

**AltaGas Utilities**  
**Integrity Management Program Review**

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Prepared For  
**The Alberta Utilities Commission**

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## STATEMENT OF WORK

*The consultant is to review and provide a written report respecting AltaGas Utilities Inc. and AltaGas Utilities manuals that address gas utility pipeline integrity management and emergency response plans. The report should address the degree to which the manuals comply with legislation and standards including, but not limited to Sections 7 and 8 of the Pipeline Regulation, CSA Z662-11: Oil and Gas Pipeline Systems including Annex N, CSA Z731 Emergency Preparedness and Response and CSA Z1600 Emergency Management and Business Continuity. Recommendations to alleviate any deficiencies identified with the procedural manuals are to be provided. The consultant will also provide high level perspectives respecting recommended procedures or exercises for use in the AUC development of a gas utility pipeline procedural audit plan for integrity management and emergency response.*

## SCOPE

The following report addresses the legislative compliance of AltaGas Utilities Inc. Integrity Management Program to the requirements of CSAZ662-11 Annex N<sup>1</sup>, *Oil and Gas Pipeline Systems*. The reports focus is on gas utility pipelines operated in excess of 700 kilopascals operating within the province of Alberta. The construction and operation of gas utility pipelines, operated in excess of 700 kilopascals, is regulated by the Alberta Utilities Commission.

The document used in the review was AltaGas Utilities Inc. Integrity Management Program Rev. July 2012.

## METHODOLOGY

AltaGas Utilities Inc. Integrity Management Program was reviewed to the 16 elements of CSAZ662-11 Annex N. Policies and procedures, both externally referenced and contained within the Integrity Management Program were categorized and evaluated for compliance to Annex N.

The reviews focus is to verify that documented policies, methods and procedures are in place to manage the pipeline integrity management requirements of Annex N.

## REVIEW SUMMARY

*Note: Documents referenced in AltaGas Utilities Integrity Management Program were not reviewed, and may address deficiencies outlined in this report.*

The following Sections of CSA Z662-11 Annex N are not evident in AltaGas Utilities Inc. Integrity Management Program:

### **N.4 Descriptions of pipeline systems**

No evidence was found in documented policies, methods or procedures to indicate that AltaGas Utilities Integrity Management Program includes descriptions of pipeline systems that are included in the Integrity Management Program, and reasons for the exclusion of any pipeline systems.

<sup>1</sup> Part 1 Section 1.2(1) of the Pipeline Regulation states "a licensee shall comply with the requirements of Directive 077." Directive 077 – Pipeline Requirements and Reference Tools, Section 5.2 states "A pipeline licensee must develop, implement, and document for all its pipelines a pipeline integrity management program that complies with the latest edition of CSA Z662, Annex N."

**N.15.3 Monitoring and measurement**

No evidence was found in documented policies, methods or procedures to indicate that AltaGas Utilities Integrity Management Program monitors and measures, on a regular basis, the performance of the integrity management program.

**N.15.5 Control of non-conformance**

No evidence was found in documented policies, methods or procedures to indicate that AltaGas Utilities Inc. Integrity Management Program includes procedures for defining responsibility and authority for handling and investigating non-conformances, taking action to mitigate any impact, or for initiating and completing corrective and preventative action.

**N.5 Integrity management program records****N.6 Change management****N.7 Competency and training****N.8 Hazard identification and control****N.9 Risk Assessment****N.11 Integrity management program planning****N.15 Continual improvement****N.16 Incident investigations**

The sections listed above are addressed at the policy level of the Integrity Management Program, however there is no indication or reference of methods or procedures to manage the requirements of each section.

The remaining sections of the Integrity Management Program contain documented policies, methods and procedures to manage pipeline integrity requirements of *CSAZ662-11 Annex N*. (see Table 1)

**REVIEW RECOMMENDATIONS**

## Annex N.4 Description of pipeline systems

The addition of pipeline descriptions as defined in *CSA Z662-11 Annex N.4* which will provide both the Regulator and the licensee a high level summary of the licensee's pipeline systems. The development of pipeline descriptions, along with pipeline licence summaries, and pipeline maps (see *CSA Z662-11 Section 10.5.1.1b*) will provide pipeline inventories to ensure all pipelines are properly licenced and compliant to pipeline integrity programs.

## Annex N.15.3 Monitoring and measurement

The addition of policies, methods or procedures as defined in *CSA Z662-11 Annex N.15.3* which will provide both the Regulator and the licensee a summary of the performance measures on both conformance to established requirements and effectiveness in achieving stated objectives and targets.

## Annex N.15.5 Control of non-conformance

The addition of policies, methods or procedures as defined in CSA Z662-11 Annex N.15.5 that define responsibility and authority for investigating non-conformances, taking actions to mitigate impacts and for initiating and completing corrective and preventative action.

Annex N.5 Integrity management program records  
Annex N.6 Change management  
Annex N.7 Competency and training  
Annex N.8 Hazard identification and control  
Annex N.9 Risk Assessment  
Annex N.11 Integrity management program planning  
Annex N.15 Continual improvement  
Annex N.16 Incident investigations

The addition of methods and procedures to manage the requirements, related to the policy statements.

**PIPELINE PROCEDURAL AUDIT PLAN FOR INTEGRITY MANAGEMENT PROGRAM**

The Integrity Management Program Review focused on AltaGas Utilities Inc. Integrity Management Program and how it meets the requirements of CSAZ662-11 Annex N. The Integrity Management Program utilizes a combination of policies and methods, as well as procedures referenced in other manuals

Audits and reviews will measure AltaGas Utilities Inc. compliance to the policies, methods and procedures of the Integrity Management Program.

Audits and reviews can also be used to measure compliance to the applicable requirements of:

- *Alberta Pipeline Regulation*
- *ERCB Directive 066 Requirements and Procedures for Pipelines*
- *ERCB Directive 077 Pipelines- Requirements and Reference Tools*
- *CSA-Z662-11*

**Recommendations**

1. A review of the compliance with AltaGas Utilities Inc. Integrity Management Program's referenced procedures to the legislative requirements of the *Alberta Pipeline Regulation, ERCB Directive 066, ERCB Directive 077* and *CSA Z662-11*.

**Example:** A review of the Standard Practices Manual, specifically procedures related to signage, to the legislative requirements of the *Alberta Pipeline Regulations, ERCB Directive 066, ERCB Directive 077* and *CSA Z662-11*.

2. An audit of pipeline integrity policies, methods and procedures contained within or referenced by the Integrity Management Program. This audit can be conducted through a review of integrity records, and/or by field verification of program requirements.

**Example A:** An audit of the application of the Standard Practices Manual, specifically procedures related to signage, including inspections, deficiencies and mitigation records.

**Example B:** An audit of field compliance to the Standard Practices Manual, specifically procedures related to signage.

**Example C:** An audit of the performance measures referenced in AltaGas Utilities Inc., Integrity Management Program, Section 2.1 Presidents Endorsement, "The plan will use performance measures to monitor overall effectiveness and to initiate modifications or additions as warranted."

In order to develop audits that are manageable in scope:

- a) Audits can be developed to utilize the ERCB's Risk Assessment Matrix, and focus on the applicable high risks, outlined in *ERCB Directive 66: Requirements for Pipelines, Appendix 1 Operational Deficiencies* that are associated with gas utility pipelines.
- b) Field audits can be focused on specific pipeline licences.

Integrity Management Program - Table 1

Annex N CSA Z662-11	AltaGas Utilities Inc. Policies, Methods and Procedures	Comments
N.1 Introduction	N/A	
N.2 Integrity management program scope	<p><b>Integrity Management Program</b></p> <p>Section 1.0 Introduction 1.1 Scope</p> <p>Section 4.0 Documentation and Information Methods Standards used in the Engineering, operations and maintenance of the piping systems will be documented and stored in the Standard Practices Manual (SPM)</p> <p>Section 4.1 Design Design information will be recorded.</p> <p>Section 4.5 Failure Reporting and Investigation All failure incidents will be investigated.</p> <p>Section 4.7 Environmental Protection Environmental issues and concerns will be documented as per the AUI Environmental Management Practices Manual</p> <p>Section 4.8 Safety Employees and contractors will follow the Company's Environmental Management Practices Manual and OH&amp;S policies and procedures.</p> <p>Section 5.0 Pipeline Integrity Management Program Records Protocol to implement standards. Records will include the following:</p> <ul style="list-style-type: none"> <li>• Geographic Information System</li> <li>• Construction Records</li> <li>• Plant Records</li> <li>• Engineering Files</li> <li>• Engineering Services</li> <li>• Operations</li> <li>• Supply and Services</li> </ul> <p><b>Section 8.0 Failure Reporting and Investigation</b></p> <p>Section 11.3.1 External Interference</p> <p><b>Referenced Policies and Procedures</b> <a href="#">Standard Practice Manual</a> <a href="#">Environmental Management Practices Manual</a></p>	Integrity Management Program includes policies, methods and procedures to address the requirements of Annex N.2
N.3 Corporate policies, objectives and organization	<p><b>Integrity Management Program</b></p> <p>Section 1.0 Introduction 1.2 Objectives</p>	Integrity Management Program includes policies, methods and procedures to address the requirements of Annex N.3

	<ul style="list-style-type: none"> <li>• Maintaining and improving appropriate inspection, maintenance and repair programs.</li> <li>• Maintaining and improving continuous improvement programs.</li> <li>• Maintaining and improving training and operator competence programs.</li> <li>• Maintaining and improving third party awareness programs.</li> </ul> <p><b>Referenced Policies and Procedures</b>  <a href="#">Standard Practice Manual</a>  <a href="#">Environmental Management Practices Manual</a>  <a href="#">Instructions to Employees Manual</a>  <a href="#">Environmental Occupational Health and Safety Manual</a>  <a href="#">AUI SPM 9.3 - Leak Surveys</a></p>	
N.4 Description of pipeline systems		No evidence of policies, methods or procedures related to requirements of Annex N.4.
N.5 Integrity management program records	<p><b>Integrity Management Program</b>  Section 5.0 Pipeline Integrity Management Program Records  Protocol to implement standards.  Records will include the following:</p> <ul style="list-style-type: none"> <li>• Geographic Information System</li> <li>• Construction Records</li> <li>• Plant Records</li> <li>• Engineering Files</li> <li>• Engineering Services</li> <li>• Operations</li> <li>• Supply and Services</li> </ul> <p>Section 1.0 Introduction 1.2 Objectives  Specific requirements for data gathering, record retention, design, construction and operation of AUI pipelines are specified in this manual.</p>	<p>Integrity Management Program includes a policy and methods to address the requirements of Annex N.5</p> <p>Specific documentation of procedures used for managing program records (i.e. index and methods of storage and retrieval) are not evident in the IMP.</p>
N.6 Change management	<p><b>Integrity Management Program</b>  Section 7.0 Change Management</p>	<p>Integrity Management Program includes a policy and methods to address the requirements of Annex N.6</p> <p>Specific documentation of a change management procedure is not evident in the IMP.</p>
N.7 Competency and training	<p><b>Integrity Management Program</b>  Section 6.0 Competency and Training  All employees, contractors and external service providers required to perform tasks related to the IMP will complete appropriate orientation and training.</p>	<p>Integrity Management Program includes a policy to address the requirements of Annex N.7</p> <p>Specific documentation of competency methods or procedures are not evident in the IMP.</p>
N.8 Hazard identification and control	<p><b>Integrity Management Program</b>  Section 9 Hazard Identification and Control</p>	<p>Integrity Management Program includes a policy and method to address the requirements of Annex N.8</p> <p>Specific documentation of hazard identification and control procedures are not evident in the IMP.</p>
N.9 Risk assessment	<p><b>Integrity Management Program</b>  Section 1.0 Introduction 1.2 Objectives</p>	<p>Integrity Management Program includes policies and methods to address the requirements of Annex N.9</p>

	<p>This manual describes a process that can be used to assess and mitigate risk in order to reduce both the likelihood (frequency) and consequence of incidents.</p> <p>Section 10.0 Risk Assessment Section 10.1 Risk Evaluation</p>	<p>Specific documentation of procedures used for conducting risk assessments are not evident in the IMP.</p>
N.10 Options for reducing frequency and consequences of failure or damage incidents	<p><b>Integrity Management Program</b> Section 11.2 Pipeline Monitoring Section 11.3.1 External Interference Section 11.4 Improved Engineering Practices</p> <p><b>Referenced Policies and Procedures</b> <a href="#">AUI SPM 9.3 - Leak Surveys</a></p>	<p>Integrity Management Program includes policies, methods and procedures to address the requirements of Annex N.10</p>
N.11 Integrity management program planning	<p><b>Integrity Management Program</b> Section 5.0 Pipeline Integrity Management Program Records Protocol to implement standards. Records will include the following: Geographic Information System</p> <ul style="list-style-type: none"> <li>• Construction Records</li> <li>• Plant Records</li> <li>• Engineering Files</li> <li>• Engineering Services</li> <li>• Operations</li> <li>• Supply and Services</li> </ul> <p>Section 12.0 Pipeline Integrity Management Program Planning</p>	<p>Integrity Management Program includes policies to address the requirements of Annex N.11</p> <p>Specific documentation of procedures used for planning and scheduling of activities (i.e. Inspections, Testing, Patrols and Monitoring) are not evident in the IMP.</p>
N.12 Inspections, testing, patrols and monitoring	<p><b>Integrity Management Program</b> Section 5.0 Pipeline Integrity Management Program Records Protocol to implement standards. Records will include the following:</p> <ul style="list-style-type: none"> <li>• Geographic Information System</li> <li>• Construction Records</li> <li>• Plant Records</li> <li>• Engineering Files</li> <li>• Engineering Services</li> <li>• Operations</li> <li>• Supply and Services</li> </ul> <p>Section 11.2.1 Testing and Monitoring of Cathodic Protection Section 11.3 Operations/Maintenance Practices Section 11.3.1 External Interference Section 13 Inspections, Testing, Patrols and Monitoring (Includes Evaluation of Results)</p> <p><b>Referenced Policies and Procedures</b> <a href="#">AUI SPM 9.3 - Leak Surveys</a></p>	<p>Integrity Management Program includes policies, methods and procedures to address the requirements of Annex N.12</p>



N.13 Evaluation of inspection, testing, patrol and monitoring results	<b>Integrity Management Program</b> Section 13 Inspections, Testing, Patrols and Monitoring (Includes Evaluation of Results)	Integrity Management Program includes policies, methods and procedures to address the requirements of Annex N.13
N.14 Mitigation and repair	<b>Integrity Management Program</b> Section 14.0 Mitigation and Repair  <b>Referenced Policies and Procedures</b> <a href="#">Standard Practice Manual</a>	Integrity Management Program includes policies, methods and procedures to address the requirements of Annex N.14
N.15 Continual improvement	<b>Integrity Management Program</b> Section 11.4 Improved Engineering Practices  Section 15.0 Pipeline Integrity Management Program Review and Evaluation	Integrity Management Program includes policies and methods to address the requirements of Annex N.15.1, N.15.2, & N.15.4.  Specific documentation of procedures used for continual improvement are not evident in the IMP.  Specific documentation of the policy, methods or procedures used for N.15.3 Monitoring and Measurement and N.15.5 Control of non-conformance are not evident in the IMP.
N.16 Incident investigations	<b>Integrity Management Program</b> Section 4.5 Failure Reporting and Investigation Section 8.0 Failure Reporting and Investigation	Integrity Management Program includes a policy and methods to address the requirements of Annex N.16  Specific documentation of procedures used for Incident investigations are not evident in the IMP.