orders are not tracked on the Scorecard and therefore it is unclear whether senior management is being made aware of such enforcement measures. As an example, a Board Inspection Officer Order was issued to Westcoast in September 2012; however, there is no record of this enforcement measure being discussed at any of the senior management level meetings (Weekly OSC or Bi-Monthly Audit Review Meetings).

As the Board expects that goals, objectives and targets be developed based on risk and hazards, and not the amount of non-compliances they incur, the company is in compliance with this sub-element. See also sub-element 2.2 Legal Requirements.

**Compliance Status:** Compliant

### **3.0 IMPLEMENTATION**

#### **3.1 Organizational Structure, Roles and Responsibilities**

**Expectations:** The company shall have an organizational structure that allows its management and protection programs to effectively function. The company should have clear roles and responsibilities, which may include responsibilities for the development, implementation and management of the management and protection programs.

|   |   |  |                                    |
|---|---|--|------------------------------------|
| <b>References:</b>  |   |  |                                    |
| OPR-99 Section 47   | CSA Z662-11 Clauses<br>3.1.1 and 3.1.2(b) | CLC Part II Sections<br>125.(1), 125.1, 126,<br>134.1, 135(1), 135.1, 136<br>and 137 |                                    |
| <b>Assessment:</b>  |   |  |                                    |
| <p>The Westcoast Roles and Responsibilities Performance Standard 1.2 establishes the expectations for demonstrating management’s commitment and support to ensure the effective implementation of the EHS MS and improvement of EHS performance. Formal documentation for EHS roles, responsibilities and accountabilities for management, departments, employees and contractors includes: programs and procedures; job position descriptions; organization charts; roles; responsibilities; and authority matrices.</p> <p>Westcoast was not able to demonstrate compliance with respect to Organizational Structure. An organizational review is being conducted to determine resource allocation for Westcoast Environment Health and Safety (EHS) and Operations. Westcoast indicated that its EHS reporting structure is expected to change in 2013. The Board was unable to identify that a formal evaluation was being conducted throughout the Westcoast organization to identify resource requirements throughout the organizational structure.</p> |   |  |                                    |
| <b>Compliance Status:</b> Non-Compliant   |   |  |                                    |
| <b>3.2 Management of Change</b>   |   |  |                                    |
| <b>Expectations:</b> The company shall have a management of change program. The program should include:   |   |  |                                    |
| <ul style="list-style-type: none"> <li>• identification of changes that could affect the management and protection programs;</li> <li>• documentation of the changes; and</li> <li>• analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.</li> </ul>  |   |  |                                    |
| <b>References:</b>  |   |  |                                    |
| OPR-99 Section 6  | CSA Z662-11 Clause<br>3.1.2(g)            | CLC Part II Sections<br>125(1), 125(1)(z.05)-<br>(z.06)                              | COHSR Sections<br>19.5(4), 19.6(2) |



**Assessment:**

The Board verified that a management of change (MOC) procedure is in place which outlines the process for identifying, assessing and implementing procedural changes once they have been approved by the accountable individual (EHS MS Management of Change Performance Standard 2.7). There is also a collaborative process in place to review all Standard Operating Procedures against all regulatory requirements and best practices for all of Westcoast. EHS is leading the process with the support of Senior Management and Regional subject matter experts.

Westcoast demonstrated that it has a formal process and dedicated staff for managing changes to its assets. However, Westcoast's MOC process, as demonstrated, is not considered compliant as it applies only to physical (asset) changes and not to changes required in practices or procedures that could result from:

- changes to legal requirements;
- the identification of new hazards; or
- results of monitoring, inspections or investigations.

Further, Westcoast's MOC process only manages changes on a reactive basis (i.e., changes once the need has been identified). The Board expectation is that company MOC processes be proactive and formally linked to processes for the identification of changes that could affect the management and protection programs (e.g., Integrity Management, Safety, Environmental Protection, Emergency Management Programs, etc.).

Westcoast has initiated a MOC procedure review. December 2013 is the scheduled implementation of the revised MOC procedure. As the MOC review process is incomplete, the Board was unable to evaluate the results of the MOC review.

Westcoast was not able to demonstrate that a fully-implemented MOC program was in place to identify, document and analyze changes that could affect the EHS MS, including introduction of new risks, hazards or legal requirements.

**Compliance Status:** Non-Compliant

**3.3 Training, Competence and Evaluation**

**Expectations:** The company shall have a documented training program for employees and contractors related to the company's management and protection programs. The company shall inform visitors to company maintenance sites of the practices and

procedures to be followed. Training requirements should include information about program-specific policies. Training should include emergency preparedness and environmental response requirements as well as the potential consequences of not following the requirements. The company should determine the required levels of competency for employees and contractors. Training shall evaluate competency to ensure desired knowledge requirements have been met. Training programs should include record management procedures. The training program should include methods to ensure staff remains current in their required training. The program should include requirements and standards for addressing any identified non-compliances to the training requirement.

**References:**

|                                    |                        |   |
|------------------------------------|------------------------|---|
| OPR-99 Sections 18, 28,<br>29 & 47 | CSA Z662-11 Clause 3.1 | CLC Part II Sections<br>122.3, 125(1)(d)-(f),<br>125(1)(s), 125(1)(z.03)-<br>(z.11), 125(1)(z.14)-<br>(z.15), 125(1)(z.17)-<br>(z.19) |
|------------------------------------|------------------------|---|

**Assessment:**

Westcoast's Performance Standard establishes the minimum expectations to ensure that:

- appropriate training is identified for all employees;
- employees are properly trained in, and understand, applicable EHS compliance standards, regulations, company policies and procedures, and best management practices; and
- employees perform their tasks, duties and responsibilities in a manner that protects the health and safety of Westcoast employees, contractors, and the community.

Westcoast's Training Program Charter provides guidance and support to meet regulatory and business training expectations. Training provides employees with the knowledge and skills to perform their role. Employee competency assessment in the application of skills is the responsibility of the employee's leader or manager. The Accountability Management and Performance Management assessments determine employee competency and identify future training initiatives.

Employee training records are stored in the LMS which generates monthly status reports for all leaders and groups, and annually assesses and communicates the status of the training programs and manuals. Employees are provided with any updates should additional training requirements be identified or should existing curriculums be changed. Westcoast also supports its safety personnel to further their education and training to acquire and maintain Safety Professional Designations.

Although Westcoast's Training Program met the requirements of this sub-element, the Board identified in sub-element 2.2 (Legal Requirements) of this appendix that a review of Westcoast's safety training is required to ensure federal legislation is reflected in the training and that identified conflicts are eliminated. As this Non-Compliance is already addressed in sub-element 2.2, the Board finds Westcoast's Training Program to be Compliant, noting that Westcoast will update the program to address the Non-Compliance identified in sub-element 2.2.

**Compliance Status:** Compliant

### 3.4 Communication

**Expectations:** The company should have an adequate, effective and documented communication process(es):

- to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs policies, goals, objectives and commitments;
- to inform and consult with interested persons about issues associated with its operations;
- to address communication from external stakeholders;
- for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons;
- to communicate the program's roles and responsibilities to interested persons.

### References:

|   |                                |  |   |
|---|--------------------------------|--|---|
| OPR-99 Sections 28, 29,<br>30(b), 46, 47 and 56 | CSA Z662-11 Clause<br>3.1.2(d) | CLC Part II Sections<br>124, 125(1)(q), 125(1)(s),<br>125(1)(z), 125(1)(z.01),<br>125(1)(z.03) | COHSR Sections 10.14,<br>11.5(2), 11.11,<br>12.10(1.1)(a)(ii),<br>12.10(1.2), 12.15, 13.11,<br>14.23, 17.6(1), 20.10,<br>19.1(1), 19.2(2), 19.6 |
|---|--------------------------------|--|---|

### Assessment:

Westcoast was able to demonstrate that it employs many methods for communicating safety requirements with its internal and external stakeholders. Communication of safety information is done through:

- safety stand down meetings;
- quarterly employee meetings and safety updates;

- daily tailgate meetings;
- daily and weekly safety reports;
- Health and Safety Newsletters;
- monthly safety and communication meetings;
- monthly reports to the EHS Corporate Group;
- contract management activities;
- pre-job meetings,
- its intranet sites; etc.

However, the audit was unable to verify that the Westcoast Internal and External Communication Performance Standard 6.0 (September 2006) is fully implemented and cross referenced to the OMS system to communicate all required safety information to the appropriate levels. It was noted that the Board Inspection Order (September 2012) was not recorded in the Scorecards. The OMS system needs to be applied to all of the safety-related systems to confirm that Board Inspection Orders are included in the overall score to address noted non-compliances.

**Compliance Status:** Non-Compliant

**3.5 Documentation and Document Control**

**Expectations:** The company should have documentation to describe the elements of its management and protection programs- where warranted. The documentation should be reviewed and revised at regular and planned intervals. Documents should be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.

**References:**

|                               |  |  |  |
|-------------------------------|--|--|--|
| OPR-99 Sections 27, 47 and 56 | CSA Z662-11 Clauses 3.1.2(e) (f) and 10.5.1.1(d) | CLC Part II Sections 125(1)(z.03)-(z.06), 125(1)(z.09), 125.1(d)-(e), 125.1(f), 135.1(9) | COHSR Sections 1.5, 2.23, 4.6, 5.17, 5.18, 8.12, 8.14(4)-(7), 8.15, 10.3 |
|-------------------------------|--|--|--|

**Assessment:**

To develop or revise an EHS standard, Westcoast's EHS Standard Development Committee reviews the following:

- EHS practices and procedures currently available within Westcoast;
- legislation applicable to Westcoast;
- CSA or other applicable industry standards;
- Spectra Energy or Spectra Energy Transmission Policies; and
- industry best practices.

Legal and Human Resources may be consulted as necessary during the development or revision of an EHS standard.

EHS Safety Specialists communicate draft standards to the OHSE Workplace Committees for review and comment in a timely manner. The EHS Standard Development Committee reviews all comments, updates the standards if necessary and provides feedback to individuals or committees who provided the input. The EHS Standard Development Committee develops an Implementation Impact Assessment for each proposed standard. Revised (updated) standards, including comments from OHSE Workplace Committees and the Implementation Impact Assessment, are sent to the EHS Director for review, comment, and communication to the Operations Management Team (OMT). Standards are endorsed by the OMT before review by the OHSE Oversight Committee. Proposed changes to EHS Standards are reviewed by the OHSE Oversight Committee to determine if consultation is required. New EHS Standards are approved by the EHS Director for implementation.

Westcoast's EHS Manuals do not reference OPR-99 requirements. Also, the audit found a number of performance standards and procedures that are either in draft status or out-of-date. For example, the Board requires that the Westcoast Construction On-site Manual be the same as the Westcoast Construction Manual that is filed with the Board.

The Board requires a review of all safety standards and procedures to ensure they are current and reflect revision dates and the requirements of OPR-99, CLC Part II and COHSR.

**Compliance Status:** Non-Compliant

**3.6 Operational Control-Normal Operations**

**Expectations:** The company should establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address the risks and hazards identified in elements 2.0 and 3.0. The process should include measures to reduce or eliminate risks and hazards at their source, where appropriate.

|  |  |                                  |                                       |  |
|--|--|----------------------------------|---------------------------------------|--|
| <b>References:</b>   |  |                                  |                                       |  |
| OPR SOR-99<br>Sections 27-49   | CSA Z662-11 Clause 27-<br>49               | CLC sections 125(1),<br>125.1    | COHSR section 19.1(1)                 |  |
| <b>Assessment:</b>   |  |                                  |                                       |  |
| <p>The EHS MS contains procedures for identified work tasks typically encountered by Westcoast personnel. The procedures reference and acknowledge compliance with applicable legislation and with industry associations.</p> <p>Frontline supervisors review safe work permit practices with employees at operational and safety meetings. Westcoast hazard assessment training for employees includes hazards and risks associated with tasks that are outlined in safe work permits.</p> <p>As discussed previously in sub-element 2.1 of this appendix, it was confirmed that critical task lists, risk assessment and job hazard analyses that have been completed include various mitigating measures that form the basis of the EHS MS procedures and which would ensure operational control is maintained.</p> |  |                                  |                                       |  |
| <b>Compliance Status:</b> Compliant  |  |                                  |                                       |  |
| <b>3.7 Operational Control-Upset or Abnormal Operating Conditions</b>  |  |                                  |                                       |  |
| <b>Expectations:</b> The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (example, after emergency events).  |  |                                  |                                       |  |
| <b>References:</b>   |  |                                  |                                       |  |
| OPR-99 Sections 32, 35<br>and 52   | CSA Z662-11 Clauses<br>3.1, 3.2 and 10.5.2 | CLC Part II Section<br>125(1)(o) | COHSR Sections 17.4,<br>17.5, 19.1(1) |  |
| <b>Assessment:</b>   |  |                                  |                                       |  |
| The audit verified that Westcoast has developed and implemented an emergency preparedness and response plan. Interviews and  |  |                                  |                                       |  |

document review verified that personnel safety issues such as the emergency evacuation and muster locations are discussed during orientations, and fire evacuation procedures are posted. Emergency evacuation drills and mock exercises are held on a regular basis. Safety issues are standard items on meeting agendas and are incorporated into the review and learn discussion for continual improvement purposes.

**Compliance Status:** Compliant

#### **4.0 CHECKING AND CORRECTIVE ACTION**

##### **4.1 Inspection, Measurement and Monitoring**

**Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs and should, at a minimum, address legal requirements as well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs.

##### **References:**

|  |   |   |  |
|--|---|---|--|
| OPR-99 Sections 36, 39,<br>47, 53(1) and 54(1) | CSA Z662-11 Clauses<br>10.2.2 and 10.14.1 | CLC Part II Sections<br>125(1)(c), 134.1(4)(d),<br>135(7)(k), 136(5)(g),<br>136(5)(j) | COHSR Sections 4.5,<br>4.6, 5.10, 6.10(3), 10.18,<br>12.3, 12.14, 14.20, 14.21,<br>14.23, 15.6, 17.3, 17.9 |
|--|---|---|--|

##### **Assessment:**

Westcoast holds various meetings and completes reports which monitor and document the EHS MS safety component, when required, is tracked in the Incident Investigation Reporting (IIR) system). Westcoast indicated that the Environment Performance and Safety System (EPASS) tracking system are expected to be in place January 2013.

Document review confirmed that actions resulting from the above-listed activities are assigned and tracked to ensure all issues are addressed and reported. Westcoast tracks the actions until completion and verifies their effectiveness.

Westcoast has developed and implemented a comprehensive incident investigation process. The incident reporting and investigation

process includes near misses, and includes contractors in incident investigations when appropriate. The investigation process identifies root causes. Incidents are analyzed to detect patterns or trends to anticipate and prevent future incidents. The incidents and accidents are recorded and reported as per policy. Best practices and lessons learned are shared with internal stakeholders and contractors who can benefit.

The Accountability Management and Performance Management assessments determine employee competency and identify future training initiatives.

The audit found that Westcoast has adequate processes in place to ensure safety-related incidents are investigated and that the appropriate measures are taken to correct or prevent further deficiencies in its execution of the EHS MS.

**Compliance Status:** Compliant

**4.2 Corrective and Preventive Actions**

**Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to:

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

The company should develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.

**References:**

|                          |   |   |   |
|--------------------------|---|---|---|
| OPR-99 Sections 6 and 52 | CSA Z662-11 Clauses 3.1.2(g),(h) and 10.5 | CLC Part II Sections 125(1)(c), 125(1)(o), 125.1(f), 134.1(4)(d), 135(7)(e), 135(7)(j), 136(5)(g) | COHSR Sections 2.27, 7.3, 10.4, 10.5, 15.4, 19.1(1) |
|--------------------------|---|---|---|



**Assessment:**

Westcoast’s Regulatory Incident Reporting Guidelines for On-Call Supervisors is approved and communicated to control teams and on-call incident supervisors. The purpose of the guidelines is to assist Westcoast’s On-Call Supervisors and On-Call Incident Supervisors in the external reporting of “regulatory reportable” incidents that occur in both its federally and provincially regulated facilities. This regulatory reporting practice was put in place to ensure timely notification of reportable occurrences to the appropriate regulatory agency regardless of where the incident occurs across the facilities. The Regulatory Incident Reporting Guidelines For On-Call Supervisors is controlled by the incident management program and is reviewed on an annual basis by all stakeholders to ensure it is current. The One-Window Reporting Procedures, embedded in the EHS Checklist, are reviewed on initial hiring and annually thereafter. Evidence of the checklist review was found in the LMS.

The audit found that the NEB Assurances of Voluntary Compliance (AVCs) are currently being tracked on the Scorecard; however, no targets for continual improvement have been established. Board Inspection Officer Orders and Board Orders are not tracked on the Scorecard and therefore it is unclear whether senior management is being made aware of such enforcement measures. As an example, a Board Inspection Officer Order was issued to Westcoast in September 2012; however, there is no record of this enforcement measure being discussed at any of the senior management level meetings (Weekly OSC or Bi-Monthly Audit Review Meetings). There is inconsistency in the communication, tracking and resolution of non-compliances outlined in Board Inspection Orders.

**Compliance Status:** Non-Compliant

**4.3 Records Management**

**Expectations:** The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.

**References:**

|                           |  |                                |   |
|---------------------------|--|--------------------------------|---|
| OPR-99 Sections 47 and 56 | CSA Z662-11 Clauses 9.11, 3.1, 10.5 and 10.4 | CLC Part II Sections 125(1)(g) | COHSR Sections 1.5, 2.23, 2.24, 2.27(7), 4.6 5.17, 5.18, 6.10(7), 7.3(6), 8.18 (3), 10.6, 10.15, 10.19(4), 11.12, |
|---------------------------|--|--------------------------------|---|

12.14, 14.23(4), 15.11,  
16.13(2), 17.4(4),  
17.8(2), 17.9(2),  
17.10(2), 18.39, 18.40,  
18.41, 18.42, 19.6(5),  
19.8(2)

**Assessment:**

The Board confirmed through documentation and record review that Westcoast has implemented a record retention process which includes appropriate types of records to be retained, retention and disposition timeframes and disposal methods. Copies of all records requested were made readily available.

Westcoast has several repositories for safety-related information. The IIR system is used for tracking incidents. Hard copies of these records are maintained in the regional offices. The Westcoast Document Management and Retention Standard are posted on the EHS site of the Source. A posting communication announcing the Westcoast Document Management and Retention Standard was sent to all employees from Spectra Energy Records Management.

While all records requested were readily retrieved, it was indicated during interviews that the company lacked a formalized process for email correspondence retention. The company has established that all unfiled emails will be deleted after three months and those that have been moved to a folder are deleted after two years. Individual staff have established their personal method in ensuring that these records are maintained; however, the Board is concerned that, without a formal filing process, certain email correspondence which contain compliance information may be deleted and not easily accessible in the event of an investigation.

**Compliance Status:** Non-Compliant

**4.4 Internal Audit**

**Expectations:** The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.

|  |   |   |                          |
|--|---|---|--------------------------|
| <p><b>References:</b></p> <table border="0"> <tr> <td data-bbox="170 293 520 365">OPR-99 Sections 53 and 55</td> <td data-bbox="520 293 1255 365">CSA Z662-11 Clauses 3.1.2(c) and (h)(iii)</td> <td data-bbox="1255 293 1932 365">COHSR Section 19.7(1)(2)</td> </tr> </table>  | OPR-99 Sections 53 and 55                 | CSA Z662-11 Clauses 3.1.2(c) and (h)(iii) | COHSR Section 19.7(1)(2) |
| OPR-99 Sections 53 and 55  | CSA Z662-11 Clauses 3.1.2(c) and (h)(iii) | COHSR Section 19.7(1)(2)                  |                          |
| <p><b>Assessment:</b></p> <p>The operation of Westcoast’s facilities and pipelines are subject to periodic audits by Spectra Energy Corporation’s internal audit services and EHS audit groups.</p> <p>Westcoast’s audit team in Calgary conducts audits on capital expansion projects, while safety audits are conducted by its Manager Internal Audits, based out of Houston, Texas. The audit cycle is determined by a comprehensive risk assessment. Local subject matter experts are contracted to ensure appropriate legislation is included in the protocol for the facilities being audited.</p> <p>The Senior Management of Spectra Energy Corporation and its Board of Directors approve audit risk assessment methodologies and annual audit plans of Spectra Energy Corporation’s internal audit services and EHS audit groups. Performance based audits are being conducted. TeamMate™ audit management software is being used to ensure action items are closed-out. TeamCentral,™ an audit management database, is used for tracking audit projects, issues and recommendations.</p> <p>It was verified through interviews and document review that Westcoast has an internal audit program to assess its EHS MS against its regulatory requirements. However, the audit found that the absence of an effective process to identify and integrate all of the legal operational safety requirements could lead to incomplete EHS audit protocols and inaccurate internal audit findings. The specific discipline audits conducted are performance audits, not compliance or technical audits. The Board was unable to confirm that Westcoast has conducted an internal audit that included all management systems in the audit scope (i.e., Integrity, Safety, Environment, Emergency Management, Public Awareness and Crossings).</p> |   |   |                          |
| <p><b>Compliance Status:</b> Non-Compliant</p>   |   |   |                          |
| <p><b>5.0 MANAGEMENT REVIEW</b></p> <p><b>Expectations:</b> Senior management should formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. This review should be formal and documented and should occur on a regular basis. The</p>   |   |   |                          |

management review should include a review of any decisions, actions and commitments which relate to the improvement of the programs and the company's overall performance.

**References:**

OPR-99 Section 55

CSA Z662-11  
Clause 3.1.2(h)(iii)

COHSR Sections 11.2(4),  
12.10(1.2),19.6(3),19.7(1)-  
(2)

**Assessment:**

Westcoast's EHS MS Performance Standard 9.4, Management System Review establishes minimum expectations for conducting a Management System Review with senior management to determine whether changes to the EHS Policy, EHS goals and targets or other elements of the EHS MS are necessary to ensure effectiveness of the EHS MS based on EHS audit results, EHS performance, changing business needs and/or stakeholder inputs. The Management System Review is conducted at least annually, preferably in the third quarter.

Management System Reviews may be conducted more frequently when:

- important new EHS regulatory or EHS issues arise;
- significant hazards/risks are identified; or
- previous audits/assessments have identified on-going deficiencies in the EHS MS.

Although the audit found that there is a level of oversight provided, given the absence of rigor in the reporting and tracking of non-compliances, as well as the deficient audit process described in sub-element 4.4 of this appendix, the Board has determined that the level of management oversight does not meet its expectations.

**Compliance Status:** Non-Compliant

**APPENDIX III**  
**WESTCOAST ENERGY INC., CARRYING ON BUSINESS AS SPECTRA ENERGY TRANSMISSION (WESTCOAST)**  
**ENVIRONMENTAL PROTECTION PROGRAM AUDIT EVALUATION TABLE**

|   |
|---|
| <p><b>1.0 POLICY AND COMMITMENT</b></p> <p><b>1.1 Policy and Commitment Statements</b></p> <p><b>Expectations:</b> The company shall have a policy approved and endorsed by senior management (the Policy). It should include goals and objectives and commit to improving the performance of the company.</p>  |
| <p><b>References:</b><sup>5</sup></p> <p>OPR-99 Sections 4 and 48<br/>         CSA Z662-11 Clause 3.1.2(a)</p>  |
| <p><b>Assessment:</b></p> <p>Westcoast was able to demonstrate that it has an adequate and up-to-date corporate Environment, Health and Safety (EHS) policy that meets the Board’s expectations. The Policy statement and accompanying documentation outline Westcoast’s management principles and clear program objectives. The Environmental Protection Program (EPP) is guided by these documents.</p> |
| <p><b>Compliance Status:</b> Compliant</p>  |

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<sup>5</sup> Each “Reference” in this table contains specific examples of the “legal requirements” applicable to each element but are not necessarily a complete list of all applicable legal requirements.

## 2.0 PLANNING

### 2.1 Hazards Identification, Risk Assessment and Control<sup>6</sup>

**Expectations:** The company shall be able to demonstrate a procedure to identify all possible hazards. The company should assess the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs (management and protection programs). The company should be able to implement control measures to minimize or eliminate the risk.

#### References:

OPR-99 Sections 4(2) and 48  
CSA Z662-11 Clauses 3.1 and 3.1.2

#### Assessment:

Through its EPP documents and records, as well as interviews with staff, Westcoast was not able to demonstrate that it had met the Board's requirements with respect to this sub-element.

Westcoast was able to demonstrate that it had identified some of its environmental hazards and aspects; however, in reviewing the documents provided, it would appear that the items identified and managed formally were, for the most part, limited to the requirements stated in its provincial operating permits.

During the audit, Westcoast was unable to demonstrate that an active inventory of environmental hazards and aspects exists nor provide a procedure to proactively identify and manage new environmental hazards and aspects as they arise. During interviews with staff, the company indicated that environmental hazards and aspects are also identified through pre-job and ground disturbance checklists, incidents, and by reviewing new legislative requirements. Similarly, company staff interviewed indicated that, as part of their annual business planning, an informal risk analysis based on staff knowledge is completed on known areas of potential environmental concern.

While all of these sub-processes of the EPP contribute to the aspect identification process, they are also all reactionary and may

<sup>6</sup> Hazard: Source or situation with a potential for harm in terms of injury or ill health, damage to property, damage to workplace environment, or a combination of these. Risk: Combination of the likelihood and consequence(s) of a specified hazardous event occurring

preclude environmental hazards and aspects from being identified.

**Compliance Status:** Non-Compliant

## 2.2 Legal Requirements

**Expectations:** The company shall have a verifiable process for the identification and integration of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements that include updating the management and protection programs as required.

### References:

OPR-99 Sections 4, 6 and 48  
CSA Z662-11 Clause 3.1.1

### Assessment:

Review of Westcoast's process for the identification and integration of its legal requirements indicated that the company's processes did not meet the Board's expectations.

Interviews with staff indicated that the company has contracts with several external providers in order to identify changes to legislative requirements. Reviews of these changes are completed by the company's legal department and by the various subject matter experts. Any changes to legal requirements and their implications are discussed at the weekly Operations Management Team (OMT) and Area Management Team (AMT) meetings and, if deemed significant, are elevated to senior management through the Operations Steering Committee (OSC).

Through several internal tracking mechanisms, Westcoast staff provided records listing its legal requirements at various levels of detail. For example, an inventory of provincial permit environmental requirements were outlined and monitored in detail, whereas other inventories provided either had legislative requirements that were excluded (e.g., Part 8 of OPR-99) or discussed only at a very high level. Other than ensuring that reporting deadlines are being met, the company did not demonstrate how these legislative requirements were being integrated into its EPP. It was also unclear how or if these legal inventories provided are maintained to ensure that they are current.

Of particular note was the lack of description related to the NEB OPR-99 EPP requirements and a similar lack in expectations that could be used in the development and evaluation of Westcoast's Standard Operating Procedures (SOPs), as well as audit, inspection and investigation processes. As the Board's regulations are process and outcome focused, a clear interpretation and description of the requirements in relation to Westcoast's facilities and associated activities is required to ensure compliance.

**Compliance Status:** Non-Compliant

### **2.3 Goals, Objectives and Targets**

**Expectations:** The company should have goals, objectives and quantifiable targets relevant to the risks and hazards associated with the company's facilities and activities (i.e., construction, operations and maintenance). The objectives and targets should be measurable and consistent with the Policy and legal requirements and ideally include continual improvement and prevention initiatives, where appropriate.

#### **References:**

OPR-99 Section 48  
CSA Z662-11 Clause 3.1.2(h)(ii)

#### **Assessment:**

Westcoast was able to demonstrate compliance with this sub-element through documentation and records provided.

Company staff provided records indicating that, on an annual basis, senior management sets corporate goals, objectives and targets for the company that are applied and measured at each management unit on an on-going basis. The results are collected, measured and monitored by senior management as a monthly operational performance metric referred to as the SET-West OSC Monthly Scorecard (Scorecard). Interviews with company senior management indicated that off-site meetings occur throughout the year to formally discuss performance to date and implement corrective actions where required. General Managers and EHS advisors across the Spectra corporation also meet annually to discuss existing goals, objectives and targets as well as discuss what areas should be focused on for the upcoming year.



Westcoast staff indicated that senior management has identified seven program areas for measurement and improvement and have set what they would consider to be aggressive goals for improvement in these areas. One such area includes environmental performance and appears to relate back to the corporate Policy and purpose statements. Measures being tracked that may have environmental considerations include non-compliance with provincial permits, spills and releases, and public complaints. Through the Short-Term Incentive Pay (STIP) Program, Westcoast has also established performance measures/targets for the various teams to achieve. Of note, permit non-compliances are one such measure; however, NEB non-compliances are not included in this program.

Of particular note was that NEB Assurances of Voluntary Compliance (AVCs) are currently being tracked on the Scorecard; however, no targets for continual improvement have been established. Board Inspection Officer Orders and Board Orders are not tracked on the Scorecard and therefore it is unclear whether senior management is being made aware of such enforcement measures. As an example, a Board Inspection Officer Order was issued to Westcoast in September 2012; however, there is no record of this enforcement measure being discussed at any of the senior management level meetings (Weekly OSC or Bi-Monthly Audit Review Meetings). As the Board expects that goals, objectives and targets be developed based on risk and hazards, and not the amount of non-compliances they incur, the company is in compliance with this sub-element. See also sub-element 5.1 Management Review.

**Compliance Status:** Compliant

### **3.0 IMPLEMENTATION**

#### **3.1 Organizational Structure, Roles and Responsibilities**

**Expectations:** The company shall have an organizational structure that allows its management and protection programs to effectively function. The company should have clear roles and responsibilities, which may include responsibilities for the development, implementation and management of the management and protection programs.

#### **References:**

OPR-99 Section 48

CSA Z662-11 Clauses 3.1.1 and 3.1.2(b)

**Assessment:**

Through interviews as well as document and record review, Westcoast was able to demonstrate that all staff with environmental responsibilities have clear role and responsibility statements applicable to their positions within the environmental or organizational structure.

The company, however, was not able to demonstrate that it had an organizational structure that would allow its EPP to effectively function. Board inspections conducted prior to both the audit and interviews, as well as records and documents reviewed during the audit, indicate that some of the findings and non-compliances noted in this appendix could relate to having too few frontline environmental staff available to support operations staff in ensuring compliance with the Board's expectations. This support could be achieved by conducting internal inspections, providing training, and through process or procedural development. For example, it was indicated during interviews that environmental staff are not formally involved with the development, review or implementation of the various SOPs for the Westcoast system. As some of the SOPs have significant environmental considerations (e.g., the Pipeline Right-of-Way Inspection SOP), by not having environmental staff formally engaged, it is possible that some of the environmental aspects and/or issues are being overlooked. It was indicated that records from these inspections are not formally communicated with environmental staff. See also sub-element 3.4 Communication.

Additionally, some of the facilities within the area of responsibility of the local environmental specialists have not been inspected on an appropriate or regular basis. Interviews with various staff members indicated that this was related to having too large of an area of responsibility for the environmental staff. As an example, the audit identified one environmental specialist is currently responsible for the entire Westcoast Transmission system which runs from Fort Nelson to Huntington, BC (approximately 2000 km of right-of-way and associated facilities). Further, Board inspections conducted in conjunction with this audit identified environmental issues that could be considered routine, but had remained unmitigated for a long time. An example of this is the Assurance of Voluntary Compliance received from the company with respect to oil staining. The Board inspector noted, among other things, significant and other small areas of staining adjacent to a decommissioned compressor building. It was suggested by company staff that this staining likely occurred while the compressor was active and appears to have been continually overlooked by operations staff. Interviews with various staff indicated that the right-of-way and facility inspections do not routinely include the environmental staff because of workload issues nor are the staff available to train the facility inspectors. As noted, many of the issues identified in the Board's inspections could be considered routine or standard practice issues, had been on-going for some time and should have been identified by an adequate inspection program. See also sub-element 4.1 Inspection, Measurement and Monitoring.

Westcoast indicated that a formal organization review of the EHS & Operations Services groups was completed in 2012. This review did result in realigning the EHS from the Vice President (VP) Operations to a new VP, EHS & Risk Management. The Board sees this as an improvement in the organizational structure as it will promote better oversight, improve impartiality and remove local influence in decision making and reporting of issues. However, review of the documentation provided on this organizational review indicated that this review was focused on the appropriate management structure and did not consider whether there were adequate resources for their EPP to effectively function.

**Compliance Status:** Non-Compliant

### 3.2 Management of Change

**Expectations:** The company shall have a management of change program. The program should include:

- identification of changes that could affect the management and protection programs;
- documentation of the changes; and
- analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.

#### References:

OPR-99 Section 6

CSA Z662-11 Clause 3.1.2(g)

#### Assessment:

Westcoast demonstrated that it has a formal process and dedicated staff for managing changes to its assets. However, Westcoast's management of change (MOC) process, as demonstrated, is not considered compliant as it applies only to physical (asset) changes and not to changes required in practices or procedures that could result from:

- changes to legal requirements;
- changes to industry standards or practices;
- the identification of new hazards; or
- results of monitoring, inspections or investigations.

Further, Westcoast's MOC process only manages changes on a reactive basis (i.e., changes once the need has been identified). The Board's expectation is that company MOC processes be proactive and include requirements for the identification of changes that could affect the management and protection programs (e.g., Integrity, Safety, Environmental Protection, Emergency Management, etc.).

**Compliance Status:** Non-Compliant

### **3.3 Training, Competence and Evaluation**

**Expectations:** The company shall have a documented training program for employees and contractors related to the company's management and protection programs. The company shall inform visitors to company maintenance sites of the practices and procedures to be followed. Training requirements should include information about program-specific policies. Training should include emergency preparedness and environmental response requirements as well as the potential consequences of not following the requirements. The company should determine the required levels of competency for employees and contractors. Training shall evaluate competency to ensure desired knowledge requirements have been met. Training programs should include record management procedures. The training program should include methods to ensure staff remains current in their required training. The program should include requirements and standards for addressing any identified non-compliances to the training requirement.

#### **References:**

OPR-99 Sections 28, 29, 30(b), 46, 48 and 56  
CSA Z662-11 Clause 3.1

#### **Assessment:**

Although Westcoast was able to demonstrate that it invested a significant amount of resources in developing and implementing a formal training process, the company was not able to demonstrate full compliance with the Board's training and competency requirements.

Through documentation and record review, and during interviews with staff, the company demonstrated that it has dedicated training staff that have developed a formalized training process within its Operations Management System. The process involves formal identification, assignment and monitoring of training requirements. The training program involves competency-based training and evaluation, where applicable. These formal processes and practices were appropriate in managing a training program to meet the

Board's requirements. Interviews also indicated that supervisors complete annual technical competency assessments of their environmental staff.

Where the company was not able to demonstrate compliance was with respect to environmental training for operations staff, contractor competency evaluation and the maintenance of environmental training for the company's environmental professionals.

During interviews throughout the organization, company staff identified that operations staff received training in regard to environmental aspects and controls as part of their on-boarding (new staff orientation) process. This training is required to be renewed every three years and is tracked annually as a STIP performance measure. As part of the document review process, Westcoast provided copies of its various SOPs for the Westcoast system that include environmental controls. Operations staff that were interviewed indicated that mentorship arrangements are established to ensure the appropriate training of inexperienced staff. A formal sign-off from senior staff would occur upon completion of each training module to ensure competence in that particular task. However, as there is no formal evaluation of senior staff to ensure their competency with environmental controls, and it was indicated that some senior staff may have been "grandfathered" from a training perspective, Westcoast could not demonstrate that staff remain current in their required training.

With respect to the assurance of contractor competence, Westcoast staff indicated that this is being managed and assured by a third party service provider, ISNetwork (ISN) on its behalf. The interview indicated that ISN primarily manages safety histories, insurance and workman's compensation issues of contractors. Westcoast was therefore unable to demonstrate how it ensures the competency of its contractors.

Additionally, companies should also demonstrate that they have practices to ensure that their professional staff remain current and competent in their areas of expertise. Interviews conducted indicated that the company expectation is for staff to obtain or maintain professional designation.

Also, it was stated repeatedly that the organization is supportive of staff attending conferences, workshop and/or other professional development activities; however, due to time availability, some of the environmental staff have not been able to participate in these learning opportunities.

**Compliance Status:** Non-Compliant

### 3.4 Communication

**Expectations:** The company should have an adequate, effective and documented communication process(es):

- to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs policies, goals, objectives and commitments;
- to inform and consult with interested persons about issues associated with its operations;
- to address communication from external stakeholders;
- for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons; and
- to communicate the program's roles and responsibilities to interested persons.

### References:

OPR-99 Sections 28, 29, 30(b), 46, 47 and 56

CSA Z662-11 Clause 3.1.2(d)

### Assessment:

Upon review of Westcoast's records and interviews with staff, Westcoast was not able to demonstrate that it had met the Board's requirements with respect to this sub-element.

Environmental staff were able to demonstrate appropriate, on-going communication practices, procedures and activities between Westcoast and its external stakeholders. The stakeholders involved included corporate and private individuals surrounding the facilities.

While the company was able to demonstrate the effectiveness of its communication process for sharing information between senior management and staff, there did not appear to be a communication process for the sharing of information between functional groups (i.e., pipeline integrity, EHS, etc.). As previously mentioned in this appendix, results from inspections (e.g., aerial, on the ground, etc.) that have environmental considerations are not formally shared with environmental staff. This transfer of information, whether positive or negative, would assist in confirming the environmental program is effective and could identify areas for improvement.

**Compliance Status:** Non-Compliant

### **3.5 Documentation and Document Control**

**Expectations:** The company should have documentation to describe the elements of its management and protection programs- where warranted. The documentation should be reviewed and revised at regular and planned intervals. Documents should be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.

#### **References:**

OPR-99 Sections 27, 48 and 56  
CSA Z662-11 Clauses 3.1.2 (e)(f) and 10.5.1.1(d)

**Assessment:**

Through document and record review and interviews with staff, Westcoast was not able to demonstrate compliance with this sub-element with respect to environmental protection.

Westcoast demonstrated that it has a formalized process for the development, revision and management of EHS documentation. However, upon reviewing records, it was clear that this process is inconsistently being followed. As one example, the Pipeline Pigging – General SOP indicates that, if a benzene hazard is known or suspected, the SET-West Benzene Management Standard #0612 shall be consulted in order to determine the testing, handling, PPE requirements and disposal requirements. Westcoast provided a copy of the standard and it was noted that this standard was in draft and has been since 2008.

**Compliance Status:** Non-Compliant

**3.6 Operational Control-Normal Operations**

**Expectations:** The company should establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address the risks and hazards identified in elements 2.0 and 3.0. The process should include measures to reduce or eliminate risks and hazards at their source, where appropriate.

**References:**

OPR-99 Sections 27 - 49  
CSA Z662-11 Clause 10

**Assessment:**

During the audit, the company was not able to demonstrate full compliance with this sub-element.

Review of the company's implemented practices indicated that it has developed a significant amount of proceduralized controls for items contained in its provincial permits. Review of these procedures and accompanying records indicated that they were appropriate, and that they were being implemented as designed.



However, as noted in sub-element 2.1 Hazards Identification, Risk Assessment and Control, and elsewhere, the company has significantly limited its formal environmental hazard identification and accompanying controls to its provincial permit requirements. Although this does address the majority of the significant issues, it does not assure adequate control of all of the hazards, aspects and legal requirements needing to be addressed.

**Compliance Status:** Non-Compliant

### **3.7 Operational Control-Upset or Abnormal Operating Conditions**

**Expectations:** The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (for example, after emergency events).

**References:**

OPR-99 Sections 32, 35 and 52

CSA Z662-11 Clauses 3.1, 3.2 and 10.5.2

**Assessment:**

Review of Westcoast's documents and records, as well as interviews with staff indicated that, regardless of the finding of non-compliance with sub-element 3.6 (Operational Control – Normal Operations) above, Westcoast was able to demonstrate that it has appropriate controls to minimize, respond to or mitigate the environmental effects associated with upset or abnormal operating conditions of its operating processes. The formal procedures, including emergency management, that have been developed included the high-risk hazards that should be addressed. Similarly, Westcoast was able to demonstrate that its staff were being trained and were implementing the procedures and practices as described in the documents. Further, it was noted that environmental-related processes and procedures included practices to be implemented if abnormal or upset conditions were detected or were occurring.

**Compliance Status:** Compliant

#### **4.0 CHECKING AND CORRECTIVE ACTION**

##### **4.1 Inspection, Measurement and Monitoring**

**Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs and should, at a minimum, address legal requirements as well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs.

##### **References:**

OPR-99 Sections 39, 48, 53(1) and 54(1)  
CSA Z662-11 Clauses 3.1.2, 10.9.2.5, 10.9.2.6 and 10.9.2.8

##### **Assessment:**

Westcoast was not able to demonstrate compliance with the Board's expectations.

During the audit, company staff indicated that there are a number of formal and informal ways that Westcoast inspects and monitors its right-of-way and associated facilities. These include aerial fly-overs, pigging station inspections, ground disturbance activities, senior management and other committee tours, and general site walk-throughs.

Document and record review, as well as interviews with staff, indicated that Westcoast had developed and implemented appropriate monitoring and inspection practices and procedures for ensuring the safe operation of its pipeline and associated facilities. However, as noted elsewhere in this appendix, interviews with staff, and document review confirmed that the company has not developed or implemented an appropriate process for conducting the environmental portion of these inspections. The audit identified that environmental staff are not routinely involved in the inspection of the pipeline system nor do they routinely participate in the training of staff whose role it is to complete them.

Further, interviews with environmental staff indicated that there is no set frequency or formal requirement to conduct internal environment inspections. Some sites are elevated to a higher inspection frequency (quarterly) due to historical issues; however, no

records of these inspections are documented nor is there a checklist for staff to use to ensure consistency.

**Compliance Status:** Non-Compliant

#### **4.2 Corrective and Preventive Actions**

**Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to:

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

The company should develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.

#### **References:**

OPR-99 Sections 6 and 52

CSA Z662-11 Clauses 3.1.2(g) and (h)

#### **Assessment:**

Westcoast was able to demonstrate, through document and record review, that it has developed and implemented appropriate incident investigation processes. Westcoast was able to demonstrate that it has adequate processes in place to identify, develop and implement corrective and preventive actions that may be identified in its management or incident investigation processes.

**Compliance Status:** Compliant

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| <p><b>4.3 Records Management</b></p> <p><b>Expectations:</b> The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.</p>   |
| <p><b>References:</b></p> <p>OPR-99 Sections 48 and 56<br/>CSA Z662-11 Clauses 3.1, 9.11, 10.4 and 10.5.1.1</p>  |
| <p><b>Assessment:</b></p> <p>During the audit, the company was not able to demonstrate full compliance with this sub-element.</p> <p>While all records requested were readily retrieved, it was indicated during interviews that the company lacked a formalized process for email correspondence retention. The company has established that all unfiled emails will be deleted after three months and those that have been moved to a folder are deleted after two years. Individual staff have established their personal method in ensuring that these records are maintained; however, the Board is concerned that, without a formal filing process, certain email correspondence which contain compliance information may be deleted and not easily accessible in the event of an investigation.</p> |
| <p><b>Compliance Status:</b> Non-Compliant</p>   |
| <p><b>4.4 Internal Audit</b></p> <p><b>Expectations:</b> The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.</p>   |
| <p><b>References:</b></p> <p>OPR-99 Sections 53 and 55<br/>CSA Z662-11 Clauses 3.1.2(c) and (h)(iii)</p>   |

**Assessment:**

During the audit, the company demonstrated that it has two processes for conducting audits of its facilities. These processes were implemented by staff from Calgary, Alberta or in its head office in Houston, Texas. Interviews with the company indicated that the internal audits are completed to confirm program compliance and would not necessarily confirm legislative compliance.

During the audit, the company provided copies of internal audits conducted by its Houston-based EHS auditing group. Review of the internal audit records indicated that an appropriate process had been developed for conducting the audit and managing the results through to implementation of the corrective action plans for noted deficiencies.

The audit process did not, however, meet the requirements contained in OPR-99. OPR-99 requires that audits be undertaken to ensure compliance with relevant portions of the *National Energy Board Act*, the regulations, any terms and conditions of any certificate or order issued by the Board and the company's EPP. Review of the company protocols indicated that the audit did not meet these requirements. The audit protocols and results did not contain itemized lists of the regulatory or certificate requirements, nor did they contain appropriate audit definitions of the National Energy Board's outcome-based program requirements to evaluate against.

**Compliance Status:** Non-Compliant

**5.0 MANAGEMENT REVIEW****5.1 Management Review**

**Expectations:** Senior management should formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. This review should be formal and documented and should occur on a regular basis. The management review should include a review of any decisions, actions and commitments which relate to the improvement of the programs and the company's overall performance.

**References:**

OPR-99 Section 55  
CSA Z662-11 Clause 3.1.2(h)(iii)

**Assessment:**

Interviews and record reviews indicate that the EPP undergoes regular review by Westcoast's area management, operations

management and senior management teams. Westcoast's senior management also holds meetings on a regular basis at different field locations to evaluate the operations of the pipeline and associated facilities.

While the Board acknowledges the amount of review of the EPP by Westcoast senior management, based on the non-compliances identified in sub-elements 3.1 and 4.4, the Board is not satisfied that management review has been undertaken with a view to ensuring the EPP's continuing suitability, adequacy and effectiveness. The Board expects senior management to ensure and demonstrate that there are appropriate human resources to operate its pipeline system. Further, the Board is of the view that senior management is responsible to ensure that the EPP is audited and internal inspections are completed on a regular basis.

As referenced early in this appendix, significant effort has been put forth by senior management to track and measure performance related to permit non-compliances. This includes having this measure built into the company's performance pay system (STIP). Board AVCs have since been added to the company scorecard; however, no targets have been established for which the company can measure performance. Board or Inspection Officer Orders are not tracked, nor could Westcoast demonstrate in the audit that these enforcement actions are discussed at the senior management level.

**Compliance Status:** Non-Compliant

**APPENDIX IV  
WESTCOAST ENERGY INC., CARRYING ON BUSINESS AS SPECTRA ENERGY TRANSMISSION (WESTCOAST)  
EMERGENCY MANAGEMENT PROGRAM AUDIT EVALUATION TABLE**

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| <p><b>1.0 POLICY AND COMMITMENT</b></p> <p><b>1.1 Policy and Commitment Statements</b></p> <p><b>Expectations:</b> The company shall have a policy approved and endorsed by senior management (the Policy). It should include goals and objectives and commit to improving the performance of the company.</p>   |
| <p><b>References:</b><sup>7</sup></p> <p>OPR-99 Sections 4, 47 and 48<br/>CSA Z662-11 Clause 3.1.2(a)</p>  |
| <p><b>Assessment:</b></p> <p>Westcoast provided an adequate and up-to-date corporate Environment, Health and Safety Policy which meets the Board's expectations. The Policy statement and accompanying documentation outline Westcoast's management principles and clear program objectives. The Emergency Management Program (EMP) is guided by these documents. The review of Westcoast's overarching Emergency Management (EM) Manual indicated that the company has developed EM-specific policy documents which build on the corporate policy documents. All staff interviewed were aware of the existence and content of the appropriate policy documents.</p> |
| <p><b>Compliance Status:</b> Compliant</p>   |

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<sup>7</sup> Each "Reference" in this table contains specific examples of the "legal requirements" applicable to each element but are not necessarily a complete list of all applicable legal requirements.

## 2.0 PLANNING

### 2.1 Hazards Identification, Risk Assessment and Control<sup>8</sup>

**Expectations:** The company shall be able to demonstrate a procedure to identify all possible hazards. The company should assess the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs (management and protection programs). The company should be able to implement control measures to minimize or eliminate the risk.

#### References:

OPR-99 Sections 4, 33, 37, 39, 40, 47 and 48  
CSA Z662-11 Clause 3.1.2 (f),

#### Assessment:

During review of Westcoast's EM manuals and interviews with staff, Westcoast was able to demonstrate that it had identified and risk-assessed the hazards associated with its facilities. Westcoast demonstrated that it had developed and implemented processes for the identification of its EM planning zones (EPZ) associated with the hazards posed by its pipelines and associated facilities. Westcoast staff also provided information and records describing the processes it uses to re-validate its EPZ on a periodic basis. Westcoast staff demonstrated that the hazard identification processes and EPZ were being utilized in the development of its other EM-related activities including its awareness, continuing education and liaison programs.

**Compliance Status:** Compliant

### 2.2 Legal Requirements

**Expectations:** The company shall have a verifiable process for the identification and integration of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements which includes updating the management and protection programs as required.

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<sup>8</sup> Hazard: Source or situation with a potential for harm in terms of injury of ill health, damage to property, damage to workplace environment, or a combination of these. Risk: Combination of the likelihood and consequence(s) of a specified hazardous event occurring



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| <p><b>References:</b><br/>OPR-99 Sections 4, 6, 32, 40, 47 and 48</p>  |
| <p><b>Assessment:</b><br/>Through record and document review, EM staff demonstrated that Westcoast has developed and implemented adequate processes and activities for the identification and integration of the legal requirements related to its EM obligations.</p> <p>Further, Westcoast staff demonstrated that the company is actively involved in the development and improvement of the various technical standards utilized by industry. This demonstrates Westcoast’s commitment not only to meeting its requirements but also to improving safety and response practices.</p> |
| <p><b>Compliance Status:</b> Compliant</p>   |
| <p><b>2.3 Goals, Objectives and Targets</b><br/><b>Expectations:</b> The company should have goals, objectives and quantifiable targets relevant to the risks and hazards associated with the company’s facilities and activities (i.e. construction, operations and maintenance). The objectives and targets should be measurable and consistent with the Policy and legal requirements and ideally include continual improvement and prevention initiatives, where appropriate.</p>  |
| <p><b>References:</b><br/>OPR-99 Sections 40, 47 and 48<br/>CSA Z662-11 Clause 3.1.2(h)(ii)</p>  |
| <p><b>Assessment:</b><br/>Westcoast EM staff was able to demonstrate compliance with this sub-element through documentation and records provided to the Board. Westcoast’s corporate emergency management manual contains clear objectives for the EM program. Westcoast sets annual targets related to its exercise program on an annual basis. As well, review of Westcoast’s EM exercise documentation and records indicates that specific objectives are set, measured and managed for each exercise conducted.</p>  |

Similarly, Westcoast EM staff provided documents and records to demonstrate that it routinely sets and measures objectives associated with its interactions with other response agencies.

**Compliance Status:** Compliant

### 3.0 IMPLEMENTATION

#### 3.1 Organizational Structure, Roles and Responsibilities

**Expectations:** The company shall have an organizational structure that allows its management and protection programs to effectively function. The company should have clear roles and responsibilities, which may include responsibilities for the development, implementation and management of the management and protection programs.

**References:**

OPR-99 Sections 40, 47 and 48  
CSA Z662-11 Clauses 3.1.2(b) and 10.5.2.4

**Assessment:**

Westcoast EM staff was able to demonstrate compliance with this sub-element through documentation and records provided to the Board. While Westcoast was not able to demonstrate that it has a formal and repeatable process for evaluating the adequacy of its staff in preparing for and responding to an emergency, the company was able to demonstrate that it had an adequate organizational structure and resourcing levels for its present facilities. Westcoast has:

- developed a full complement of facility emergency response plans (FERPs);
- four dedicated emergency response professionals on staff;
- participated actively in industry committees and standard development; and
- undertaken a significant volume of work related to emergency response exercises and drills, as well as continuing education and liaison programs.

Further, Westcoast staff demonstrated that senior management routinely seeks information regarding EM resourcing.

With respect to resourcing levels, Westcoast is advised that the updated OPRs presently in the parliamentary review process require companies to develop, implement and demonstrate formal resourcing management practices, which Westcoast does not currently have. Further, while present resourcing levels appear adequate, Westcoast's proposed pipeline facilities related to LNG expansion in BC will

require on-going monitoring and management of its operational resourcing.

Through document and record review, as well as interviews with staff, Westcoast was able to demonstrate compliance with respect to the Board's expectations regarding roles and responsibilities.

Westcoast provided roles and responsibility statements and documents for all staff involved in the management, development and implementation of the EMP. All company staff interviewed was able to clearly demonstrate knowledge of their involvement and expectations with the management of the program.

Companies must be able to demonstrate that they have a clearly defined organizational structure including documented roles and responsibilities for all staff who could be involved in an emergency. Westcoast was able to demonstrate that it meets the requirements with respect to having an appropriate EM structure including appropriately defined roles and responsibilities for staff involved in a response. Westcoast provided EM response organization charts, role and responsibility statements, and job descriptions. Westcoast demonstrated that it trains its staff in the formal Incident Command System (ICS) at the BC Justice Institute. ICS is an internationally recognized organizational system for providing oversight and management of emergencies. Westcoast staff receives ICS 100 through 300 training dependant on expected roles. As well, Westcoast has developed formal documentation outlining their management related roles and provided training on same.

Further, Westcoast provided formal documentation for the organization and use of mutual aid practices between the various companies located in the Taylor, BC, area where transmission facilities cross congested industrial areas.

**Compliance Status:** Compliant

### **3.2 Management of Change**

**Expectations:** The company shall have a management of change program. The program should include:

- identification of changes that could affect the management and protection programs;
- documentation of the changes; and

- analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.

**References:**

OPR-99 Section 6  
CSA Z662-11 Clause 3.1.2(g)

**Assessment:**

Westcoast demonstrated that it has a formal process and dedicated staff for managing changes to its assets. However, Westcoast's management of change (MOC) process, as demonstrated, is not considered compliant as it applies only to physical (asset) changes and not to changes required in practices or procedures that could result from:

- changes to legal requirements;
- changes to industry standards or practices;
- the identification of new hazards; or
- results of monitoring, inspections or investigations.

Further, Westcoast's MOC process only manages changes on a reactive basis (i.e., changes once the need has been identified). The Board expectation is that company MOC processes be proactive and formally linked to processes for the identification of changes that could affect the management and protection programs (e.g., Integrity Management, Safety, Environmental Protection, Emergency Management Programs, etc.).

With respect to the EM program MOC, on a less formalized basis, the EM coordinator and staff do proactively identify and manage changes to the EM program and documentation in an adequate manner. Westcoast EM staff demonstrated that internal activities such as Leave-to-Open requests, decommissioning applications, incident investigations, etc., are routinely monitored to evaluate their impact on the EM program and that changes are made as required. However, as this practice is not fully proceduralized, and given the non-compliant finding associated with the formal company-wide MOC process, this sub-element is found to be non-compliant.

EM staff provided a draft Emergency Preparedness Management System that included requirements for management of change. This was being undertaken in anticipation of the Board's updated OPR requirements and the draft findings of the NEB Processing Plant

Audit Report. While not reviewed because of its draft nature, this anticipatory work was viewed as a positive practice.

**Compliance Status:** Non-Compliant

### **3.3 Training, Competence and Evaluation**

**Expectations:** The company shall have a documented training program for employees and contractors related to the company's management and protection programs. The company shall inform visitors to company maintenance sites of the practices and procedures to be followed. Training requirements should include information about program-specific policies. Training should include emergency preparedness and environmental response requirements as well as the potential consequences of not following the requirements. The company should determine the required levels of competency for employees and contractors. Training shall evaluate competency to ensure desired knowledge requirements have been met. Training programs should include record management procedures. The training program should include methods to ensure staff remains current in their required training. The program should include requirements and standards for addressing any identified non-compliances to the training requirement.

#### **References:**

OPR-99 Sections 28, 34, 35, 46 and 56  
CSA Z662-11 Clauses 3.1.2(ii) and 10.5.2.4

#### **Assessment:**

Through document and record review, as well as interviews with staff, Westcoast was able to demonstrate compliance with this sub-element.

Westcoast provided documented EM training requirements that were appropriate for the facilities audited.

Record review indicated that the EM training program was being monitored on a regular basis by the EM coordinator, the Operations Steering Committee, and other senior management. Staff receives EM information, guidance and training starting with the employee induction process and continuing throughout their employment with Westcoast. As noted in sub-element 3.1, Organizational Structure, Roles and Responsibilities above, staff and management receive training in formal incident command practices and procedures which allows for an integrated response (with other first responders) utilizing a common, standardized structure. Westcoast provided copies of its EM training handbooks and knowledge checklists used by instructors to ensure consistent learning practices.

EM training and competency requirements include, in addition to knowledge-based training for company personnel, the need to demonstrate an ability to respond to the various emergencies that may occur at the facilities. As well, the company demonstrated that it has developed a program of continuing education and awareness for other first responders who may attend or manage emergencies involving the regulated facilities. Westcoast provided documents and records detailing robust and all-inclusive continuing education, awareness and exercise programs involving company staff, local (e.g., municipal, fire and police staff) and regional (e.g., provincial environment and forest fire staff) responders, and mutual aid organizations and companies. The records indicated that the company was conducting well-attended, regular, planned exercises with clear program, learning and coordination objectives. Westcoast provided records indicating that over 50 exercises were completed in 2012 and 58 had been completed in 2011. Further, Westcoast has added 100% completion of the EM training and exercise programs to the Short-Term Incentive Pay (STIP) structure. Review of Westcoast records indicated a 100% completion record with the final records for the year indicating staff attending the activities from all regions to assure target completion.

Additionally, review of records associated with the continuing education and awareness programs indicated that Westcoast included post-activity review and learn exercises, which resulted in improvements to company plans, processes and procedures, where required.

**Compliance Status:** Compliant

### 3.4 Communication

**Expectations:** The company should have an adequate, effective and documented communication process(es):

- to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs policies, goals, objectives and commitments;
- to inform and consult with interested persons about issues associated with its operations;
- to address communication from external stakeholders;
- for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons;
- to communicate the program's roles and responsibilities to interested persons.

### References:

OPR-99 Sections 28, 29, 33, 34 and 35

CSA Z662-11 Clauses 3.1.2(d), 10.5.2.2 and 10.5.2.3

**Assessment:**

During document and record review, as well as interviews with staff, Westcoast was not able to demonstrate full compliance with this sub-element.

The company was able to demonstrate that it employs many methods for communicating its EMP with its internal and external stakeholders. Staff are provided information regarding EM as well as Health, Safety and Environment practices in general during induction activities and throughout an employee's tenure during:

- employee competency training;
- safety meetings;
- EM exercises and drills; and
- routine on-line information practices.

Documents reviewed indicated that two-way communication of EM information was routinely being undertaken between and across all levels of the organization.

EM staff was also able to demonstrate appropriate, on-going communication practices, procedures and activities between Westcoast and its external stakeholders. The stakeholders involved included:

- corporate and private individuals within the various planning zones;
- municipalities;
- responder agencies;
- provincial and federal organizations; and
- mutual aid partners.

In reviewing the stakeholder communication practices the audit found that the practices were documented and, where applicable, included checklists and guidance for staff to ensure that critical information was being provided. Further, EM staff provided records indicating that Westcoast undertakes internal and external effectiveness reviews of its communication and awareness programs and activities. Westcoast staff provided evidence of the formal review of the results of the surveys and the implementation of corrective and preventive actions as well as suggested process improvements which were identified in the records.

Only one non-compliant issue was noted during the Board's audit of this sub-element. During the review of Westcoast's gas control notification process used by the public or internal parties to report a potential incident, it was noted that the procedure did not include standardized formal safety messaging to ensure the on-going safety of the caller. Westcoast EM staff agreed that this would result in a better practice and indicated that they would begin the development of an updated practice regardless of this audit and reporting schedule. Although improvements were discussed, at the time of the audit, Westcoast failed to demonstrate the standardized formal safety messaging required.

**Compliance Status:** Non-Compliant

### **3.5 Documentation and Document Control**

**Expectations:** The company should have documentation to describe the elements of its management and protection programs where warranted. The documentation should be reviewed and revised at regular and planned intervals. Documents should be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.

#### **References:**

OPR-99 Sections 27 and 32  
CSA Z662-11 Clauses 3.1.2(e) and 10.5.2.3



**Assessment:**

Through document and record review as well as interviews with staff, Westcoast was able to demonstrate compliance with this sub-element with respect to EM.

Westcoast provided copies of its EM manuals, plans and responder handbooks for review. Westcoast has developed appropriate documentation for the communication, development, implementation and management of its EM program and for responding to and managing its potential emergencies.

Westcoast's EM staff demonstrated processes for ensuring that all critical EM documentation (EM plans, procedures, etc.) was being regularly and formally reviewed, and revised on an on-going basis. EM manuals and plans are kept in electronic format on Westcoast's internal intranet site and in paper format using controlled documentation practices.

Review of the documentation and associated records indicated that Westcoast has been implementing its document management procedures on an on-going basis.

**Compliance Status:** Compliant

**3.6 Operational Control-Normal Operations**

**Expectations:** The company should establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address the risks and hazards identified in elements 2.0 and 3.0. The process should include measures to reduce or eliminate risks and hazards at their source, where appropriate.

**References:**

N/A

**Assessment:**

By definition, EM controls are considered to be controls for managing and responding to upset or abnormal operating conditions; therefore, the audit results for the entire EM program, including proactive activities and documentation such as training, etc. will be documented in sub-element 3.7 Operational Control-Upset or Abnormal Operating Conditions, below.

**Compliance Status:** N/A

**3.7 Operational Control-Upset or Abnormal Operating Conditions**

**Expectations:** The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (for example, after emergency events).

**References:**

OPR-99 Sections 32, 35 and 52  
CSA Z662-11 Clauses 3.1.2(e) and 10.5.2

**Assessment:**

Through document and record review, as well as interviews with staff, Westcoast was able to demonstrate that it has a number of controls for addressing the hazards and risks associated with upset conditions. The primary controls used by Westcoast are the proactive development of its corporate Spectra Energy EM Manual and site specific Spectra Energy Field Emergency Response Plans (FERPs). These documents contain descriptions of the potential incidents and hazards caused by emergencies across Westcoast's system. These documents also include:

- descriptions of the hazardous products and associated emergency planning zones;
- immediate actions to be taken in the case of an incident;
- the various roles and responsibilities of staff and responders during an incident;
- reporting and communication requirements and information; and
- other information related to the incidents.

Westcoast also provided copies of its First Responder Handbook, which is a focused and condensed version of the EM manual for use by field staff as a resource document in the event of an incident.

Review of the EM manual and FERPs indicated that they were well organized, up-to-date and contained all of the practices associated with each individual hazard. Further, review of the Westcoast facilities including potential hazards, consequences and geographical influences compared against the FERPs, indicated that the individual plans reflected appropriate geographical regionalization and the individual product hazards. This is important as the facilities reviewed include sour and acid gas facilities, as well as sweet gas transmission through populated or urban areas.

**Compliance Status:** Compliant

#### **4.0 CHECKING AND CORRECTIVE ACTION**

##### **4.1 Inspection, Measurement and Monitoring**

**Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs and should, at a minimum, address legal requirements as well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs.

##### **References:**

OPR-99 Sections 36, 39, 47, 48 and 53(1)  
CSA Z662-11 Clauses 3.1.2(h)(i) & (ii) and 10.5.2.4

##### **Assessment:**

Through document and record review, as well as interviews with staff, Westcoast was able to demonstrate that the development and implementation of its EM program was being adequately monitored. Westcoast provided records of review by program and senior managers with respect to the development of documents, training and competency, mutual aid agreements, exercises, awareness programs, etc. Westcoast also provided procedures requiring formal evaluations for training, exercises, investigations and responses. Westcoast provided records of the implementation of these procedures. Westcoast also presented records indicating follow-through to

close-out of issues requiring changes.

**Compliance Status:** Compliant

#### **4.2 Corrective and Preventive Actions**

**Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to:

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

The company should develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.

#### **References:**

OPR-99 Sections 6 and 52  
CSA Z662-11 Clause 3.1.2(h)(i)

|   |
|---|
| <p><b>Assessment:</b><br/>Westcoast was able to demonstrate through document and record review that it has developed and implemented appropriate incident management and investigation processes. Westcoast was also able to demonstrate that it has adequate processes in place to identify, develop and implement corrective and preventive actions that arise from its management or incident investigation processes.</p>                   |
| <p><b>Compliance Status:</b> Compliant</p>  |
| <p><b>4.3 Records Management</b><br/><b>Expectations:</b> The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.</p> |
| <p><b>References:</b><br/>OPR-99 Sections 32, 47, 48, 52 and 56<br/>CSA Z662-11 Clause 3.1.2(e)</p>   |
| <p><b>Assessment:</b><br/>Records relating to the EMP were retained in the regional offices in Charlie Lake, BC. Document review confirmed that the company had record retention processes in place that include appropriate types of records to be retained, retention timeframes and disposal methods. All records requested were readily retrieved.</p>  |
| <p><b>Compliance Status:</b> Compliant</p>  |
| <p><b>4.4 Internal Audit</b><br/><b>Expectations:</b> The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.</p>   |

**References:**

OPR-99 Sections 53 and 55  
CSA Z662-11 Clause 3.1.2(h)(iii)

**Assessment:**

While the EM manager and other senior staff at Westcoast closely monitor the EM program, the company did not present information indicating that an adequate audit of the EM program, either on a stand-alone basis or in conjunction with either Safety and/or Environmental Protection Program audits, had been completed.

In response to the Draft Audit Report, Westcoast stated that, in 2011, Spectra Audit Services conducted an audit of Crisis Management, and that an internal Operations Assurance review of Emergency Preparedness was conducted in Q4, 2012. During the audit, the information referenced in Westcoast's response was brought forward by Westcoast's emergency management staff; however, it was determined that the Crisis Management audit would not meet the Board's regulatory requirements as it did not measure compliance pursuant to sections 53 and 55 of OPR-99.

Westcoast did demonstrate that it has a number of audit programs applicable to its facilities. These programs were implemented by staff from Calgary, Alberta or in its head office in Houston, Texas. The Board examined these processes and their management, and has determined that they would meet the Board's requirements if applied to the EM program.

**Compliance Status:** Non-Compliant

## 5.0 MANAGEMENT REVIEW

### 5.1 Management Review

**Expectations:** Senior management should formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. This review should be formal and documented and should occur on a regular basis. The management review should include a review of any decisions, actions and commitments which relate to the improvement of the programs and the company's overall performance.

#### References:

OPR-99 Section 55  
CSA Z662-11 Clause 3.1.2(h)(iii)

#### Assessment:

Interviews and record reviews indicate that the EM Program undergoes regular review by Westcoast's senior management starting at the EM Manager through to the president of the company. Westcoast's senior management also holds meetings on a regular basis at different field locations to evaluate the operations of the individual facilities and to provide leadership at the facility level. Westcoast is demonstrating its management commitment to the EM Program by assigning value to its activities by attaching STIP measures to four of its activities including development and maintenance of FERPs, completion of training and exercise requirements and implementation of the liaison and awareness programs.

While the Board acknowledges the involvement and review of the EM Program by Westcoast senior management, based on the non-compliances identified in sub-element 4.4 Internal Audit, the Board is not satisfied that management review has been undertaken with a view to ensuring the continuing compliance, suitability, adequacy and effectiveness of the EM Program. The Board views compliance with this sub-element to rest with senior management. Further, the Board views the development and implementation of an audit program compliant with sections 53 and 55 of OPR-99 to be a key demonstration of the adequacy of its programs.

**Compliance Status:** Non-Compliant

**APPENDIX V**  
**WESTCOAST ENERGY INC., CARRYING ON BUSINESS AS SPECTRA ENERGY TRANSMISSION (WESTCOAST)**  
**CROSSINGS PROGRAM AUDIT EVALUATION TABLE**

|  |
|--|
| <p><b>1.0 POLICY AND COMMITMENT</b></p> <p><b>1.1 Policy and Commitment Statements</b></p> <p><b>Expectations:</b> The company shall have a policy approved and endorsed by senior management (the Policy). It should include goals and objectives and commit to improving the performance of the company.</p>   |
| <p><b>References:</b><sup>9</sup></p> <p>OPR-99 Sections 4, 47 and 48<br/>         CSA Z662-11 Clause 3.1.2</p>  |
| <p><b>Assessment:</b></p> <p>Westcoast senior management participates in several committees that oversee the development and implementation of the policies that frame the Environment, Health and Safety (EHS) Program. For the purposes of this audit, the Crossings Program is considered to be subsumed in the Safety Program. Westcoast management communicates the policy for EHS programs through an Operational Steering Committee. The EHS Policy is signed off by Spectra Energy’s President and Chief Executive Officer.</p> <p>The Policy was available at all sites and staff interviews confirmed that employees are aware of its existence. A review of the Policy from the 2012 purpose statement is as follows:</p> <p>“To achieve our purpose we manage risk in everything we do, by continuously improving on:</p> <ul style="list-style-type: none"> <li>• Employee, contractor and vehicle safety;</li> <li>• Process safety;</li> <li>• Environmental Management;</li> <li>• Reliability; and</li> <li>• Cost management.”</li> </ul> <p>While Westcoast was able to demonstrate that its Policy is signed off by senior management and communicated to employees, the</p> |

<sup>9</sup> Each “Reference” in this table contains specific examples of the “legal requirements” applicable to each element but are not necessarily a complete list of all applicable legal requirements.



audit found that “public safety” is not mentioned in the Policy. While it is understood that public safety is achieved when the goals listed are reached, the NEB Act and associated regulations clearly separate the safety of the public as a requirement.

**Compliance Status:** Non-Compliant

## 2.0 PLANNING

### 2.1 Hazards Identification, Risk Assessment and Control<sup>10</sup>

**Expectations:** The company shall be able to demonstrate a procedure to identify all possible hazards. The company should assess the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs (management and protection programs). The company should be able to implement control measures to minimize or eliminate the risk.

#### References:

OPR-99 Sections 4(2), 37, 39, 40 and 41

CSA Z662-11 Clause 3.1.2(f)

#### Assessment:

Administrative assistants conduct the initial screening of crossing requests that are submitted through the One-Call system. Operations supplied them with criteria such as parameters for vehicle load versus amount of cover. For activity applications that are in closer proximity to the pipeline, they open a file and pass the “in conflict” requests to the Lands department for further evaluation. Depending on the level of expertise required to review the application based on factors such as proximity to the pipe and the nature of the request, the applications are addressed by either the Lands or Operations teams.

The hazard identification for third party crossing activity is incorporated and captured in the permitting process and outlined in the related documentation. The Land and Crossing Administrator assesses the application using information and formulas provided on the Source (Westcoast’s internal intranet site). Based on the assessment, they forward on the applications that require engineering

<sup>10</sup> Hazard: Source or situation with a potential for harm in terms of injury of ill health, damage to property, damage to workplace environment, or a combination of these. Risk: Combination of the likelihood and consequence(s) of a specified hazardous event occurring

assessments. All crossing requests are administered with permits. These permits include the instructions for conducting the work as well as the safety and contact information. The Lands and Damage Prevention groups also work with the Public Awareness group to identify and address potentially hazardous activities, such as deep tillage. Once identified, the groups work on a strategy to address the hazard with awareness activities or alterations to permit templates and information.

Westcoast was able to demonstrate that it has implemented a hazard identification process that is incorporated into its processing and administration of third party crossing applications. As well, the Damage Prevention and Lands groups work with the Public Awareness group in the identification of potentially hazardous activities.

**Compliance Status:** Compliant

## 2.2 Legal Requirements

**Expectations:** The company shall have a verifiable process for the identification and integration of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements which includes updating the management and protection programs as required.

### References:

OPR-99 Sections 4 and 6

PCR Part II Sections 4 and 5

CSA Z662-11 Clause 3.1.2(h)(i)

### Assessment:

Westcoast monitors legal requirements through a subscription to Templegate Information Services Inc. and Cyber Regs, as well as membership in professional organizations such as CEPA and the Canadian Common Ground Alliance. Westcoast's Regulatory Affairs group communicates regulatory changes via email to a list of group leads. It is then up to the recipients on the distribution list to identify any changes that are relevant to their respective operational processes. For example, according to staff, it was the Regulatory Affairs office that ensured that Westcoast complied with the Exemption Order Respecting Crossings by Agricultural Vehicles or Mobile Equipment (NEB M0-21-2010). Document review also demonstrated that regulatory references are identified in some Standard Operating Procedures (SOPs).

While the company was able to demonstrate that communication of regulatory requirements is occurring, and that personnel are incorporating new requirements into some of the procedures and templates, Westcoast did not demonstrate that there is an inventory of legal requirements or a formal process to verify whether the Damage Prevention and Crossing Programs are meeting all of the legal requirements.

**Compliance Status:** Non-Compliant

### **2.3 Goals, Objectives and Targets**

**Expectations:** The company should have goals, objectives and quantifiable targets relevant to the risks and hazards associated with the company's facilities and activities (i.e. construction, operations and maintenance). The objectives and targets should be measurable and consistent with the Policy and legal requirements and ideally include continual improvement and prevention initiatives, where appropriate.

### **References:**

OPR-99 Sections 47 and 48  
CSA Z662-11 Clause 3.1.2

Westcoast sets goals at various levels of the organization. At the corporate level, set goals often include issues related to safety and operations. For example, one of this year's corporate goals was for 100% of staff to complete the core safety training by 31 October 2012. Westcoast staff goals and targets are developed, in part, to reflect the corporate ones such as completing safety training. Goals and targets for employees are established in staff development plans then managed and tracked through performance management and tied to the organization-wide Short-term Incentive Pay (STIP) program.

Within the Lands and Damage Prevention groups, goals are established related to business and process improvements as well as meeting regulatory requirements. For example, following the issuance of NEB MO-21-2010, a depth of cover survey was included among staff goals for the year. The Lands and Damage Prevention groups also report the number of unauthorized activities to the Operations group to be included among its Key Performance Indicators. These teams work closely with the Public Awareness Teams in order to identify new potential audiences or hazardous activities. Document review confirmed that goals and targets are established relating to the Public Awareness Program staff and activity development.

Westcoast was able to demonstrate that there is a process for establishing goals, targets and objectives for its Lands and Damage Prevention Programs, and that related issues are monitored and measured, and used to form the basis of the plan going forward.

Within the Lands and Damage Prevention groups, goals are established for the related programs annually and these goals contribute to staff performance reviews.

**Compliance Status:** Compliant

### **3.0 IMPLEMENTATION**

#### **3.1 Organizational Structure, Roles and Responsibilities**

**Expectations:** The company shall have an organizational structure that allows its management and protection programs to effectively function. The company should have clear roles and responsibilities, which may include responsibilities for the development, implementation and management of the management and protection programs.

#### **References:**

OPR-99 Sections 40, 47 and 48  
CSA Z662-11 Clause 3.1.2(b)

#### **Assessment:**

The Team Leader, Public Awareness, Team Leader, Crossing Administration and Damage Prevention and the Manager of Lands, Field Operations all report to the Lands and Pipeline Safety Director. The third party crossing permits are managed in the Crossing Administration and Damage Prevention Team. The staff who manages and performs third party locates reports through the Manager of Lands, Field Operations. This team has staff in Vancouver, Fort St John and Prince George, BC, as well as contract workers in various locations around BC. The Team Leaders conduct annual reviews to discuss performance, goals and targets. The Team Leaders review the workload with the Director during their quarterly reporting.

Westcoast was able to demonstrate that it has a functioning structure to maintain the program as designed. With all of the third party contact points managed under one team, communication among the groups contributes to the ongoing functioning of all programs.

While each of these groups have distinct roles and responsibilities, they also have well established communication triggers for issues that affect the other areas and processes in place for regular review of the adequacy of each program.

**Compliance Status:** Compliant

### 3.2 Management of Change

Expectations: The company shall have a management of change program. The program should include:

- identification of changes that could affect the management and protection programs;
- documentation of the changes; and
- analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.

#### References:

OPR-99 Section 6

CSA Z662-11 Clause 3.1.2(g)

#### Assessment:

Management of Change (MOC) related to Lands and Crossings is managed out of Vancouver, British Columbia and MOC for asset changes is managed at local facilities. Its current MOC program has scoped in Public Awareness as a group that needs to be notified and evaluated for potential impacts when there are changes involving the assets, such as databases. The *MOC Descriptions of Affected Applications, Systems, Documentation and Processes*, describes the circumstances for involving the Public Awareness Program in the MOC. Review of the documentation provided indicates that the triggers for MOC and the Public Awareness Program mainly involve the Geographical Information System (GIS). While it is understood that changes to the GIS system database should be managed, it is not clear what other types of changes at Westcoast would trigger the MOC process and when the Lands or Damage Prevention Teams would be notified and considered in that change.

Interviews confirmed that Westcoast is in the process of developing and implementing an Operations Management System (OMS). Westcoast indicated that it intends to incorporate the MOC process into the OMS. Interviews indicated that public safety measures such as damage prevention and lands related matters had yet to be included in the scope as triggers for the new MOC.

Although there are aspects of a functioning asset-based MOC process in place, and improvements are planned, at the time of the audit, Westcoast failed to demonstrate that it has implemented a comprehensive MOC process that includes the appropriate triggers to include the Lands and Damage Prevention groups.

**Compliance Status:** Non-Compliant

### **3.3 Training, Competence and Evaluation**

**Expectations:** The company shall have a documented training program for employees and contractors related to the company's management and protection programs. The company shall inform visitors to company maintenance sites of the practices and procedures to be followed. Training requirements should include information about program-specific policies. Training should include emergency preparedness and environmental response requirements as well as the potential consequences of not following the requirements. The company should determine the required levels of competency for employees and contractors. Training shall evaluate competency to ensure desired knowledge requirements have been met. Training programs should include record management procedures. The training program should include methods to ensure staff remains current in their required training. The program should include requirements and standards for addressing any identified non-compliances to the training requirement.

#### **References:**

OPR-99 Sections 28, 29, 30(b), 46, 47, 48 and 56  
CSA Z662-11 Clause 3.1.2(c)(iii)

#### **Assessment:**

The Land Services Administrator tracks training for all employees in the Lands and Pipeline Safety Awareness Team using a Learning Management System (LMS) database. The training records for the Lands staff are managed in LMS by administrative staff in the Vancouver office. Expiration dates are put on required courses for Westcoast staff and the system sends out email alerts three months before the training has expired. Interviews confirmed that employees in the field offices were aware of LMS and the online courses available in that database.

All mandatory training is entered in the LMS database. Once leaders have met with staff to determine learning and development plans, all additional training is also included in the LMS. For instance, the Damage Prevention Team Leader requires her team to take Ground Disturbance level I and II training. This course is entered in the LMS and the training records are managed there. Other training is managed within the performance management and professional development process in Career Zone. For example,

although there are no formal requirements for the Land Agents to have a professional designation, all current Land Agents are enrolled in International Right of Way Association (IRWA) courses in pursuit of the IRWA designation. While all Lands staff is subject to reviews and evaluations, contract land agents are not subject to the same reviews to ensure that they are performing in accordance with Westcoast standards and procedures.

While employees in the Damage Prevention and Lands Team are trained and evaluated on a regular basis, Westcoast could not demonstrate that there is a process in place to evaluate its contractors who conduct third party locates as required by CSA Z662-11.

**Compliance Status:** Non-Compliant

### 3.4 Communication

**Expectations:** The company should have an adequate, effective and documented communication process(es):

- to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs policies, goals, objectives and commitments;
- to inform and consult with interested persons about issues associated with its operations;
- to address communication from external stakeholders;
- for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons;
- to communicate the program's roles and responsibilities to interested persons.

### References:

OPR-99 Sections 18, 28 and 29  
 CSA Z662-11 Clause 3.1.2(d)  
 PCR Part II Sections 4 and 5

### Assessment:

Organization wide safety related communication takes place during mandatory safety stand down meetings and monthly mandatory safety meetings which are delivered to all sites simultaneously. There are also less formal town hall meetings to discuss safety topics which include third party issues such as call before you dig issues and agricultural practices. Employees also receive weekly safety reports by email that are posted on the Source and emails from Public Affairs.

Each of the Damage Prevention and Lands Teams provide the Director with weekly reports on workload and issues related to

workload. Communication also takes place with related teams. For example, Land Agents attend weekly meetings with Operations to discuss potential land issues prior to any Operations and Maintenance (O&M) work.

Westcoast works with BC Common Ground Alliance and BC One-Call to organize contractor safety breakfasts, Digsafe BC! Workshops and other related trade shows to discuss general safety practices and regulatory requirements for working around federally regulated pipelines. They also place ads with safety messages in trade journals and community newsletters. The external website also contains readily available safety and contact information for landowners and other third parties. Communication with potential crossers occurs throughout the permitting process in order to ensure a complete permit. The Damage Prevention and Crossing Administration team includes the company's written permission as well as the instructions for working near the pipeline such as whether or not a Westcoast employee has to be onsite during the work.

The Lands Team communicates with landowners regarding any O&M work that Operations has determined is required. Westcoast has contractors in the North East BC area to perform locates for third parties. To communicate with landowners regarding O&M projects, they provide a company contact. Any landowner issues or complaints are managed through the issue resolution process.

While communication with external stakeholders has established processes and triggers, the audit was unable verify that the Westcoast Internal and External Communication Performance Standard 6.0 (September 2006) is fully implemented and cross referenced to the OMS system to include and communicate all required crossings or damage prevention information to the appropriate levels.

Westcoast was able to demonstrate that it has established regular communication within the Crossings Program as well as triggers for communicating with other teams such as Operations and Integrity. Although communication is occurring within the Crossings Program, and there are triggers in place from the programs outward, Westcoast failed to demonstrate that there is an implemented internal communication plan for the organization that includes the Crossings Program in order to ensure that relevant information is communicated in a timely way to internal stakeholders.

**Compliance Status:** Non- Compliant



### 3.5 Documentation and Document Control

**Expectations:** The company should have documentation to describe the elements of its management and protection programs- where warranted. The documentation should be reviewed and revised at regular and planned intervals. Documents should be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.

#### References:

OPR-99 Section 27  
 CSA Z662-11 Clause 3.1.2(e)  
 PCR Part II Sections 10 and 11

#### Assessment:

Westcoast employees store and use procedures and templates that are saved on the intranet site “the Source”. In order to facilitate access to the most current templates, the Damage Prevention Group has created a page to post all of the forms, policies and related links for their group. If changes or enhancements are made to any of the procedures or templates, the Crossing Administration and Damage Prevention Group uploads the new documents and announces the new versions by email. Field interviews confirmed that field staff was aware of the requirement to use documents from the Source to ensure that they were using the most recent versions.

Westcoast was able to demonstrate that it has implemented a process to maintain and communicate the policies, procedures and templates related to its Damage Prevention and Lands activities.

**Compliance Status:** Compliant

### 3.6 Operational Control-Normal Operations

**Expectations:** The company should establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address the risks and hazards identified in elements 2.0 and 3.0. The process should include measures to reduce or eliminate risks and hazards at their source, where appropriate.

**References:**

OPR-99 Sections 21, 27 to 49  
CSA Z662-11 Clause 3.1.2(h)  
PCR Part II Sections 4 and 5

**Assessment:**

The Crossing Administration and Damage Prevention Group manages requests for permission submitted by third parties who are planning to excavate or build on or near the right of way as well as those parties who wish to arrange for crossing the right of way with heavy equipment. According to staff, this group receives and manages the requests it receives directly or through BC-One Call. Document review confirms that there are procedures that are available for employees to address the various levels complexity of the requests. Staff members follow set engineering criteria to manage the requests and issue the appropriate permits, or pass the request to the appropriate technical group. This group issues approximately 450-500 permits each year.

The Manager of Lands, Field Operations and his group conduct the field component related to third party crossing activities. Land Agents in this group are trained and accountable to perform locates, attend crossings, inspect the pipe prior to backfilling, as well as issue on-site approvals following the established criteria. This group also works with residents to arrange the removal of encroachments and notifies the surrounding residents, fire departments and municipalities when there is a planned flaring activity associated with regular maintenance.

Westcoast was able to demonstrate that its Damage Prevention and Lands groups have established policies and procedures that address the hazards and risks associated with third party excavation and construction activities as described in the NEB requirements.

**Compliance Status:** Compliant

### 3.7 Operational Control-Upset or Abnormal Operating Conditions

**Expectations:** The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (for example, after emergency events).

#### References:

OPR-99 Sections 32 and 52  
CSA Z662-11 Section 10.5.2

#### Assessment:

According to the *Lands and Pipeline Safety Awareness Crossing Administration and Damage Prevention –Roles and Responsibilities* document, emergency response related activities are included among this group's accountabilities. Interviews confirmed that Land Agents are also deployed for aerial surveillance to assist in the assessment of the situation following an emergency. They also work with the Public Awareness staff to communicate with the community regarding the state of remediation and when the system comes back online.

Emergency management related functions are incorporated directly into the responsibilities of the Lands and Pipeline Safety group, particularly for the Land Agents. The Land Agents are trained in Incident Command System, are part of the standing Emergency Response team, and are part of the team on call for emergencies 24/7. When incidents occur in populated areas, Land Agents use the information in the GIS database to determine the number of people, as well as if any residents requiring evacuation have disabilities and will require special attention. In addition, the Land Agents and Public Awareness employees participate in emergency training sessions and table top exercises, and also prepare and deliver community liaison awareness sessions.

Although the Westcoast emergency response program is discussed in further detail in Appendix IV of this audit report, the overlap of duties and substantial roles played by the Lands and Public Awareness Teams were reviewed and found to be in compliance with regulatory expectations.

**Compliance Status:** Compliant

#### **4.0 CHECKING AND CORRECTIVE ACTION**

##### **4.1 Inspection, Measurement and Monitoring**

**Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs and should, at a minimum, address legal requirements as well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs.

##### **References:**

OPR-99 Sections 36 and 39

CSA Z662-11 Clause 3.1.2(h)(i) PCR Part II Sections 4, 5, 10 ad 14(1)

##### **Assessment:**

The Lands team participates in the right of way (ROW) inspections. Each section of the Westcoast system is inspected by helicopter monthly to monitor for unauthorized activity and potential environmental issues. In order to ensure that issues are identified, staff follows set criteria for the aerial inspections. In areas where Westcoast shares a ROW with Pembina, the companies alternate monthly aerial patrols and report accordingly. Interviews confirm that the Lands group attends the aerial ROW patrols and submits the reports regarding the state of signage, any unauthorized activity or encroachments noted, as well as the state of vegetation. Signage is maintained on an ongoing, as-required basis to ensure it is legible and visible.

Westcoast was able to demonstrate that it has processes and procedures in place for the surveillance and monitoring of its ROW.

**Compliance Status:** Compliant

##### **4.2 Corrective and Preventive Actions**

**Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to:

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

The company should develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.

**References:**

OPR-99 Sections 6 and 52  
 CSA Z662-11 Clause 3.1.2(h)(i)  
 PCR Part II Section 13

**Assessment:**

Westcoast has developed and implemented procedures for addressing the reporting requirements for unauthorized activities outlined in the PCR. Reporting templates are maintained by the Damage Prevention Team and available to all employees on the Source. All unauthorized activities are entered in the Incident Tracking Database to be managed until addressed.

The Damage Prevention Team is responsible for reporting these events to the Board as well as following up with the third parties. The Damage Prevention Team enters the unauthorized activity reports into the GIS database to link them to the section of ROW. The Damage Prevention Team also communicates with the Public Awareness Team in order to correlate awareness activities and unauthorized activities when appropriate. The Lands Team members are located throughout the province and can be involved when onsite follow-up and investigation is required.

Westcoast was able to demonstrate that it has a process to identify and respond to unauthorized activities, and that staff are aware of their roles regarding reporting and follow-up.

There is also a well-established feedback loop to analyze the events, and identify deficiencies and appropriate follow-up.

**Compliance Status:** Compliant

#### **4.3 Records Management**

**Expectations:** The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.

#### **References:**

OPR-99 Sections 41, 51, 52 and 56  
 CSA Z662-11 Clause 3.1.2(h)(iii)  
 PCR Part II Sections 10(c), 11(1) and 16

#### **Assessment:**

Westcoast maintains several databases related to the programs under the Director of Lands and Pipeline Safety. For third party crossing and damage prevention, related files and records are stored in the GIS database according to standards established by the Lands group. All records related to any third party crossing file are uploaded to GIS and available to all staff. Staff at all locations has read access to all of the layers of information. It is used to obtain a current snapshot, as well as a history of activity at a specific location. For instance, staff uses the GIS database to access records regarding O&M activities, unauthorized activities, as well as permits granted to the same piece of property along the ROW. The system has several layers of data entered so it is useful for many teams.

A review of the database entries showed that Westcoast enters all related permit applications, permits, correspondence, unauthorized activities, landowner complaints by the GIS coordinates. The result is that staff can obtain information as it relates to a particular section of its ROW.

Westcoast was able to demonstrate that it has implemented and maintained appropriate records management in accordance with the legal requirements.

**Compliance Status:** Compliant

#### **4.4 Internal Audit**

**Expectations:** The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.

#### **References:**

OPR-99 Section 53  
CSA Z662-11 Clause 3.1.2 (h)(iii)

#### **Assessment:**

Senior management of Spectra Audit Services is located in Houston, Texas. However, an audit manager and several staff are located in Calgary, Alberta. Calgary-based audit staff perform most of the Westcoast internal audits, sometimes with participation by Houston-based audit staff. The audits against program requirements occur on a regular basis and vary in size and scope. Interviews and document review confirm that all non-compliant findings are tracked, assigned to staff for completion, and reported to upper management.

While other operational programs are routinely reviewed, interviews confirmed that the Lands and Pipeline Safety Programs have not yet been included in an operational audit done by the audit team out of Houston. Also, according to staff there are no formal reviews of the Lands and Damage Prevention Programs to ensure that they are developed and maintained in accordance with the legal requirements.

Westcoast was not able to demonstrate that the requirements of the PCR have been scoped into any internal operational audits. Also, it did not demonstrate that the requirements of the PCR are included in its audit protocols for the audits regarding safety of the public in order to confirm compliance.

**Compliance Status:** Non-Compliant

### **5.0 MANAGEMENT REVIEW**

**Expectations:** Senior management should formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. This review should be formal and documented and should occur on a regular basis. The management review should include a review of any decisions, actions and commitments which relate to the improvement of the programs and the company's overall performance.

#### **References:**

OPR-99 Section 53  
 CSA Z662-11 Clause 3.1.2(h) (iii)  
 PCR Part II, Sections 4 and 5

#### **Assessment:**

According to staff, the Public Awareness, Lands and Damage Prevention Teams report results to the Director of Lands and Pipeline Safety. These reports form the basis for the programs going forward and are also discussed during performance reviews. Interviews with Senior Management confirm that reports of unauthorized activity trends are discussed at a senior management level. These reports are synthesized into management's overall safety and performance reporting. Management from head office also conducts mandatory safety stand down meetings which often address topics related to third party damage prevention.

Senior management receives reports regarding the performance of the damage prevention related programs and includes public safety and damage prevention topics in its regular communications. While the Board acknowledges that there is communication occurring, Westcoast was unable to demonstrate that it has established the required processes that contribute to an adequate management review. As noted in element 2.2 of this report, Westcoast does not have a formal process of confirming that there is a current and complete inventory of legal requirements guiding the development and implementation of its Crossing program. Also, Westcoast's internal audit



process does not include an evaluation of compliance to the PCR which outline the requirements for addressing third party activities. Without this confirmation of compliance, senior management cannot verify that the Crossing program is operating in compliance with all of the requirements. As well, Westcoast's policy and purpose statement does not explicitly include public safety, and so there is no clear line of sight from Westcoast's policy to the Crossings Program. Therefore the Board is not satisfied that there are sufficient processes in place by senior management to allow for a formal and documented management review to ensure ongoing suitability of the Crossings Program.

**Compliance Status:** Non-Compliant

**APPENDIX VI**  
**WESTCOAST ENERGY INC., CARRYING ON BUSINESS AS SPECTRA ENERGY TRANSMISSION (WESTCOAST)**  
**PUBLIC AWARENESS PROGRAM AUDIT EVALUATION TABLE**

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|--|
| <p><b>1.0 POLICY AND COMMITMENT</b></p> <p><b>1.1 Policy and Commitment Statements</b></p> <p><b>Expectations:</b> The company shall have a policy approved and endorsed by senior management (the Policy). It should include goals and objectives and commit to improving the performance of the company.</p>   |
| <p><b>References:</b><sup>11</sup></p> <p>OPR-99 Sections 4, 47 and 48<br/>         CSA Z662-11 Clause 3.1.2(a)</p>  |
| <p><b>Assessment:</b></p> <p>Westcoast senior management participates in several committees that oversee the development and implementation of the policies that frame the Environment, Health and Safety (EHS) program. For the purposes of this audit, the Public Awareness (PA) Program is considered to be subsumed in the Safety Program. Westcoast management communicates the policy for EHS programs through an Operational Steering Committee. The EHS policy is signed off by Spectra Energy’s President and Chief Executive Officer.</p> <p>The Policy was available at all sites and staff interviews confirmed that employees are aware of its existence. A review of the Policy from the 2012 purpose statement is as follows:</p> <p>“To achieve our purpose we manage risk in everything we do, by continuously improving on:</p> <ul style="list-style-type: none"> <li>• Employee, contractor and vehicle safety;</li> <li>• Process safety;</li> <li>• Environmental Management ;</li> <li>• Reliability; and</li> <li>• Cost management.”</li> </ul> <p>Although Westcoast was able to demonstrate that its Policy is signed off by senior management and communicated to employees; the</p> |

<sup>11</sup> Each “Reference” in this table contains specific examples of the “legal requirements” applicable to each element but are not necessarily a complete list of all applicable legal requirements.

audit found that “public safety” is not explicitly written into the purpose statement. Interviews confirmed that while staff members were familiar with the policy, they could not identify the link between the policy and public safety goals.

Due to the absence of public safety in the policy, the audit has determined that the current policy at Westcoast does not adequately create the required line of sight between the policy framework and support of the PA program. Therefore, the company policy does not demonstrate how Westcoast prioritizes and mitigates the risks regarding its interactions with and obligations to third parties and the public at large.

While it is understood that public safety is implied in the current policy, the NEB Act and associated regulations separate public safety as an explicit requirement.

**Compliance Status:** Non-Compliant

## **2.0 PLANNING**

### **2.1 Hazards Identification, Risk Assessment and Control<sup>12</sup>**

**Expectations:** The company shall be able to demonstrate a procedure to identify all possible hazards. The company should assess the degree of risk associated with these hazards. The company should be able to support the rationale for including or excluding possible risks in regard to its environment, safety, integrity, crossings and awareness and emergency management and protection programs (management and protection programs). The company should be able to implement control measures to minimize or eliminate the risk.

#### **References:**

OPR-99 Sections 4(2), 37, 39, 40 and 41  
CSA Z662-11 Clause 3.1.2 (f)

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<sup>12</sup> Hazard: Source or situation with a potential for harm in terms of injury of ill health, damage to property, damage to workplace environment, or a combination of these. Risk: Combination of the likelihood and consequence(s) of a specified hazardous event occurring

**Assessment:**

Westcoast's PA Program is developed and revised to address the hazards to the system posed by third party activity. Under the direction of the Lands and Pipeline Safety Awareness director, Westcoast staff categorizes the risks by severity and likelihood for each region of the BC system. The PA Plan is then developed to address the hazards that have been identified.

According to Westcoast staff, they organize PA activities that correspond to the risks identified such as new urban developments or high risk activities in certain areas. The risk assessment also informs the outreach plan. For example, a special mail out of postcard reminders was organized to address the issue of deep tillage in the Fraser Valley. There are also new hazards identified by the PA group that are communicated to operational groups regarding potential class location issues within a new neighbourhood.

According to PA staff, there are a wide range of hazards that they could be exposed to during the performance of their duties. For staff who conduct resident visits, hazards they face include vicious dogs and hostility from third parties. Also, for staff working in Northern B.C., Westcoast has identified working in remote and isolated areas and wildlife such as bears as potential hazards. To address these hazards, Westcoast has developed policies and mandatory training requirements. For example, Westcoast requires that PA staff attend training in conflict resolution prior to working with third parties. All staff interviewed were aware of the policies that apply to their outreach activities, such as bear awareness and the work alone policies. If any safety-related incidents occur, they are tracked in the Incident Investigation Reporting Tracking (IIR) and noted in the Geographical Information System (GIS) for future reference.

Westcoast was able to demonstrate that its PA program has a procedure for hazard identification that includes risk assessment and controls both for the program development as well as staff protection.

**Compliance Status:** Compliant

**2.2 Legal Requirements**

**Expectations:** The company shall have a verifiable process for the identification and integration of legal requirements into its management and protection programs. The company should have a documented procedure to identify and resolve non-compliances as they relate to legal requirements which includes updating the management and protection programs as required.

**References:**

OPR-99 Sections 4 and 6  
 CSA Z662-11 Clause 3.1.2(h)(i)  
 PCR Part II Sections 4 and 5

**Assessment:**

Westcoast monitors legal requirements through a subscription to Temple Gate Information Services Inc. and Cyber Regs. Also, Westcoast has staff members that participate in professional organizations such as CEPA and the Canadian Common Ground Alliance. Westcoast's Regulatory Affairs group communicates regulatory changes via email to all group leads. It is then up to the recipients on the distribution list to identify any changes that are relevant to their respective operational processes. For example, according to staff, it was the Regulatory Affairs office that ensured that Westcoast complied with the Exemption Order Respecting Crossings by Agricultural Vehicles or Mobile Equipment (NEB M0-21-2010). Document review also demonstrated that regulatory references are identified in some Standard Operating Procedures (SOPs).

While the company was able to demonstrate that communication of regulatory requirements is occurring, and that personnel are incorporating new requirements into the procedures, Westcoast did not demonstrate that there is an inventory of legal requirements or a formal process to verify whether the PA Program is meeting all of its legal requirements.

**Compliance Status:** Non-Compliant

**2.3 Goals, Objectives and Targets**

**Expectations:** The company should have goals, objectives and quantifiable targets relevant to the risks and hazards associated with the company's facilities and activities (i.e. construction, operations and maintenance). The objectives and targets should be measurable and consistent with the Policy and legal requirements and ideally include continual improvement and prevention initiatives, where appropriate.

**References:**

OPR-99 Sections 47 and 48  
CSA Z662-11 Clause 3.1.2(h)(ii)

**Assessment**

Westcoast sets goals at various levels of the organization. At the corporate level, set goals often include issues related to safety and operations. For example, one of this year's corporate goals was for 100% of staff to complete the core safety training by 31 October 2012. Staff goals and targets are developed, in part, to reflect the corporate ones such as completing safety training. Staff goals and targets are established in staff development plans and then managed and tracked through performance management and tied to the organization-wide Short-term Incentive Pay (STIP) program.

Within the Lands and Awareness group, goals are established for the Continuing Education (Emergency Response) and PA Program on a three year cycle. To evaluate whether the program has met its targets, PA staff track statistics related to their outreach activities such as number of stakeholder visits conducted, number of trade shows attended and number of attendees at its contractor awareness events. They also include statistics that measure the impact of the PA Program such as reports regarding the number of one-calls received, the number of unauthorized activities reported and the feedback from outreach events. This qualitative and quantitative data is analyzed and incorporated into the PA Program in order to identify new potential audiences or activities. Document review confirmed that goals and targets are established annually relating to the PA Program staff and activity development.

Westcoast was able to demonstrate that there is a process for establishing goals, targets and objectives for its PA Program, and that related issues are monitored and measured, and used to form the basis of the plan going forward.

**Compliance Status:** Compliant

### 3.0 IMPLEMENTATION

#### 3.1 Organizational Structure, Roles and Responsibilities

**Expectations:** The company shall have an organizational structure that allows its management and protection programs to effectively function. The company should have clear roles and responsibilities, which may include responsibilities for the development, implementation and management of the management and protection programs.

#### References:

OPR-99 Sections 40, 47 and 48  
CSA Z662-11 Clause 3.1.2(b)

#### Assessment:

The Westcoast PA Program is managed under the Director of Lands and Pipeline Safety Awareness out of Vancouver. Reporting to the Director are the Team Leaders for PA, Crossing Administration and Damage Prevention and the Manager of Lands, Field Operations. The Team Leader for PA has one full-time report in Fort St. John and five contract employees through HMA Land Services in each of the Central, Southern and Northern areas of B.C. The Team Leader chairs a weekly conference call with the group and conducts reviews annually to discuss performance, goals and targets. The Team Leader reviews the workload with the Director during quarterly reporting.

According to the *Continuing Education and Public Awareness Program 2012-2014* document, each member of the team is assigned a certain number of visits for awareness and Emergency Planning Zone (EPZ) resident education on a three-year rotation. There are approximately 2800 right of way residents and 6400 EPZ residents that require visits and awareness information. Each visit is attempted three times and, if they are unable to speak in person, they leave the package which contains a change of contact/household information form and a return envelope. If changes to contact information are required, the PA staff and contractors enter the information in GIS. In order to determine whether there are adequate resources, the Team Leader meets quarterly with the Director to discuss the planned activities and program goals and current staff workload.

Westcoast was able to demonstrate that it has a functioning structure to maintain the program as designed. Staff indicated that given the size of the area that each staff/contractor is responsible for, and the ongoing increase in activity the structure will be reviewed in the next year to ensure that Westcoast can maintain an effective PA Program as required in the PCR.

**Compliance Status:** Compliant

### 3.2 Management of Change

Expectations: The company shall have a management of change program. The program should include:

- identification of changes that could affect the management and protection programs;
- documentation of the changes; and
- analysis of implications and effects of the changes, including introduction of new risks or hazards or legal requirements.

#### References:

OPR-99 Section 6

CSA Z662-11 Clause 3.1.2(g)

#### Assessment:

Management of Change (MOC) related to Lands and Crossings is managed out of Vancouver, British Columbia and MOC for asset changes is managed at local facilities. Its current MOC program has scoped in PA as a group that needs to be notified and evaluated for potential impacts when there are changes in the information technology. The *MOC Descriptions of Affected Applications, Systems, Documentation and Processes* describes the circumstances for involving the PA Program in the MOC process. Review of the documentation provided indicates that the triggers for the MOC process and the PA Program mainly involve the GIS system. While it is understood that changes to the GIS database should be managed, it is not clear what other types of changes at Westcoast would trigger the MOC process and when the PA Program would be notified and considered in that change.

Interviews confirmed that Westcoast is in the process of developing and implementing an Operations Management System (OMS). Westcoast indicated that it intends to incorporate the MOC process in the new OMS.

Although there are aspects of a functioning asset-based MOC process, and improvements are scheduled for implementation, at the time of the audit, Westcoast failed to demonstrate that it has implemented a comprehensive MOC process that includes the appropriate



triggers to include the PA Program.

**Compliance Status:** Non-Compliant

### **3.3 Training, Competence and Evaluation**

**Expectations:** The company shall have a documented training program for employees and contractors related to the company's management and protection programs. The company shall inform visitors to company maintenance sites of the practices and procedures to be followed. Training requirements should include information about program-specific policies. Training should include emergency preparedness and environmental response requirements as well as the potential consequences of not following the requirements. The company should determine the required levels of competency for employees and contractors. Training shall evaluate competency to ensure desired knowledge requirements have been met. Training programs should include record management procedures. The training program should include methods to ensure staff remains current in their required training. The program should include requirements and standards for addressing any identified non-compliances to the training requirement.

#### **References:**

OPR-99 Sections 28, 29, 30(b), 46, 47, 48 and 56  
CSA Z662-11 Clause 3.1.2(c)(iii)

#### **Assessment:**

Westcoast manages employee required training such as safety training in the Learning Management System (LMS). Administrative staff in the Vancouver office manages training records for the Lands and Pipeline Safety teams. The system attaches expiration dates on required courses for Westcoast staff and sends out email alerts three months before the training has expired. Interviews confirmed that employees in the field offices were aware of LMS and the online courses available in that database.

The PA Team Leader also recommends training to her staff as part of professional development. Due to their role in the Emergency Program and continuing education program, the PA staff attends training for the Incident Command system as well as courses to improve their communication and conflict resolution skills. The same awareness and emergency continuing education training is provided, tracked, and managed for contract PA staff. Contract staff is also subject to regular performance reviews by the PA Team Leader.

Westcoast was able to demonstrate that it has a process to identify, track and maintain records on employee training. As well, Westcoast demonstrated that staff and contractors involved in the PA and Continuing Education Program are trained and evaluated on a regular basis.

**Compliance Status:** Compliant

### 3.4 Communication

**Expectations:** The company should have an adequate, effective and documented communication process(es):

- to inform all persons associated with the company's facilities and activities (interested persons) of its management and protection programs policies, goals, objectives and commitments;
- to inform and consult with interested persons about issues associated with its operations;
- to address communication from external stakeholders;
- for communicating the legal and other related requirements pertaining to the management and protection programs to interested persons;
- to communicate the program's roles and responsibilities to interested persons.

### References:

OPR-99 Sections 18, 28 and 29  
 CSA Z662-11 Clause 3.1.2(d)  
 PCR Part II Sections 4 and 5

### Assessment:

The Team Leader of PA provides a script to staff and contractors that conduct the visits with third parties to ensure the consistency of information to all stakeholders. Document review of the script, as well as the standard awareness presentations, confirmed that safety messages are consistent. Westcoast's outreach plan includes open houses, as well as presentations to various stakeholder groups where they present safety messages related to the Westcoast system and upcoming projects. Also, Westcoast works with BC Common Ground Alliance and BC One-Call to organize contractor safety breakfasts, Digsafe BC! Workshops and other related trade shows to discuss general safety practices and regulatory requirements for working around federally-regulated pipelines. These safety associations also place ads with safety messages in trade journals and community newsletters. Special mail outs are organized to address particular issues, such as deep tillage in the Fraser Valley. The external website also contains readily available safety and

contact information.

Internal communication at Westcoast occurs formally at bi-weekly PA/Emergency Management meetings, and at monthly meetings with Community Coordinators to discuss the Aboriginal Engagement Program. The team also receives reports from integrity and damage prevention regarding unauthorized activity reports and trends.

Westcoast was able to demonstrate that it has established a PA Program and that it measures the effectiveness of this program on a regular basis. Although communication is occurring within the PA Program, and there are triggers in place from the program to communicate with external stakeholders, Westcoast failed to demonstrate that there is a formal communication plan that includes the PA program in order to ensure that relevant information is communicated in a timely way throughout the organization.

**Compliance Status:** Non-Compliant

### **3.5 Documentation and Document Control**

**Expectations:** The company should have documentation to describe the elements of its management and protection programs- where warranted. The documentation should be reviewed and revised at regular and planned intervals. Documents should be revised immediately where changes are required as a result of legal requirements or where failure to make immediate changes may result in negative consequences. The company should have procedures within its management and protection programs to control documentation and data as it relates to the risks identified in element 2.0.

#### **References:**

OPR-99 Section 27  
 CSA-Z662 11 Clause 3.1.2(e)(f)  
 PCR Part II Sections 10 and 11

#### **Assessment:**

Westcoast employees store and use procedures and templates that are saved on its intranet site called “the Source.” The Lands and Pipeline Safety Group has created a page to post all of the forms, policies and related links for their group. The PA group also has a site on the Source for its information. The site is maintained at the Vancouver office. If changes or enhancements are made to any of the procedures or forms, the Crossing Administration and Damage Prevention Lands Group upload the new documents and announce

the new versions by email. Interviews confirmed that field staff was aware of the requirement to use documents from the Source to ensure that they were using the most recent versions.

The Continuing Education and PA Plan, which includes the scripts for resident visits, serves as a guideline for the program. This document is controlled in the Vancouver office and maintained on the Source. Presentations for the various stakeholder groups are kept on the shared G drive and available to all Westcoast staff.

Westcoast was able to demonstrate that it has implemented a document management process to maintain and communicate the policies and procedures related to its PA Program.

**Compliance Status:** Compliant

### **3.6 Operational Control-Normal Operations**

**Expectations:** The company should establish and maintain a process to develop, implement and communicate mitigative, preventive and protective measures to address the risks and hazards identified in elements 2.0 and 3.0. The process should include measures to reduce or eliminate risks and hazards at their source, where appropriate.

#### **References:**

OPR-99 Sections 21, 27 to 49

CSA Z662-11 Clause 3.1.2(c)

PCR Part II Sections 4 and 5

#### **Assessment:**

In order to be proactive, Westcoast develops a three-year outreach plan which includes right of way residents, those dwellings that are adjacent to the right of way as well as residents of the Emergency Planning Zone (EPZ). The goal of the plan is to conduct in-person visits for each of the right of way and EPZ residents every three years. Activities associated with this outreach program include open houses and scheduled presentations to various stakeholder groups where they present safety messages related to the Westcoast system and projects. In order to reach a wider audience, Westcoast places ads with safety messages in trade journals and community newsletters. Also, Westcoast works with BC Common Ground Alliance and BC One-Call to organize contractor safety breakfasts, Digsafe BC! Workshops and other related trade shows to discuss general safety practices and regulatory requirements for working around federally-regulated pipelines.

Westcoast was able to demonstrate that it has a PA Program to address the risks and hazards associated with third-party in accordance with the legal requirements.

**Compliance Status:** Compliant

### **3.7 Operational Control-Upset or Abnormal Operating Conditions**

**Expectations:** The company shall establish and maintain plans and procedures to identify the potential for upset or abnormal operating conditions, accidental releases, incidents and emergency situations. The company shall also define proposed responses to these events and prevent and mitigate the likely consequence and/or impacts of these events. The procedures must be periodically tested and reviewed and revised where appropriate (for example, after emergency events).

#### **References:**

OPR-99 Sections 32, 52  
CSA Z662-11 Clause 10.5.2

#### **Assessment:**

Although the Westcoast Emergency Management Program is evaluated in more detail in Appendix IV of this report, there is significant overlap with the PA Program.

Westcoast has combined the continuing education of first responders and EPZ residents from the emergency preparedness programs with the provision of safety information of the PA Program. The same group conducts the outreach to residents and other stakeholders with a combined message of working safely around pipelines as well as what to expect in the event of an emergency. In the event of an emergency, the PA group would assist in the communication with stakeholders including residents and first responders, as well as community members along its system. Also this group supports the emergency management process by obtaining and confirming resident information for the GIS database. During their regular visits, staff members confirm the number of occupants, and whether any household has special evacuation requirements.

Westcoast was able to demonstrate that its PA Program is integrated with the Continuing Education Program to meet the requirements of OPR-99.

**Compliance Status:** Compliant

#### **4.0 CHECKING AND CORRECTIVE ACTION**

##### **4.1 Inspection, Measurement and Monitoring**

**Expectations:** The company shall develop and implement surveillance and monitoring programs. These programs should address contract work being performed on behalf of the company. These programs should include qualitative and quantitative measures for evaluating the management and protection programs and should, at a minimum, address legal requirements as well as the risks identified as significant in elements 2.0 and 3.0. The company should integrate the surveillance and monitoring results with other data in risk assessments and performance measures, including proactive trend analyses. The company shall have documentation and records of its surveillance and monitoring programs.

##### **References:**

OPR-99 Sections 36 and 39

CSA Z662-11 Clause 10.6.1

PCR Part II Sections 4, 5, 10 and 14(1)

##### **Assessment:**

According to staff, in order to measure and monitor the effectiveness of its PA Program, Westcoast hires a third party survey company to conduct telephone surveys with stakeholders every three years. Responses to the survey are analyzed and results are used for planning activities as well as enhancements to the program where required.

A review of the survey confirmed that stakeholders are asked about their comprehension of the safety messages as well as their level of satisfaction with the Westcoast PA Program. Also, Westcoast obtains feedback from third parties during the stakeholder visits, following the safety presentations and the safety events in which it participates. The Public Awareness Team uses the feedback to review its program and identify opportunities to improve the PA program.

Westcoast was able to demonstrate that it has several processes in place to review its PA program and incorporate feedback for continual improvement.

**Compliance status:** Compliant

#### **4.2 Corrective and Preventive Actions**

**Expectations:** The company shall have a process to investigate incidents or any non-compliance that may occur. The company shall have a process to mitigate any potential or actual issues arising from such incidents or non-compliances. Such mitigation may include appropriate timing and actions for addressing the issues that arise. The company shall demonstrate that it has established a documented procedure to:

- set criteria for non-compliance;
- identify the occurrence of any non-compliances;
- investigate the cause(s) of any non-compliances;
- develop corrective and/or preventative actions; and
- effectively implement the required corrective and/or preventative actions.

The company should develop procedures to analyze incident data in order to identify deficiencies and opportunities for improvement in its management and protection programs and procedures.

#### **References:**

OPR-99 Sections 6 and 52  
 CSA Z662-11 Clause 3.1.2(h)(i)  
 PCR Part II Section 13

#### **Assessment:**

All contraventions of the PCR are deemed unauthorized activities. While the unauthorized activities are addressed and managed through the Damage Prevention and Lands Teams, the PA Team uses the reports and trends to inform the PA Program on an ongoing basis in order to identify trends or particular areas that should be targeted for awareness. For instance, when deep tilling in the Fraser Valley was identified as a potential safety issue, the PA team created and distributed safety awareness material specifically for the farmers in that area. According to staff, the PA Team also conducts “on-demand” awareness presentations or workshops when a party has been identified for awareness and safety information based on an unauthorized activity report.

Westcoast was able to demonstrate that the PA Program is integrated into its response to third party unauthorized activities.

**Compliance Status:** Compliant

#### **4.3 Records Management**

**Expectations:** The company shall establish and implement procedures to ensure that the records supporting the management and protection programs are retained, accessible and maintained. The company shall, as a minimum, retain all records for the minimum lengths of time as required by the applicable legislation, regulation and standards incorporated by reference into the regulation.

#### **References:**

OPR-99 Sections 41, 51, 52 and 56

CSA Z662-11 Clause 3.1.2(e)

PCR Part II Sections 10(c), 11(1) and 16

#### **Assessment:**

Westcoast maintains several databases for the records generated by its business. For PA Program related files, most records generated by work done are kept in the PA application on the GIS database. Records, such as contact information for residents along the right of way or adjacent to the right of way, as well as EPZ residents are uploaded to GIS and thereby linked to the map. Other information such as number of residents, special needs, pets on the premises, etc. can also be entered into GIS and searched when required. The information is confirmed every three years during the landowner visits. Westcoast notifies tenants as well as landowners and contact information is also entered into the GIS.

Westcoast staff members at all locations have access to all of the layers of information. It is used to obtain a current snapshot as well as a history of a particular location. The system has several layers of data entered so it is useful for many teams. A review of the database entries showed that Westcoast enters all related filings, correspondence, unauthorized activities, resident complaints, etc. by using the GIS coordinates. The result is that staff can obtain a history of activity as well as resident information in one database for awareness and emergency purposes.



Westcoast was able to demonstrate that it has processes in place to manage the records generated by and for the PA Program.

**Compliance Status:** Compliant

#### 4.4 Internal Audit

**Expectations:** The company shall develop and implement a documented process to undertake audits of its management and protection programs and procedures. The audit process should identify and manage the training and competency requirements for staff carrying out the audits. These audits shall be conducted on a regular basis.

#### References:

OPR-99 Section 53  
CSA Z662-11 Clause 3.1.2(h)(iii)

#### Assessment:

Senior management of Spectra Audit Services is located in Houston, Texas. However, an audit manager and several staff are located in Calgary, Alberta. Calgary-based audit staff perform most of the Westcoast internal audits, sometimes with participation by Houston-based audit staff. These audits occur on a regular basis and vary in size and scope. The team audits Westcoast's performance against Spectra's established program requirements. Once the audits are complete, all non-compliant findings are tracked through a database until resolved and reported to upper management.

Although Westcoast was able to demonstrate that it assesses the effectiveness of its PA Program on a regular basis using surveys and trend analysis, it was not able to demonstrate that the PA program has been scoped into any internal operational audits or that the existing audit process incorporates an evaluation of the program's compliance to the regulatory requirements.

Also it did not demonstrate that the requirements of the PCR are included in its audit protocols for audits regarding safety of the public.

**Compliance Status:** Non-Compliant

## 5.0 MANAGEMENT REVIEW

**Expectations:** Senior management should formally review the management and protection programs for continuing suitability, adequacy and effectiveness. The review should be based on appropriate documentation and records including the results of the surveillance, monitoring and audit programs. This review should be formal and documented and should occur on a regular basis. The management review should include a review of any decisions, actions and commitments which relate to the improvement of the programs and the company's overall performance.

### References:

OPR-99 Section 53  
 CSA Z662-11 Clause 3.1.2(a)  
 PCR Part II Sections 4 and 5

### Assessment:

According to staff, the PA, Lands and Damage Prevention teams report their respective program results to the Director of Lands and Pipeline Safety. These reports form the basis for the programs going forward and are also discussed during performance reviews.

Interviews with senior management confirmed that reports of unauthorized activity trends are discussed at a senior management level. These reports are synthesized into management's overall safety and performance reporting. Management from head office also conducts mandatory safety stand down meetings which often address topics related to third-party damage prevention.

While the Board acknowledges that there is communication occurring, Westcoast was unable to demonstrate that it has established the required processes that contribute to an adequate management review. As noted in element 2.2 of this report, Westcoast does not have a formal process of confirming that there is a current and complete inventory of legal requirements guiding the development and implementation of its PA program. Also, Westcoast's internal audit process does not include an evaluation of compliance to the PCR which outline the requirements for addressing third party activities. Without this confirmation of compliance, senior management cannot verify that the PA program is operating in compliance with all of the requirements. As well, Westcoast's policy and purpose statement does not explicitly include public safety, and so there is no clear line of sight from Westcoast's policy to the PA Program. Therefore the Board is not satisfied that there are sufficient processes in place by senior management to allow for a formal and documented management review to ensure ongoing suitability of the PA Program.

While Westcoast was able to demonstrate that some communication was occurring regarding the PA program, it could not demonstrate that Senior management formally evaluates the performance of the PA program. Also, the audit determined that the internal audit process does not include an evaluation of Westcoast's compliance to the requirements of the PCR.

**Compliance Status:** Non-Compliant

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**Appendix VII – Westcoast OPR-99 Audit - Company Representatives Interviewed**

| <b>Company Representative Interviewed</b> | <b>Job Title</b>   |
|---|--|
| Don Cameron                               | VP, EHS & Risk Management  |
|   | Director Audit Liaison   |
|   | Team Leader, Emergency Preparedness                                    |
|   | Emergency Preparedness Coordinator                                     |
|   | Manager, OMS   |
|   | Manager, Compliance Support  |
|   | General Manager Field Services   |
|   | Director, Operations Engineering                                       |
|   | Manager, EHS   |
|   | Manager Process Safety   |
|   | Manager, Process Operations Engineering                                |
|   | Team Leader<br>Manager, Lands, Field Operations                        |
|   | Director, Land & Pipeline Safety Awareness                             |
|   | Team Leader, Crossing Administration and Damage Prevention Lands Group |
|   | Lands Services Administrator   |
|   | Director, Field Services Gathering                                     |
|   | Lands and Crossing Administrator                                       |
|   | Public Awareness Specialist  |
|   | Team Leader, Lands   |
|   | General Manager NGL, Midstream and Pipeline                            |
|   | Manager, Transmission South  |
|   | Operations Manager, Transmission North                                 |

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|  |  |
|--|--|
|  | Health & Safety Specialist Transmission        |
|  | Environmental Specialist                       |
|  | Employee Relations/Labour Relations Consultant |
|  | Team Leader, Environment                       |
|  | Environmental Specialist                       |
|  | Team Leader, Public Awareness                  |

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## Appendix VIII – Westcoast OPR-99 Audit - Documents Reviewed

- Set-West Audit Review Meeting Agenda
- Spectra Energy Process Safety Management – How we categorize PSM incidents
- Email – General Listing of items which are indicative for observation and possible reporting from aerial pipeline patrols.
- Spectra Energy Pre-Task Analysis Card
- Pre – Operations Safety Checklist
- Set West operations, Programs Organized by Focus Areas
- Set West Operations, OSC Safety Tour Expectations to Area Management
- OMS leadership roles, responsibilities, processes
- (OSE offsite meetings - seven per year; every six -- eight weeks)
- weekly OSC meetings(every Friday)
- incident review meetings (every Friday)
- Joint OSC/OMT incident review meetings (monthly)
- Analyze Audit Data – Tool
- Manage Audit Preparation and Response –Tool
- Track Findings to Completion – Tool
- Set – West Audit Review Meeting
- Set West Environmental Health and Safety – Prolonged Work Policy Audit #920STW012, June 22,2012
- Risk Assessment Guide, January 2012
- Critical task Analysis
- Train A Still, Mobilization & Prep Work (Completed Critical Task Analysis)
- SET – West OSC STIP Scorecard – October 2012, Operations Scorecard & Team Objectives
- 2013 Set -West Operations Purpose & Set – West Operations 2013 Our Purpose Explained
- OSC Safety Tour Expectations to Area Management
- OMS Leadership Roles, Responsibilities, Processes
- Figure 4: Business Planning – Management review
- Spectra Energy – First Responder Handbook
- Spectra Energy – Emergency Preparedness management System (Draft 2013 Proposal)
- Spectra Energy – Exercise Evaluation Form

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- Spectra Energy – Spectra Energy Transmission – Integrated Preparedness Planning “Program Manual”
  - 2012 Emergency Exercise Status
  - Emergency Preparedness Scorecard
  - Spectra Energy – Regulatory Incident Reporting Guidelines For On-Call Incident Reporting Supervisor
  - 26 November 2012 - Auditor received documents as per document review list; however, no documents were reviewed for this summary period.
  - Spectra Energy – Custom Report (IIR – Incident Report)
  - SET – Incident Investigation System
  - Spectra Energy – Incident/Emergency Reporting Procedure
  - Spectra Energy – Environment, Health & Safety (EHS) Checklist
  - N4 – 2012 – ERP, ICS, Incident Commander Notes, Action Checklist, Incident Ranking Matrix, Notification Matrix, Scribe Resource, Timeline, Primary Assignments, Documentation, Notification Report
  - Spectra Energy West Division Emergency Exercise and Training (N3 N4)
  - Spectra Energy PTC Emergency Preparedness Training (June 6, 2012 Tabletop Exercise - Richardson)
  - Spectra Energy PTC Emergency Preparedness Training (June 7, 2012 Table Top - Dewdney)
  - Spectra Energy PTC Emergency Preparedness Training (September 4, 2012 Table Top - Fort Whyte)
  - Spectra Energy PTC Emergency Preparedness Training (September 5, 2012 Field Exercise - Richardson)
  - Chilliwack Chaser - Spectra Energy – SET West Full Scale Exercise (Exercise Chilliwack February 1, 2011 participant Instructions)
  - Chilliwack Chaser - 2011 Exercise Chilliwack Chaser After Exercise Action List (Facilities, Resources, Procedures)
  - Chilliwack Chaser - incident follow-up email with observations and lessons learned
  - Chilliwack Chaser - Spectra Energy Operations and Crisis Management Emergency Communications Plan
  - Chilliwack Chaser - Preliminary report for Exercise “Chilliwack Chaser” – February 1, 2011

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- Chilliwack Chaser - Hotwash notes
  - Chilliwack Chaser - Parking Lot Issues for RRC
  - Chilliwack Chaser - Narrative from simulated ICP
  - 27 November 2012 – Auditors received and reviewed all documents and records requested as per document review list. No outstanding requests are outstanding.
  - SET-West OSC Monthly Scorecard – October 2012
  - Ground Stain Inspection IPDM (14 November 2012)
  - Pipeline Right-of-Way Inspection Report - 10” Sikanni (19 October 2011)
  - Pipeline Right-of-Way Inspection Report - 8” Adsett (6 July 2011)
  - Email (hard copy) regarding Pipeline patrol/IRR (27 November 2012)
  - Process Safety Management – How we categorize PSM Incidents (26 July 2011)
  - Process Safety Management – A Guide for SET West Operations Leaders (pamphlet)
  - SET West Operations – Programs organized by focus areas (14 October 2012)
  - Job Ticket and Annual Pigging Facility Safety Inspection Form – 10” Fireweed O/L Rec Bbl Job Ticket (18 May 2012 and 22 June 2012)
  - Job Ticket – 10” Fireweed O-L Rec Blacken Flare (28 November 2012)
  - Annual Pigging Facility Safety Inspection Form – Revision 3.0 (30 May 2012)
  - Draft SET West Benzene Management Standard (15 February 2008)
  - SET-West Audit Review Meeting – Standing Agenda for 4 Dec 2012 (28 November 2012)
  - Analyze Audit Data – Tool (last updated 6 January 2010)
  - Track Audit Findings to Completion Tool (last updated 4 July 2012)
  - Manage Audit Preparation and Response – Tool (last updated 4 July 2012)
  - Our Environment: Our Responsibility – Module 4 Presentation (Updated July 2012)
  - Our Environment: Our Responsibility – Module 4 Quiz (Revised 24 November 2008)
  - Our Environment: Our Responsibility – Prelude to Modules 5,6,7 (Updated 1 October 2010)
  - FSJ Gathering OGWR Registration – Overview (27 November 2000)
  - FSJ Gathering Air Permits – Overview (27 November 2000)
  - FSJ Gathering Effluent Permits – Overview (27 November 2000)
  - Pipeline Environmental Regulatory Guide (December 2004)
  - Our Environment: Our Responsibility – Module 5 Presentation (February 2009)
  - Our Environment: Our Responsibility – Module 5,6,7 Quiz (February 2009)
  - Our Environment: Our Responsibility – Module 6 Presentation (February 2009)



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- Our Environment: Our Responsibility – Module 7 Presentation (February 2009)
  - 2010-2011 Public Awareness and Emergency Preparedness Survey Report
  - Org Chart – Lands and Public Safety (the source 01/02/2012)
  - Spectra Energy Annual Report – 2011 (excerpts)
  - Spectra Energy Sustainability Report- 2011 (excerpts)
  - Weekly Regulatory Update November 16-23 (sample)
  - Spatial Data Management Scope Document (June 2007)
  - Crossing Inspector Resources page from the Source (26/11/2012)
  - Lands and Pipeline Safety Awareness, Spectra Energy Transmission Crossing Application and Damage Prevention – Roles and Responsibilities (to be approved and posted by December 31, 2012)
  - Landowner information package Includes:
    - Map
    - Resident Information Card (to be completed and returned to Spectra Energy with envelope)
    - Pipeline Safety and Emergency Preparedness (along the gathering system and along pipeline system)
    - Spectra sticker with contact information
    - Call before you dig – BC One Call pamphlet
    - Land Agent business card
    - Contractor Breakfast feedback form (sample)
    - Excavation and Construction near Spectra Transmission’s Pipeline System
    - Management of Change Descriptions of Affected Applications, Systems, Documentation and Processes (2012-06-08)  
Spectra Energy Transmission: Crossing Administration Procedures and Reference Manual (Updated July 2011)
  - Damage Prevention Program – Third Party activities with potential to damage a Spectra Energy Pipeline
  - Assessment / practice for third party activities requiring written permission (December 12, 2011)
  - Damage Prevention Program – Third Party activities with potential to damage a Spectra Energy Pipeline
  - Assessment / practice for agricultural activities on private land (October 31, 2011)

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- Damage Prevention Program – Third party excavations within the 30 metre zone (November 14, 2012)
  - Damage Prevention Program – On-site permit approval procedure (July 16, 2012)
  - Guidelines – For applications to cross facilities of WEI doing business as Spectra Energy Transmission- BC Pipeline & field services
  - Spectra Energy – BC Pipeline & BC Field Services Third Party activity permitting process summary table (December 2011)
  - Damage Prevention Program – Application form for ground disturbance/facility construction within and/or in proximity to a Spectra Energy Transmission’s pipeline right of way (November 15, 2011)
  - BC Pipeline and Field Services – Standard Operating Practice- Third Party Vehicle Crossing Application Process (2012-07-18)
  - Vehicle Crossing Information Form (Schedule D) (Nov 2, 2012)
  - Spatial Data Management Third Party Permitted Line Crossing As-Building (Feb 17, 2011)
  - GIS permit samples for
    - Pipeline Under Crossing
    - Permanent Road Crossing
    - Temporary Vehicle Access Crossing
    - Buried Cable Crossing
    - Power Line (aerial crossing)
    - Excavation within safety zone
    - Excavation within the right of way
    - Excavation abutting the right of way
    - Pipeline parallel (abutting) the right of way
    - Logging Cutblock within the safety zone
    - Seismic Program within the safety zone
    - Ditching within the right of way
    - Fence Crossing
  - Contract Approval Policy (Last revised 10/03/2012)
  - Continuing Education and Public Awareness Program (2012-2014)
  - 2012 STIP goals – Public Awareness (March 1, 2012)
  - Damage Prevention Group-2012 STIP Goals

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- Public Awareness/ Damage Prevention Activity Plan 2012 (March 22, 2012)
  - SET –West Operations Standard – Incident Reporting and Investigation (March 23, 2012)
  - Damage Prevention Program – How to report unauthorized activity in proximity to Spectra Energy Pipelines (March 1, 2012)
  - Reporting form for unauthorized activity within and / or in proximity to Spectra Energy Transmission’s Pipeline right of way (September 4, 2012)
  - Sample presentations
  - Third Party Activity in proximity to Spectra Energy’s Pipeline – BC Hydro (October 11, 2012)
  - Third Party Activity in proximity to Spectra Energy’s Pipeline – DGS Astro Safety Meeting (May 14) Fort St John
  - Contractor breakfast (November 6, 2012)
  - Working Safely near NEB regulated Pipelines
  - EHS Management System Performance Standards – Contractor H&S Management Performance Standard 5.0 (November 1, 2011)
  - Career Zone Performance Management Employee Year End Self-Assessment Quick Reference (September 10, 2011)
  - OPA Standard – Management of Change (undated)
  - MOC Process Standard (June 2000)
  - SET West Lands Department – Field Responsibilities and third party crossing activity
  - How to complete a field inspector’s Crossing Report Form
  - Damage Prevention Program – How to complete a Spectra Energy Pipeline locate report form
  - PLFS Field Operations Technical Training Requirements (July 26, 2010)
  - BC Pipeline and Field Services – Standard Operating Practice – Line Locating (2012-03-05)
  - SET West Ground Disturbance Standard (December 6, 2011)
  - Records Management Policy
  - Detailed Exception Report by User (sample training records from Learning Management System)
  - BC Pipeline and Field Services – Standard Operating Practice – Right of Way Maintenance (2011-10-27)

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- BC Pipeline and Field Services – Standard Operating Practice – Right of way Pipeline Signage (2012-03-16)
  - BC Pipeline and Field Services – Standard Operating Practice - Right of Way Acquisitions and Settlement of Damage Claims (2012-03-01)
  - BC Pipeline and Field Services – Standard Operating Practice – Use Existing Right of Way (2012-02-22)
  - Email announcement for contractor mail out announcement (April 18-12)
  - Spectra Energy – Landowner Information and Public Safety
  - Agricultural Ground Disturbance on-site approval permit/ inspection report form(05/12)
  - Spectra Energy Transmission – Encroachment Resolution Guidelines (updated May 2005)
  - Encroachment Removal form
  - BC One Call Ticket Procedures (06/15/2010)
  - BC One Call Emergency Ticket Procedures and contact numbers (06/18/2010)
  - One Call Ticket Processing Procedures (undated)
  - BC One Call – Daily Check sheet (January 2011)
  - One Call Stats Form
  - Spectra Energy – BC Pipeline & BC Field Services – Backfilling Practices (2011-12-05)
  - Spectra Energy – BC Pipeline & BC Field Services – Line Locating ( 2012-03-05)
  - Spectra Energy – BC Pipeline & BC Field Services – Pipeline Right of Way Patrol (2011-12-01)
  - Spectra Energy – Pipeline Right of Way Inspection Report
  - If a One Call location has the potential to affect the facilities of Spectra Energy Transmission and Spectra Midstream Corporation
  - Emergency One Call Process Map (April 2012)
  - One Call Process Map (April 2012)
  - Spectra Energy Transmission- West One Call Summary Report (26/11/2012)
  - Spectra Energy Operations: Unauthorized Third-Party Activity Quick Reference Guide
  - Spatial Data Management Third Party Permitted Line Crossing As-Building (February 17, 2011)
  - Spectra Energy- Damage Prevention Program – How to Report Unauthorized activity in proximity to Spectra Energy Pipelines
  - Discovery of Unauthorized activity on, or within 30 metres of, a Spectra Energy Pipeline Right of Way – Reporting guide internal (March 1, 2012)

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- Records Management Policy (06/24/11)
  - SDM – GIS Data Standard and Metadata GIS>Lands System> Third Party Permit (June 25, 2012)
  - SDM – GIS Data Standard and Metadata GIS> Gas Facilities> Line Crossing (November 8, 2010)
  - Third Party Permit Manager (GIS) Updated May 15, 2010
  - Introduction to the Major Incidents Corrective Actions Project (MICA)
  - Spectra Energy Transmission West Empress PTC Pipeline Audit, Audit # 211004, November 8, 2011 ( Audit scope includes the examination of the maintenance and integrity programs in place at PTC pipeline during June 1, 2002 - August 31, 2011)
  - Set West -- EHS & Ops Services, Organizational Review Feedback Presentation for the OSC meeting April 4, 2012
  - Core International Inc. – a consulting firm proposal for organizational design support at set West ( EHS & Operations Services Group)
  - Completed Records pertaining to an unstable slope monitoring location ( 3.1 right-of-way maintenance) location 12 “Milligan Peejay P/L, South approach slope to the Betton River.
  - 12-051N Permit – 3<sup>rd</sup> Party Pipeline Crossing – Inspection Report – Probe Corrosion Services Ltd.
  - 12-063(30m) – Permit Excavation w/in 30m of ROW
  - Proximity agreement request (Spectra Damage Prevention 2012 Form
  - Correspondence – Proximity Agreement Request – LC1
  - Correspondence – Proximity Agreement Request – JD2
  - Correspondence – Proximity Agreement Request – JD3
  - Correspondence – Proximity Agreement Request – LC2
  - Pembina’s Borehole Drilling for Groundwater Monitoring Wells Near: 16” Boundary Lake
  - 12-063(30m) Permit
  - 3 Working Days Notice: 12-063(30M) Pembina’s Borehole Drilling within 30M
  - Spectra Energy Transmission Pipeline Locate Report – 12-063(30M)
  - Probe Corrosion Services Ltd – Pembina Pipeline Corporation’s – Request to Evacuate (for Borehole Drilling) in the area of the Right-of Way containing the following Westcoast Energy Inc., doing business as Spectra Energy Transmission pipeline(s):  
Inspection Report

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- Investigative Dig Process for Landowners
  - Spectra Energy Flaring Notice w/maps
  - Annual Cathodic Protection Survey
  - Letter to Landowner RE: Pipeline Corrosion Digs 2012-12' Milligan PeeJay
  - Spectra Energy BC Pipeline and Field Services Standard Operating Practice – Third Party Vehicle Crossing Application Process
  - Spectra Energy Schedule “C” Vehicle Crossing Information Form
  - Spectra Energy Vehicle Crossing Engineering Assessment Request Form
  - Request for a Pipeline Crossing and Proximity Agreement for Block 24014 – 12-223N Application
  - 12-223N – Correspondence - Request for a Pipeline Crossing and Proximity Agreement for Block 24014 – 12-223N Application
  - 12-223N – Correspondence – XLA-2012-073
  - 12-223N – Correspondence – Canfor Road Use
  - 12-223N – Correspondence – Canfor Permanent Vehicle Crossing Request – XLA-2012-073
  - 12-223N – Correspondence – Third Party Permits (12-223N & 12-098(30M) – Canfor’s permanent access road over and cut block within 30M of 20” Jedney
  - 12-223N – Correspondence – Spectra Energy Transmission Permits: 12-223N & 12-098(30M)
  - 12-223N – Correspondence – Executed Crossing No. 12-223N
  - 12-223N – Correspondance – 16” Lapp
  - 12-223N – Correspondance – 16” Lapp Images
  - Spectra Energy Transmission – Vehicle Crossing Engineering Assessment Request Form – XLA-2012-073
  - 12-223N Permit – Canadian Forest Products Ltd.’s (the “Crosser”) Proposed Permanent Access Crossing over the following Westcoast Energy Inc., doing business as Spectra Energy Transmission, (the “Company”) pipeline(s):
  - 12-223N Permit – Canadian Forest Products Ltd.’s (the “Crosser”) Proposed Permanent Access Crossing over the following Westcoast Energy Inc., doing business as Spectra Energy Transmission, (the “Company”) pipeline(s): (Executed copy)
  - 3 Working Days Notice: 12-223N Canfor
  - 12-223N Probe Corrosion Services Ltd Inspection Report

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- 12-223 Spectra Energy Transmission Pipeline Locate Report
  - 12-051N Permit – Spectra Energy RE: Canadian Natural Resources Limited’s (the “Crosser”) Proposed 3.5: OD Sour Natural Gas Pipeline Crossing the following Westcoast Energy Inc., doing business as Spectra Energy Transmission, (the “Company”) pipeline(s):
  - 12-051N Permit – Canadian Natural Resources Limited Pipeline from d-52-H, 94-A-13 to b-51-H, 94-A-13 CNRL File No. 1133391 Pioneer File No. 0142-12
  - 12-051N 3 Working Days Notice – BC One Call Request 2012342444 – Notice of intent to evacuate – Short Notice Locate
  - 12-051N- Pipeline Locate Report
  - Request on behalf of CNRL: Pipeline from d-52-H, 94-A-13 to Wellsite b-51-H, 94-A-13 – CNRL File No. 1133391
  - 12-051N Correspondence - Request on behalf of CNRL: Pipeline from d-52-H, 94-A-13 to Wellsite b-51-H, 94-A-13 – CNRL File No. 1133391
  - 12-051N Correspondence – 12-051N for review
  - 12-051N Correspondence – Third Party Permit – CNRL’s pipeline crossing
  - 12-051N Correspondence - Third Party Permit – CNRL’s pipeline crossing –KG1
  - 12-051N Correspondence - Third Party Permit – CNRL’s pipeline crossing – LC1
  - 12-051N Correspondence – Spectra Energy Permit 12-051N
  - 12-051N Correspondence – Pipeline Crossing # 12-051N
  - 12-051N Correspondence – 107C-1/12-051N/FSJ
  - 12-051N Correspondence - 107C-1/12-051N/FSJ/DW
  - 12-051N Correspondence – Report 12-051N
  - MTS\_Org.pdf
  - Current RP List and Maps
  - RPList\_20120312.pdf
  - GatheringandMainline.pdf
  - GatheringandMainline.pdf
  - GatheringMapOverview.pdf
  - GTandC\_Article11\_PCOPP.pdf
  - GTandC\_Article12\_GasQuality.pdf
  - RGT\_MeasurementPolicy.pdf
  - RES\_MeasurementPolicy.pdf

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- PCOPP\_CalibrationForm.pdf
  - RGT\_PCOPPSpecification.pdf
  - BeaverRiverEngAssessment.pdf
  - SampleOPPPC\_ComplianceReport.pdf
  - FTN\_RP10126\_PCOPP\_Drawing.pdf
  - FSJ\_RP10346\_PCOPP\_Drawing.pdf
  - GV\_RP8566\_PCOPP\_Drawing.PDF
  - Residue\_MS184\_PCOPP\_Drawing.pdf
  - PCOPP\_SiteNonComplianceReport.pdf
  - Inspection Results.pdf
  - HighRiskLines\_OnlineMonitors.pdf
  - RTU Control.pdf
  - FSJ\_AOCMeeting.pdf
  - EmailRegardingPiggingReport.pdf
  - PiggingReport.pdf
  - ResidueGasMeasurementReport.pdf
  - FW Pipeline Integrity Plan.msg
  - Pipeline Integrity Management.doc
  - FW SOP Update Meetings.msg
  - 2009 OM Manual Update - Document Tracking.xls
  - 2009 OM Manual Update Meeting.docx
  - 2011 SOP Update - Document Tracking\_RL.xlsx
  - 2011 SOP Review Agenda.docx
  - 2010 SOP Update - Document Tracking\_RL.xlsx
  - 2010 SOP Update Meeting.docx
  - FW SOP Update Meetings.msg
  - 2009 OM Manual Update Meeting.docx
  - RE Performance Indicators.msg
  - SET-West - Performance Indicators - Annual NEB.XLSX
  - FW Audit - Compressor Station Recoat Program.msg
  - SET-West Audit Review Meeting (3 pages)



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- SET-West SCADA field device and network equipment security (BC Pipeline Division) Audit #410005 October 5 2011 (6 pages)
  - SET-West Leak Detection Systems Audit #411007 – 13 December 2011 (9 pages)
  - SET-West SCADA Audit #407007 – 20 November 2008 (15 pages)
  - SET-West Risk Assessment Pipeline Integrity Program SET Board of Directors Meeting December 2009 (2 pages)
  - FW Pipeline Integrity Plan.msg
  - Pipeline Integrity Management.doc
  - FW SOP Update Meetings.msg
  - SET-West OSC Monthly Scorecard - 2011 and 2012.pdf
  - SET-West OSC STIP Scorecard - December 2011.pdf
  - FW Documents for NEB.msg
  - 2011 CP (Pipe-to-Soil) Survey's Grizzly Gathering.msg
  - BRAZION 20 INCH (PL-17000).xlsx
  - BULLMOOSE 8 inch LATERAL (12000LT1).xlsx
  - CHAMBERLAIN 12 INCH (PL-16400).xlsx
  - EXTENSION 16 INCH (PL-19100).xlsx
  - GOODRICH RE-INJECTION 6 INCH (PL-19400).xlsx
  - GOODRICH RE-INJECTION EXTENSION 6 INCH (19400EX1).xlsx
  - GRIZZLY 10 INCH (PL3-12000).xlsx
  - GRIZZLY 20 INCH (PL2-12000).xlsx
  - GRIZZLY 24 INCH (PL1-12000).xlsx
  - GRIZZLY 24 INCH LOOP (LP-12000).xlsx
  - KWOEN ACID GAS REINJ. PPL 6 INCH (PL-19300).xlsx
  - MURRAY RIVER 12 INCH (PL-16500).xlsx
  - MURRAY RIVER 12 INCH (PL-16500DE01).xlsx
  - RED WILLOW 6 INCH (PL-13500).xlsx
  - SOUTH SUKUNKA 16 INCH (PL-14900DE1).xlsx
  - SOUTH SUKUNKA 24 INCH LOOP (PL-14900L).xlsx
  - SUKUNKA 8 INCH LATERAL (PL-12000DE02).xlsx
  - WAPITI 10 INCH (PL-16700).xlsx
  - WEEJAY LATERAL PIPELINE 10 INCH (PL-19200).xlsx

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- CouponSummary Oct 2009 Chet.xlsx
  - CouponSummaryChet april 2010.xlsx
  - Corrosion Coupon Summary Oct 2009 - Chetwynd Gathering.msg
  - CouponSummary Oct 2009 Chet.xls
  - Pine River Gathering Coupon Exposure Summary - April 2010.msg
  - CouponSummaryChet april 2010.xls
  - Fort St John Gathering Pipeline & Barrel Coupon Summary Oct 2010.msg
  - CouponSummarybyRegionFSJ Oct 2010.xls
  - Fort St John Gathering Pig Barrel Coupon Summary July 2011msg
  - CouponSummary FSJ Barrel Coupons July 2011.xls
  - April 2010 Pipeline Corrosion Coupon Summary.msg
  - CouponSummaryFN april 2010.xls
  - FW: Emailing: 2011 Fort Nelson Gathering.msg
  - Adsett 8 inch(14600PL1)
  - Beaver River 24 inch(09600PL1)
  - Cabin 16 inch(10000PL1)
  - Clarke Lake 16 inch Loop(08500LP1)
  - Clarke Lake 16 inch(08500PL1)
  - East Kotcho 10 inch(10300DE01)
  - Ekwan 16 inch(12800PL1)
  - Gote Pipeline System 12 inch(10100PL1)
  - Helmet 16 inch(10400PL1)
  - Hossitl 8 inch(15300PL1)
  - Klua 16 inch(15600PL1)
  - Louise 20 inch(09900PL1)
  - North Helmet 16 inch Loop(10400LP2)
  - North Shekilie 10 inch(12900PL1)
  - Northwest Helmet 8 inch Extension(10400EX1)
  - Pesh 8 inch(13900DE01)
  - Pesh 16 inch Loop(13900LP1)
  - Petitot 10 inch(10200PL1)
  - Pointed Mountain 20 inch(09700PL1)

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- Sahtaneh (Junior) 24 inch(12800PL4)
  - Sierra 12 inch(09200PL1)
  - Sierra 16 inch Loop(09200LP1)
  - Sierra-Sahtaneh 16 inch(12800PL3)
  - South Clarke Lake 8 inch(12500PL1)
  - South Shekilie 10 inch(17800PL1)
  - Southeast Helmet 10 inch Extension(10400DE02)
  - Southeast Helmet 16 inch Loop(10400LP1)
  - West Clarke Lake 6 inch(15900DE01)
  - Yoyo 24 inch(09000PL1)
  - FW: Grizzly Gathering Area Coupon Summary Spring of 2011.msg
  - Coupon Summary by Region 2011 Spring PRRG.xls
  - April 2010 Pipeline Corrosion Coupon Summary.msg
  - Coupon Summary FN April 2010.xls
  - Spring 2011 Coupon Summary.msg
  - Coupon Summary by Region1 FSJ Spring 2011.xls
  - Fort Nelson Gathering Coupon Summary - Spring 2009.msg
  - FtNELSONspr09.xls
  - Fort Nelson Gathering Pipeline & Barrel Coupons - Oct 2010.msg
  - Coupon Summary by Region FN Oct 2010.xls
  - Example 1 - 8 East Osborne
    - 8 East Osborn 2010 Dig Report Summary.doc
    - 8\_ East Osborn ILI Results.pdf
    - Annotated 2010 BJ Pipeline Tally - 8 Osborn.xls
  - Example 2 - 10 North Shekilie
    - 10 North Shekilie Dig#1 - 1.013KM Report.pdf
    - 10 North Shekilie Dig#2 - 3.566KM Report.pdf
    - 10 North Shekilie Dig#3 - 4.769KM Report.pdf
    - 10 North Shekilie Dig#4 - 9.740KM Report.pdf
    - 10 North Shekilie Dig#5 - 10.353KM Report.pdf
    - 2009 Dig Report Summary 10 North Shekilie.pdf
    - Annotated 10 North Shekilie 2009 Pipe Tally.xls
    - CHAINAGE 10 North Shekilie.xls

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- Example 3 - MML2
    - 36 MML2 Dig #5 - 24.02KM 2011 Log Report.pdf
    - 36 MML2 Dig #6 - 26.54KM 2011 Log Report.pdf
    - 36 MML2 Dig #11 - 47.74KM 2011 Log Report.pdf
    - 36 MML2 Dig #12 - 49.51KM 2011 Log Report.pdf
    - 36 MML2 Dig #13 - 51.15KM 2011 Log Report.pdf
    - Analysis email.pdf
    - Annotated 2011 BJ Pipeline Tally 36 MML2.xls
    - CHAINAGE 36 MML2.xls
  - 2BL1 2008 pipeline Corrosion Growth (RPR) - Metric\_Rev2.xlsx
  - CLOCKSPRING\_UTM\_COORDINATES.xls
  - 15YRPLn2.xls
  - Multiyear ILI Plan 2000-2019
  - ILI History – all pipelines T-North
  - Fort Nelson Gathering Pipeline & Barrel Coupons - Oct 2010.msg
  - CouponSummarybyRegionFN Oct 2010.xls
  - 6BL1 HiHum Geotechnical Update Oct 2007.pdf
  - 8AL1 km 5.3 Coldwater 2007 Work Summary V2.pdf
  - 8AL1 km 5.3 Spectra Energy Coldwater plan.pdf
  - 8BL1 km 18.7 rockfall memo.pdf
  - 6bl1 HiHum Geotechnical Update Final March 2006.pdf
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  - 4AL1 km 34.5 Shelley Hill Report Version 2 for bid package.pdf
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  - 2L1 km 31.8 West Pine -As-constructed Letter Report - 25 June 2010.pdf
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  - SET-West Asset Management Definitions - Critical Systems.pdf
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  - Accountabilty Management.pdf
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  - CP Test Point Surveys - 2007 to 2011.pdf
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  - Compressor Station CP Surveys.pdf
  - Test Lead Post Repair Data.pdf
  - PEIMP - Revision 1.pdf
  - Postponement of 4BL2 Weld 12610 and 13390.docx
  - Dent Review.pdf
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  - SET West Training DeterminationTool\_Final\_March 28, 2012.xlsx
  - 100% EHS Training Compliance Process.pdf
  - IMRegulatoryReportingGuidelines.docx
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  - Acuren Report CS8B 2006
  - A06619-00300\_01-02R0 60DUK001001 Station 8B Recoat - Site Map-Visits.doc
  - A06619-00300\_01-03R0 60DUK001001 Station 8B Recoat – Procedure.doc
  - A06619-00300\_01-04R0 60DUK001001 Station 8B Recoat - Visit 1.doc
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  - Compressor Station 8B Schematics
    - 8201-21.pdf
    - 9001-02.pdf
    - 9001-03.pdf

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- 9001-04.pdf
  - 9001-05.pdf
  - 9001-08.pdf
  - VaultServlet.pdf
  - Compressor Station 8B Photos
    - CS 8B 30in bypass.jpg
    - DSCN0507.jpg
    - DSCN0508.jpg
    - P5190088.jpg
    - P5190089.jpg
    - P6020029.jpg
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    - P6190001.jpg
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  - Compressor Station 8B Miscellaneous
    - Acuren risk identifcaiton and communication form.xls
    - EHS Risk Documentation\_Ogilvie Mountain Holding Ltd.xls
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    - RStreng LOF-A-01 30 Bypass.xls
    - Authority for Expenditure.doc
    - Delivery Truck Procedure for CS8B Recoat Job 2006.doc
    - Integrity U0858 CS8B Recoat.doc
    - RE Cs8B Discharge.txt
    - H&S-42%20Personal%20Protective%20Equipment.pdf
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