File OF-Surv-OpAud-A159-2018-2019 01
6 March 2019

Mr. Bill Yardley
President
Accountable Officer
Alliance Pipeline Ltd.
5400 Westheimer Court
Houston, TX   77056
Email: ███████████████████

Dear Mr. Yardley:

**National Energy Board (Board) Final Integrity Audit Report of
Alliance Pipeline Ltd. (Alliance) – CV1819-419**

The Board has completed its Final Audit Report (Report) of Alliance. Alliance was provided with the Draft Audit Report on 25 January 2019, and Alliance provided its response and comments on 15 February 2019. The Board has considered Alliance's comments and made changes where it determined that the proposed changes would improve the quality or accuracy of the Report.

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

- the *National Energy Board Act* and its associated regulations, including;
- the *National Energy Board Onshore Pipeline Regulations*;
- any conditions contained within applicable Board certificates or Orders issued by the Board.

Alliance was required to demonstrate the adequacy and effectiveness of the methods it has selected and employed within its management system and integrity program to meet the regulatory requirements listed above. Throughout this audit, the Board has evaluated selected management system processes and requirements as applied to Alliance's integrity program. 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, Alliance is required to file a Corrective and Preventative Action Plan (CAPA Plan), which describes the methods and timing for addressing the Non-Compliant findings identified through this audit, for approval. Board staff will provide the CAPA Plan template for Alliance to complete.

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

If you require any further information or clarification, please contact Barbara Wegernoski, Lead Auditor, at 403-614-9537.

Yours truly,

Original signed by L. George for

Sheri Young
Secretary of the Board

Attachment

c.c.

National Energy
Board

Office national
de l'énergie

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Final Audit Report
Integrity Management Program

Compliance Verification Activity CV1819-419
File OF-Surv-OpAud-A159-2018-2019-01

6 March 2019

Canada

Executive Summary

In accordance with subsection 49(3) of the *National Energy Board Act*, the National Energy Board (NEB or the Board) conducted a compliance audit of Alliance Pipeline Ltd. (Alliance) during the period from 5 September to 21 November 2018.

The Board expects companies to have effective, fully developed and implemented management systems and protection programs and a strong culture of safety, all of which are fundamental to keep people safe and protect the environment. The *NEB Onshore Pipeline Regulations* (OPR) require that companies develop, implement and maintain an Integrity Management Program (IMP) that anticipates, prevents, manages and mitigates conditions that could adversely affect safety or the environment during the design, construction, operation, maintenance or abandonment of a pipeline. The objective of this audit was to verify that the company had established and implemented an IMP in accordance with the OPR.

During the audit, the NEB assessed compliance to selected management system processes and requirements as applied to Alliance's IMP. The scope also included a review of selected company activities and operational practices related to the IMP. The audit was conducted using the regulatory requirements listed in Appendix I of this report.

The audit identified non-compliances in three out of the twelve protocol items assessed. The deficiencies are related to the process for hazard identification and analysis, the process for risk assessment and to the surveillance and monitoring program. Despite the deficiencies identified, Alliance demonstrated that it has established and implemented a management system and an IMP to ensure the protection of the environment and safety of people. The Board is of the view that the issues identified do not represent a significant and immediate risk to the integrity of Alliance system. Still, these issues will need to be addressed in order to achieve compliance. Appendix I of this report provides the details regarding all of the Board's findings.

The Board expects Alliance to address the deficiencies which were identified in this audit. While no immediate enforcement actions are required to address the Non-Compliant findings, the Board requires Alliance to develop and submit a Corrective and Preventive Action Plan (CAPA Plan) to address the Board's findings. Alliance is required to submit its CAPA Plan for approval within 30 days of this Final Audit Report being issued by the Board.

The Board will assess the implementation of Alliance's corrective and preventive actions to confirm they are completed in a timely manner. The Board will also continue to monitor the overall implementation and effectiveness of Alliance's management system through targeted compliance verification activities as a part of its ongoing regulatory mandate.

The Board will make its Final Audit Report and Alliance's approved CAPA Plan public on the Board's website.

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1.0 Introduction

In accordance with subsection 49(3) of the *National Energy Board Act*, the National Energy Board conducted a compliance audit of Alliance's Integrity Management Program (IMP) during the period from 5 September to 21 November 2018.

1.1 Audit Objective

The objective of this audit was to verify that the company had established and implemented an IMP in accordance with the *National Energy Board Onshore Pipeline Regulations* (OPR). The audit assessed the adequacy, implementation and effectiveness of:

- selected management system processes and requirements as applied to the IMP; and
- selected company activities and operational practices related to the IMP.

1.2 Audit Scope

The audit scope included the requirements of the OPR primarily focusing on, but not limited to, the management system requirements of OPR sections 6.5(1) (a) through (f), (q), (r), (t) and (u) as well as section 6.6. Other requirements of the OPR related to the integrity program were also included such as sections 27, 37, 39, 40, 42, 53 and 55, as well as relevant clauses of CSA Z662-15.

The audit scope was limited to the operations part of the life cycle of the pipeline system. In terms of facilities, pipe and equipment, the audit scope was limited to the pipelines and the associated stations' piping. Storage tanks, pressure vessels, and ancillary equipment and piping were not included in the scope.

2.0 Company Overview

Alliance operates a pipeline system that transports rich natural gas from North-East British Columbia and North-West Alberta through Saskatchewan, North Dakota, Minnesota, and Iowa to Illinois in the United States. The system is 3,848 km of integrated Canadian and U.S.A transmission pipelines which commenced operation in December 2000. The NEB regulated portion of the Alliance system primarily consists of 338 km of 42 inch pipe, 1221 km of 36 inch pipe and 730 km of lateral pipelines ranging from 4 to 24 inch in diameter. Figure 1 below shows a map of Alliance's system regulated by the NEB.
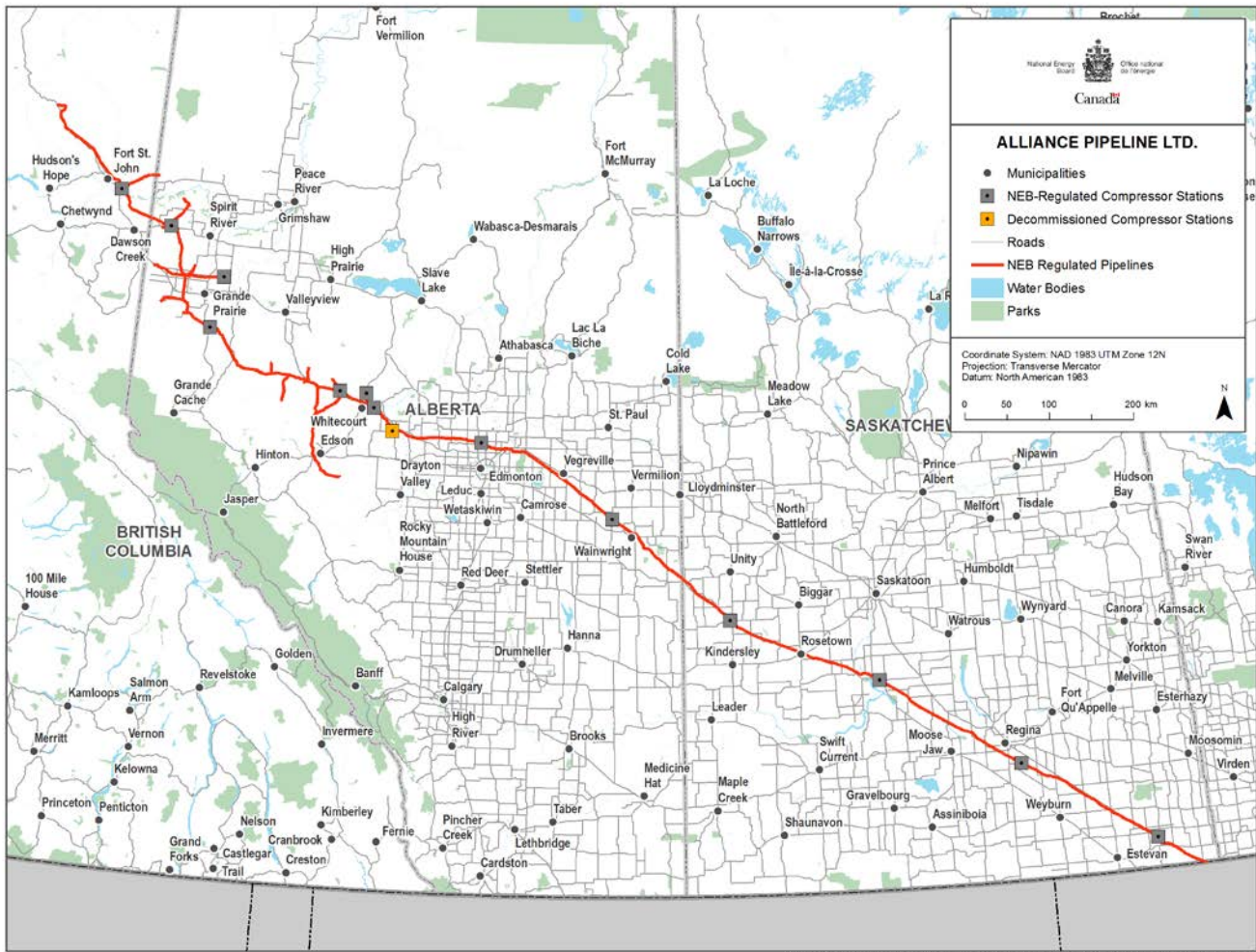
Map produced by the NEB, October 2018. The map is a graphical representation intended for general informational purposes only

3.0 Assessment of Compliance of the Audited Processes and Activities

This section of the audit report provides a summary of the Board's assessment of compliance of Alliance's management system processes and activities reviewed as part of the audit. To determine compliance, the Board reviewed Alliance's documents and records and conducted interviews with company representatives.

There are two possible audit findings which can be assigned to each Audit Protocol (AP) item evaluated by the Board in this audit:

- No issues noted – *no non-compliances were identified during the audit based on the information provided and reviewed within the context of the scope of the audit;*

- Non-compliant - *an evaluated regulatory requirement 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.*

The Board expects companies to have effective, fully developed and implemented management systems and protection programs and a strong culture of safety, all of which are fundamental to keep people safe and protect the environment. The OPR s. 40 requires that companies develop, implement and maintain an IMP that anticipates, prevents, manages and mitigates conditions that could adversely affect safety or the environment during the design, construction, operation, maintenance or abandonment of a pipeline.

The OPR, s. 6.1 outlines the Board's management system requirements, which are as follows:

OPR s. 6.1: A company shall establish, implement and maintain a management system that

> *(a) is systematic, explicit, comprehensive and proactive;*

> *(b) integrates the company's operational activities and technical systems with its management of human and financial resources to enable the company to meet its obligations under section 6;*

> *(c) applies to all the company's activities involving the design, construction, operation or abandonment of a pipeline and to the programs referred to in section 55;*

> *(d) ensures coordination between the programs referred to in section 55; and*

> *(e) corresponds to the size of the company, to the scope, nature and complexity of its activities and to the hazards and risks associated with those activities.*

In determining Alliance's compliance with respect to establishing and implementing an IMP, the Board evaluated documents and records that described the company's establishment and implementation of selected management system processes in the context of their application to the company IMP. This aided the Board in evaluating Alliance's systematic practices as applied to the IMP. The Board's findings, therefore, are not an evaluation of Alliance's entire management system or IMP.

As summarized in Table 1 below, there were no compliance issues for nine of the twelve Audit Protocol items. These are AP-01, AP-02, AP-04, AP-06, AP-07, AP-08, AP-09, AP-11 and AP-12. Non-compliances were identified in AP-03, AP-05 and AP-10.

For AP-03 (Process for identifying and analyzing hazards), Alliance could not demonstrate that it fully analyzes its hazards as it relates to the potential interaction of integrity threats. The Board notes that this issue had already been identified by Alliance internal audits and Alliance has a corrective action plan in progress to address it. As this issue was not yet fully addressed at the time of the audit, this is a non-compliance that will require a CAPA plan.

For AP-05 (Process for evaluating and managing risks), deficiencies were identified in the risk assessment records where Alliance records did not clearly demonstrate proper risk assessment and mitigations for all interference hazards and for construction and manufacturing hazards. These issues are due to a lack of clarity in the risk assessment record demonstrating that the risks were properly assessed, before and after mitigations. However, based on the interviews conducted and documentation reviewed, the Board has no reason to believe that those threats are not properly mitigated. Another issue identified under AP-05 was that Alliance did not have a risk assessment process for the station piping. Again, based on the interviews conducted and the documentation reviewed, the Board has no reason to believe that the integrity of the station piping is not properly managed. A further issue was identified under AP-05 due to the lack of a proper consequence model for Alliance Natural Gas Liquids (NGL) lines. The model that Alliance used for those lines, which the Board notes are short in length (a total of 0.43 km for the four segments), was for natural gas ruptures and this model does not properly model the consequence of an NGL leak or rupture.

For AP-10 (process for inspecting and monitoring), Alliance does not have in place a documented centralized Surveillance and Monitoring Program as required by section 39 of the OPR. Alliance demonstrated that it conducts the necessary activities for this program, but these activities are not properly documented into a program document. This deficiency was also identified by Alliance internal audits and Alliance has a corrective action plan in progress to address it. As this issue was not yet addressed at the time of the audit, this is a non-compliance that will require a CAPA plan.

Although deficiencies were identified, Alliance demonstrated that it has established and implemented a management system and an IMP. Alliance also demonstrated that it has implemented controls, inspection and monitoring activities to manage the integrity of its facilities in order to ensure the protection of the environment and safety of people.

The detailed assessment of the management system processes and other requirements is documented in Appendix I, attached to this report. Table 1 below provides a summary of the findings and deficiencies identified during the audit.

Appendix II of this report provides a list of all the abbreviations contained in this report. Appendix III provides the list of documents reviewed and Appendix IV provides the list of company representatives interviewed during the audit.

Audit Protocol Number	OPR Clause	Summary of the Requirement	Finding	Summary of Deficiencies to be addressed
AP-01	s. 6.5(1)(a)	Process for setting objectives and targets	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-02	s. 6.5(1)(b)	Performance measures	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-03	s. 6.5(1)(c)	Process for identifying and analyzing hazards	Non-compliant	Alliance did not demonstrate that it fully analyzed its hazards for the interaction of threats. Alliance was developing an approach to analyze the interaction of hazards, but this had not been implemented yet and the approach was not properly documented.
AP-04	s. 6.5(1)(d)	Inventory of Hazards	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-05	s. 6.5(1)(e)	Process for evaluating and managing risks	Non-compliant	Alliance's risk assessment records did not demonstrate an assessment of the risk for all hazards related to external interference. Alliance did not demonstrate that the risk associated with construction and fabrication hazards was properly evaluated and mitigated. Alliance did not demonstrate that it had evaluated the risk associated with its station piping. In addition, Alliance did not demonstrate that it had an adequate model to assess the potential consequences for its NGL pipeline segments.
AP-06	s. 6.5(1)(f)	Process for developing and implementing controls	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.

AP-07	s. 6.5(1)(q)	Process for coordinating and controlling operational activities	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-08	s. 6.5(1)(r)	Process for internal reporting of hazards, incidents and near-misses	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-09	s. 6.5(1)(t)	Process for developing contingency plans	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-10	s. 6.5(1)(u)	Process for inspecting and monitoring	Non-compliant	Alliance could not demonstrate that it had established a documented surveillance and monitoring program as the program was a draft document.
AP-11	s. 6.6(1)	Annual Report	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.
AP-12	s. 55(1)	Program audits	No issues noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no non-compliances were noted.

4.0   Conclusion

The audit identified non-compliances in three out of the twelve protocol items assessed. The deficiencies are related to the process for hazard identification and analysis, the process documentation and records for risk assessment and to the surveillance and monitoring program. Despite the deficiencies identified, Alliance demonstrated that it has established and implemented a comprehensive management system and an integrity program to ensure the protection of the environment and safety of people. The Board is of the view that the issues identified do not represent a significant and immediate risk to the integrity of the Alliance's system. Still, these issues will need to be addressed in order to achieve compliance. The Board also notes that two of the non-compliances identified in this audit had already been identified by Alliance and that corrective actions had been initiated by Alliance to address them.

While no enforcement actions are immediately required to address these non-compliant findings, the Board requires Alliance to develop and submit a CAPA Plan to address the Board's findings. The Board will provide Alliance with a CAPA Plan template that Alliance will be required to use to develop its CAPA Plan. The CAPA Plan must describe its proposed methods to resolve the deficiencies identified and the timeline in which corrective and preventive actions will be completed. Alliance is required to submit its CAPA Plan for approval within 30 days of the final Audit Report being issued by the Board.

The Board will assess the implementation of Alliance's corrective and preventive actions to confirm they are completed in a timely manner. The Board will also continue to monitor the overall implementation and effectiveness of Alliance's management system and programs through targeted compliance verification activities as a part of its ongoing regulatory mandate.

The Board will make its final Audit Report and Alliance's approved CAPA Plan public on the Board's website.

Appendix I: Audit Assessment Tables

Background

The Board expects companies to have effective, fully developed and implemented management systems and protection programs and a strong culture of safety, all of which are fundamental to keep people safe and protect the environment. To that end, the OPR provides specific requirements for the processes and other items that need to be part of these systems and programs.

The Audit Protocol (AP-01 to AP-12) is comprised of specific legal requirements against which the company's Integrity Management Program was assessed for compliance. During the audit, compliance to these legal requirements was examined to confirm that the requirements were met and that the relevant characteristics set out in section 6.1, and subsections 6.5(2) and (3) of the OPR were also addressed.

> *OPR s. 6.1: A company shall establish, implement and maintain a management system that*
>
> > *(a) is systematic, explicit, comprehensive and proactive;*
> >
> > *(b) integrates the company's operational activities and technical systems with its management of human and financial resources to enable the company to meet its obligations under section 6;*
> >
> > *(c) applies to all the company's activities involving the design, construction, operation or abandonment of a pipeline and to the programs referred to in section 55;*
> >
> > *(d) ensures coordination between the programs referred to in section 55; and*
> >
> > *(e) corresponds to the size of the company, to the scope, nature and complexity of its activities and to the hazards and risks associated with those activities.*
>
> *OPR s. 6.5 (2) In this section, a reference to a process includes any procedures that are necessary to implement the process.*
>
> > *(3) The company shall document the processes and procedures required by this section.*

AP-01: Setting of Objectives and Specific Targets

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,	
OPR s. 6.5(1)(a) establish and implement a process for setting the objectives and specific targets that are required to achieve the goals established under subsection 6.3(1) and for ensuring their annual review.	

	Assessment
Accountabilities	Roles and responsibilities for Alliance's IMP are detailed in Tables 1 through 3 in the *Integrity Management Program - INT-PROG-0001* document. Each Alliance employee also has Alliance's corporate goals outlined in their accountability and performance agreement. Roles and responsibilities for the process for setting the objectives and targets are documented in *Alliance Integrated Management System* (AIMS) document titled *AIMS Goals Objectives and Targets - BDD-BUSPROC-0038*. Roles and responsibilities are defined for the different people involved in this process and for each step of the process. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Process	The process for setting the objectives and targets is documented in the *AIMS Goals Objectives and Targets - BDD-BUSPROC-0038* document. This corporate process describes the different steps of the process along with the roles and responsibilities for them. The process is clearly laid-out with a process map and a description of each of the steps that includes timing, description of the tasks, responsibilities, and inputs and outputs. This document also describes what the programs are responsible for. It states that the programs are responsible for delivering on Alliance's Division objectives and targets assigned to them. It also indicates that the programs can set their own objectives to meet the Division objectives. For the integrity program, the Division objective is: "*prevent ruptures, liquid and gas releases, and fatalities and injuries; readiness to respond to incidents and emergency situations*". A series of targets and performance indicators have been developed for this objective. As documented in Section 13 of Alliance IMP document, the integrity program is responsible for identifying the activities necessary to maintain the integrity of the pipeline system in order to achieve the Division objective stated above. These activities are approved as part of the annual budgeting process. The integrity program reports on the goals, objectives and targets on a quarterly basis, and Alliance also conducts an annual review to assess its performance against the goals, objectives and targets.
Integration and Application	The *AIMS Goals Objectives and Targets - BDD-BUSPROC-0038* document describes how Alliance has integrated or linked the process for setting objectives and targets with its goals, performance measures and the annual review and report.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,	
OPR s. 6.5(1)(a) establish and implement a process for setting the objectives and specific targets that are required to achieve the goals established under subsection 6.3(1) and for ensuring their annual review.	
	Assessment

FINDING: No issues noted

Based on the scope of the audit, the documents reviewed, and the interviews conducted, the Board has not identified any non-compliances to the OPR s. 6.5(1)(a).

AP-02 Performance Measures

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(b)** develop performance measures for assessing the company's success in achieving its goals, objectives and targets.	
	Assessment
Accountabilities	Roles and responsibilities for Alliance's Integrity Management Program are detailed in Tables 1 through 3 in the *Integrity Management Program - INT-PROG-0001* document. Each Alliance employee also has Alliance's corporate goals outlined in their accountability and performance agreement. A specific accountability for the IMP performance measurement is documented in the *Accountability / Performance Agreement* of the Pipeline Integrity Engineer position. Roles and responsibilities for developing performance measures are documented in the *AIMS Goals Objectives and Targets - BDD-BUSPROC-0038* document. Roles and responsibilities are defined for the different people involved in this process and for each step of the process. Information provided during the interviews related to the roles and responsibilities for the performance measures was consistent with the documentation provided.
Performance Measures	The *AIMS Goals Objectives and Targets - BDD-BUSPROC-0038* document describes the process steps for developing and reviewing the goals, objectives, targets and performance measures. Section 14 of the IMP also indicates that performance measures are developed to assess the IMP effectiveness, compliance and continual improvement. Alliance explained that as part of the annual Pipeline integrity review and planning meeting, the integrity program performance measures are reviewed. The integrity program also publishes the Integrity Program Dashboard on a monthly basis, which includes among other things, the performance metrics. This information is distributed to senior leadership in the operations group to provide regular updates on the status of the IMP. Alliance provided records demonstrating that it has developed performance measures for the integrity program for assessing its success in achieving its goals, objectives and targets.
Integration and Application	The *AIMS Goals Objectives and Targets - BDD-BUSPROC-0038* document describes how Alliance has integrated or linked its performance measures with its goals, objectives and targets, and the annual review and report.
FINDING: No issues noted Based on the scope of the audit, the documents reviewed, and the interviews conducted, the Board has not identified any non-compliances to the OPR s. 6.5(1)(b).	

AP-03 Hazard Identification and Analysis

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(c)** establish and implement a process for identifying and analyzing all hazards and potential hazards.	

	Assessment
Accountabilities	Alliance's *Integrity Management Program - INT-PROG-0001* is the company-governing document which describes the processes for identifying and analyzing all hazards and potential hazards, and defines staff responsibilities and accountabilities for all levels of the organization, including Senior Management Team, and Alliance employees (Pipeline Operations & Engineering, Operational Compliance and Information Services, Finance and Human Resources, Legal Affairs). Alliance's Integrated Management System *Hazard Identification and Risk Assessment Process - BDD-BUSPROC-0039* further defines that Program Owners will develop hazard identification and risk analysis processes and procedures to ensure hazards and potential hazards are identified and analyzed for their Programs. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Process	The Company's definition of integrity hazards and potential hazards is provided in its the *Pipeline Integrity Glossary - INT-GUID-0003* which defines hazard as *"(a) condition or practice with the potential to cause an event that could result in harm to people, the environment, the company's reputation, business or operation / integrity of its facilities"*. Alliance also indicated that it uses the terms hazard, potential hazard, and threat interchangeably. Alliance provided its description and supporting documentation of the process for identifying and analyzing all hazards and potential hazards to the integrity of the pipeline system *AIMS Framework - BDD-MGMT-0006,* providing a high level description of how hazards are identified and assessed. *AIMS Hazard Identification and Risk Assessment - BDD-BUSPROC-0039* (AIMS HIRA) describes the process used to identify and record hazards and potential hazards and assess and manage related risks. AIMS has developed additional guidance to enable Programs to execute and sustain this process in their areas. At the program level, IMP and associated practices (*INT-PRAC-0012, INT-PRAC-0027*) and subprograms (e.g. Geohazard Management Program, Pressure Equipment Integrity Program) describe the process used for identifying and analyzing hazards. Alliance stated that the process for identifying new hazards is the same process as for other hazards. When a new hazard is identified, it is documented using the change request, which is part of the Documents and Records Management (DRM) system.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,	
OPR s. 6.5(1)(c) establish and implement a process for identifying and analyzing all hazards and potential hazards.	
	Assessment
	Alliance also indicated that its hazard analysis process is reviewed and updated on a periodic basis. From an AIMS perspective, Hazard Analysis is conducted systematically throughout the year. Hazards are reviewed regularly, are assessed and addressed. At the end of each quarter, Programs add hazards to their Hazard Inventories and update the hazard inventory with any new controls for hazards that have changed. At that time, work plans are updated to reflect the need to action or implement new controls. Program Owners are to ensure that sufficient controls are developed, prioritized and implemented to reduce risk. Alliance explained that it is developing an approach to assess the interaction of hazards, **but that it has not been implemented yet. The analysis for interaction of multiple hazards or multi-event scenarios is not explicitly described in the documentation provided. For example, Alliance's** *Engineering Assessment Practice - Section 7.5 Complete Data Collection* **does not include interaction of hazards. Alliance intends to consider locations of interacting or overlapping hazards, but the work was underway at the time of the Audit.** Alliance had identified this gap as part of its internal audits and stated that it had a plan in place to address this issue. Alliance explained the process it uses for ensuring that the analysis of integrity-related hazards and potential hazards is conducted by competent persons. Competency and Training is described in its IMP which outlines the competency requirements for the Alliance PI personnel (generally professional engineers, registered technologists, or certified technical specialists, e.g. *National Association of Corrosion Engineers* Corrosion Specialist). Pipeline Integrity personnel are generally required to maintain technical competencies through training or other development activities and in accordance with the requirements from their applicable technical accreditation governing body.
Supporting Procedures	Alliance did not provide other supporting procedures beyond those provided in answer to the "Process" section above. There is, therefore, no assessment to make for this "Supporting Procedures" section.
Integration and Application	Alliance's overarching document AIMS describes the process on how sub-programs findings/updates related to hazard identification and risk evaluation are integrated. It also provides high level description on the process of integration between hazard identification and analysis, the hazard inventory, the risk evaluation, the controls and the management of change processes required by OPR s. 6.5(1)(c), (d), (e), (f), and (i).
FINDING: Non-Compliant	
Based on the scope of the audit and the documents and interviews conducted, the company has not demonstrated that its process for identifying and analyzing all hazards and potential hazards is compliant to OPR s. 6.5(1)(c). Alliance did not demonstrate that it fully analyzes its hazards for the interaction of threats. Alliance is developing an approach to analyze the interaction of hazards, but this has not yet been implemented and the approach is not properly documented.	

AP-04 Hazard Inventory

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5.1 (d)** establish and maintain an inventory of the identified hazards and potential hazards.	

	Assessment
Accountabilities	Alliance provided in its IMP a description of the roles, responsibilities and accountabilities for the staff involved in establishing and maintaining the hazard inventory, as related to the integrity program. Integrity team members' individual *Accountability/Performance Agreement 2018*, states a goal to "Ensure Integrity Programs proactively identify and mitigate integrity hazards to minimize impact on commercial operations". Additionally, in its overarching document AIMS HIRA, it is stated that Program Owners will develop hazard identification and risk analysis processes and procedures to ensure hazards and potential hazards are identified and analyzed for their Programs. The information provided during the interviews related to the roles and responsibilities for the hazard inventory was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Hazard Inventory	Alliance provided from its hazard inventory a list of the hazards and potential hazards that are specific to the integrity program. AIMS HIRA describes how Alliance establishes, updates, and maintains the hazard inventory. The list of integrity hazards provided is consistent with the pipeline industry's known hazards, such as: external and internal corrosion, cracking, mechanical damage, deformations, construction and manufacturing defects, weather and outside forces, equipment failure /malfunction, incorrect operations. Alliance provided further details on how new integrity hazards and potential hazards are added to the inventory. This process is described in the IMP and AIMS HIRA documents, respectively in sections 7.5 and 9, and *Appendix 3: Annual Hazard Inventory Questionnaire,* which provides guidance to Program Owners as to adding and/or reviewing hazards on an annual basis. In addition to the annual review and update of the hazard inventory, Alliance also has quarterly reviews where new hazards or potential hazards can be added to the inventory. Alliance also explained that hazard identification is done on an ongoing basis and that program owners are to ensure that hazards, potential hazards, and risks are identified, documented and mitigated. The AIMS hazard inventory retention and access requirements follows the practices and processes outlined in the *Collaboration Sites Best Practices - IS-PRAC-0045*. Alliance also indicated that its IMP references the *Document and Document Control Process - INF-PRCS-0003* and the *Records Management Process - INF-PRCS-0004*.
Supporting Procedures	Alliance did not provide other supporting procedures beyond those provided in answer to the "Hazard Inventory" section above. There is, therefore, no assessment to make for this "Supporting Procedures" section.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5.1 (d)** establish and maintain an inventory of the identified hazards and potential hazards.	

	Assessment
Integration and Application	Alliance explained that it operates all aspects of its business, including identifying and analyzing all integrity hazards and potential hazards, under the AIMS HIRA. This overarching document states that Program Owners will: • develop hazard identification and risk analysis processes to ensure hazards and potential hazards are identified for their Program; • maintain and update an inventory of hazards and potential hazards in the AIMS Integrated Hazard Inventory; • add items to the AIMS Hazard Inventory on an ongoing, ad hoc basis. The AIMS HIRA document describes the integration between hazard identification and analysis, the hazard inventory, the risk evaluation, the controls and the management of change processes required by OPR s. 6.5(1)(c), (d), (e), (f), and (i).

FINDING: No issues noted

Based on the scope of the audit, and the documents and interviews conducted, the Board has not identified any non-compliances to OPR s. 6.5(1)(d).

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,	
OPR s. 6.5(1)(e) establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions.	

	Assessment
Accountabilities	Alliance's IMP outlines in detail Alliance Roles and Responsibilities and shows the organizational structure of Pipeline Integrity with detailed responsibilities of each position within the department. In Alliance AIMS HIRA, it is stated that Program Owners will develop hazard identification and risk analysis processes and procedures to ensure hazards and potential hazards are identified and analyzed for their Programs. In addition, *Threat/Hazard Identification and Review Practice - INT-PRAC-0012* includes specific responsibilities for the implementation of threat/hazard identification and review. In its document *Roles and Responsibilities of the Risk Assessment and Control Practice - INT-PRAC-0027*, Alliance outlines the specific responsibilities for implementation of risk assessments within the integrity department. Additionally, role accountabilities for the Engineer responsible for the integrity management program states they are responsible for quantitative risk assessments. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Process	Alliance defines risk in its AIMS document as "*effect of uncertainty on objectives*". Alliance also explained that "*Risk is often expressed in terms of a combination of the consequences of an event and the associated likelihood of occurrence. Risk is often characterized by reference to potential events and consequences or a combination of these.*" For the IMP, as per Alliance *INT-GUID-0003*, risk is defined as "*the probability of an event or occurrence multiplied by the consequence of that event*". Alliance's process for evaluating and managing the risk associated with the identified integrity hazards is supported by several documents. The evaluation of risk follows the *Corporate Risk Matrix* structure and this can be reassessed based on feedback from the individual Program owners. Any changes to threats as identified in field inspections, inline inspections, geohazard inspections or other surveillance are incorporated in the *Integrity Qualitative Risk Assessment (QRA) and Plan - INT-GUID-0007*, with their applicable mitigation and adjusted likelihood score. On an annual basis, in conjunction with *Threat/Hazard Identification and Review Practice - INT-PRAC-0012*, the program lead for the integrity management program reviews/revises as necessary Alliance's *Integrity Qualitative Risk Assessment (QRA) and Plan - INT-GUID-0007*. This contains a list of all pipeline segments and their associated risks, with six major threats as identified in Table 6: Threat Review of the IMP.

	Assessment
OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(e)** establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions.	

	Assessment
	The risk assessment records however did not demonstrate an assessment of the risk for all hazards related to external interference, which is a non-compliance to OPR s. 6.5(1)(c). Only third party damage was listed in the risk assessment results and this document therefore did not demonstrate proper risk assessment for all external interference hazards, which also include first and second party damages. The interviews conducted and documentation reviewed indicate that Alliance has controls in place for first and second party damages, and therefore the issue identified here appears to only be a matter of properly documenting the risk assessment results for those hazards. **Another issue identified in the risk assessment results, is that fabrication and construction hazards are combined into the same threat. These two hazards are however independent and might have different risks and require different levels and types of mitigations. By combining these two hazards into one in the risk assessment, Alliance could not demonstrate that the risk associated with each hazard was properly evaluated and mitigated. This is a non-compliance to OPR s. 6.5(1)(c).** Alliance explained during the interviews that these two hazards had been combined on the risk assessment results for simplifying the risk assessment results since both hazards had similar risk results for Alliance pipeline segments. The documents and risk evaluation records demonstrated the process for evaluating and managing the risk for the pipeline segments. **However, no process documents and records were provided for the evaluation of the risks for the station piping, which is managed by the Pressure Equipment Integrity Program**. **This is a non-compliance to OPR s. 6.5(1)(c).** Alliance's consequence model used for all its pipeline segments is based on thermal radiation from a rupture of a natural gas pipeline. However, some of those segments, although they are short segments and they represent a very small fraction of Alliance assets, are carrying NGL. **The natural gas consequence model may not properly model the potential consequences of a natural gas liquid leak or rupture. A NGL release can result in the formation of a vapor cloud which, if ignited, could result in a fire or explosion. The consequence model should account for all potential consequences associated with a potential NGL release. Therefore, Alliance has not demonstrated that it has properly assessed the risk associated with its NGL pipeline segments, which is a non-compliance to OPR s. 6.5(1)(c).** Alliance's process for classification of risk associated with the identified hazard is set in the *Corporate Risk Matrix Guide - BDD-GUID-0021-*. The matrix categorizes Impacts into 7 categories and 5 Descriptor Levels (Insignificant, Minor, Moderate, Major and Critical). For classifying and estimating Likelihood, there are 5 Descriptor levels (Remote, Unlikely, Possible, Likely, Almost Certain).

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(e)** establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions.	
	Assessment
	The integrity management program's goal for the prevention of ruptures, liquid and gas releases centers the classification of risk to the first two impact columns on the Corporate Risk Matrix, People and the Environment. Within these two impact areas, the range is from Insignificant to Critical. Using this guideline, classification of risk is carried out on a case by case basis by the individual programs within the integrity management program. The *Integrity Qualitative Risk Assessment (QRA) and Plan* pulls together information for all the major threats/hazards on the system, and groups them in one location, based on their pipeline applicability. Alliance's methods for defining and determining risk tolerance (acceptability) is based on the risk severity score and Risk Matrix heat map to assess the need to further reduce risk. Scores that fall into the High severity range (red zone) must be mitigated down to an acceptable level. Scores that fall into the Medium severity range (yellow zone), should be assessed for further mitigation to determine if additional controls are to be applied. When a risk is identified as unacceptable, risk mitigations are determined following *Alliance's Risk Assessment and Control Practice - INT-PRAC-0027* which outlines the process of options analysis, where options for risk reduction are identified, analyzed and optimized based on the findings in risk assessments. Alliance stated that risk reduction measures could include actions that reduce the probability of occurrence (threat mitigation), or consequences of hazardous events (consequence mitigation). Options that may be used to mitigate unacceptable risk are also summarized in Alliance's IMP. Other risk reduction measures not specifically captured (e.g., new technology developments) should be identified based on guidance in IMP Table 6: Potential Mitigation Activity Types of the *Risk Assessment and Control Practice*. Periodic review and re-evaluation of risk is supported by the AIMS HIRA guideline. AIMS quarterly Management Review of the integrity management program provides the opportunity to report new or significantly changed hazards. In addition, the ongoing execution of the Programs within the integrity management program provide constant monitoring of hazards and risks. AIMS also outlines the activities, inputs required and outputs produced, and the scheduled frequency. The Annual IMP Review form includes a section for review of active threats. This ensures that as part of the annual review of the integrity management program, active threats/hazards identified in the IMP are reviewed. Based on the review findings from integrity Program activities of the preceding year, changes will be made to the classification of active threats as required.
Supporting Procedures	Alliance did not provide other supporting procedures beyond those provided in answer to the "Process" section above. There is, therefore, no assessment to make for this "Supporting Procedures" section.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,

OPR s. 6.5(1)(e) establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions.

	Assessment
Integration and Application	Alliance indicated that integration of risk review and evaluation is conducted through day-to-day execution of the individual integrity Programs, the Health, Safety and Security Learning, Evaluating, Addressing and Delivery (LEAD) application, and the *AIMS Annual Hazard Review,* which provide integration of risk review and evaluation. If a hazard is identified, the *Management Of Change* process within Document Control allows changes to be requested against a Program/Practice/Procedure, and the associated document review frequency (1/2/3 year) allows these to be integrated into the Program/Practice/Procedure as needed.
	Annual review of the *Integrity Qualitative Risk Assessment (QRA) and Plan* allows adjustments to be made according to inputs from all of the Programs to ensure any new hazards, or changes to hazards, are identified and integrated into the program.
	Contingency Plans are handled by the individual integrity Programs, and are generally generated on a case by case basis, with the exception of a standard or substantial risk, such as *Inline Inspection Contingency Planning Practice - INT-PRAC-0011.*
	Alliance explained that it operates all aspects of its business, including evaluating and managing the risks associated with integrity hazards and potential hazards, under the AIMS HIRA. The AIMS HIRA document describes the integration between hazard identification and analysis, the hazard inventory, the risk evaluation, the controls and the management of change processes required by OPR sections 6.5(1)(c), (d), (e), (f), and (i).

FINDING: Non-Compliant

Based on the scope of the audit, and the documents and interviews conducted, the company has not demonstrated that its process for evaluating and managing the risk associated with the identified hazards, as applied to the integrity program, is compliant to OPR s. 6.5(1)(e). Alliance's risk assessment records did not demonstrate an assessment of the risk for all hazards related to external interference. Alliance did not demonstrate that the risk associated with construction and fabrication hazards was properly evaluated and mitigated. Alliance did not demonstrate that it has evaluated the risk associated with its station piping. And finally, Alliance did not demonstrate that it has an adequate model to assess the potential consequences for its NGL pipeline segments.

AP-06 Developing and Implementing Controls

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(f)** establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks.	

	Assessment
Accountabilities	At the program level, roles and responsibilities for this process are documented in *Integrity Management Program - INT-PROG-0001*. This document outlines in detail Alliance's Pipeline Operations & Engineering, Operational Compliance and Information Services, Finance and Human Resources, and Legal Affairs Departmental Roles and Responsibilities. The organizational structure of Pipeline Integrity with detailed Responsibilities of each Position within the pipeline integrity department is also part of the document. In Alliance's AIMS HIRA document, it is stated that Program Owners will develop, implement and establish controls for their Programs. It also describes further responsibilities for the program owners relating to the identification and communication controls, and to ensure that controls are implemented to reduce the risk to the acceptable level. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Process	Alliance provided its definition of control, which is: "*any measure or action that modifies a risk, and any policy, procedure, practice, process, technology, technique, method or device that modifies or manages risk. Risk treatments become controls, or modify existing controls, once they have been implemented.*" Alliance's AIMS HIRA indicates that Alliance's intent is that a control, or set of controls, will reduce or maintain the inherent risk of a hazard so that the residual risk is tolerable. This is illustrated by the Risk Management Cycle in Appendix 1 and 2 of this document. Alliance has developed a set of documents to describe the processes followed by the Company when developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks. Overall the *AIMS Framework - BDD-MGMT-0006* provides a high level description of how Alliance uses a formal, integrated hazard identification and risk assessment process to identify and assess hazards, potential hazards and risks, and make informed decisions regarding mitigations and the controls required to address them. The AIMS HIRA describes the high level steps followed by the company to develop, monitor and measure controls and to Report Hazards, Risks & Controls.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(f)** establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks.	
	Assessment
	Finally, at the program level, the IMP and associated practices and subprograms describe the process used for developing and implementing controls. Alliance explained that controls necessary to reduce the risk are identified during the risk evaluation phase described in *Alliance's Risk Assessment and Control Practice - INT-PRAC-0027* and implemented as part of individual IMP Programs or as part of the annual review of the overall IMP. Six individual programs under the IMP are also responsible for establishing controls for their applicable threats: inline inspection program, corrosion control program, damage prevention program, geohazard management program, pressure equipment integrity program and unpiggable pipelines program.
	Alliance also provided a document describing the processes for the development of controls addressing hierarchy of control including reliability of the control and consideration of the level of risk and the procedural steps and requirements to prevent, manage and mitigate unacceptable risk. The hazard barrier inventory and classification of controls into preventative or mitigative controls directionally follows the bowtie-method approach for ensuring hazards and hazardous situations are minimized. Control development generally follows the hierarchy of controls approach which aids in the development, implementation and assessment of controls. In its AIMS HIRA, it is stated that "*controls are to be analyzed and developed in accordance with the protection program hierarchy of controls category assessment practices*". Risk assessment and hazard control is also addressed in Alliance's IMP, Sections 10 and 11. The process is described in details in *Alliance's Risk Assessment and Control - INT-PRAC-0027* Sections 6 through 10.
	Alliance provided in its IMP a description of the process used for ensuring technically competent persons are developing controls to prevent, manage and mitigate hazards and the risks.
	Communication related to controls in place is supported by several documents:
	- *AIMS Hazard Identification and Risk Assessment - BDD-BUSPROC-0039* which requires the program owner to communicate new, updated or retired controls in accordance with the AIMS Communication Process. - *AIMS Communication Process - BDD-BUSPROC-0036* which describes the process for internal and external communication required by AIMS. Appendix A and B make specific reference to the requirement to communicate controls. - *AIMS Control of Operational Activities - BDD-BUSPROC-0067* which also requires the program owner to communicate new, updated or retired controls in accordance with the AIMS Communication process.
	Alliance also indicated that in the context of its IMP, the communication plan describes how relevant integrity management plan information is communicated to external and internal stakeholders.

	Assessment
	OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(f)** establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks.
Supporting Procedures	Alliance did not provide other supporting procedures beyond those provided in answer to the "Process" section above. There is therefore no assessment to make for this "Supporting Procedures" section.
Integration and Application	The process for developing and implementing controls to prevent, manage and mitigate the identified integrity hazards and the risks, and for communicating those controls to anyone who is exposed to the risks, as per OPR s. 6.5(1)(f), is integrated or linked to the management system requirements through a set of procedures: - The controls process for risk evaluation is an integral part of the risk evaluation phase indicated in *Alliance Risk Assessment Process - INT-PRAC-0027*. Risk assessment and development of controls is also discussed in Alliance IMP Sections 10 and 11. - The process related to controls is also an integral part of the risk management cycle described in AIMS HIRA and the process described in *Risk Assessment and Hazard Identification and Risk Assessment Guidance*. Alliance's IMP document provides the integration of the process for developing controls with the risk evaluation process, the management of change process, the competency and training process, the internal and external communication process, and the control of operational activities process. The integration of the process for developing controls can be further demonstrated in *Alliance Integrated Management System Framework - BDD-MGMT-0006* in Sections: 2.3 Hazard Identification and Risk Assessment; 2.7 Operational Control – Normal Operating Conditions; 2.8 Operational Control – Abnormal Operating Conditions; 2.9 Management of Change; 2.10 Training, Competency and Evaluation and 2.11 Communication. Alliance demonstrated it has integrated or linked its process for developing and implementing controls to prevent, manage and mitigate the identified integrity hazards and the risks, and for communicating those controls to anyone who is exposed to the risks, as per OPR s. 6.5(1)(f), with the following OPR management system requirements: • s. 6.5(1)(e) Risk Evaluation Process • s. 6.5(1)(i) Managing Change Process • s. 6.5(1)(j) Competency and Training Programs • s. 6.5(1)(l) Awareness Process • s. 6.5(1)(m) Internal and External Communication Process • s. 6.5(1)(q) Control Operational Activities Process

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,
OPR s. 6.5(1)(f) establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks.

	Assessment
Additional Information Reviewed	Integrity Management Program Alliance demonstrated that it has a documented, established and implemented IMP. Version control and revision requests for the IMP document are managed through the Alliance Pipeline DRM system. Alliance explained that requests for change can be submitted through DRM for review by the document owner and, if accepted, the document will continue to evolve as new issues and opportunities for improvement are recognized during its use and from periodic reviews and audits. At a minimum, the integrity management program document is reviewed by the document owner every 12 months, not to exceed 18 months. Based on the documentation provided, the interviews conducted and a sample of records reviewed, Alliance demonstrated that it has an IMP to anticipate, prevent, manage and mitigate the conditions that could result in a release from the facilities in the scope of this audit. Further details on the activities conducted to control, inspect and monitor the integrity of the pipeline system are discussed in section AP-10 of this Appendix. Operation and Maintenance Manual Alliance demonstrated that it has documented, established and implemented an Operation and Maintenance (O&M) Manual which consists of the parts: Part 1 Corporate and Part 2 Field. The scope of Part 1 is to support the field in managing the field based activities as it relates to how other Alliance business units contribute to their work and careers, and the scope of Part 2 is to equip the field in order to manage the field-based activities related to supporting the lifecycle of the pipeline system. Version control and revision requests for the O&M manuals are managed through the DRM system. Requests for change can be submitted through DRM for review by the document owner and, if accepted, the document will be updated. At a minimum, the manuals are reviewed by the document owner every 36 months. Pipeline Control System Alliance demonstrated that it has a pipeline control system. The control room is located in Calgary, Alberta. Alliance uses a Supervisory Control and Data Acquisition (SCADA) system to control and monitor the pipeline operations. The SCADA system records and monitors pipeline operations data, messages, and alarms. Alliance has two redundant SCADA servers located at separate locations. Alliance has a main control room, as well as a back-up control room. The gas control team monitors and controls the pipeline facilities seven days a week, 24 hours per day. Alliance achieves leak detection through a variety of methods including: aerial and ground patrols, leak detection surveys, In-line Inspections (ILIs), valve inspections, facility leak surveys, pipeline volume and line pack management, and Gas Control response to abnormal pressure situations.

FINDING: No issues noted
Based on the scope of the audit, and the documents and interviews conducted, the Board has not identified any deficiencies to OPR s. 6.5(1)(f).

AP-07 Coordinating and Controlling the Operational Activities

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5.1(q)** establish and implement a process for coordinating and controlling the operational activities of employees and other people working with or on behalf of the company so that each person is aware of the activities of others and has the information that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.	

	Assessment
Accountabilities	Alliance provided multiple documents which outline roles and responsibilities for this section, including its processes, policies, practices and records. Alliance's – *Control of Operational Activities* document - *BDD-BUSPROC-0067* is Alliance's process document which establishes the guidance for the development of Operational Controls to meet the requirements of the Alliance Integrated Management System (AIMS). This process is used to provide assurance of the adequacy and effectiveness of AIMS and associated protection programs as input into management reviews and in support of continual improvement. This process defines the roles, responsibilities and accountabilities starting with the process owner or Director, Operational Compliance and the AIMS Coordinator. The Director, Operational Compliance is accountable for validating that the process is engaging the appropriate stakeholders and approving changes to the process. The Director is accountable to ensure this process is documented, that it meets the NEB requirements for a process, that it is aligned with AIMS goals, objectives and targets and that it is maintained and meets identified continuous improvement opportunities. The AIMS Coordinator is accountable for developing and updating controls as required, and communicating those controls with various stakeholders. Alliance also provided its documentation of programs and practices that have been developed for controlling operational activities. These documents bring greater levels of specificity and become more focused on the activities being conducted and the people involved in executing the work. For the purpose of this audit and the scope, the following documents were provided: *Integrity Management Program - INT-PROG-0001* and *Job Planning Practice - INT-PRAC-0015*. Roles and responsibilities for Alliance's Integrity Management Program are detailed in Tables 1 through 3 in the *Integrity Management Program - INT-PROG-0001* document. Alliance's *Job Planning Practice - INT-PRAC-0015* practice, section 5, Table 1, provides specific responsibilities for employees and contractors and other parties working with or on behalf of the company. Table 1 of *Job Planning Practice - INT-PRAC-0015* provides additional project-specific roles and the execution of operational activities. These roles are represented by pipeline integrity, information management, maintenance technicians, contractors, gas control and other parties. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5.1(q)** establish and implement a process for coordinating and controlling the operational activities of employees and other people working with or on behalf of the company so that each person is aware of the activities of others and has the information that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.	

	Assessment
Process	The Control of Operational Activities process provides the broadest set of instructions specific to this section, that direct work to other processes within the AIMS Management system that it integrates with. This process is used to provide assurance of the adequacy and effectiveness of AIMS and associated protection programs as input into management reviews and in support of continual improvement. This document contains a process flow map which identifies the following three steps: develop controls, plan operational activities and execute operational activities. Each of these steps contains a list of the various other AIMS processes that require inputs to or outputs from this process. There is also a list of records within the AIMS program which may require updating if changes are made. Program owners are assigned to each of the processes and are responsible to ensure that the Controls and the operational activities which flow from the controls: align with AIMS requirements, meet legal requirements and are communicated to workers. The first step of the process map, "Develop Controls", integrates the following processes within the AIMS Management system: AIMS Hazard Identification & Risk Assessment process, Protection Program Hazard Identification, Risk Assessment and Controls processes, AIMS Management of Change process, AIMS Communication process, Develop Contingency Plans process, Documentation & Document Control process and Records Management process. The second step of the process map, "Plan Operational Activities", integrates the following processes within the AIMS Management system: Protection Program Hazard Identification, Risk Assessment and Controls processes, Employee-partner Awareness of Responsibility Process, AIMS Contractor Management Process, AIMS Communication Process and Records Management Process. The third step of the process map, "Execute Operational Activities", integrates the following processes within the AIMS Management system: Protection Program Hazard Identification, Risk Assessment and Controls processes and Records Management Process. From these processes there are other programs and practices that have been developed for controlling operational activities. These documents bring greater levels of specificity and become more focused on the activities being conducted and the people involved in executing the work. For the purpose of this audit and the scope, the following documents were provided: *Integrity Management* Program - INT-PROG-0001, *Job Planning Practice - INT-PRAC-0015*, and *Contractor Management - HSS-PRAC-0211*. Alliance's *Job Planning Practice* details the job planning process for both routine and non-routine work. This document provides the integration of roles from the planning stages in the office to the execution stages in the field and applies to employees and contractors. Alliance conducts multiple planning meetings at 90, 60 and 30 day intervals which involve engaging the relevant stakeholders for each stage of the planning process, including third parties prior to execution of a specific project. These meetings are designed to establish the project requirements, review background historical data, identify a communication plan, establish roles and responsibilities, provide both a written plan of the project execution requirements and allow for input from all

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5.1(q)** establish and implement a process for coordinating and controlling the operational activities of employees and other people working with or on behalf of the company so that each person is aware of the activities of others and has the information that will enable them to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.	

	Assessment
	stakeholders at the design phase. Where Job Plan documents are produced all parties receive a copy of the project-specific plan prior to the execution of the project. Additionally, Section 6.9 Health and Safety of this practice references Alliance's Health and Safety program for contractor pre-qualification.
	Alliance has demonstrated that it utilizes training and competency evaluations within its process of coordinating and controlling operational activities. Technical requirements for Alliance personnel are defined in Alliance's Online Learning Environment (OLE). OLE contains specific courses required to be completed for the various job titles within the Pipeline Integrity Department. For the applicable job titles, these include internal courses within the Alliance Competency Evaluation program and external courses. Technical requirements to pre-qualify contractors are defined in the scope of work for the task.
	Alliance's *Contractor Management practice - HSS-PRAC-0211*, section 7.1 Contractor Pre-Qualification details Alliance's evaluation and prescreening process used for selecting contractors. Alliance has elected to use ISNetworld® Safety Program Compliance Requirements as its tools for health and safety prequalification of its contractors. ISNetworld® provides ratings of a company's health and safety programs and provides a letter grade evaluation. Where a Contractor does not have an "A" rating in the prequalification process, Alliance has placed secondary levels of evaluation on these companies to determine their suitability.
	The processes, policies and practices that have been developed and implemented provide for a detailed description of the roles, responsibilities and accountabilities for this section. Alliance demonstrated it has a process in place for planning its projects, identifying evaluating and controlling hazards, identifying tools and training requirements, evaluating this training and for communicating these requirements. There are process flow maps and references that link these various documents together and the inputs and outputs of each are clearly defined.
Supporting Procedures	Alliance did not provide other supporting procedures beyond those provided in answer to the "Process" section above. There is therefore no assessment to make for this "Supporting Procedures" section.
Integration and Application	Alliance was able to demonstrate that its process for coordinating and controlling the operational activities of employees and other people working with or on behalf of the company was integrated with or linked to the Responsibility Awareness process (OPR s.6.5(1)(l)) and Internal and External Communication process (OPR s.6.5(1)(m)).
FINDING: No issues noted Based on the scope of the audit, and the documents and interviews conducted, the Board has not identified any deficiencies to OPR s. 6.5(1)(q).	

AP-08 Internal Reporting of Hazards, Incidents and Near-Misses

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,
OPR s. 6.5(1)(r) establish and implement a 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.

	Assessment
Accountabilities	Alliance provided multiple documents which outline roles and responsibilities for this section, including its processes, procedures, programs, practices and records. The identification of hazards, potential hazards, incidents and near misses and the requirements for taking corrective and preventative actions can found in the AIMS *Process Description Inspection Process - BDD-BUSPROC-0040*, the *Investigating and Reporting Events process - HS-BUSPROC-0005* and the *Corrective and Preventive Action Process - HS-BUSPROC-0006* documents.
	Alliance's AIMS *Process Description Inspection Process - BDD-BUSPROC-0040* document is Alliance's process document which is used to provide assurance of the adequacy and effectiveness of AIMS and associated protection programs as an input into management reviews and in support of continual improvement. This process defines the roles, responsibilities and accountabilities for the Vice President, System Integrity & Operational Compliance, who is the owner of the process; the AIMS Coordinator; individual program owners and internal auditors. The Vice President is the owner of this document and has the overall accountability for this process. The AIMS Coordinator works with internal stakeholders to ensure this process is integrated across the organization. The program owners establish inspection practices that proactively identify hazards and potential hazards. The program owners also communicate the results to other protection programs as required. Internal Audit is responsible to validate that this process is being adhered to by confirming that each of the protection programs has completed the self-assessment and audits according to the AIMS requirements.
	Alliance's *Investigating and Reporting Events Process - HS-BUSPROC-0005* document establishes how reported events are investigated and communicated. The primary objectives of this process include: identifying new and potential hazards; conducting investigations into the root cause and causal factors; implementing corrective and preventative actions and reporting and communicating investigation results. The process owner, Manager, Health, Safety and Security, and their roles and responsibilities are defined in section 4.
	Alliance's AIMS *Process Description Corrective and Preventative Action - BDD-BUSPROC-0037* document outlines the requirements for developing and implementing corrective and preventative actions, which may include controls to prevent, manage and mitigate the identified hazards, potential hazards and non-compliances and for communicating actions to anyone who may be directly affected. This process defines the roles, responsibilities and accountabilities for the Vice President, System Integrity & Operational Compliance who is the owner of the process, the AIMS Coordinator, individual program owners and internal auditors. The Vice President is the owner of this document and has the overall accountability for this process. The AIMS Coordinator works with internal stakeholders to ensure that corrective and preventative actions are integrated and effective across the organization. The program owners are responsible for developing and implementing corrective and preventative actions and to ensure that they are assessed for effectiveness

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, OPR s. 6.5(1)(r) establish and implement a 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.		
		Assessment
		in correcting the occurrence and to prevent re-occurrence. Internal Audit is responsible to validate that this process is being adhered to by confirming that each of the protection programs has completed the self-assessment and audits according to the AIMS requirements. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Process		Hazards, potential hazards, non-compliances and program deficiencies are identified via various monitoring, surveillance and quality assurance activities. The process requirements for the identification of hazards, potential hazards, incidents and near misses and the requirements for taking corrective and preventative actions can be found in the AIMS *Process Description Inspection Process - BDD-BUSPROC-0040*, the *Investigating and Reporting Events Process - HS-BUSPROC-0005* and the *Corrective and Preventive Action Process - HS-BUSPROC-0006* documents. **Inspection Process:** The AIMS *Process Description Inspection Process* is designed to provide the requirements for inspections and monitoring of Alliance activities and facilities to evaluate the adequacy and effectiveness of the protection programs and to identify any deficiencies. This process document provides references to AIMS Corrective and Preventative Action process, Hazard and Incident Reporting and Quality Program. There is a process flow map that provides a visual representation of the process and highlights the inspection process from the planning stage to the internal audit stage. Program Owners are required to establish inspection practices that proactively identify hazards and potential hazards for the lifecycle of the pipeline including its Integrity Management Program. Integrity related hazards are managed through the individual pipeline integrity programs and are outlined in Section 11 - Hazard Control, Risk Reduction, and Integrity Assessments, Table 7: Threats Cross-Referenced to Alliance Pipeline Integrity Department (PID) Programs in the Integrity Management Program. These individual programs included: Alliance *Threat/Hazard Identification and Review Practice - INT-PRAC-0012, Aerial Patrols - COR-PROC-1000, Geohazard Management Program - INT-PROG-0007, Inline Inspection Program's Review Practice - INT-PRAC-0050* and *Corrosion Control Program - INT-PROG-0008*. Where not specifically addressed in the individual program documentation, the programs will follow the direction outlined in the IMP, as well as the AIMS *Hazard Identification and Risk Assessment Process*. Information gathered from all the various programs is reviewed and helps to inform the inspections and the inspection frequency for the following years planning. Any new hazards and potential hazards are entered into the existing hazard inventory.

	Assessment
	The Integrity Management program references Alliance's *Health and Safety Incident and Investigation practice - HSE-PRAC-0069* in Sec 18. This provides the integration between Incidents and the Integrity program. Any incidents are managed and investigated through Alliance's *Health and Safety HSE-Incident Investigation practice*, which specifies that additional requirements specific to pipeline incidents be documented in the PID's *Pipeline Failure Investigation & Evidence Collection Practice - INT-PRAC-0016*. **Investigating and Reporting Events process:** Alliance's *Investigating and Reporting Events Process - HS-BUSPROC-0005* is Alliance's process document that establishes how reported events are investigated and communicated. The primary objectives of this process include: identifying new and potential hazards; conducting investigations into the root cause and causal factors; implementing corrective and preventative actions; and reporting and communicating investigation results. This process applies to the entire pipeline enterprise, including all entities owned and/or operated by Alliance Pipeline. Section 7 of this process is a process map that provides a visual reference to the *Investigating and Reporting Events Process*. The process map outlines the reporting flow from contractors to employee partner/Alliance representative to the Health and Safety team. Both the contractors' and employees' sole responsibility is to report the event. The Health and Safety team is responsible for: validating the event; investigating and analyzing the event; applying the corrective and preventative action process; completing the investigations; communicating the outcomes and lessons learned; and closing the event. In addition, each AIMS program may have its own documentation on investigating and reporting events that meets its specific program requirements. Alliance provided its documentation of practices, guides and records that have been developed for and relate to the *Investigating and Reporting Events Process*. These documents bring greater levels of specificity and define roles, responsibilities and required steps. For the purpose of this audit and the scope, the following documents were provided: *Investigating Events - HSS-PRAC-0224*, *Communications Practice - HSS-PRAC-0207*, *LEAD – Create Event Quick Guide - HSS-GUID-0038*, *Incident Investigation reports and HSR Committee Meeting Agenda*. The *Investigating Events* practice defines the requirements for an incident report, which must contain the following information: the activity at the time of the occurrence; all hazards and potential hazards identified; all risks and potential risks identified; sequence of events leading up to and after the occurrence; and verification of the immediate action taken to prevent further loss.

	Assessment
	Employees/Alliance representatives and the Health & Safety Team track incidents, near miss and hazard investigating and reporting events within the Alliance LEAD application tool. The LEAD application provides employee-partners with a systematic approach to report, learn from, evaluate and address events that occur in the workplace. Alliance has demonstrated that it utilizes various process, practices, procedures and guidance to accomplish the objectives of OPR s. 6.5(1)(r). Alliance has demonstrated that these documents are integrated together by referencing each other. Additionally, each document contains clearly defined roles and responsibilities. There is accountability for quality control assigned within each program with an additional level of quality control occurring from the internal audit process.
Supporting Procedures	In addition to the supporting procedures provided in answer to the "Process" section above, Alliance also provided its LEAD Event & Action Workflow process diagram. This diagram specifies the steps for the event workflow and the review of the corrective actions. Step 3.1 of the Action Workflow identifies the individual owners of the corrective actions. Individual owners close-out those items assigned to them when they have been completed. The Health and Safety representative is responsible for Section 5.1 of the Event Workflow and is responsible for confirming all corrective actions are closed, prior to closing out the Event. This workflow demonstrates that a review of corrective actions for appropriateness is conducted and also confirms that there is a quality assurance check or review from a party separate from the incident initiator, who ensures that the process is being followed accurately and in a timely manner. Alliance also provided its *Process document for Patrols - COR-PRCS-1000*. Section 7.2 – Activity 2 – Perform the Patrols outlines the steps that need to be taken, forms that require completing and timelines for patrol activities, and includes special instructions for "unauthorized activities" including hazards and imminent danger as defined in the *Unauthorized Activities Process - COR-PRCS-1002*. This process requires an investigation of any observations that are unexpected or unusual. These processes demonstrated that there is clear guidance and expectations for the reporting of hazards, potential hazards, incidents and near misses.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,

OPR s. 6.5(1)(r) establish and implement a 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.

Integration and Application	Alliance provided its AIMS *Process Description Inspection Process - BDD-BUSPROC-0040*, the *Investigating and Reporting Events Process - HS-BUSPROC-0005* and the *Corrective and Preventive Action Process - HS-BUSPROC-0006* documents which have integrated to its: *Health and Safety Investigating and Reporting Events Process -HS-BUSPROC-0005*; *AIMS Inspection Process - BDD-BUSPROC-0040*; *AIMS Audit and Assessment process - BDD-BUSPROC-0035*; *AIMS Management of Change Process - BDD-BUSPROC-0041; AIMS Integrated Hazard Inventory Practice - LEG-PRAC-0001* and *AIMS Quality Program, BDD-PROG-0013*. Alliance was able to demonstrate that this process was integrated with or linked to these OPR management system requirements that directly receive input from or provide input to this process: • s. 6.3(1)(a) Objectives and Targets Process • s. 6.5(1)(c) Hazard Identification and Analysis Process • s. 6.5(1)(e) Risk Evaluation Process • s. 6.5(1)(f) Controls Process

FINDING: No issues noted

Based on the scope of the audit, and the documents and interviews conducted, the Board has not identified any deficiencies to OPR s. 6.5(1)(r).

AP-09 Developing Contingency Plans

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(t)** establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.	

	Assessment
Accountabilities	Alliance provided multiple documents which outline roles and responsibilities for this section, including its processes, programs, plans and practices. Alliance's *AIMS Develop Contingency Plans - LEG-PRCS-001*, document is Alliance's process for developing contingency plans and it describes how to develop contingency plans for the life cycle of the pipeline. Contingency plans define the responses to abnormal events and are intended to prevent and mitigate the likely consequences and or impacts of these events. This process requires that contingency plans are periodically tested, reviewed and revised where appropriate.
	This process defines the roles, responsibilities and accountabilities for the Director, Operational Compliance, Program Owners and Stakeholders. The Director is the process owner and is responsible for validating the process design and ensuring it meets the outcomes of the legal requirements. The Program Owner, in partnership with key stakeholders, will: determine the threshold for when a contingency plan needs to be developed; develop and implement contingency plans (that align with the AIMS Develop Contingency Plan Process); communicate and train stakeholders on the contingency plan as required; maintain and evaluate existing contingency plans for improvement; develop and schedule exercises or training and evaluate as required; ensure that the conditions that trigger a contingency plan are documented in the contingency plan; and ensure that roles and responsibilities for triggering a contingency plan are documented in the contingency plan. There are additional responsibilities for Stakeholders identified in the contingency plans; they shall: participate in training and exercises; participate in evaluation and continual improvement of the contingency plan; and execute according to the contingency plan when required.
	Alliance also provided its documentation of programs and practices that have been developed for controlling operational activities. These documents bring greater levels of specificity and become more focused on the activities being conducted and the people involved in executing the work. For the purpose of this audit and the scope, the following documents were provided: *Integrity Management Program - INT-PROG-0001*; *Job Planning Practice - INT-PRAC-0015* and *Pipeline Integrity Inline Inspection Contingency Planning Practice - INT-PRAC-001*.
	Alliance's *Job Planning Practice*, section 5, Table 1, provides specific responsibilities for employees and contractors and other parties working with or on behalf of the company. Table 1 of *Job Planning Practice* provides additional project-specific roles and the execution of operational activities. These roles are represented by pipeline integrity, information management, maintenance technicians, contractors, gas control and other parties.

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(t)** establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.	
	Assessment
	Alliance Pipeline Integrity Inline Inspection *Contingency Planning Practice*, section 4.0 Responsibilities, Table 1: Role and Responsibilities, provides further detail on the roles and responsibilities of the Pipeline Integrity Program Execution Group Project Manager, Operations Representative, Contractor(s), Gas Control and other parties. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.
Process	For the development of contingency plans, Alliance has provided its Process AIMS *Develop Contingency Plans - LEG-PRCS-0001*, which gives overall guidance on the development of contingency plans and it is the primary process used. Alliance also provided its *Job Planning Practice - INT-PRAC-0015* that is used for the development of all job planning activities including the development of contingency plans and *Integrity Management Program – INT-PROG-000*1 that demonstrate its IMP integration with contingency planning and other elements of the management system. Alliance's Process AIMS *Develop Contingency Plans*, document is used to develop contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations. Alliance has defined contingency plans, "A structured and coordinated course of action established to respond to an abnormal event"; and abnormal event as, "An occurrence not normally encountered that has the potential to adversely affect property, the environment or the safety of workers and the public". Alliance requires that its contingency plans be periodically tested, reviewed and revised where appropriate. The objectives of this process are to: identify requirements for when to develop a contingency plan; specify the components a contingency plan should include; align with AIMS requirements; and meet legal requirements. Alliance has created a process map with the following three steps: develop contingency plan; training and communications; and evaluate contingency plan. The "Develop Contingency Plan" step integrates the following AIMS processes: *AIMS Corrective and Preventive Action Process - BDD-BUSPROC-0037*; *AIMS Hazard Identification and Risk Assessment Process - BDD-BUSPROC-0039,* and *AIMS Management of Change Process - BDD-BUSPROC-0041*. Program Owners identify the potential for abnormal events as part of the Hazard Identification, Risk Assessment and Controls processes and the Corrective and Preventative Action processes. When a Program Owner determines that a control to address an abnormal event or emergency situation is not in place, the Program Owner is responsible for developing a contingency plan. The "Training and Communications" step integrates the following AIMS processes: *AIMS Communication Process - BDD-BUSPROC-0036* and *AIMS Control of Operational Activities Process - BDD-BUSPROC-0067*. Program owners are responsible to ensure that employees and others working with or

	Assessment
OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(t)** establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.	

	Assessment
	on behalf the company are competent and trained to perform their duties related to contingency plans in a manner that is safe, ensures the security of the pipeline and protects the environment. As a control, the contingency plan needs to be communicated to everyone exposed to the associated risk.

Lastly, the "Evaluate Contingency Plan" step integrates with the AIMS *Inspection Process - BDD-BUSPROC-0040*. To ensure contingency plan effectiveness, Program Owners will ensure that contingency plans are tested on a periodic basis, or following abnormal events or emergency situations that may have occurred. Contingency plans must be evaluated and tested while the associated risk is present.

Additionally, Alliance recognizes that other events may trigger the development of a contingency plan and has integrated this process with the following mechanisms: AIMS *Corrective and Preventive Action Process - BDD-BUSPROC-0037*; AIMS *Hazard Identification and Risk Assessment Process – BDD-BUSPROC-0039*; *AIMS Management of Change Process - BDD-BUSPROC-0041*; projects and program planning activities.

The criteria and methods for identifying abnormal conditions, specific and appropriate control measures, and associated mitigations are defined with individual IMP programs. Contingency planning, as it relates to the integrity program, may be initiated during the planning of integrity activities, if the job planning process identifies the potential for an abnormal event that has the potential for significant impact to the operation or safety of the asset or project, which was not addressed by Alliance's standard operating procedures. Alliance's IMP, section 9.1 Operational Controls - Normal and Abnormal Conditions, requires that the pipelines integrity be continually validated for both normal and abnormal conditions. This section provides some examples of abnormal conditions the IMP is trying to identify, including coating damage, inadequate cathodic protection levels and metal loss features on the pipeline.

Alliance has demonstrated that it utilizes various processes, practices and programs to accomplish the objectives of OPR s. 6.5(1)(t). Alliance has demonstrated that these documents are integrated together by referencing each other. Additionally, each document contains clearly defined roles and responsibilities. |
| Supporting Procedures | Alliance did not provide other supporting procedures beyond those provided in answer to the "Process" section above. There is therefore no assessment to make for this "Supporting Procedures" section. |
| Integration and Application | Alliance provided its AIMS *Develop Contingency Plans - LEG-PRCS-001* document which integrates to its: *AIMS Develop Contingency Plans - LEG-PRCS-001*; *AIMS Corrective and Preventative Action Process - BDD-BUSPROC-0037*; *AIMS Management of Change Process - BDD-BUSPROC-0041*; *AIMS Communication Process - BDD-BUSPROC-0036*; *AIMS Control of Operational Activities Process - BDD-BUSPROC-0067* and *AIMS Inspection Process - BDD-BUSPROC-0040* documents. |

	Assessment
OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(t)** establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.	
	Assessment
	Alliance was able to demonstrate that this process was integrated with or linked to these OPR management system requirements that directly receive input from or provide input to this process: • s. 6.5(1)(e) – Risk Evaluation Process • s. 6.5(1)(f) – Controls Process • s. 6.5(1)(q) – Operational Activities Process

FINDING: No issues noted

Based on the scope of the audit, and the documents and interviews conducted, the Board has not identified any deficiencies to OPR s. 6.5(1)(t).

AP-10 Inspect and Monitor

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(u)** establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.	
	Assessment
Accountabilities	Alliance provided multiple documents which outline roles and responsibilities for this section, including its, AIMS *Process Description Inspection Process - BDD-BUSPROC-0040*, its *AIMS Process Description Corrective and Preventative Action - BDD-BUSPROC-0037* and its *Integrity Management Program - INT-PROG-0001,* which outlines roles and responsibilities for this section. Alliance's AIMS *Process Description Inspection Process, BDD-BUSPROC-0040* document is Alliance's process document which is used to provide assurance of the adequacy and effectiveness of AIMS and associated protection programs as an input into management reviews and in support of continual improvement. This process defines the roles, responsibilities and accountabilities for the Vice President, System Integrity & Operational Compliance who is the owner of the process, the AIMS Coordinator, individual program owners and internal auditors. The Vice President is the owner of this document and has the overall accountability for this process. The AIMS Coordinator works with internal stakeholders to ensure this process is integrated across the organization. The program owners establish inspection practices that proactively identify hazards and potential hazards. They ensure the practices address: the approach to determining frequency and planning of internal and external inspections; the integration of results of inspection and monitoring activities with other data in program hazard identification and analysis; risk assessments, performance measures and annual management reviews; types of inspections, purpose, scope and inputs into the inspection; and guidance for documentation required as a result of inspection. The program owners also communicate the results to other protection programs as required. Internal Audit is responsible to validate that this process is being adhered to, by confirming that each of the protection programs has completed the self-assessment and audits according to the AIMS requirements. Alliance's AIMS *Process Description Corrective and Preventative Action - BDD-BUSPROC-0037* document is Alliance's process document that is used to provide assurance of the adequacy and effectiveness of AIMS and associated protection programs, as an input into management reviews and in support of continual improvement. This document outlines requirements for developing and implementing corrective and preventative actions, which may include controls, to prevent, manage and mitigate the identified hazards, potential hazards and non-compliances and for communicating actions to anyone who maybe directly affected. This process defines the roles, responsibilities and accountabilities for the Vice President, System Integrity & Operational Compliance who is the owner of the process, the AIMS Coordinator, individual program owners and internal auditors. The Vice President is the owner of this document and has the overall accountability for this process. The AIMS Coordinator works with internal stakeholders to ensure that corrective and preventative actions are integrated and effective across the organization. The program owners are responsible for developing and implementing corrective and preventative actions and to ensure that they are assessed for effectiveness, in correcting the occurrence and to prevent re-occurrence. Internal Audit is

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(u)** establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.		
		Assessment
	responsible to validate that this process is being adhered to by confirming that each of the protection programs has completed the self-assessment and audits according to the AIMS requirements. Alliance's IMP, section 5.3, Pipeline Integrity Department Roles and Responsibilities, Table 2, defines the Pipeline Integrity departments responsibilities for the development, planning, implementation and execution of the IMP and related integrity programs for the lifecycle of the pipeline. Table 3 defines the roles and responsibilities of seven specific roles from the Manager, Pipeline Integrity to the Field Technologist, Integrity Execution. The Operational Compliance team, within Pipeline Safety Performance and Compliance is responsible for coordinating and conducting inspections of the integrity management program. Program owners establish inspection practices to ensure effectiveness of the controls as well as compliance with regulatory requirements. In addition, the Quality Program conducts periodic audits and inspections of program documents, records, and physical facilities. Deficiencies in the adequacy of a control in mitigating or preventing a hazard are generally handled at the program level. Information provided during the interviews related to the roles and responsibilities for this process was consistent with the documentation provided and Alliance demonstrated that it had properly defined roles and responsibilities.	
Process	Alliance has provided its AIMS *Process Description Inspection Process - BDD-BUSPROC-0040*, which gives overall guidance on the requirements for inspections and monitoring of Alliance activities and facilities. It also establishes the requirements to evaluate the adequacy and effectiveness of the protections programs, to identify deficiencies and to ensure corrective actions are taken when deficiencies are noted. Alliance program owners establish inspection practices to ensure controls are effective and comply with regulatory requirements. Inspections of facilities may arise as a result of a regulatory requirement or may be, "*conducted at the discretion of Operational Compliance / Pipeline Safety based on factors such as identified risk, industry violation or known compliance concerns related to pipeline safety documents and records.*" Controls are developed to address compliance as well as mitigation of potential hazards. The integrity program conducts an annual review of all its programs and reports up through the Annual Management System Review. Deficiencies identified in this review are reported to the operating area and work orders are issued to correct any deficiency. The AIMS *Process Description Inspection Process* is designed to provide the requirements for inspections and monitoring of Alliance activities and facilities to evaluate the adequacy and effectiveness of the protection programs and to identify any deficiencies. This process document provides	

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,
OPR s. 6.5(1)(u) establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.

	Assessment
	references to AIMS Corrective and Preventative Action process, Hazard and Incident Reporting and Quality Program. There is a process flow map that provides a visual representation of the process and highlights the inspection process from the planning stage to the internal audit stage. Program Owners are required to establish inspection practices that proactively identify hazards and potential hazards for the lifecycle of the pipeline including its IMP. Integrity related hazards are managed through the individual pipeline integrity programs and are outlined in Section 11 - Hazard Control, Risk Reduction, and Integrity Assessments, Table 7: Threats Cross-Referenced to Alliance PID Programs in the Integrity Management Program. These individual programs follow these practices or program documents: Alliance *Threat/Hazard Identification and Review Practice - INT-PRAC-0012*, *Aerial Patrols - COR-PROC-1000*, *Geohazard Management Program - INT-PROG-0007*, *Inline Inspection Program's Review Practice - INT-PRAC-0050* and *Corrosion Control Program - INT-PROG-0008*. Where not specifically addressed in the individual program documentation, the programs will follow the direction outlined in the IMP, as well as the AIMS *Hazard Identification and Risk Assessment Process*. Alliance's integrity program includes the following programs to control, inspect and monitor the integrity of its facilities: • The ILI Program completed its third cycle of ILIs on the entire pipeline system in 2015 (the vast majority of Alliance system in Canada is piggable). The fourth cycle of ILIs has commenced. The pipelines have been inspected with high resolution Magnetic Flux Leakage, high resolution caliper, and inertial mapping unit tools. The ILI tools are used to inspect for deformations, pipe movements and metal losses. Re-inspection intervals are based on the projected growth of the remaining features or based on Alliance's seven year maximum ILI frequency criteria. Integrity digs have been completed to validate the ILI results and conduct repairs when necessary. The *Inline Inspection Program's Review Practice* states that, upon the review of the results from a preliminary ILI report, the pipeline integrity representative shall determine if action is required to address immediate conditions as specified in the Inline Inspection Program. If immediate conditions are identified, they will complete the necessary digs and repairs. • The Corrosion Control Program aims to prevent the onset of corrosion. Alliance uses a combination of high performance coatings (fusion bond epoxy and yellow jacket) and a modern cathodic protection (CP) system to control external corrosion. Alliance conducts different surveys to assess the performance of its CP system and coatings, including: annual CP test post-surveys, close interval surveys, alternating current voltage gradient and direct current voltage gradient surveys, and alternating current interference monitoring. The susceptibility to internal corrosion is

	Assessment
OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(u)** establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.	

	Assessment
	mitigated by the specification of the gas shipped, which limits contaminants such as water, CO_2 and H_2S. Alliance monitors for internal corrosion by monitoring gas quality, using coupons and electronic corrosion monitoring devices, internal corrosion susceptibility analysis, visual inspections, non-destructive testing, ILIs and liquids, solids and sludge analysis. The Corrosion Control Program provides specific corrosion mitigation practices and procedures that require any deficiency found in the cathodic protection be reported to the Program Lead – Corrosion Control. The Program Lead reviews each deficiency and schedules remediation based on the likelihood of the deficiency to result in corrosion. • The Geohazard Management Program manages risks from geotechnical, hydrotechnical and seismic hazards. Geohazard locations are identified, verified by ground inspection, and logged in the Cambio database. Risk analysis is conducted to estimate the risk to people and property by the combination of frequency and consequence analysis, using social, environmental and economic consequences of a geohazard event. The risk analysis are used to identify a range of alternative for managing the risk. Risk control involves decision-making for implementing or enforcing risk mitigation measures, and right-of-way, weather and flood surveillance are used to identify extraordinary circumstances to assess a potential new geohazard. Alliance has identified geohazard sites that are inspected at intervals ranging from six months to five years, based on the risk. The Geotechnical Inspection Procedure states that a Geotechnical Inspector, as part of the inspection process recommends a "ground inspection" if the site needs to be remediated or requires a more detailed investigation. If at any time during the inspection process the Inspector believes a geohazard specialist should inspect a site, the procedure states that they shall notify the Pipeline Integrity department. • The Crossing & Encroachment program, in coordination with the Corridor Management department, assess and monitor the risk of crossing and encroachment activities. This program is also responsible for monitoring class location changes. Aerial patrols are conducted to inspect and monitor the entire pipeline system on a monthly basis. The Aerial Patrols procedure requires Patrol Observers to conduct further investigation on all observations that are determined to be out of the ordinary. • The Pressure Equipment Integrity Program ensures the integrity of pressure equipment (pressure vessels, pressure safety valves, above ground piping). This includes planning and executing inspections of the equipment, which are based on prescribed time intervals.

	OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, **OPR s. 6.5(1)(u)** establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.
	Assessment
	• The Unpiggable Pipeline Integrity Program is responsible for managing the integrity of the non-piggeable assets, mainly interconnects, which represent only a small fraction of the system. This program uses a risk based inspection program. • The Depth of Cover Management Program uses a risk-based approach to establish control measures beyond Alliance's Damage Prevention program, such as: additional damage prevention measures; external communications; increase signage; physical protection; or pipeline lowering. Above-ground surveys are conducted on an annual basis to monitor the depth of cover over the pipeline. Information gathered from all the various programs is reviewed and helps to inform the inspections and the inspection frequency for the following years planning. Any new hazards and potential hazards are entered into the existing hazard inventory. Threat/Hazard Identification and Review Practice requires a review of the threat assessment record for the previous year including results from qualitative risk assessments, audits and relevant inspection records. Alliance has demonstrated that it utilizes various processes and programs to accomplish the objectives of OPR s. 6.5(1)(u). Alliance has demonstrated that these documents are integrated together by referencing each other. Additionally, each document contains clearly defined roles and responsibilities.
Supporting Procedures	Alliance did not provide other supporting procedures beyond those provided in answer to the "Process" section above. There is therefore no assessment to make for this "Supporting Procedures" section.
Integration and Application	Alliance provided its AIMS *Process Description Inspection Process* and its AIMS *Process Description Corrective and Preventative Action* which was able to demonstrate that this process was integrated with or linked to these OPR management system requirements that directly receive input from or provide input to this process: • s. 6.5(1)(w) – Quality Assurance Program • s. 55 – (1) Audits
Additional Information Reviewed	Surveillance and Monitoring Program Alliance demonstrated that it performs surveillance and monitoring activities for its pipeline system on a regular basis. As described in the "Process" section above, the company, through its different programs, conducts pipeline and right-of-way surveillance and monitoring activities such as ground and aerial patrols, geohazard inspections and different surveys conducted by the Corrosion Control Program. **However, Alliance has yet to formalize these**

OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,
OPR s. 6.5(1)(u) establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.

	Assessment
	activities in a documented "program" as required by OPR s. 39. This is an issue that had been identified by Alliance internal audits and work is in progress to address this issue. Alliance provided a draft surveillance and monitoring program document titled *Program, Surveillance and Monitoring - BDD-TEMP-0012*, which demonstrated its progress on addressing this issue. Interviews also confirmed that this document has not been approved for use within the organization. Since the document is only a draft, Alliance cannot be found compliant to OPR s. 39. Class Location Changes Alliance's Corridor Management department practice, *Encroachment Monitoring and Data Management - COR-PRAC-1002* has the purpose to "*collect and maintain corridor data and to identify/mitigate activities that may cause negative impacts to the operation of corporate assets. This includes all activities that may impact High Consequence Area (HCA) or Class status or otherwise impact Alliance's business.*" Corridor data is monitored in the form of physical corridor monitoring (ground patrols, aerial patrols), external data monitoring (construction, parcel ownership, planned development) and internal data monitoring (First Class Mailings, Notifications to External Stakeholders). The *HCA and Class Location Change Review practice - INT-PRAC-0022*, outlines how the program reviews potential class location changes on an annual basis, which involves participation from Land, Right-of-Way and Corridor, as well as Information Management and Pipeline Integrity. Land, Right-of-Way and Corridor are responsible for finalizing structure counts, and when changes in Class Location are identified, they confirm this via site visits or other means. Information Management is responsible for importing the land data and performing the geospatial alignment of structures. Pipeline Integrity identifies changes to class locations through the use of a class location software.

FINDING: Non-Compliant

Based on the scope of the audit, and the documents and interviews conducted, the company demonstrated that it has a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.

However, Alliance provided a copy of its *Program, Surveillance and Monitoring, BDD-TEMP-0012,* which was in draft form, with no published date or approvals. Therefore, Alliance could not demonstrate that it has established a documented surveillance and monitoring program, which is non-compliant with OPR s. 39.

AP-11 Annual Report

6.6(1) A company shall complete an annual report for the previous calendar year, signed by the accountable officer, that describes
    (a) the performance of the company's management system in meeting its obligations under section 6 and the company's achievement of its goals, objectives and targets during that year, as measured by the performance measures developed under OPR s. 6.5(1)(b) and (v); and
    (b) the actions taken during that year to correct any deficiencies identified by the quality assurance program established under OPR s. 6.5(1)(w).

	Assessment
Annual Report	Alliance provided its most recent annual report titled *2017 Accountable Officer Report*. The annual report was signed by the accountable officer and by the Vice Presidents of Operational Compliance & Information Services and of Pipeline Operations and Engineering. The annual report described the performance of Alliance in meeting its obligations under section 6 of the OPR and Alliance's achievement of its goals, objectives and target during that year. The report stated that Alliance met its goals and achieved its objectives and targets for the year. The report also described Alliance's performance on its objectives and targets as measured by its performance measures. The report contained a summary of the quality assurance program activities conducted with the actions and outcomes taken to address the deficiencies identified.

FINDING: No issues noted

Based on the scope of the audit, the documents reviewed, and the interviews conducted, the Board has not identified any non-compliances to OPR s. 6.6(1).

AP-12 Integrity Program Audits

OPR s. 55(1) A company shall conduct audits, with a maximum interval of three years, of the following programs	

OPR s. 55(1) A company shall conduct audits, with a maximum interval of three years, of the following programs
    (a) the emergency management program referred to in section 32;
    (b) the integrity management program referred to in section 40, including the pipeline control system referred to in section 37;
    (c) the safety management program referred to in section 47;
    (d) the security management program referred to in section 47.1;
    (e) the environmental protection program referred to in section 48; and
    (f) the damage prevention program referred to in section 47.2.

    (2) The documents prepared following the audit shall include
    (a) any deficiencies noted; and
    (b) any corrective action taken or planned to be taken.

	Assessment
Integrity Program Audits	Alliance provided an integrity program audit report titled *Pipeline Integrity Management Program Compliance Audit – Q4 2017*. The report demonstrated that Alliance had conducted an audit of its integrity program within the last three years. The audit was conducted to assess compliance with the applicable regulatory requirements and to assure the adequacy and effectiveness of the integrity program. The audit report described the deficiencies noted and Alliance also provided records demonstrating that it has identified corrective actions for the deficiencies identified. Alliance explained that the IMP owner is responsible for tracking the status of the corrective actions. The implementation of the corrective action plan is still in progress. Alliance also explained that the results from audits constitute an input into the annual management review. The *AIMS Audit and Assessment Process - BDD-BUSPROC-0035* states that the Internal Audit department is responsible for providing status updates to the *AIMS Management Review*.

FINDING: No issues noted

Based on the scope of the audit, the documents reviewed, and the interviews conducted, the Board has not identified any non-compliances to OPR s. 55(1).

AIMS: Alliance Integrated Management System

AIMS HIRA: AIMS Hazard Identification and Risk Assessment

AP: Audit Protocol

CAPA Plan: Corrective and Preventative Action Plan

CSA Z662-15: CSA Standard Z662 entitled *Oil and Gas Pipeline Systems*, 2015 version

CP: Cathodic Protection

DRM: Documents and Records Management

HCA: High Consequence Area

HIRA: Hazard Identification and Risk Assessment

ILI: In-Line Inspection

LEAD: Learning, Evaluating, Addressing and Delivery

IMP: Integrity Management Program

MOC: Management of Change

NGL: Natural Gas liquid

NEB: National Energy Board

O&M: Operation and Maintenance

OLE: Online Learning Environment

OPR: *National Energy Board Onshore Pipeline Regulations*

PID: Pipeline Integrity Department

SCADA: Supervisory Control and Data Acquisition

Appendix III: Documents and Records Reviewed

- BDD-PROG-0013 (AIMS Quality Program)
- BDD-BUSPROC-0035 (Audit and Assessment Process)
- BDD-BUSPROC-0036 (Communications Process)
- BDD-BUSPROC-0037 (Corrective and Preventative Action Plan Process)
- BDD-BUSPROC-0038 (AIMS Goals Objectives and Targets Process)
- BDD-BUSPROC-0039 (AIMS Hazard Identification and Risk Assessment Process)
- BDD-BUSPROC-0040 (AIMS Inspection Process Process)
- BDD-BUSPROC-0041 (Management of Change Process)
- BDD-BUSPROC-0042 (Management Review Process)
- BDD-BUSPROC-0066 (Contractor Management Process)
- BDD-BUSPROC-0067 (AIMS Control of Operational Activities Process)
- BDD-BUSPROC-0069 (Centralized Inventory of Legal Requirements Process)
- BDD-GUID-0021 (Corporate Risk Matrix)
- BDD-MGMT-0006 (Alliance Integrated Management System Framework)
- BDD-PLCY-0070 (External Communication Policy)
- BDD-PROC-0011 (MOC for Legal and Regulatory Requirements in CCMS (LogicManager) Process)
- BDD-PROG-0013 (AIMS Quality Program)
- COR-PRAC-1000 (Bi-Annual Corridor Inspection Practice)
- COR-PRAC-1002 (Encroachment Monitoring and Data Management Practice)
- COR-PROC-1000 (Aerial Patrols Procedure)
- HR-BUSPROC-0001 (EP Awareness of Responsibility Process)
- HR-BUSPROC-0003 (Training Process)
- HR-BUSPROC-0004 (Competency Development and Evaluation Business Process)
- HS-BUSPROC-0005 (Investigating and Reporting Events Process)
- HS-BUSPROC-0006 (Corrective and Preventive Action Process)
- HSS-GUID-0038 (LEAD – Create Event Quick Guide)
- HSS-GUID-0039 (LEAD – Investigation User Guide)
- HSS-PRAC-0207 (Communications Practice)
- HSS-PRAC-0211 (Contractor Management Practice)
- HSS-PRAC-0224 (Investigating Events Practice)
- INF-PRCS-0003 (Document Control Process)
- IS-PRAC-0045 (Collaboration Sites Best Practices)
- INT-PROG-0001 (Integrity Management Program)
- INT-PRAC-0015 (Job Planning Practice)
- INT-PRAC-0011 (Inline Inspection Contingency Planning Practice)
- INT-GUID-0003 (Pipeline Integrity Glossary)
- INT-PRAC-0012 (Threat/Hazard Identification and Review Practice)
- INT-PRAC-0022 (HCA and Class Location Change Review Practice)
- INT-PRAC-0026 (Management of Change Practice)
- INT-PRAC-0027 (Risk Assessment and Control Practice)

- INT-PROC-0001 (Close Interval Surveys Procedure)
- INT-PROC-0080 (Hydrotechnical Inspection Procedure)
- INT-PROG-0007 (Geohazard Management)
- INT-PROG-0011 (Depth of Cover Management)
- INT-PROG-0008 (Corrosion Control Program)
- INT-PROC-0077 (Geotechnical Inspection - Geotechnical Hazards)
- INT-PROC-0001 (Close Interval Surveys)
- LEG-PRAC-0001 (AIMS Integrated Hazard Inventory Practice)
- LEG-PRCS-0001 (AIMS Develop Contingency Plans)
- LRC-PRAC-0028 (Hierarchy of Control Category Assessment Practice)
- OPS-MANL-0002 (Operations and Maintenance (Part 1 - Corporate))
- OPS-MANL-0003 (Operations and Maintenance (Part 2 - Field))

Appendix IV: Company Representatives Interviewed

Company Representative Interviewed	Job Title
███████████	Manager Regulatory Compliance
███████████	Gas Control Supervisor
████████	Regulatory Specialist
██████████	Manager Pipeline Integrity
█████████	Learning and Development Advisor
█████████	Learning and Development Advisor
█████████	Learning and Development Advisor
█████████	Senior Compliance Advisor
████████████	Chief Inspector
█████████	Director Field Operations
█████████	Senior Health & Safety Advisor
████████	Manager Technical Operations
█████████	Senior Auditor, Operational Audits
████████	Manager Pipeline Operations
█████████	Pipeline Engineering / Integrity Management
█████████	Pipeline Integrity Engineer – Integrity Management Program
████████	Manager Corridor & Damage Prevention
█████████	AIMS Manager / Strategic Advisor
█████████	Pipeline Integrity Engineer – Inline Inspection Program
█████████	Pipeline Integrity Engineer – Geohazard Management Program
█████████	Senior Advisor Pipeline Integrity – Corrosion Control Program