



File OF-Surv-OpAud-P384-2016-2017 02
18 April 2017

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Accountable Officer
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Calgary, AB T2P 0A7
Email [REDACTED]

Dear Mr. Balash:

**Final Audit Report for:
Plains Midstream Canada ULC. (Plains)
Aurora Pipeline Company Ltd. (Aurora)**

The National Energy Board (NEB or the Board) has completed its Final Audit Report of Plains and Aurora. The audit focused on sub-element 4.1 *Inspection Measurement and Monitoring* of the NEB Management System and Protection Program Audit Protocol.

A Draft Audit Report documenting the Board's evaluation of Plains and Aurora was provided to Plains and Aurora on 9 March 2017 for review and comment. Plains and Aurora provided comments on the Draft Audit Report. The comments were editorial in nature correcting naming errors and structural clarification with no comments regarding the findings of the audit. These editorial items were corrected. Since the Board had no comments to consider, no changes to the findings were made to the Draft Audit Report and its Appendices.

The findings of the audit are based upon an assessment of whether Plains and Aurora was compliant with the regulatory requirements contained within:

- The *National Energy Board Act*;
- The *National Energy Board Onshore Pipeline Regulations*;
- The *National Energy Board Pipeline Damage Prevention Regulations - Obligations of Pipeline Companies* (DPR-0); and
- any conditions contained within applicable Board certificates or orders issued by the Board (collectively referred to as, Legal Requirements).

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Plains and Aurora was required to demonstrate the adequacy and effectiveness of the methods selected and employed within its management system and programs to meet the regulatory requirements listed above.

The Board has enclosed its Final Audit Report and associated Appendices with this letter. The Board will make the Final Audit Report public and it will be posted on the Board's website.

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

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

If you require any further information or clarification, please contact Niall Berry, Lead Auditor, at 403-471-1921.

Yours truly,

Original signed by L. George for

Sheri Young
Secretary of the Board

Attachment

c.c. 

National Energy
Board



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National Energy Board Onshore Pipeline Regulations (OPR)
Final Audit Report of the Plains Midstream Canada ULC (Plains)
Aurora Pipeline Company Ltd. (Aurora)
Pipeline Patrol Activities
Collectively referred to as Plains in this report

File OF-Surv-OpAud-P384-2016-2017 02

Plains Midstream Canada ULC
Aurora Pipeline Company Ltd.
Suite 1400, 607 8 Avenue S.W.
Calgary, Alberta T2P 0A7

18 April 2017

Executive Summary

Companies regulated by the National Energy Board (NEB or the Board) must demonstrate a proactive commitment to continual improvement in safety, security and environmental protection. Pipeline companies under the Board's regulation are required to incorporate adequate, effective and implemented management systems into their day-to-day operations.

This report documents the Board's audit of the above ground monitoring and surveillance activities (collectively referred to as patrol activities) of Plains and Aurora. Specifically, this audit focussed on the adequacy and effectiveness of the patrol activities for its NEB-regulated pipeline facilities that are part of sub-element 4.1 **Inspection, Measurement and Monitoring** of the National Energy Board Management System and Protection Program Audit Protocol published in July 2013. Given the scope of this audit, it also included the requirements contained within the *Damage Prevention Regulations – Obligations of Pipeline Companies* (DPR-O) and the Canadian Standards Association (CSA Z662-15).

The Board conducted the audit using the audit protocols detailed in Appendices I and II. Appendix I focused solely on sub-element 4.1 Inspection, Measurement and Monitoring, whereas Appendix II evaluated how the company's patrol activities interacted with the other elements of the Plains and Aurora's management system; specifically as they relate to the inputs and outputs and linkages between the other management system elements.

The Board's audit of Plains and Aurora's federally regulated facilities found that Plains and Aurora demonstrated that it conducts various types of patrol activities to identify hazards on its rights of way, particularly relating to the identification and management of potential unauthorized third party activity. As patrol activities are expected to identify several types of hazards along the rights of way, the audit found that Plains and Aurora's practices regarding several aspects of its patrols did not meet the Board's requirements. A detailed assessment of the patrol activities is documented in Appendix I of this audit report.

The Board also assessed the extent to which Plains and Aurora's management system processes were integrated with its patrol activities, where required. The details of this assessment are outlined in Appendix II of this audit report.

Plains and Aurora was able to demonstrate that most of the governance sub-elements had been integrated with the patrol activities including its overarching Health and Safety policy, its Management of Change process and its development of goals and targets. The Board also noted that Plains and Aurora was conducting several types of patrols. Interviews and document review confirmed that Plains and Aurora's patrol activities were being conducted in order to identify and prevent unauthorized activities.

During its evaluation, the Board noted several deficiencies regarding the planning, execution, evaluation and resolution of issues identified on patrol activities, which are summarized. In section 5 on page 8 of this document.

Within 30 days of the Final Audit Report being issued, Plains and Aurora must develop and submit a Corrective Action Plan (CAP) for Board approval. The CAP must detail how Plains and Aurora intends to resolve the non-compliances and deficiencies identified by this audit. The Board will verify that the corrective actions are completed in a timely manner and applied consistently across Plains and Aurora's system. The Board will continue to monitor the implementation and effectiveness of Plains and Aurora's management system and programs through targeted compliance verification activities as part of its ongoing regulatory mandate.

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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. In order to meet this the National Energy Board Onshore Pipeline Regulations (OPR), requires pipeline companies to operate in a systematic, comprehensive and proactive manner that manages risks with effective, fully developed and implemented management systems and protection programs that provide for continual improvement. A carefully-designed and well-implemented management system supports a strong culture of safety, and is fundamental to keeping people safe and protecting the environment. To evaluate compliance with its regulations, the Board audits the management system and programs of regulated companies. The Board requires each regulated company to demonstrate that they have established and implemented, adequate and effective methods for proactively identifying and managing hazards and risks.

This audit is one in a series of focused audits that the Board is conducting of company right of way (ROW) patrol activities and is focused on sub-element 4.1 ***Inspection, Measuring and Monitoring*** of the National Energy Board Management System and Protection Program Audit Protocol published in July 2013.

The Board developed its audit protocols to evaluate Plains and Aurora' patrol activities and to verify that they are appropriately implemented and managed. To this end, the Board conducted interviews with corporate and regionally-based staff; field inspections and reviewed documentation and records related to patrol activities. This enabled the Board to evaluate the adequacy, effectiveness and implementation of the patrol program. The Board based the scope and location of the field inspections on the needs of the audit. The inspections follow the Board's standard inspection processes and practices. Although they inform the audit, inspections are considered independent of the audit. If unsafe or non-compliant activities are identified during an inspection, they are actioned as set out by the Board's standard inspection and enforcement practices.

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

2.0 Background

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

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

In fiscal year 2016/17 the Board is piloting a new approach to audits. It identified the need to conduct a series of audits focused on company patrol activities. This decision was based on an internal analysis of compliance data and application of the NEB risk model. This model combines different aspects of the pipeline system's location, product etc. with the companies' performance in other compliance areas. Plains Midstream Canada ULC (Plains) and Aurora Pipeline Company Ltd. (Aurora) own, and operate, transportation and midstream assets for crude oil, natural gas, and natural gas liquids (NGLs). Plains and Aurora are headquartered in Calgary, Alberta; with facilities located in four provinces. More information on the federally regulated system is available in Appendix III of this audit report.

This audit is focused on sub-element 4.1 ***Inspection, Measuring and Monitoring*** of the National Energy Board Management System and Protection Program Audit Protocol published in July 2013, which has the following expectations for sub-element 4.1:

“The company shall have an established, implemented and effective process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the protection programs and for taking corrective and preventive actions if deficiencies are identified. The evaluation shall include compliance with legal requirements.

The company shall have an established, implemented and effective process for evaluating the adequacy and effectiveness of the company's management system, and for monitoring, measuring and documenting the company's performance in meeting its obligations to perform its activities in a manner that ensures the safety and security of the public, company employees and the pipeline, and protection of property and the environment.

The company shall have an established, maintained and effective data management system for monitoring and analyzing the trends in hazards, incidents and near-misses. The company shall have documentation and records resulting from the inspection and monitoring activities for its programs.

The company management system shall ensure coordination between its protection programs, and the company should integrate the results of its inspection and monitoring activities with other data in its hazard identification and analysis, risk assessments,



performance measures and annual management reviews, to ensure continual improvement in meeting the company's obligations for safety, security and protection of the environment."

3.0 Audit Objectives and Scope

The objective of the audit was to evaluate Plains and Aurora's performance against the applicable requirements specifically as they relate to patrol activities. The scope of the audit focused on sub-element 4.1 of the Board's audit protocol to verify that patrol activities are adequately identifying issues noted on the rights-of way to promote environmental protection, pipeline integrity, emergency response, security and damage prevention. The Board also examined the degree to which patrol activities were integrated with the company's management system to ensure the protection of the environment and the safety and security of the public.

This audit was based on the requirement that federally regulated pipeline companies are required to conduct patrols of their rights of way to actively monitor any potential hazards that could jeopardize the safety of people and the environment. The information gathered and issues observed by patrol activities must be communicated to the appropriate protection programs for tracking and resolution. Equally important, in an established management system, some of the hazards identified by the protection programs areas of the company's management system must inform the patrol activities to promote effective monitoring of these hazards.

For this audit, Plains and Aurora was audited against the requirements contained within the following legal requirements as they relate to patrol activities:

- The *National Energy Board Act*;
- The *National Energy Board Onshore Pipeline Regulations*;
- The *National Energy Board Damage Prevention Regulations*;
- Canadian Standards Association (CSA) Z662 – 15 – Oil and Gas Pipeline Systems; and
- Plains and Aurora's policies, programs, practices and procedures.

During the audit, the NEB conducted physical field inspections, reviewed documentation and interviewed the company's staff with the aim to:

- obtain a snapshot of the patrol activities being conducted;
- assess the implementation of company management systems as they relate to pipeline patrols;
- allow for a broader assessment of industry performance with regards to pipeline patrols; and
- provide clarity around the Board's expectations regarding these patrol activities.

4.0 Audit Process, Methodology and Activities

The Board informed Plains and Aurora of its intent to audit its NEB regulated facilities in a letter dated 9 September 2016. Following the issuance of this letter, Board audit staff met with Plains and Aurora to arrange and coordinate this audit. The Board also provided Plains and Aurora with the audit protocols (Appendices I and II), an information request guidance document as well as discussion questions to help Plains and Aurora prepare for the audit, and provide access to documentation and records to demonstrate its compliance. Appendix I is divided into five sections, with each section covering a partial component of the Board's expectations for sub-element 4.1. In Appendix II, the Board's Audit Protocol identifies five Management System elements which are further broken down into 17 sub-elements. Each sub-element reflects a number of regulatory requirements. As this audit is focussed on patrol activities and related inputs and outputs from other protection programs, many of the processes required by the OPR were considered within the scope of this audit. Plains and Aurora established a digital access portal for Board staff to review documentation and records.

On 28th September 2016, an opening meeting was conducted with representatives from Plains and Aurora in Calgary, Alberta to confirm the Board's audit objectives, scope and process. The opening meeting was followed by various field level audit activities as described in the table below. Throughout the audit, Board audit staff gave Plains and Aurora daily summaries which included requests for additional documentation and interviews.

On 25 January 2017, the Board sent a pre-closeout information request to Plains and Aurora. At this meeting Board staff and Plains and Aurora staff discussed potential deficiencies identified during field activities and discussed additional information that could be of value to the Board prior to compiling its draft audit report. An audit close-out meeting was held on 6 February 2017 to provide Plains and Aurora with a description of the recommendations that staff would be bringing to the Board for decision.

PLAINS AND AURORA Pipeline Patrol Audit Office and Field Activities
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|---|
| <ul style="list-style-type: none"> • Audit Opening meeting - 28 September 2016 • Audit interviews, Calgary Office – 25 October 2016 • Audit interviews, Sarnia Office 1-3 November 2016 • Audit interviews, Regina Office- 7-9 November 2016 • Audit Interviews, Calgary Office 15-17 November 2016 • Audit closing meeting, Calgary Office February 6 2017 |
|---|

5.0 Summary of Audit Findings

During this audit, Plains and Aurora was required to demonstrate the adequacy and effectiveness of its management system, programs and its processes as they relate to pipeline patrols. The Board reviewed documentation and records provided by Plains and Aurora, conducted inspections and interviewed Plains and Aurora's staff.

The following summary represents an overview of the Board's audit findings for Plains and Aurora's patrol activities based on information provided for the audit:

Finding 1:

Plains and Aurora ROW patrol report includes a list of conditions to pay attention to during patrols such as changes in land usage, encroachment, flooding, evidence of unauthorized crossings. Through a review of inspection reports, the Board confirmed that patrol reports were being generated after each patrol. A review of a sample of aerial patrol reports identified that these reports did not include confirmation that each of the CSA-Z662-15 clause 10.6.1.1 conditions and activities were being monitored or assessed during patrols.

This type of reporting by exception does not allow for any monitoring of developing trends that can affect the safety and operation of the pipeline nor does it document an assessment of the various potential issues.

Finding 2:

The Plains and Aurora Surveillance and Monitoring element resides within the Damage Prevention program, within Operations Management System Sub-Element 2.7. The Damage Prevention department holds primary responsibility over the patrols program, along with its policies and procedures.

The policies and goals of the Damage Prevention Program are documented in the Damage Prevention program governing document, which is currently in draft. To meet the requirements of this audit element the Damage Prevention Program governing document will need to be finalized and implemented.

Finding 3:

Plains and Aurora Midstream Canada has formal patrol activities that are documented specific to the patrol process however Plains and Aurora also uses their field operations employees to monitor ROW during their daily activities (referred to in the audit as Operational Employee Patrols) this monitoring is not documented in an SOP or written into job requirements. Through interviews and record review the auditors noted inconsistent monitoring practices of the field operations employees, that would be addressed with documented job requirements.

Finding 4:

Plains and Aurora Midstream Canada outlines the reporting process of ROW and pipeline hazards and threats. Plains and Aurora has a written process for external incident reporting. Plains and Aurora provided examples of communications directed at both internal and external stakeholders. However, Plains and Aurora could not demonstrate that it has a written process for

communication with the public; workers; contractors; regulatory agencies; and emergency responders.

Finding 5:

Plains and Aurora was unable to demonstrate it has conducted internal audits that included patrol activities to determine whether patrol activities are adequate or effective. The full assessment of these findings can be found in Appendices I and II.

6.0 Conclusions

Companies regulated by the NEB must demonstrate a proactive commitment to continual improvement in safety, security and environmental protection. Pipeline companies under the Board's regulation must establish and implement effective management systems in their day-to-day operations. In conducting this review, the Board has determined that although Plains and Aurora is conducting patrol activities, a couple of the sub-elements of its management system that have not been consistently implemented with regards to its patrol activities.

Upon receipt of the final report, Plains and Aurora must develop a corrective action plan describing its proposed methods to resolve the non-compliances identified in Appendices I and II and the timeline in which corrective actions will be completed. Plains and Aurora is required to submit its corrective action plan for Board approval within 30 days of the final Audit Report being issued. The Board will make its final Audit Report and Plains and Aurora's approved corrective action plan public on the Board's website.

The Board will assess the implementation of Plains and Aurora's corrective actions to confirm they are completed in a timely manner and on a system wide basis until they are fully implemented. The Board will also continue to monitor the overall implementation and effectiveness of Plains and Aurora's patrol activities.

7.0 Audit Terminology and Definitions

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

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

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



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

Corrective Action Plan: Addresses the non-compliances identified in the audit report, and explain the methods and actions that will be used to correct them.

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

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

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

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

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

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

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

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

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

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

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

Non-Compliant: 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 plan must be developed and implemented.

Practice: A repeated or customary action that is well understood by the persons authorized to carry it out.

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

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

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

OPR section 6.5(1) establishes the basic requirements for management system processes. In evaluating a company's management system processes, the Board considers whether each



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

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

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

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

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

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

8.0 Abbreviations

CAP: Corrective Action Plan

CLC: Canada Labour Code Part II

COHSR: Canada Occupational Health and Safety Regulations

CSA Z662-11: CSA Standard Z662 entitled *Oil and Gas Pipeline Systems*, 2015 version

GOT: Goals, Objectives and Targets

MOC: Management of Change

NEB: National Energy Board

OPR: *National Energy Board Onshore Pipeline Regulations*

PLM: Pipeline Maintenance

ROW: Right-of-Way



National Energy Board Pipeline Patrol Audit Protocol

Appendix I – Evaluation of Sub-element 4.1

CHECKING AND CORRECTIVE ACTION

4.1 Inspection, Measurement and Monitoring

Expectations: The company shall have an established, implemented and effective process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the protection programs and for taking corrective and preventive actions if deficiencies are identified. The evaluation shall include compliance with legal requirements. The company shall have an established, implemented and effective process for evaluating the adequacy and effectiveness of the company's management system, and for monitoring, measuring and documenting the company's performance in meeting its obligations to perform its activities in a manner that ensures the safety and security of the public, company employees and the pipeline, and protection of property and the environment.

The company shall have an established, maintained and effective data management system for monitoring and analyzing the trends in hazards, incidents and near-misses. The company shall have documentation and records resulting from the inspection and monitoring activities for its programs.

The company management system shall ensure coordination between its protection programs, and the company should integrate the results of its inspection and monitoring activities with other data in its hazard identification and analysis, risk assessments, performance measures and annual management reviews, to ensure continual improvement in meeting the company's obligations for safety, security and protection of the environment.

OPR 6.5.1(r)(u), 39

NEB Assessment

Appendix I's focus is solely on the various types of patrol activities conducted pursuant to the legal requirements. An evaluation of the patrol activities in the context of the management system and the process requirements outline in 4.1 is provided in Appendix II of this report.

1.0 Inspecting and Monitoring

The Board expects companies to have an established, implemented and effective process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the protection programs. In order to verify the implementation of the ROW monitoring activities, the NEB conducted several ROW inspections in urban and rural settings in support of the audit both by air and ground patrol.



Given the scope of this audit, these processes and protection programs were not reviewed for compliance or adequacy. Rather, the Board conducted a focused audit of the company's pipeline patrol activities which is typically part of the surveillance and monitoring program. Patrol activities are one method used by companies to monitor the effectiveness of the protection programs. The review in this appendix relates directly to the patrol activities that Plains Midstream Canada had in place at the time of the audit.

Plains Midstream Canada (PMC) owns, operates, transportation and midstream provider for crude oil, natural gas, and natural gas liquids (NGLs). PMC is headquartered in Calgary, Alberta; Canadian facilities are located in four provinces. Plains Midstream Canada ULC is an indirect subsidiary of Plains All American Pipeline, L.P.

Plains Midstream Canada provided documents that describe the process, frequency, responsibilities, competencies, emergency procedures and reporting requirements of the Patrols.

These activities are described as follows:

- **Aerial Patrol:**
Plains Midstream Canada conducts routine aerial patrols of its ROW by fixed wing aircraft. The pipe line ROWs are patrolled either weekly or every two weeks based on a schedule published in the Plains Right of Way Patrol Procedure. The aerial Patrols are conducted by Plains Midstream Canada contracted pilots. These inspections are documented on the aerial patrols report.
- **Windsor to Sarnia additional patrols:**
Employees conduct weekly ground patrols of the Windsor-Sarnia ROW this is documented in a work order. The employees have been trained on what to look for and document any issues on email that are followed up by local management. A contract employee conducts daily patrols of the same ROW and the facilities. The contract employee has been given training on what to look for and has a reporting process and event emergency procedures.
- **Operations employee Patrols:**
During their normal daily operations activities Plains Midstream Canada employees check on the ROW they are working on or traveling past, these checks can include checking fenced facilities for signs of tampering and vandalism. These checks are documented on email if an issue is noted and entered into the work management system for resolution. The auditors reviewed emails presented as evidence.
Note: These types of patrols are not scheduled nor are there any written process or requirement documents. This is noted as non-compliance in appendix 2 under operational conditions.



- **Cathodic protection survey:**
While the scope of this audit is limited to patrol activities, the Board notes that Plains Midstream Canada has scheduled other activities in order to monitor its cathodic protection; it has retained contractors to undertake an annual corrosion surveys.
- **Vegetation management survey:**
While the scope of this audit is limited to patrol activities, the Board notes that Plains Midstream Canada has scheduled other activities in order to monitor its vegetation management; it has retained contractors to undertake vegetation surveys.

Conclusion

Given the scope of the audit and the documents reviewed, the Board did not find any issues of non-compliance for this aspect of the requirement.

2.0 Evaluating adequacy and taking corrective action

The Board requires companies to evaluate the adequacy and effectiveness of the protection programs and for taking corrective and preventive actions if deficiencies are identified. During the audit, the Board reviewed records of various types of patrol activities as part of its surveillance and monitoring program.

In cases where issues were noted on the reports, the Board noted that Plains Midstream Canada demonstrated that potential unauthorized activities, Plains Midstream Canada had a process for reporting, tracking, communicating and resolving these issues using data bases for collecting the information and software systems for tracking the issues to closure.

Interviews, document and record review determined that Plains Midstream Canada is evaluating the effectiveness of its right of way patrol activities during quarterly management reviews and consistently tracking any issues to resolution.

Conclusion

Given the scope of the audit and the documents reviewed, the Board did not find any issues of non-compliance for this aspect of the requirement.

1.1 Right of Way Patrols

Regulatory Requirements

DPR-O s. 16(b): The damage prevention program that a pipeline company is required to develop, implement and maintain under section 47.2 of the *National Energy Board Onshore Pipeline Regulations* must include ongoing monitoring of any changes in the use of the land on which a pipeline is located and the land that is adjacent to that land.

**CSA Z662-15, Clause 10.6.1.1, Pipeline patrolling:**

Operating companies shall periodically patrol their pipelines in order to observe conditions and activities on and adjacent to their rights-of-way that can affect the safety and operation of the pipelines. Particular attention shall be given to the following:

- a) construction activity;
- b) dredging operations;
- c) erosion;
- d) ice effects;
- e) scour;
- f) seismic activity;
- g) soil slides;
- h) subsidence;
- i) loss of cover;
- j) evidence of leaks; and
- k) Unauthorized activities.

CSA Z662-15, Clause 10.6.1.2:

The frequency of pipeline patrolling shall be determined by considering such factors as

- a) operating pressure;
- b) pipeline size;
- c) population density;
- d) service fluid;
- e) terrain;
- f) weather; and
- g) Agricultural and other land use.

NEB Assessment**Monitoring of adjacent lands (DPR-O)**

The *National Energy Board Damage Prevention Regulations – Obligations of Pipeline Companies* (DPR-O) requirements came into effect on 19 June 2016. The DPR-O requires that companies develop a Damage Prevention Program which includes ongoing monitoring of any changes in the use of the land on which a pipeline is located and the land that is adjacent to that land.

Plains Midstream Canada did demonstrate that it is in the process of revising its patrol activities to account for the additional requirements outlined in the DPR-O s.16 (b). The damage prevention program as noted in element 1.2 of Appendix II is in a draft stage and will need to be finalized, implemented and established to be compliant. (This is noted as non-compliance in Appendix II).



Conclusion

Given the scope of the audit and the documents reviewed, the Board did not find any issues of non-compliance for this aspect of the requirement.

Observing conditions and activities (CSA clause 10.6.1.1)

Plains Midstream Canada's ROW patrol report includes a list of conditions to pay attention to during patrols such as changes in land usage, encroachment, flooding, evidence of unauthorized crossings. Through a review of inspection reports, the Board confirmed that patrol reports were being generated after each patrol. A review of a sample of aerial patrol reports identified that these reports did not include confirmation that each of the CSA-Z662-15 clause 10.6.1.1 condition's and activities were being monitored or assessed during patrols.

This type of reporting by exception does not allow for any monitoring of developing trends that can affect the safety and operation of the pipeline nor does it document an assessment of the various potential issues.

Conclusion

Due to the fact that the aerial patrols report by exception, that is, only noted when activity or an issue is present, Plains Midstream Canada could not demonstrate that it is monitoring all the issues as noted in CSA Z662-15 clause 10.6.1.1.

Therefore, the audit determined that Plains Midstream Canada is non-compliant with this requirement. The Board requires that a CAP be developed to address this non-compliance.

Frequency of inspections (CSA clause 10.6.1.2)

Plains Midstream Canada provided documentation related to its patrol activities and ROW maintenance standards. Plains Midstream Canada's ROW patrol procedure describe frequency of patrols the company uses the Alberta Regulation 91/2005 Pipeline Act, Pipeline Regulation (44) as there frequency of Patrols. The company concluded that the Alberta Regulation has the most stringent requirements.

Alberta Regulation 91/2005 Pipeline Act, Pipeline Regulation (44).

Inspection Frequency Pipeline System Criteria

- *Monthly CSAZ662 Class 1 LVP product gathering segments*
- *Every two weeks CSAZ662 Class 1 LVP product transmission systems*
- *CSAZ662 Class 1 HVP product segments*
- *CSAZ662 Class 2 segments conveying gas with >10mol/kmol H2S*
- *Weekly CSAZ662 Class 2, 3 or 4 LVP product gathering or transmission segments*
- *CSAZ662 Class 2, 3 or 4 HVP product segments*
- *CSAZ662 Class 3 or 4 segments conveying gas with >10mol/kmol H2S*



Plains Midstream Canada was able to demonstrate that it has provided criteria for establishing its frequency of patrols. As it included all of the factors as listed in CSA Z662-15, Clause 10.6.1.2 requirements in the documents.

Conclusion

Given the scope of the audit and the documents reviewed, the Board did not find any issues of non-compliance for this aspect of the requirement.

2.0 Reporting

Regulatory Requirements

OPR s. 52 (1): A company shall immediately notify the Board of any incident relating to the construction, operation or abandonment of its pipeline and shall submit a preliminary and detailed incident report to the Board as soon as practicable.

DPR-O s. 7: Even if the condition set out in paragraph 13(1)(a) of the *National Energy Board Pipeline Damage Prevention Regulations – Authorizations* is met, when the operation of vehicles or mobile equipment across a pipeline at specific locations for the purposes of performing an agricultural activity could impair the pipeline's safety or security, the pipeline company must identify those locations and notify the following persons in writing of those locations:

- (a) landowners of the specific locations in question; and
- (b) persons that are engaged in agricultural activities, rent or lease the land or work as service providers or employees at the specific locations in question.

DPR-O s. 11(1): The pipeline company must immediately report to the Board

- (a) every contravention of the *National Energy Board Pipeline Damage Prevention Regulations – Authorizations*;
- (b) all damage to its pipe caused or identified during the construction of a facility across, on, along or under a pipeline, the operation, maintenance or removal of a facility, an activity that caused a ground disturbance within the prescribed area or the operation of vehicles or mobile equipment across the pipeline; and
- (c) any activity related to the construction of a facility across, on, along or under a pipeline, an activity that caused a ground disturbance within the prescribed area or the operation of vehicles or mobile equipment across a pipeline that the pipeline company considers could impair the safety or security of the pipe.

NEB Assessment

Notification of locations regarding low risk agricultural activity (DPR-O s.7)

In its 29 March 2011 submission to the Board that was required by the MO-21-2010, Plains Midstream Canada reported that it had assessed all crossings and no locations were identified to cause issue.



Plains Midstream Canada notes instances of exposed pipe discovered during its patrols activities. Plains Midstream Canada was able to demonstrate that it had tracked these issues to resolution. Plains Midstream Canada did demonstrate that it has a process for monitoring depth of cover on agricultural lands this is managed in the integrity management system through damage prevention program.

Conclusion

Given the scope of the audit and the documents reviewed, the Board did not find any issues of non-compliance for this aspect of the requirement.

Reporting unauthorized activities (DPR-O s 11)

Plains Midstream Canada's Right of Way Patrol Procedure and the Unauthorized Activity Internal Reporting Guideline documents the procedures for reporting incidents and unauthorized activities to the Board.

Plains Midstream Canada was able to demonstrate that it has a process in place to report instances of potential unauthorized activities. It also demonstrated that these unauthorized activities are documented and reported to the Board, communicated throughout the organization and tracked to resolution. Using "One Window Reporting" function on its intranet, Plains Midstream Canada provides a single point-of-contact for reporting all regulatory reportable incidents and emergencies.

Through interviews and record review, the audit verified that Plains Midstream Canada staff and contractors follow these procedures when they discover unauthorized activities on the ROW during patrols.

Plains Midstream Canada also demonstrated that it is tracking, trending and reporting annually on the unauthorized activities to Senior Management in quarterly and annual reports and presentations.

Through document and record reviews and interviews in the regions, the Board confirmed that Plains Midstream Canada staff were aware of the inspection and related reporting requirements particularly as they relate to potential mechanical damage from unauthorized third party activities.

Conclusion

Given the scope of the audit and the documents reviewed, the Board did not find any issues of non-compliance for this requirement.



National Energy Board Pipeline Patrol Audit Protocol
Appendix II – Pipeline Patrol interaction with other Management System
sub-elements

1.0 POLICY AND COMMITMENT

1.1 Leadership Accountability

Expectations: The company shall have an accountable officer appointed who has the appropriate authority over the company's human and financial resources required to establish, implement and maintain its management system and protection programs, and to ensure that the company meets its obligations for safety, security and protection of the environment. The company shall have notified the Board of the identity of the accountable officer within 30 days of the appointment and ensure that the accountable officer submits a signed statement to the Board accepting the responsibilities of their position.

Regulatory References: OPR 6.2(3), 6.3, 6.4.

NEB Assessment

The Accountable officer (AO) for Plains Midstream Canada (ULC) (Plains) and Aurora Pipeline Company Ltd. (Aurora) is Mr. Jason Balasch, President.

The AO roles and responsibilities are documented within the Plains Midstream Canada's Operations Management System (OMS) The AO is to ensure the OMS is established, implemented and maintained in a systematic manner in accordance with internal and external requirements and that the necessary human and financial resources are provided.

This includes all the programs, process, and activities associated with *4.1 Inspection, Measuring and Monitoring*.

Conclusion:

The audit verified that Plains Midstream Canada has established the role of the Accountable Officer who has the responsibility and authority with respect to sub-element *4.1 Inspection, Measuring and Monitoring*.

The audit verified that Plains Midstream Canada has the policies to address the above expectations as they relate to inspection and monitoring. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 1.1- Leadership Accountability.



1.2 Policy and Commitment Statements

Expectations: The company shall have documented policies and goals intended to ensure activities are conducted in a manner that ensures the safety and security of the public, workers, the pipeline, and protection of property and the environment. The company shall base its management system and protection programs on those policies and goals. The company shall include goals for the prevention of ruptures, liquids and gas releases, fatalities and injuries and for the response to incidents and emergency situations.

The company shall have a policy for the internal reporting of hazards, potential hazards, incidents and near-misses that include the conditions under which a person who makes a report will be granted immunity from disciplinary action.

The company's accountable officer shall prepare a policy statement that Plains Midstream Canada out the company's commitment to these policies and goals and shall communicate that statement to the company's employees.

References: OPR s 6.3 CSA 3.1.2 (a)

NEB Assessment

Plains Midstream Canada Operations policy drives the corporate initiatives that establish the Plains Midstream Canada Operations Management System.

The Plains Midstream Canada Published Operations policy states.

Plains Midstream Canada ULC and Its affiliates (Collectively Plains) commit to conducting our operations in a manner that ensures the safety and security of the public, our employees and contractors the safety, security and integrity of all Plains assets. Including property; and the protection and stewardship of the environment.

We commit to fostering a safety culture that supports our journey to zero incidents while optimizing our response to and control of emergency situations. We commit to a reporting culture, requiring the reporting of hazards, potential hazards. Incidents and near-misses without fear of reprisal or disciplinary action. We commit to a learning culture, including the identification and correction of deficiencies through ongoing assurance activities and lessons learned that continuously safeguard and optimize operations.

The Operations Management System (OMS) is the over-arching system that encompasses all Plains Midstream Canada Operations Programs. The Policy document was approved and signed January 1 2016 by Mr. Jason Balasch, President. The goals of the policy are stated as:

- *Protect people, the environment and our assets.*
- *Achieve consistency in execution with continual focus on improvement;*
- *Maintain socially responsible. and sustainable operations;*
- *Apply discipline and prudence. in planning, managing and executing our business; and*
- *Develop our employee and leader effectiveness.*



The Plains and Aurora Surveillance and Monitoring element resides within the Damage Prevention program, within Operations Management System Sub-Element 2.7. The Damage Prevention department holds primary responsibility over the patrols program, along with its policies and procedures.

The policies and goals of the Damage Prevention Program are documented in the Damage Prevention program governing document, which is currently in draft. To meet the requirements of this audit element the Damage Prevention Program governing document will need to be finalized and implemented.

Plains Midstream Canada policy for the Internal reporting of hazards, potential hazards, incidents and near misses is documented in the “operations policy” and the conditions under which a person who makes a report will be granted immunity from disciplinary action is documented in the “Non- Retaliation and NON Retribution Policy.”

Conclusion:

Plains Midstream Canada could not demonstrate that it has documented implemented and established policies and programs in the Damage prevention (Patrols program) to determine whether its patrol activities are adequate or effective. As a result, the Board has determined that Plains Midstream Canada is non-compliant with NEB OPR Section 1.2 Policy and Commitment Statements The Board requires Plains Midstream Canada to develop a corrective action plan to address the described deficiencies.

2.0 PLANNING

2.1 Hazards Identification, Risk Assessment and Control¹

Expectations: The company shall have an established, implemented and effective process for identifying and analyzing all hazards and potential hazards. The company shall establish and maintain an inventory of hazards and potential hazards. The company shall have an established, implemented and effective process for evaluating the risk associated with these hazards, including the risks related to normal and abnormal operating conditions. As part of its formal risk assessment, a company shall keep records to demonstrate the implementation of the hazard identification and risk assessment processes.

The company shall have an established, implemented and effective process for the internal reporting of hazards, potential hazards, incidents, and near-misses and for taking corrective and preventive actions, including the steps to manage imminent hazards. The company shall have and maintain a data management system for monitoring and analyzing the trends in hazards, incidents, and near-misses.

The company shall have an established, implemented and effective process for developing and

¹ 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



implementing controls to prevent, manage and mitigate the identified hazards and risks. The company shall communicate those controls to anyone exposed to the risks.

References OPR 6.5 (1)(c), (d),(e), 40, 47, 48
CSA Z662-15 clause 10.6.1, 10.6.2, 10.1,10.7
DPR-O s.7,9,10,11,16(b)(c)

NEB Assessment

Identifying Hazards and Potential Hazards and Inventory

Plains Midstream Canada provided a number of documented procedures related to hazard identification for review including:

- Operations Management System
- Damage Prevention Program.(Draft)
- SREMS Damage Prevention Risk Registry Final Draft
- ORM Hazard Identification Guide
- Right-of-Way Patrol Procedure

The Right-of-Way Patrol Procedure outlines how hazards and potential hazards are identified through periodic monitoring of the conditions and activities along its right of way through aerial patrols. The procedure makes reference to the various activities and conditions that “shall be reported that corresponds with the CSA Z662-11 clause 10.5.1. The procedure also lists specific activities and conditions that are monitored during aerial patrols. Section 4.0 of the procedure explains the Patrol reporting process.

Companies are required to have established, implemented and effective process for the internal reporting of hazards, potential hazards, incidents, and near-misses and for taking corrective and preventive actions, including the steps to manage imminent hazards. Plains Midstream Canada uses software tracking process for issues that is managed through the “Incident Management Process” called Velocity. A review of patrol reports indicated that reports of unauthorized activity such as encroachments were being entered into the system from patrol reports.

Analysis of Hazards and Potential Hazards

Plains Midstream Canada provided documentation demonstrating that it had conducted an analysis of the occurrences of unauthorized activities reported on or near its ROW to senior management. According to the analysis, some of these occurrences were discovered during patrol activities.

In addition, Plains Midstream Canada did demonstrate that hazard identification from other protection programs was informing the patrols. For example, although invasive species was identified as an environmental issue on the ROW, Plains Midstream Canada did demonstrate that its staff and contractors conducting patrols were aware and trained to identify issues during patrols and report back.



Controls

Based on the review of documents provided, the Board noted that Plains Midstream Canada demonstrated that patrol activities are established as controls for hazards on the ROW. The audit found that Plains Midstream Canada conducts frequent and various types of patrols, as discussed in Appendix I of this report.

Conclusion:

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*.

The audit verified that Plains Midstream Canada has the policies to address the above expectations as they relate to inspection and monitoring. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 2.1 Hazards Identification, Risk Assessment and Control.

2.2 Legal Requirements

Expectations: The company shall have an established, implemented and effective process for identifying, and monitoring compliance with, all legal requirements that are applicable to the company in matters of safety, security and protection of the environment. The company shall have and maintain a list of those legal requirements. The company shall have a documented process to identify and resolve non-compliances as they relate to legal requirements, which includes updating the management and protection programs as required.

References OPR 6.5(1) (g)(h)(i)

NEB Assessment

Plains provided a procedure for Managing and Monitoring Regulatory Legislative Amendments and Updates. The purpose of the procedure is to outline the Plains Midstream Canada (PMC) process for monitoring, and assessing regulatory changes that apply to Plains operations. This document outlines the communication and implementation of these changes within PMC. Regulations that affect PMC Environment Health and Safety are listed in PMC's Legal List, which encompasses legal requirements across Canada, both federally and provincially.

Conclusion:

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 2.2 for Appendix II, Legal Requirements.

2.3 Goals, Objectives and Targets

Expectations: The company shall have an established, implemented and effective process for developing and Setting goals, objectives and specific targets relevant to the risks and hazards



associated with the company's facilities and activities (i.e. construction, operations and maintenance). The company's process for setting objectives and specific targets shall ensure that the objectives and targets are those required to achieve their goals, and shall ensure that the objectives and targets are reviewed annually.

The company shall include goals for the prevention of ruptures, liquids and gas releases, fatalities and injuries and for the response to incidents and emergency situations. The company's goals shall be communicated to employees.

The company shall develop performance measures for assessing the company's success in achieving its goals, objectives, and targets. The company shall annually review its performance in achieving its goals, objectives and targets and performance of its management system. The company shall document its annual review of its performance, including the actions taken during the year to correct any deficiencies identified in its quality assurance program, in an annual report, and signed by the accountable officer.

**References OPR sections 6.3, 6.5(1)(a), (b), 6.6
CSA 3.1.2 (h)**

NEB Assessment

Plains Midstream Canada Operations Strategic Plan 2016/17 describes the performance measures (Goals, Objectives Targets and associated activities) assigned to the departments. Among other company wide goals Plains has developed objectives, measures and targets specific to damage prevention and ROW Patrol examples are reductions in line hits, product releases, Incident reduction and Identifying risks.

Conclusion

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element **4.1 Inspection, Measuring and Monitoring**. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 2.3 Goals, Objectives and Targets.

2.4 Organizational Structure, Roles and Responsibilities

Expectations: The Company shall have a documented organizational structure that enables it to meet the requirements of its management system and its obligations to carry out activities in a manner that ensures the safety and security of the public, company employees, the pipeline, and protection of property and the environment. The documented structure shall enable the company to determine and communicate the roles, responsibilities and authority of the officers and employees at all levels. The company shall document contractor's responsibilities in its construction and maintenance safety manuals.

The documented organizational structure shall also enable the company to demonstrate that the human resources allocated to establishing, implementing, and maintaining, the management system are sufficient to meet the requirements of the management system and to meet the



company's obligations to design, construct, operate or abandon its facilities to ensure the safety and security of the public and the company's employees, and the protection of property and the environment. The company shall complete an annual documented evaluation of need in order to demonstrate adequate human resourcing to meet these obligations.

References: **OPR 6.3, 6.4, 6.5 (c)(j)(k)(l)**
CSA 3.1.2 (b)(c)

NEB Assessment:

Plains Midstream Canada supplied the NEB with their overall structure in an organization chart and responsibilities were broken down within program overviews and job descriptions. The Damage Prevention department is accountable for the aerial patrol program. The department has oversight over operations employees as well as contract employees who conduct regular patrols. Vacations and illness are handled within the departments and are covered by existing staff.

A formal evaluation of need is done annually and documented in the Damage Prevention annual program review.

Conclusion:

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element **4.1 *Inspection, Measuring and Monitoring***. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 2.4 Organizational Structure, Roles and Responsibilities.

3.0 IMPLEMENTATION

3.1 Operational Control-Normal Operations

Expectations: The company shall have an established, implemented and effective process for developing and implementing corrective, mitigative, preventive and protective controls associated with the hazards and risks identified in elements 2.0 and 3.0, and for communicating these controls to anyone who is exposed to the risks.

The company shall have an established, implemented and effective process for coordinating, controlling and managing the operational activities of employees and other people working with or on behalf of the company.

References **OPR s.39,OPR s. 6.5(1)(e), (f), (g)**
CSA 3.1.2(f),10.6.1, 10.6.1.2,10.6.2



NEB Assessment

The Plains Midstream Canada damage prevention department is responsible for the procedures for patrols and the patrol schedule. The frequency of Patrols is based on class risk and Plains uses the AER prescriptive requirements for frequency. The Plains schedule is published in the patrol procedure patrols are performed weekly or every other week.

All findings are recorded on a "ROW Patrol Report". Reports are emailed to a common email address and reviewed by the area managers. Corrective actions are either resolved through the Velocity reporting and investigation process or are directly added into the Computerized Maintenance Management system (CMMS) "Maximo".

As noted in appendix I the Plains Midstream Canada has formal patrol activities that are documented specific to the patrol process however Plains also uses their field operations employees to monitor ROW during their daily activities (referred to in the audit as Operational Employee Patrols) this monitoring is not documented in an SOP or written into job requirements. Through interviews and record review the auditors noted inconsistent monitoring practices of the field operations employees, that would be addressed with documented job requirements.

Conclusion:

While Plains Midstream Canada has demonstrated it has developed process and system requirements for the majority of its patrols the board has determined that additional process and requirements need to be established and implemented for these (Operational Employee Patrols). As a result, the Board finds Plains Midstream Canada in non-compliance with NEB OPR s. 6.5(1) (q). The Board requires Plains Midstream Canada to develop a corrective action plan to address the described deficiencies.

3.2 Operational Control-Up Set or Abnormal Operating Conditions

Expectations: The company shall establish and maintain plans and procedures to identify the potential for up Plains Midstream Canada 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 upset or abnormal events). The company shall have an established, implemented and effective process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.

**References OPR 6.5(1)(c)(d)(f)(t)
CSA 3.1.2 f)ii, h)vi**

NEB Assessment

Section 3.0 and 4.0 of the Right-of-Way Patrol procedure defines the hazards that would be considered abnormal conditions and emergencies. The section also outlines the immediate actions to be taken reporting requirements and mitigating measures.



Plains Midstream Canada monitors land use changes and land class changes. If identified these activities can trigger changes or addition to the patrol schedule.

Conclusion:

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 3.2 Operational Control-Up set or Abnormal Operating Conditions

3.3 Management of Change

Expectations: The company shall have an established, implemented and effective process for identifying and managing any change that could affect safety, security or protection of the environment, including any new hazard or risk, any change in a design, specification, standard or procedure and any change in the company's organizational structure or the legal requirements applicable to the company.

References: OPR 6.5(1)(i)

CSA3.1.2 (g)

NEB Assessment

At Plains Midstream Canada, changes to the patrol program or changes that the patrol program initiates are managed through the OMS MOC process in Maximo (CMMS).

Plains Midstream Canada provided the NEB with the MOC # MOC100818 that was initiated and is being managed regarding changes in the Damage Prevention Regulations (June 2016). The Plains Midstream Canada MOC process uses data capture software and preprogramed logic to ensure all elements of the MOC are addressed.

Effective June 19, 2016 the Pipeline Safety Act amends the damage prevention provisions in the National Energy Board Act (NEB Act).

Conclusion:

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 3.3 Management of Change



3.4 Training, Competence and Evaluation

Expectations: The company shall have an established, implemented and effective process for developing competency requirements and training programs that provide employees and other persons working with or on behalf of the company with the training that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.

The company shall have an established, implemented and effective process for verifying that employees and other persons working with or on behalf of the company are trained and competent and for supervising them to ensure that they perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment. The company shall have an established, implemented and effective process for making employees and other persons working with or on behalf of the company aware of their responsibilities in relation to the processes and procedures required by the management system or the company's protection programs.

The company shall have established and implemented an effective process for generating and managing training documents and records.

**References OPR s.6.5(1)(j), (k), (l), (p), 46
CSA 3.1.2(c)**

NEB Assessment

Plains Midstream Canada trained their employees and contractors who perform patrols. Plains Midstream Canada has developed a PowerPoint based training module that is managed by their IT. The course PowerPoint and, worker / contractor records, training matrix and attendance records were supplied as evidence.

The Board noted during interviews and inspections employees and contractors who had taken the training course were knowledgeable regarding ROW patrols.

Conclusion:

The audit verified that Plains Midstream Canada has the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 3.4 Training, Competence and Evaluation



3.5 Communication

Expectations: The company shall have an established, implemented and effective process for the internal and external communication of information relating to safety, security and environmental protection. The process should include procedures for communication with the public; workers; contractors; regulatory agencies; and emergency responders.

**References: OPR 6.5(1)(m)(q)
CSA Z662 clause 3.1.2(d), g)(v)**

NEB Assessment

Plains Midstream Canada outlines the reporting process of ROW and pipeline hazards and threats. Plains has a written process for external incident reporting. Plains provided examples of communications directed at both internal and external stakeholders. However, Plains could not demonstrate that it has a written process for communication with the public; workers; contractors; regulatory agencies; and emergency responders.

Conclusion:

Plains Midstream Canada could not demonstrate that it has a written process for communication with the public; workers; contractors; regulatory agencies; and emergency responders. As a result, the Board has determined that Plains Midstream Canada is non-compliant with NEB OPR Section 3.5 Communication. The Board requires Plains Midstream Canada to develop a corrective action plan to address the described deficiencies.

3.6 Documentation and Document Control

Expectations: The company shall have an established, implemented and effective process for identifying the documents required for the company to meet its obligations to conduct activities in a manner that ensures the safety and security of the public, company employees, the pipeline, and protection of property and the environment. The documents shall include all of the processes and procedures required as part of the company's management system.

The company shall have an established, implemented and effective process for preparing, reviewing, revising and controlling documents, including a process for obtaining approval of the documents by the appropriate authority. The documentation should be reviewed and revised at regular and planned intervals.

Documents shall be revised where changes are required as a result of legal requirements. Documents should be revised immediately where changes may result in significant negative consequences.

**References OPR 6.5(1)(i),(n),(o), 6.5(3)
CSA 3.1.2 (e)**



NEB Assessment

The Board expects to have an established, implemented and effective process for identifying the documents required for the company to meet its obligations to conduct activities in a manner that ensures the safety and security of the public, company employees, the pipeline, and protection of property and the environment.

The documents generated by the patrols are managed according to the Plains Midstream Canada Policy and Governance (P&G) This is the platform used for retention and management of approval workflow for controlled and governance documents. The documents reviewed for the Patrols audit were all following the requirements of the (P&G).

Conclusion:

Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element - 3.6 Documentation and Document Control.

4.0 CHECKING AND CORRECTIVE ACTION

4.1 Inspection, Measurement and Monitoring

Expectations: The company shall have an established, implemented and effective process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the protection programs and for taking corrective and preventive actions if deficiencies are identified. The evaluation shall include compliance with legal requirements.

The company shall have an established, implemented and effective process for evaluating the adequacy and effectiveness of the company's management system, and for monitoring, measuring and documenting the company's performance in meeting its obligations to perform its activities in a manner that ensures the safety and security of the public, company employees, the pipeline, and protection of property and the environment.

The company shall have an established, maintained and effective data management system for monitoring and analyzing the trends in hazards, incidents and near-misses. The company shall have documentation and records resulting from the inspection and monitoring activities for its programs.

The company management system shall ensure coordination between its protection programs, and the company should integrate the results of its inspection and monitoring activities with other data in its hazard identification and analysis, risk assessments, performance measures, and annual management reviews, to ensure continual improvement in meeting the company's obligations for safety, security and protection of the environment.

References OPR s. 6.1(d), 6.5(1)(g), (s), (u), (v), (w), (x), 56

CSA 10.6.1, 10.6.1.2, 10.6.210.7 (class location

DPR-O s.16(b)

**This sub-element is assessed in Appendix I****4.2 Investigations of Incidents, Near-misses and Non-compliances**

Expectations: The company shall have an established, implemented and effective process for reporting on hazards, potential hazards, incidents and near-misses, and for taking corrective and preventive actions. This should include conducting investigations where required or where hazards, potential hazards, incidents and near-misses have or could have resulted in the safety and security of the public, workers, the pipeline, and protection of property and the environment being appreciably significantly compromised.

The company shall have an established, maintained and effective data management system for monitoring and analyzing the trends in hazards, incidents and near-misses.

The company should integrate the results of their reporting on hazards, potential hazards, incidents and near-misses with other data in hazard identification and analysis, risk assessments, performance measures, and annual management reviews, to ensure continual improvement in meeting the company's obligations for safety, security and protection of the environment.

**References: OPR s. 6.5(1)(r), (s), (u), (w), (x), 52
DPR-O s.11**

NEB Assessment

Plains include reporting on hazards, potential hazards, incidents and near-misses discovered in their patrols program. The program uses a software tool Velocity also known internally as PINS the tool is used to report, track, investigate and communicate the all events.

Plains supplied copies of reports and investigations as evidence that the program was being used for Patrols related incidents.

NOTE: The NEB is doing a focused audit on element 4.2 Investigations of Incidents, Near-misses and Non-compliances that looks in depth at the process.

Conclusion:

The audit verified that Plains Midstream Canada the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 4.2 Investigations of Incidents, Near-misses and Non-compliances.



4.3 Internal Audit

Expectations: The company shall have an established, implemented and effective quality assurance program for the management system and for each protection program, including a process for conducting regular inspections and audits and for taking corrective and preventive actions if deficiencies are identified. The audit process should identify and manage the training and competency requirements for staff carrying out the audits.

The company should integrate the results of their audits with other data in identification and analysis, risk assessment, performance measures, and annual management review, to ensure continual improvement in meeting the company's obligations for safety, security and protection of the environment.

**References OPRs.6.1, 6.5(1)(w), (x), 40, 47, 48
CSA 3.1.2 h(v)(vi)(vii)**

NEB Assessment

Plains Midstream Canada provided Operations - 2015 OMS Assessments Report that included a report on the damage prevention program this is a self-assessment and although the assessment looks comprehensive it does not constitute an audit.

Conclusion:

Plains Midstream Canada could not demonstrate that it has conducted any audits that included Patrols to determine whether its patrol activities are adequate or effective. As a result, the Board has determined that Plains Midstream Canada is non-compliant with 4.3 Internal Audit. The Board requires Plains Midstream Canada to develop a corrective action plan to address the described deficiencies.

4.4 Records Management

Expectations: The company shall have an established, implemented and effective process for generating, retaining, and maintaining records that document the implementation of the management system and its protection programs and for providing access to those who require them in the course of their duties.

**References OPR s 6.1, 6.5(1)(p), 40, 47, 48
CSA 3.1.2 (e) , 10.4.4.1**



NEB Assessment

The records generated by the patrols are managed according to the Plains Midstream Canada records management retention rules. A comprehensive list and location of documents and records that support the Pipeline-IMP is provided in SOP 1.2 “Documents Management.” Throughout the audit, Plains Midstream Canada provided examples of records of patrols, incidents and investigations that followed the policies and process Plains Midstream Canada by the SOP and the retention rules.

Conclusion:

The audit verified that Plains Midstream Canada the policies to address the above expectations as with respect to sub-element 4.1 *Inspection, Measuring and Monitoring*. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 4.4 - Records Management

5.0 MANAGEMENT REVIEW

Expectations: The company shall have an established, implemented and effective process for conducting an annual management review of the management system and each protection program and for ensuring continual improvement in meeting the company’s obligations to perform its activities in a manner that ensures the safety and security of the public, company employees, the pipeline, and protection of property and the environment. The management review should include a review of any decisions, actions and commitments which relate to the improvement of the management system and protection programs, and the company’s overall performance.

The company shall complete an annual report for the previous calendar year, signed by the accountable officer, that describes the performance of the company’s management system in meeting its obligations for safety, security and protection of the environment and the company’s achievement of its goals, objectives and targets during that year, as measured by the performance measures developed under the management system and any actions taken during that year to correct deficiencies identified by the quality assurance program. The company shall submit to the Board a statement, signed by the accountable officer, no later than April 30 of each year, indicating that it has completed its annual report.

**References: OPR sections 6.1, 6.5(1)(w), (x), 6.6, 40, 47, 48
CSA 3.1.2 (h)(vii)**

NEB Assessment

Plains Midstream Canada conducts Patrols management reviews in accordance with its OMS Procedure and is detailed in the 2015 Damage prevention annual program review. A comprehensive review process is described in the Plains document Management Review Process.



Plains Midstream Canada provided the 2015 Damage prevention annual program review for the OMS Damage prevention program. The report summarized the program status on goals, objectives, targets, performance measures, results year to date and trends of the performance measures.

Plains Midstream Canada also provided its 2015 Operations Annual Report. The purpose of the Annual Operations Report is to inform Plains' Accountable Officer and governance teams of the performance of Plains' Operations in meeting commitments set forth in the Operations Policy, expectations set forth in Plains Operations Management System ("OMS"), the means by which Plains will identify and correct identified deficiencies and ensure continual improvement. Section 2.7 of the report is the Damage prevention and crossing management program review.

Conclusion:

The audit verified that Plains Midstream Canada has a process for conducting management reviews as it relates to sub-element 4.1 and has provided documentation of management reviews for all OMS programs. Based on the review conducted and considering the scope of this audit, the Board did not identify any issues of non-compliance in relation to sub-element 5.0 - Management Review.

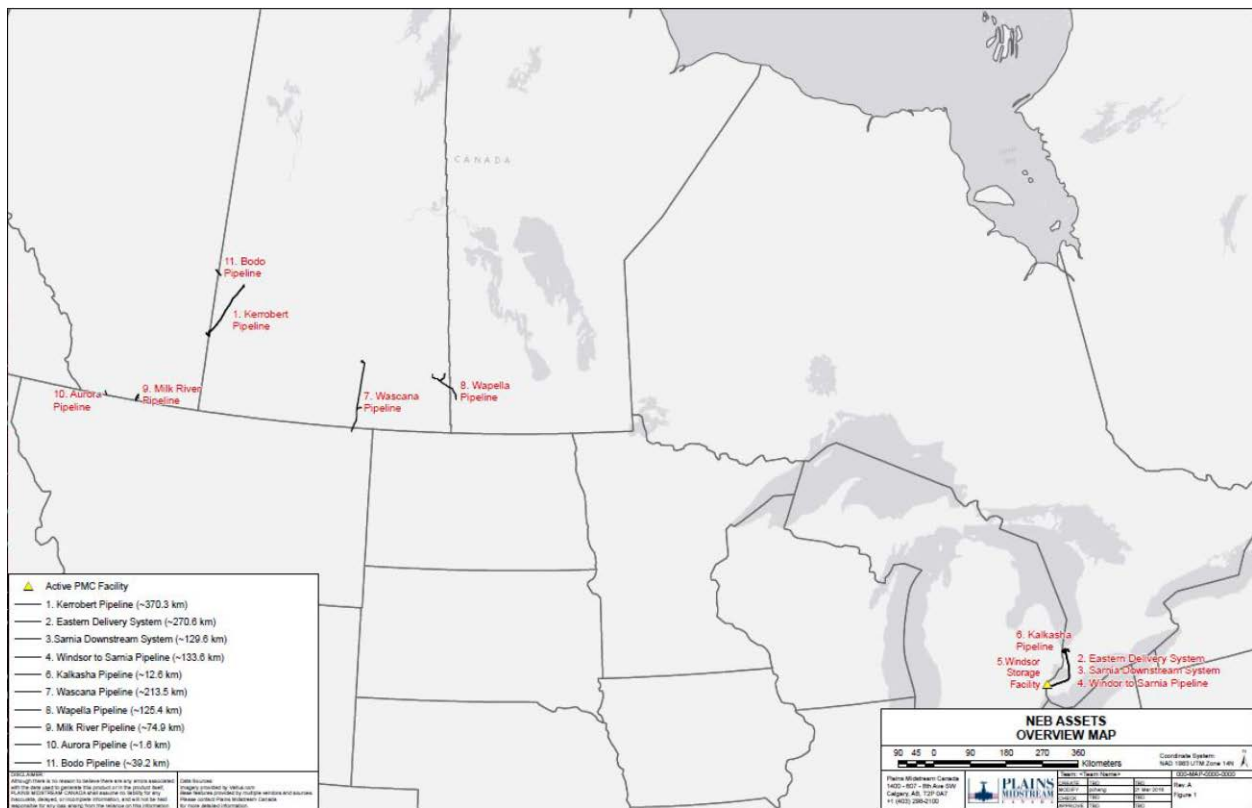
APPENDIX III

PLAINS MIDSTREAM CANADA (ULC)

AURORA PIPELINE COMPANY LTD.

MAPS AND SYSTEM DESCRIPTION

Plains Midstream Canada (PMC) owns, operates, transportation and midstream provider for crude oil, natural gas, and natural gas liquids (NGLs). PMC is headquartered in Calgary, Alberta; Canadian facilities are located in four provinces. Plains Midstream Canada ULC is an indirect subsidiary of Plains All American Pipeline, L.P.



APPENDIX IV

Plains Midstream Canada (ULC)

Aurora Pipeline Company Ltd.

COMPANY REPRESENTATIVES INTERVIEWED

Company Representative Interviewed	Job Title
[REDACTED]	Director, Operations management System OMS and PSM
[REDACTED]	Specialist Damage Prevention
[REDACTED]	Manager Damage Prevention
[REDACTED]	Director, Stakeholder relations, Emergency Management and Security
[REDACTED]	Windsor Team Lead
[REDACTED]	PSM Specialist
[REDACTED]	Senior Pipeline Operator
[REDACTED]	One Call coordinator
[REDACTED]	EHS Advisor
[REDACTED]	Director, Regulatory
[REDACTED]	Pilot- Ops-Mobil Inc.
[REDACTED]	Pilot- SWIFT AVIATION LTD
[REDACTED]	Pilot- BLUE NORTHERN ENTERPRISES
[REDACTED]	District Manager
[REDACTED]	Area Supervisor
[REDACTED]	Operations Assurance
[REDACTED]	HSE Advisor
[REDACTED]	Area Supervisor
[REDACTED]	Land Agent
[REDACTED]	PSM Specialist
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Area Supervisor
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician
[REDACTED]	Operations Technician

APPENDIX V
Plains Midstream Canada (ULC)
Aurora Pipeline Company Ltd.
Documents and records reviewed

Operations Policy
Operations Management System Manual
Right Of Way Patrol Procedure
Pipeline Integrity Management Manual
Damage Prevention Annual Program Review
Damage Prevention Program (0,4 2015 Aug-13) Draft
Sub-Element Plan 2.7 Damage Prevention
Accountable Officer Acknowledgement
Accountable Officer Annual Report Notification
Management Review Process
Operational Governance Process
Sub-Element Plan 2.7 Damage Prevention
Damage Prevention Program Commitment Statement
ORM Hazard Identification Guide (inventory)
FG SREMS Damage Prevention Risk Register
Operations Risk Management Risk Matrix
BGC Engineering Training PowerPoint
BGC Geo-Hazard Training Certificates of Completion
Managing and Monitoring Regulatory Legislative Amendments and Updates SOP
SREMS Annual Plan

Sub- Element Plan 2.7 Damage Prevention
Annual Planning Process
SREMS Annual Plan
Master Service Agreements for aerial patrol contractors
Annual Management Review Damage Prevention Program
Gap Closure Plan GCP27-01 Damage Prevention and Crossing Management
Incident Reporting and Investigation Program.
Corrective Actions management program
Watercourse Management Procedure
Master Service Agreements for vendors
See included Unauthorized Activity Records
See Examples of GEO hazard monitoring
Management of Change Process
MOC for changes in aerial patrol program example
BGC Geo-Hazard Training
Incident reporting training (not included)
BGC Geo-Hazard Training Completion Certificates
General Orientation Records (not included)
Incident reporting training (not included)
BGC Geo-Hazard Training Completion Certificates
Incident Reporting and Investigation Program
External Incident Reporting Process
Release Reporting Standard Operating Practice
See Incident Follow Up Records Example 1.0 & 2.0

Review and Approval Process- Policies and Governance.
Purpose and Use of PMC Safe Operating Policies, Procedures, and Practices Manual (see page 5).
Pipeline Integrity Management Manual
Watercourse management program
GCP27-01
Incident Reporting and Investigation Program
Internal Incident Investigation and Reporting SOP 3.04
See Incident Follow Up Records Example 1.0 & 2.0
OMS Assessment Guidance Questions
OMS Assessment Process
OMS Gap Management Process
2015 OMS Assessment Report
Gap Closure Plan GCP27-01 Damage Prevention And Crossing Management
Policy - PMC Records Retention
Incident Reporting and Investigation Program
Corrective Actions Management Program
2015 Operations Annual report
2015 Damage prevention Annual Program Review Form
Quarterly Oversight Meeting example
Operations Bi-Weekly Meeting
Pipeline Integrity Management Manual
Watercourse Management Program (Procedure)
GEO hazard Monitoring Reports

Pipeline Integrity Management Manual
Watercourse Management Procedure
Aerial Reports
Incident Reporting and Investigation Program.
Corrective Actions management program
Velocity Incident Reports
Policies & Governance: Damage Prevention Screen shots
External Incident Reporting Process
Sections from Emergency Response Plans
Unauthorized Activity Head Map
Pipeline Incident, Hazard Identification, Near Miss Example
Public Awareness Form
New DPR MOC - Internal
Platform overview
Assurance Program
OMS Assurance Process
OMS Assessment Process
Gap Management Process
5+1 Year Rolling Audit and Assessment Plan
NEB Regulated Summary of Patrols