

***ATCO Pipelines***  
***Safety and Loss Management Systems***  
***Supplemental Review***

*March 22, 2019*

*Prepared For*

***The Alberta Utilities Commission***

*Prepared By*

*Byron Serge, BHTSerge Consulting Ltd.*  
*Lead Auditor, QMS ISO9001:2015*  
*Exemplar Global Certificate 131564*

**Table of Contents**

Statement of Work..... 3  
Scope..... 3  
Definitions..... 3  
SLMS Overview..... 5  
Review Findings & Recommendations ..... 6  
Appendix A - SLMS Regulations ..... 18

## **1. STATEMENT OF WORK**

The consultant is to review submissions and provide a written report respecting ATCO Pipeline's safety and loss management systems, specifically the application of the safety and loss management systems (SLMS) in managing emergency response and pipeline integrity associated with high-pressure gas utility pipelines.

## **2. SCOPE**

The following report addresses the compliance of ATCO Pipeline's Safety and Loss Management System, Pipeline Integrity Management Program, and Emergency Response Program to the requirements of:

- Sections 7, 8 and 9(3) of the Pipeline Rules;
- CSA Z662-15: Oil and gas pipeline systems including Section 3 Safety and Loss Management Systems, Annex A: Safety and loss management system and Annex N: Guidelines for pipeline integrity management systems; and
- CSA Z246.2-14 Emergency preparedness and response for petroleum and natural gas industry systems.

The report's focus is on gas utility pipelines operated in excess of 700 kilopascals operating within the province of Alberta, regulated by the Alberta Utilities Commission.

The report utilizes the supplemental review evidence provided by ATCO Pipelines, in response to the December 21, 2018 Safety and Loss Management System Review, regarding compliance of programs, policies, procedures and records with legislation and standards.

## **3. DEFINITIONS**

**Policy** - A documented statement of a company's commitment to safety, security and environmental protection. Goals reflect the direction and desired outcomes of the policies.

**Program** - A documented set of processes and procedures designed to regularly accomplish a result. A program outlines how plans, processes and procedures are linked, and how each one contributes toward the result. Program planning and evaluation are conducted regularly to check that the program is achieving intended results.

**Process** - A documented series of actions taking place in an established order, with identified roles and responsibilities, and directed toward a result. A process includes the roles, responsibilities and authorities for the actions. A process may contain a set of procedures, if required.

**Procedure** - A procedure indicates how a process will be implemented. It provides a documented series of steps followed in an established order. A procedure includes the identification of roles, responsibilities and authorities required for completing each step.

**Management System** - A systematic approach designed to effectively manage and reduce risk and promote continual improvement. It includes the necessary organizational structures, resources, accountabilities, policies, processes and procedures required for an organization to fulfill all tasks related to safety, security and environmental protection.

**Safety and Loss Management System (SLMS)** - A systematic, comprehensive, and proactive process for the management of safety and loss control associated with design, construction, operation, and maintenance activities.

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

**Effective** - A process or other requirement meets its stated goals, objectives, targets and regulated outcomes. Continual improvement is being demonstrated. This is primarily demonstrated by records of inspection, measurement, monitoring, investigation, quality assurance, audit and management review processes.

**Established** - A process or other requirement has been developed in the format required. It has been approved and endorsed for use by the appropriate management authority and communicated throughout the organization. All staff and persons working on behalf of the company or others that may require knowledge of the requirement are aware of the process requirements and its application. Staff has been trained on how to use the process or other requirement. The company has demonstrated that the process or other requirement has been implemented on a permanent basis.

**General Compliance Audit** - Audits utilizing criteria established within the SLMS, specifically documented processes and procedures to evaluate the level of conformity for a specific pipeline or facility. Audits take place in the field with the auditees being personally responsible to complete the duties outlined in the documented processes and procedures. Inspections and interviews are utilized to conduct the audit.

**Program Audit** - Audits utilizing criteria established in CSAZ662 Section 3 SLMS as well as other applicable legal requirements (must, will and should statements). Audit evidence includes documented processes and procedures. Auditees are typically program owners and the audit is primarily a paper exercise.

#### **4. SLMS Overview**

*CSAZ662-15 Section 3, and Annex A details the system requirements to ensure a systematic, comprehensive, and proactive process for the management of safety and loss control associated with design, construction, operation, and maintenance activities.*

*SLMS is focused on ensuring no harm is done to people, the environment or property. SLMS processes ensure a quality management program, Plan-Do-Check -Act. In simplified terms the inputs into a SLMS are legal requirements and risks, the outputs are mitigation in the form of documented programs, policies, processes and procedures.*

*SLMS processes include:*

- 1. Process to determine legal requirements*
- 2. Process to determine hazards*
- 3. Process for risk management*
- 4. Process to mitigate risks*
- 5. Process to set goals and objectives*
- 6. Process to identify and ensure adequate resources, human resources, contractors, infrastructure and work environment to meet objectives*
- 7. Process to ensure training, competence and evaluation*
- 8. Process to determine required operational controls*
- 9. Process to ensure effective internal and external communication*
- 10. Process to ensure document and records management*
- 11. Process to control of documents and records*
- 12. Process to ensure management of change*
- 13. Process to ensure continual improvement including performance monitoring, conformance monitoring, control of nonconformance and management review*

**5. Review Findings**

Submitted review evidence was evaluated based on the level of detail provided to consistently deliver the same results regardless of the individual completing the requirements. Where review evidence was too general, repeated the regulatory requirement, or was written as a guideline rather than in mandatory language, additional evidence was requested to confirm that the ATCO processes and procedures were established and implemented. The additional evidence requested should include documented records confirming that ATCO’s processes and procedures are being followed in practice.

**1. Process to determine legal requirements**

**AUC SLMS Review Recommendation:** Development and implementation of processes and procedures to identify specific legal requirements for the protection of people, property and the environment (legal registry). These Regulations should be identified at the "shall, must or will" statement. The legal registry will serve as one of the inputs into the SLMS risk management process.

**ATCO Response:** ATCO agrees with the recommendation, has already implemented the recommended process and further clarification is provided.

The Regulatory Compliance Process referenced in the supplemental document QS04 outlines ATCO’s legal registry process. Employees are assigned ownership of specific legal requirements and are prompted to review them within the appropriate time-period through an automated email. With legal requirements captured in an IT platform, employees can access the information in real-time and update accordingly when legislation changes.

**Supplemental Review Evidence:**

1. Process to determine legal requirements			
Documents	Revision	Previously Reviewed	Approver
a) QMP1400 – Regulatory Compliance	Revision 3 Date Unknown	No	Not Indicated

**Findings:**

- a) Evidence of documented guidelines for identifying and implementing new and amended legislation, as well as monitoring compliance with each piece of legislation.

**Recommendation:** Development of the legal registry as well as documented processes and procedures to manage the legal registry. Ensure existing legislation is included along with new and amended legislation. Once the legal registry processes are implemented, additional documented evidence will be required to determine that the processes are effective and established.

## 2. Process to determine hazards

**AUC SLMS Review Recommendation:** Development and implementation of a hazard inventory, specifically for the protection of people, property and the environment. The hazard inventory, along with the legal registry will serve as the inputs into the SLMS risk management process.

**ATCO Response:** ATCO agrees with the recommendation, is continuing improvement of its existing process, and provides further clarification. ATCO's Job Hazard Analysis Specifications are an inventory of those hazards encountered by employees performing certain tasks (SA07-1 to 9). Employees are required to complete Project and Daily Hazard Assessments (forms 0165 and 0197, and associated procedure SA02-1). For unique hazards, employees complete ATCO's Hazard Identification Report (form 0163, and associated procedure SA02-2). These documents are respectfully submitted as supplemental evidence. In addition, hazards may also be added to ATCO's Risk Registry and would include a description of proposed mitigating measures as part of the overall risk assessment process. The risk management process is discussed further in ATCO's responses to Recommendations #3 and #4.

### Supplemental Review Evidence:

2. Process to determine hazards			
Documents	Revision	Previously Reviewed	Approver
a) SA07-1 Job Hazard Analysis-Process Control	July 2014	No	Randy Dorland
b) SA07-2 Job Hazard Analysis-Process Pipelines	Sept 2017	No	Not Indicated
c) SA07-3 Job Hazard Analysis-Process Compressors	Sept 2017	No	Not Indicated
d) SA07-4 Job Hazard Analysis-Process Salt Caverns	July 2014	No	Randy Dorland
e) SA07-5 Job Hazard Analysis-Process Control	June 2017	No	Not Indicated
f) SA07-6 Job Hazard Analysis-Process Vehicles	July 2017	No	Not Indicated
g) SA07-7 Job Hazard Analysis-Process Offices	Sept 2017	No	Not Indicated
h) SA07-8 Job Hazard Analysis-Process Off Road Vehicles	July 2017	No	Not Indicated
i) SA07-9 Job Hazard Analysis-Process Building Maintenance	Jan 2015	No	Randy Dorland
j) SA02-1 Hazard Assessment	Revision 5	Yes	Randy Dorland
k) Form 0165 Project Hazard Assessment	n/a	No	n/a
l) Form 0197 Daily Hazard Assessment	n/a	No	n/a
m) SA02-2 Hazard Identification, Mitigation and Reporting	April 2016	Yes	John McCarthy
n) Form 0163 Project Hazard Assessment	n/a	No	n/a

### Findings:

- a) a) to i) Evidence of specific hazards as well as corresponding controls to mitigate risks.
- j) Evidence of a documented procedure providing details for completing a Hazard Assessment of the conditions and activities on a worksite.
- k) Documented Project Hazard Assessment Form.
- l) Documented Daily Hazard Assessment Form.
- m) Evidence of a documented procedure that details the process that shall be used by ATCO Pipelines Employees and Contractors to report and mitigate an identified hazard.
- n) Documented Hazard Identification Report Form.

**Recommendation** Hazards to people, property and the environment should be identified for lifecycle of pipelines including design, construction, operation and abandonment. Additional documented evidence is required to determine that the submitted evidence is effective and established.

**3. Process for risk management**

**AUC SLMS Review Recommendation:** Development and implementation of a risk management process aligned to CSAZ662-15 Annex B, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation, has already implemented the recommended process and provides further clarification. In addition to the supplemental evidence provided in response to Recommendation #2, ATCO’s risk framework is described in the previously provided Risk Management document, MS500 Figure 3 (shown below). This risk framework aligns with CSA Z662 Annex B and is reiterated throughout organizational procedures. For example, on the Project and Daily Hazard Assessment Form, hazards are risk-ranked both pre- and post mitigation to ensure hazards are appropriately mitigated and the work is safe to complete. In addition, quarterly reviews of the most serious risks are conducted. A detailed explanation of the process is included in ATCO’s response to Recommendation #4.

**Supplemental Review Evidence:**

3. Process for risk management			
Documents	Revision	Previously Reviewed	Approver
a) MS500 Figure 3 (Figure MS504)	July 2014	Yes	B. Hahn

**Findings:**

- a) Evidence of documented risk management process.

**Recommendation:** As per CSAZ662-15 Figure B.1 The process of risk management, regulatory authorities (legal requirements) should be an input into the risk evaluation process. Once the legal registry processes are implemented, submission of additional documented evidence should be submitted to verify that the risk management processes are established and effective.

**4. Process to mitigate risks**

**AUC SLMS Review Recommendation:** Development and implementation of processes to mitigate risks, specifically for the protection of people, property and the environment.

**ATCO Response:**

ATCO agrees with the recommendation, has already implemented the recommended process and provides further clarification.

ATCO’s Risk Management document MS500, along with the additional hazard assessment documents provided, describe how risks are treated (mitigated). The excerpt below from MS500 describes the process that occurs quarterly:

The ATCO Pipelines Operational Risk Management & Compliance Committee establishes its commitment to the development, observance, and improvement of the Risk Management Program by:



- a) identifying, classifying, and prioritizing corporate risks;
- b) determining and applying mitigations and controls appropriate for the corporate risks identified;**
- c) assigning corporate risks and mitigations identified to an accountable Risk Owner, when necessary;**
- d) ensure monitoring of the corporate risks and the effectiveness of the applied controls;**
- e) review of the limitations and quanta of insurance held by ATCO Pipelines and its effect on mitigated risks;
- f) documenting the risk management process in the Risk Register;
- g) emphasizing continuous improvement in the Risk Management Program through the use of objectives, goals, measurement, review, and subsequent modifications; and
- h) ensuring the ongoing compliance with all legislation through the constant revision of the Regulatory Compliance Record.

Risk Treatment is further described in MS500 as follows:

*Risk treatment involves the implementation and tracking of a mitigation plan. Once a mitigation plan and the applicable controls have been determined and put in place, the residual risk is evaluated using the same approach as the pre-mitigation assessment. Extreme residual risk ratings require that appropriate action plans are in place to mitigate the risk to an acceptable level. High residual risk ratings require consideration of actions and contingency plans in addition to any mitigation. Responsibility for the completion of required actions and plans is assigned and documented on the risk register.*

**Supplemental Review Evidence:**

4. Process to mitigate risks			
Documents	Revision	Previously Reviewed	Approver
a) MS500 Management System	July 2014	Yes	B. Hahn

**Findings:**

- a) Evidence of documented risk management process.

**Recommendation:** As per CSAZ662-15 Figure B.1 The process of risk management, regulatory authorities (legal requirements) should be an input into the risk evaluation process. Once the legal registry processes are implemented, documented evidence should be submitted to verify that the risk management processes are established and effective.

**5. Process to set goals and objectives**

**AUC SLMS Review Recommendation:** Development and implementation of processes to set goals and objectives, for procedures specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO does not fully agree with the recommendation and provides further clarification. The recommendation suggests goals be set at three specific levels: overall management system, individual programs and individual procedures. ATCO is unclear what is meant by setting goals at the individual procedures level.

CSA Z662 Clause 3.1.2 h) calls for a process for continual improvement, including development of measurable objectives and targets. Non-mandatory guidance in Annex A.10.1 suggests that the operating company shall establish objectives and targets at relevant functions and levels within the organization. However, CSA does not define relevant levels.

ATCO sets corporate level goals which are a consistent part of the annual business planning process. Corporate level goals and metrics are monitored and reviewed by ATCO’s leadership team on a regular basis.

ATCO’s Management System document MS00 also assigns responsibilities for:

“Establishing goals, metrics and KPIs” to Program Owners; “Participating in the setting of their individual goals and objectives” to all employees; and “Supporting implementation of plans to achieve health and safety, environment, quality and security goals and objectives and recommending initiatives to ensure they are communicated and understood” to Joint Safety, Environment & Quality (SEQ) Teams.

To ensure and encourage continual improvement, MS00 requires that Management Reviews validate the achievement of goals.

**Supplemental Review Evidence:**

5. Process to set goals and objectives			
Documents	Revision	Previously Reviewed	Approver
a) MS00 Management System	Date Unknown	Yes	Not Indicated

**Findings:**

- a) Evidence of general overview of ATCO’s Management System.

**Recommendation:** SLMS is focused on ensuring all risks (significant hazards and applicable legal requirements) are eliminated or mitigated to an acceptable level. Procedural mitigation for risks to people, property or the environment, require the establishment of specific goals and objectives. Goals and objectives are utilized by assurance activities to ensure SLMS performance is measured and continuously improved. Goals and objectives for SLMS programs, processes and procedures should be established and aligned to the processes to ensure continual improvement including performance monitoring, conformance monitoring, control of non-conformance and management review.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. Supporting evidence could include examples of documented goals and

targets, within ATCO programs, processes and procedures. The additional evidence should be evaluated against both CSAZ662-15 and ATCO requirements.

**6. Process to identify and ensure adequate resources, human resources, contractors, infrastructure and work environment to meet objectives**

**AUC SLMS Review Recommendation:** Development and implementation of processes for resource management, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation, has implemented a process and provides further clarification.

Responsibility of resource management is assigned to Program Owners, Project Managers, Management and Supervisors in ATCO’s MS00 document. These individuals review and secure resources to meet objectives as part of:

- Project identification and business case development
- Project management planning practices
- Annual business plan development

In addition, resourcing requirements are considered in response to the risks identified as part of ATCO’s assessment process, described in ATCO’s responses to Recommendations #2, #3 and #4.

**Supplemental Review Evidence:**

6. Process to identify and ensure adequate resources, human resources, contractors, infrastructure and work environment to meet objectives			
Documents	Revision	Previously Reviewed	Approver
a) MS00 Management System	Date Unknown	Yes	Not Indicated

**Findings:**

- a) Evidence of general overview of ATCO’s Management System.

**Recommendation:** As SLMS procedures and processes are developed, to ensure successful execution, specific resources, infrastructure and work place environment requirements need to be identified, assessed and addressed. Performance issues identified through the evaluation of specific goals and objectives, at the procedure level, will indicate areas where resources, infrastructure and work place environment are inadequate.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. Supporting evidence could include specific examples of the identification of resources required to successfully implement a SLMS program, process or procedure. Consideration should be given to the creation of new procedures as well as results of management reviews. The additional evidence should be evaluated against both CSAZ662-15 and ATCO requirements.

## 7. Process to ensure training, competence and evaluation

**AUC SLMS Review Recommendation:** Development and implementation of processes for training, competence and evaluation, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation, has implemented processes and provides further clarification.

Training, competency information and evaluation are documented in competency modules and completion is tracked via the Competency Management Information System (CMIS), an Access database. A controlled document does not exist that describes the IT solution implemented to manage competency. ATCO has however implemented controlled Competency forms; examples have been provided as supplemental evidence. (CMIS 1505000 Personal Protective Equipment; CMIS 1502200 Working at Heights; CMIS 1503000 H2S Alive, CMIS 1502300: Wildfire Reporting, CMIS 2501600: Waste Disposal; CMIS 3001200 Gas Regulators 2) ATCO is willing to demonstrate the competency modules and process to provide evidence that competencies have been defined and a consistent process exists.

### Supplemental Review Evidence:

7. Process to ensure training, competence and evaluation			
Documents	Revision	Previously Reviewed	Approver
a) CMIS 1505000 Personal Protective Equipment	August 2016	No	Not Indicated
b) CMIS 1502200 Working at Heights	August 2016	No	Not Indicated
c) CMIS 1503000 H2S Alive	June 2017	No	Not Indicated
d) CMIS 1502300: Wildfire Reporting	July 2017	No	Not Indicated
e) CMIS 2501600: Waste Disposal	Aug 2016	No	Not Indicated
f) CMIS 3001200 Gas Regulators	March 2017	No	Not Indicated

### Findings:

- a) a) to f) Evidence of specific competency tracking forms.

**Recommendation:** Training, competence and evaluation processes, required for the effective implementation of the SLMS, should conform to CSAZ662-15 Annex A.5 requirements. All SLMS processes and procedures should include specific, documented, training and competency requirements for both contractors and employees who are responsible or accountable. Training requirements and competency assessments should be completed based on the level of risk being managed and should take place prior to work being assigned.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. Supporting evidence could include a concordance document identifying all SLMS Programs, process and procedures, the specific persons responsible for implementation, specific training requirements and how competency is managed. ATCO has indicated in their response that they are willing to demonstrate the competency modules and process to provide evidence that competencies have been defined and a consistent process exists.

## **8. Process to determine required operational controls**

**AUC SLMS Review Recommendation:** Development and implementation of all 13 SLMS processes, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation and has begun to implement the recommended processes. Further clarification is provided below.

ATCO has implemented a Management System (MS00) that incorporates the principles of ISO 9001:2015 and applies the approach to several aspects of operations including health and safety, environmental protection, quality and security. This approach is consistent with the 13 Safety and Loss Management processes.

ATCO's Management System is supported by several Programs. Each Program is assigned to a Program Owner from senior management who is responsible for program execution in accordance with requirements defined in MS00. The role of the Program Owner as outlined in MS00 is similar to that of the Management Representative as defined in CSA Z662.

Each Program has its own set of processes and work procedures. ATCO's numerous documented work procedures ensure consistent execution in accordance with code requirements. Actions are executed by Program Owners applying the requirements of the Management System to their programs.

ATCO has initiated the development of fully documented plan-do-check-act processes for all programs identified as part of the Safety and Loss Management System. In particular, work is progressing on a priority basis for the following areas: Integrity Management, Emergency Management, Damage Prevention, Control Room Management, Water Protection, Security Management, and Environmental Stewardship.

Supplemental Review Evidence – None

Evidence of specific documented procedures and processes to determine operational controls were not provided. Operational control includes project management, design, procurement, construction, operations and maintenance and engineering assessments.

**Recommendation:** SLMS procedures and processes should be developed for the design, construction operation, and abandonment of pipeline systems, SLMS processes and procedures should incorporate all 13 processes identified in this report.

## **9. Process to ensure effective internal and external communication**

**AUC SLMS Review Recommendation:** Development and implementation of processes to ensure effective internal and external communication, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation, has already implemented the recommended processes and provides further clarification. Page 12 of MS00) outlines the internal lines of communication and reporting with defined responsibilities for various roles described on pages 13-17 of MS00. MS00 page 25 also describes several communications tools used to ensure effective communications and provides instructions to Program Owners regarding their responsibilities for

communications planning. ATCO's Marketing & Communications group supports Program Owners, and departments within the organization to provide messaging to external stakeholders.

**Supplemental Review Evidence:**

9. Process to ensure effective internal and external communication			
Documents	Revision	Previously Reviewed	Approver
a) MS00 Management System	Date Unknown	Yes	Not Indicated

**Findings:**

- a) Evidence of general overview of ATCO's Management System.

**Recommendation:** All SLMS processes and procedures should identify the internal and external communications required for their effective implementation. The processes for communication will be specific for the hazards or legal requirements being managed and should consider activation, implementation and any outputs including interrelations and cross-functionality.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. Supporting evidence could include specific, documented communication requirements to successfully implement a SLMS program, process or procedure.

**10. Process to ensure document and records management**

**AUC SLMS Review Recommendation:** Development and implementation of processes for documents and records management, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation and has implemented the recommended processes. Please refer to the supplemental documents prefixed with MR for Management of Records.

**Supplemental Review Evidence:**

10. Process to ensure document and records management			
Documents	Revision	Previously Reviewed	Approver
a) MR	Sept 2015	No	B. Hahn
b) MR001 Management of Records Program	October 2015	No	J. Sharpe
c) MR002 Table of Contents	October 2015	No	J. Sharpe
d) MR003 Definitions	October 2015	No	J. Sharpe
e) MR004 Scope/Objectives	October 2015	No	J. Sharpe
f) MR005 Statement of Authority	October 2015	No	J. Sharpe
g) MR100 Creating Files	October 2015	No	J. Sharpe
h) MR200 Classification of Records	October 2015	No	J. Sharpe
i) MR300 Filing	October 2015	No	J. Sharpe
j) MR400 User Access to Files	October 2015	No	J. Sharpe

k) MR500 Putting Away of Files	October 2015	No	J. Sharpe
l) MR600 Scheduling and Disposition	October 2015	No	J. Sharpe
m) MR700 Amending Retention Periods and Final Dispositions	October 2015	No	J. Sharpe
n) MR800 Inventory	October 2015	No	J. Sharpe
o) MR900 Records Transfer to Off-Site Storage Facility	October 2015	No	J. Sharpe
p) MR1000 Destruction of Record Material	October 2015	No	J. Sharpe
q) MR1100 System Maintenance	October 2015	No	J. Sharpe

**Findings:**

- a) Evidence of a Management of Records blank amendment sheet (Template).
- b) b) to q) Evidence of a documented Records Program, limited to Engineering and Planning Departments.

**Recommendation:** Document and records management processes, required for the effective implementation of the SLMS, should conform to CSAZ662-15 Annex A.7 requirements.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. All documented SLMS programs, processes and procedures should be compliant with document and records management requirements of both CSAZ662-15 and the ATCO documents listed above.

**11. Process to control documents and records**

**AUC SLMS Review Recommendation:** Development and implementation of processes for control of documents and records, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation and has already implemented the recommended processes. Please refer to the supplemental document QMP 100, Document Control.

**Supplemental Review Evidence:**

11. Process to control documents and records			
Documents	Revision	Previously Reviewed	Approver
a) QMP100 Document Control	May 2012	Yes	Not Indicated

**Findings:**

- a) Evidence of a documented process to define procedures for the creation, control, distribution, use, revision, recall, and disposal of documents used to communicate information.

**Recommendation:** Document and records control processes, required for the effective implementation of the SLMS, should conform to CSAZ662-15 Annex A.7 requirements.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. All documented SLMS programs, processes and procedures should be

compliant with document and records control requirements of both CSAZ662-15 and the ATCO documents listed above.

**12. Process to ensure Management of Change**

**AUC SLMS Review Recommendation:** Development and implementation of processes to ensure management of change, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation and has already implemented the recommended process. Please refer to the previously provided document QS05 Management of Change.

**Supplemental Review Evidence:**

12. Process to ensure Management of Change			
Documents	Revision	Previously Reviewed	Approver
a) QS05 Management of Change	March 2017	Yes	Not Indicated

**Findings:**

- a) Evidence of a documented process for management of change.

**Recommendation:** Management of change processes, required for the effective implementation of the SLMS, should conform to CSAZ662-15 Annex A.9 requirements.

Once the MOC process is finalized additional documented evidence will be required to determine that the process is effective and established.

**13. Process to ensure continual improvement including performance monitoring, conformance monitoring, control of non-conformance and management review.**

**AUC SLMS Review Recommendation:** Development and implementation of processes to ensure continual improvement, specifically for the protection of people, property and the environment.

**ATCO Response:** ATCO agrees with the recommendation, has already implemented the recommended process and provides further clarification.

Please refer to the supplemental document DWI 1690 Nonconformance Reporting for more detail on conformance monitoring and non-conformance resolution. MS00 page 34 describes the management review expectations placed upon all Program Owners. Program Owners have been provided training where expectations for conducting management reviews have been addressed. Further, tools have been developed to assist Program Owners with this process (i.e. ISO-aligned Management Review template).



**Supplemental Review Evidence:**

13. Process to ensure continual improvement including performance monitoring, conformance monitoring, control of non-conformance and management review.			
Documents	Revision	Previously Reviewed	Approver
a) DWI1690 Nonconformance Reporting	August 2014	No	Not Indicated
b) MS00 page 34	Date Unknown	Yes	Not Indicated

**Findings:**

- a) Evidence of a documented process for nonconformance reporting.
- b) Evidence of general overview of ATCO’s Management System.

**Recommendation:** Continual improvement, including performance monitoring, conformance monitoring, control of non-conformance and management review, processes, required for the effective implementation of the SLMS, should conform to CSAZ662-15 Annex A.10 requirements. Pipeline incident reporting should conform to CSAZ662-15 Annex H requirements.

Additional evidence is required to verify that the submitted management system documents are both implemented and effective. Supporting evidence could include documented audit and inspection programs, records of; program audits, general compliance audits, inspections, incidents, corrective and preventative actions.

## Appendix A – SLMS Regulations

**Note:** SLMS processes identified in this review are identified in *blue font*

### Alberta Pipeline Rules

#### Section 9

##### Codes and standards

9(1) A reference in these Rules to a code or standard is to the latest published edition of the code or standard issued by the Canadian Standards Association (CSA).

(2) Except as otherwise specified by these Rules, **the following standards are in force:** (a) CSA Z245.11, Steel Fittings; (b) CSA Z245.12, Steel Flanges; (c) CSA Z245.15, Steel Valves; **(d) CSA Z662, Oil and Gas Pipeline Systems.**

(3) **Except as otherwise specified by these Rules, the minimum requirements for the design, construction, testing, operation, maintenance, repair and leak detection of pipelines are set out in CSA Z662.**

### CSAZ662-15 Oil and Gas Pipeline Systems

#### 3 Safety and loss management systems

##### 3.1 General

###### 3.1.1

Operating companies **shall** develop and implement a documented safety and loss management system for the pipeline system that provides for the protection of people, the environment, and property.

###### 3.1.2

The safety and loss management system **shall** cover the life cycle of the pipeline system and **shall** include the following elements:

- a) clearly articulated policy and leadership commitment to the development and implementation of the safety and loss management system;
- b) an organizational structure with well-defined responsibilities and authorities that supports the effective implementation of the safety and loss management system;
- c) a process for the management of resources, **(6)** including:
  - i) the establishment of competency requirements;
  - ii) a training program that includes a process for evaluating the effectiveness of the training provided and for maintaining training records; and **(7)**
  - iii) contractor selection and performance monitoring that ensures services are performed in a manner that conforms to the requirements of the safety and loss management system;
- d) an internal and external communication process that supports the effective implementation of the safety and loss management system; **(9)**
- e) a document and records management process for the effective implementation of the safety and loss management system, including **(10,11)**
  - i) procedures for the control and distribution of documents; and
  - ii) procedures for the control of records;

- f) operational controls, as applicable, for **(8)**
- i) risk management; **(1,2,3,4)**
  - ii) design, material selection, and procurement;
  - iii) construction;
  - iv) operations and maintenance;
  - v) pipeline system integrity management;
  - vi) engineering assessments;
  - vii) emergency preparedness, response, and recovery;
  - viii) security management; and
  - ix) deactivation and abandonment;
- g) a process for the management of change that includes **(12)**
- i) the identification of changes that could affect the safety and loss management system;
  - ii) assigning responsibilities and authorities for the review, approval, and implementation of changes;
  - iii) documentation of reasons for the changes;
  - iv) analysis of implications and effects of the changes;
  - v) the documentation and communication of changes to affected parties; and
  - vi) the timing of changes; and
- h) a process for continual improvement, including **(13)**
- i) development of measurable objectives and targets; **(5)**
  - ii) a process for the reporting, collection, evaluation, and trending of data related to hazards, incidents, and near misses, including the communication of any findings and actions;
  - iii) a process for learning from events;
  - iv) performance monitoring against objectives and targets;
  - v) conformance monitoring, including periodic audits, to assess conformance with the requirements of the standard and the safety and loss management system;
  - vi) procedures for the control of non-conformances, including procedures for defining responsibility and authority, for handling and investigating non-conformance, taking action to mitigate any impacts, for initiating and completing corrective and preventive action, and for evaluating the effectiveness of any actions taken; and
  - vii) management reviews of the safety and loss management system at planned intervals to ensure its continuing suitability, adequacy, and effectiveness. The management review shall include an assessment of opportunities for improvement and the need for changes to the safety and loss management system, its policy and objectives.

Notes:

**1) Annex A sets out a recommended practice and provides additional guidance for a safety and loss management system.**

### **3.4 Risk management (1,2,3,4)**

The operational control required by Clause 3.1.2 f) i) **shall** be in the form of a risk management process that identifies, assesses, and manages the hazards and associated risks for the life cycle of the pipeline system. The risk management process **shall** include the following:

- a) risk acceptance criteria;

- b) risk assessment, including hazard identification, risk analysis, and risk evaluation;*
- c) risk control;*
- d) risk monitoring and review;*
- e) communication; and*
- f) documentation.*

Notes:

- 1) CAN/CSA-ISO 31000 sets out principles and guidelines for risk management.*
- 2) Annex B provides guidance on performing pipeline system risk assessments. (1) Figure B.1**

### **SLMS Processes**

- 1. Process to determine legal requirements*
- 2. Process to determine hazards*
- 3. Process for risk management*
- 4. Process to mitigate risks*
- 5. Process to set goals and objectives*
- 6. Process to identify and ensure adequate resources, human resources, contractors, infrastructure and work environment to meet objectives*
- 7. Process to ensure training, competence and evaluation*
- 8. Process to determine required operational controls*
- 9. Process to ensure effective internal and external communication*
- 10. Process to ensure document and records management*
- 11. Process to control of documents and records*
- 12. Process to ensure management of change*
- 13. Process to ensure continual improvement including performance monitoring, conformance monitoring, control of nonconformance and management review.*