



Canada Energy
Regulator

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Final Audit Report

**NorthRiver Midstream G and P Canada Pipelines Inc. as General Partner and on behalf of
NorthRiver Midstream G and P Canada Pipelines Limited Partnership**

**NorthRiver Midstream Canada Partner Limited, as General Partner and on behalf of
NorthRiver Midstream Canada LP**

Topic: Control Room Management

CV2324-217

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Executive Summary

The Canada Energy Regulator (**CER**) expects pipelines and associated facilities within the Government of Canada's jurisdiction to be constructed, operated, and abandoned in a safe and secure manner that protects people, property, and the environment. To this end, the CER conducts a variety of compliance oversight activities, such as audits.

Section 103 of the *Canadian Energy Regulator Act* (S.C. 2019, c.28, s.10) (**CER Act**) authorizes inspection officers to conduct audits of regulated companies. The purpose of these audits is to assess compliance with the CER Act and its associated Regulations.

The purpose of operational audits is to ensure that regulated companies have established and implemented both a management system and its associated programs, as specified in the *Canadian Energy Regulator Onshore Pipeline Regulations* (SOR/99-294) (**OPR**).

The CER conducted an audit of NorthRiver Midstream G and P Canada Pipelines Inc. as General Partner and on behalf of NorthRiver Midstream G and P Canada Pipelines Limited Partnership and NorthRiver Midstream Canada Partner Limited, as General Partner and on behalf of NorthRiver Midstream Canada LP (**the company, or NorthRiver Midstream**) between 12 April 2023 and 18 August 2023. The topic of the audit was Control Room Management.

The objectives of this audit were to:

- verify that the company has developed and implemented a pipeline control system and leak detection system in accordance with the requirements of the OPR and the Canadian Standards Association Z662: 2019, Oil and gas pipeline systems (**CSA Z662:19**); and,
- verify that the control room operation and maintenance processes are effectively integrated within the company's management system.

The scope of the audit included the personnel, processes and activities used to operate and control the pipeline control system and leak detection system. The scope spans normal and abnormal operating conditions including emergency shut down in place at the time of the audit and looking back for up to six months to verify that the company was compliant with the relevant sections of the OPR and CSA Z662:19.

The CER conducted the audit using the audit protocols attached in Appendix 1 of this report, which are focused on control room management.

Of 21 audit protocols, 4 were deemed no issues identified and 2 were not evaluated as they did not apply to a system such as the one operated by the company. The remaining were deemed non-compliant.

The auditors found that NorthRiver Midstream had many of the elements needed for a functional management system. However, many of the required activities related to management systems were not being done following documented processes and procedures, or the required processes were in draft form. As a result, the auditors identified deficiencies which need to be rectified to become compliant.

Within 30 calendar days of receiving the Final Audit Report, the company shall file with the CER a Corrective and Preventive Action (**CAPA**) Plan that outlines how the non-compliant findings will be resolved. The CER will monitor and assess the implementation of this CAPA Plan to confirm it is completed in a timely manner.

Note that all findings are specific to the information assessed at the time of the audit as related to the audit scope.

While non-compliant findings exist, the CER is of the view that the company can still construct, operate, and abandon pipelines in a manner that will preserve the safety of persons, the environment, and property.

The Final Audit Report will be made public on the CER website.

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1.0 Background

1.1 Introduction

The CER expects pipelines and associated facilities within the Government of Canada's jurisdiction to be constructed, operated, and abandoned in a safe and secure manner that protects people, property, and the environment.

Section 103 of the CER Act (S.C. 2019, c.28, s.10) authorizes inspection officers to conduct audits of regulated companies. The purpose of these audits is to assess compliance with the CER Act and its associated Regulations.

The purpose of operational audits is to ensure that regulated companies have established and implemented both a management system and its associated programs, as specified in the OPR.

The CER conducted an audit of NorthRiver Midstream between 12 April 2023 and 18 August 2023. The topic of the audit was Control Room Management.

1.2 Description of Audit Topic

For CER-regulated entities that operate pipeline control rooms, the OPR requires them to develop and implement a pipeline control system and a leak detection system as part of their management system. A carefully designed and well-implemented management system reflects a company's commitment to continual improvement in safety and environmental protection throughout the full lifecycle of its facilities. It also supports a culture of safety and is fundamental to keeping people safe and protecting the environment. The control systems and leak detection systems must also meet the requirements of CSA Z662:19 and reflect the level of complexity of the pipeline, the pipeline operation, and the products transported.

For the purposes of this audit, the CER's expectations include, but are not limited to the company having established and implemented:

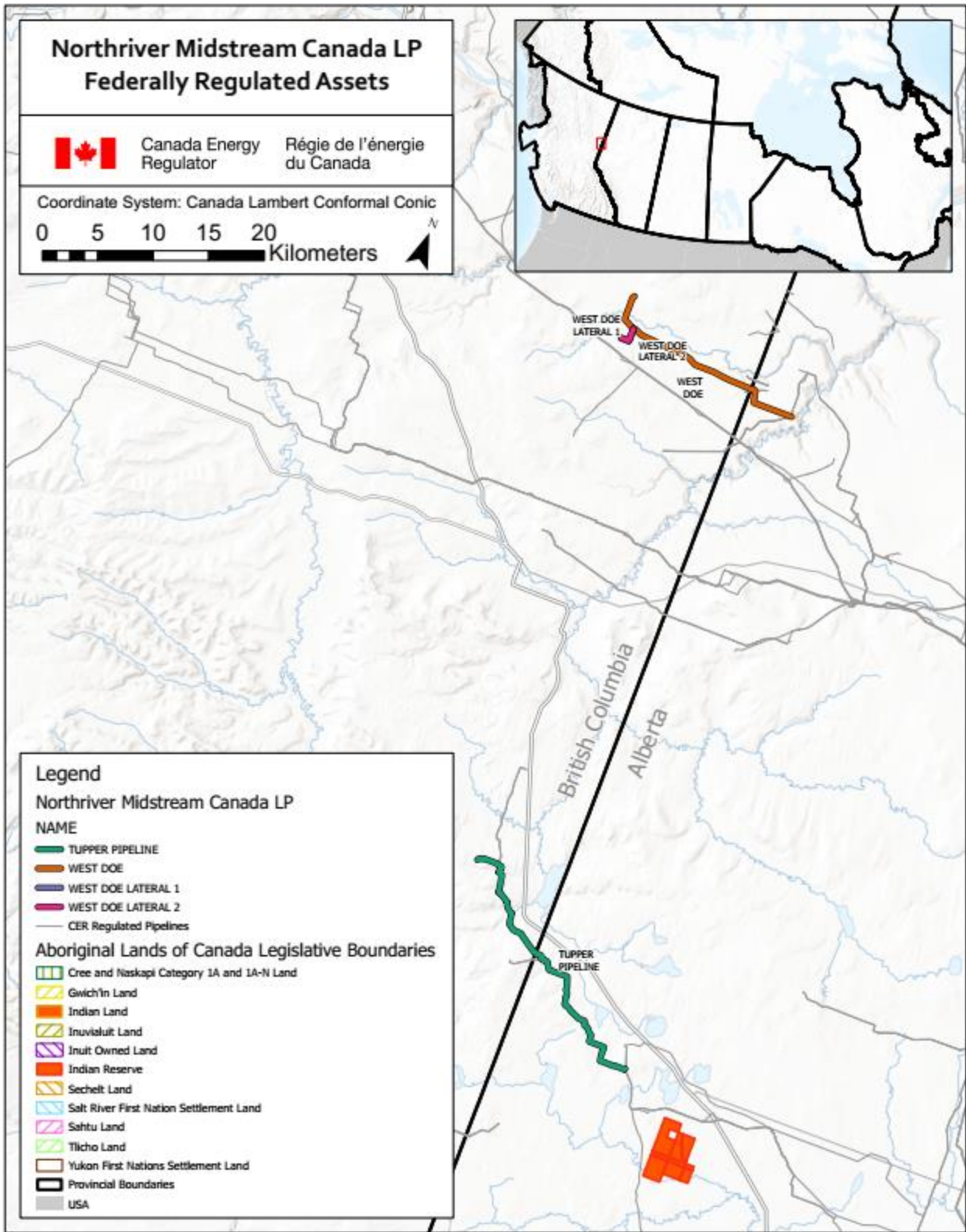
- an effective organizational structure, competency and training requirements, and training programs and processes to identify and communicate roles, responsibilities, and authorities, and to verify the competency of workers;
- control room operation and maintenance manuals designed to ensure that the pipeline is operated safely, efficiently, and in a manner that protects people and the environment;
- a process for the internal reporting, analysis, and investigation of hazards, potential hazards, incidents, and near-misses reported through the control centre, and for taking corrective and preventive measures, including measures to manage imminent threats; and,
- quality assurance measures, including audits and inspections, to ensure that the pipeline control system is being effectively operated and maintained and that personnel are carrying out their duties in accordance with company requirements in a competent manner.

1.3 Company Overview

NorthRiver Midstream operates an independent gas gathering and processing business. It operates thirteen natural gas processing facilities in north-eastern British Columbia (**BC**) and northwest Alberta and has over 3,400 kilometres of natural gas gathering pipelines, the majority of which are provincially regulated. The company's pipelines connect to major demand markets through the Westcoast pipeline to the United States (**US**) Pacific Northwest, the Alliance pipeline to the US Midwest, and the NOVA Gas Transmission Ltd. system to the Alberta market.

While most of the company's assets are provincially regulated by the BC Energy Regulator (**BC ER**) and the Alberta Energy Regulator (**AER**), two subsidiaries of the company own and operate the West Doe cross border and Tupper Main sales gas pipelines, which are subject to regulation by the CER.

The map below depicts the company's CER-regulated assets.



The map is a graphical representation intended for general informational purposes only. Map produced by the CER, July, 2023, Last updated on Jul 31

2.0 Objectives and Scope

The objectives of this audit are to:

- verify that the company has developed and implemented a pipeline control system and leak detection system in accordance with the requirements of the OPR and the CSA Z662:19; and verify that the control room operation and maintenance processes are effectively integrated within the company's management system.

The table below outlines the scope selected for this audit. The scope of the audit included the personnel, processes, and activities used to operate and control the pipeline control system and leak detection system. The scope spans normal and abnormal operating conditions including emergency shut down in place at the time of the audit and looking back for up to six months to verify that the company was compliant with the relevant sections of the OPR and CSA Z662:19.

Table 1. Audit Scope

Audit Scope	Details
Audit Topic	Control Room Management
Lifecycle Phases	<input type="checkbox"/> Construction <input checked="" type="checkbox"/> Operations <input type="checkbox"/> Abandonment
Section 55 Programs	<input type="checkbox"/> Emergency Management <input checked="" type="checkbox"/> Integrity Management <input type="checkbox"/> Safety Management <input type="checkbox"/> Security Management <input type="checkbox"/> Environmental Protection <input type="checkbox"/> Damage Prevention
Time Frame	Up to six (6) months prior to the start of the audit.

3.0 Methodology

The auditors assessed compliance through:

- document reviews;
- record sampling;
- interviews; and
- control room visits.

The list of documents reviewed, records sampled, and the list of interviewees are retained on file with the CER.

An audit notification letter was sent to the company on 12 April 2023, advising the company of the CER's plans to conduct an operational audit. The lead auditor provided the audit protocol and initial information request to the company on 17 April 2023, and followed up on 21 April 2023 with a

meeting with the company staff to discuss the plans and schedule for the audit. Document review began on 12 May 2023, and interviews were conducted between 24 July 2023 and 26 July 2023. Control room site visits were conducted on 5 July 2023.

In accordance with the established CER audit process, the lead auditor shared a pre-closeout summary of the audit results on 18 August 2023. At that time, the company was given five business days to provide any additional documents or records to help resolve the identified gaps in information or compliance. Subsequent to the pre-closeout meeting, the company provided additional information to assist the lead auditor in making their final assessment of compliance. The lead auditor did not conduct a final close out meeting with the company, instead an e-mail exchange was held in which the final decision was shared.

4.0 Summary of Findings

The lead auditor has assigned a finding to each audit protocol. A finding can be:

- No issues identified – No non-compliances were identified during the audit, based on the information provided by the company, and reviewed by the auditor within the context of the audit scope; or
- Non-compliant – The company has not demonstrated that it has met the legal requirements. A CAPA Plan shall be developed and implemented to resolve the deficiency; or
- Not Applicable – two audit protocols were not evaluated due to the fact the commodity transported by NorthRiver Midstream, sweet natural gas, does not meet the applicability of Annex E of CSA Z662:19.

All findings are specific to the information assessed at the time of the audit, as related to the audit scope.

The table below summarizes the findings. See [Appendix 1: Audit Assessment](#) for more information.

Table 2. Summary of Findings

As NorthRiver Midstream transports gas in its CER-regulated pipelines, clauses E.4.2.1 and E.9 of the CSA Z662:19 were not evaluated. These specific clauses are meant for liquid pipelines.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-01	OPR	6.3(1)	Policy and Commitment Statements	No issues identified	NorthRiver Midstream has demonstrated that it has policies and goals that meet the requirements of subsection 6.3(1) of the OPR.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-02	OPR	6.5(1)(d)	Hazard Identification	Non-compliant	<p>NorthRiver Midstream has gaps in its inventory of hazards and potential hazards and how the inventory is kept up to date. For the two CER regulated pipelines, the current inventories of hazards and potential hazards have different hazards listed for each pipeline. While the auditors understand that each pipeline may have subtle differences to its inventory, some basic hazards should show up on each inventory such as ergonomics and Supervisory Control and Data Acquisition (SCADA) displays, which are both important for control room management. In addition to this, the Management of Change (MOC) program did not include a link or an indication that any changes made as a result of the MOC process would include a possible update to the hazard inventory.</p>

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-03	OPR	6.5(1)(e)	Risk Assessment	Non-compliant	<p>NorthRiver Midstream has gaps in its process for evaluating the risks associated with the identified hazards and potential hazards. When reviewing the provided documentation, it was not possible to determine what the identified hazards vs. the potential hazards were. The auditors did not see the process addressing abnormal operating conditions. This appears to be done by activity and not by process. In addition, the auditors did not observe a reference in the Emergency Management Program document to control room management.</p>
AP-04	OPR	6.5(1)(f)	Controls	Non-compliant	<p>By activity, NorthRiver Midstream is developing and implementing controls to prevent, manage and mitigate the identified hazards and potential hazards. However, NorthRiver Midstream was not able to provide a documented process for these tasks. In addition, while NorthRiver Midstream has many activities on its communication plan, it appears that the communication of controls to prevent, manage, and mitigate the identified hazards and potential hazards is completed in an ad hoc fashion which does not meet the requirements set in the OPR.</p>

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-05	OPR	6.5(1)(a)	Goals, Targets and Objectives	Non-compliant	<p>The auditors believe that NorthRiver Midstream is, by activity, developing and distributing its Goals, Objectives, and Targets (GOTs) throughout the organization. With the draft Management System Goals, Objectives and Targets Process, the company does have the tools for the development of its objectives and specific targets; however as the process is only in a draft state, the CER does not consider it fully implemented.</p>
AP-06	OPR	6.4	Organizational Structure, Roles, and Responsibilities	Non-compliant	<p>NorthRiver Midstream was able to demonstrate a detailed organizational chart that flowed from senior management down to the facility or plant level. The auditors heard from NorthRiver Midstream staff an annual evaluation of need, as required by the OPR, is conducted. However, the auditors did not see any documentation that would demonstrate NorthRiver Midstream was implementing what has been described by staff. No documentation was available to demonstrate NorthRiver Midstream has the correct number of people, with the correct skill sets, in the needed positions to ensure its system was operating in a safe and secure manner. In addition, some of the documents reviewed were written at such a high level that they fail to provide adequate direction to staff tasked to implement them.</p>

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-07	OPR	6.5(1)(q)	Operational Control	Non-compliant	<p>NorthRiver Midstream is generally, by activity and not by process, coordinating and controlling the operational activities of employees and other people working on behalf of the company so that each person is aware of the activities of others. The structure of the Safe Work Permit procedure contains many of the steps expected of a compliant process, however there are several gaps that need to be addressed. Examples of the gaps identified include the interoperation between different work groups, clarity of what the Permit Issuer is inspecting and its frequency, and the lack of documented pre-qualification of workers for the task to be completed, to name a few.</p>
AP-08	OPR	27	Operating & Maintenance Manuals	Non-compliant	<p>NorthRiver Midstream did not demonstrate that control room procedures were developed that addressed tasks during all normal and abnormal operations. Written procedures to manage shift handover; 24x7 shift fatigue management; response to abnormal pipeline events that may include leaks; over pressurization and gas quality; and how SCADA is used to monitor and control the pipeline and investigate abnormal operating conditions were not observed. The records retention policy was also not implemented at the time of audit.</p>

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-09	OPR	37(c)	Pipeline Control System - Leak Detection System	No issues identified	NorthRiver Midstream demonstrated the SCADA systems were configured to monitor pressures and flow, and implemented alarms to alert the control room operator of abnormal conditions, including gas leaks.
AP-10	OPR	37(b)	Pipeline Control System - Data Recording System	No issues identified	NorthRiver Midstream demonstrated it has a pipeline control system which is capable of retaining historical information.
AP-11	OPR	6.5(1)(r)	Investigation of Incidents, Near Misses, and Non-compliances	Non-compliant	NorthRiver Midstream demonstrated through interviews and observation that a process was established and implemented; however, the company has not defined how imminent hazards are managed. In addition, the CAPA process document was in draft and not approved at the time of the audit.
AP-12	OPR	32(1.1)	Emergency Procedures Manual	No issues identified	Emergency procedure manuals are available and have the control room responsibilities listed. Control room operators understand and use the emergency response procedures as a reference.
AP-13	CSA Z662:19	E.4.2.1	Analysis of Leak Alarms	Not Applicable	This protocol item was not evaluated due to the fact that Clause E.4.2.1 of CSA Z662:19 does not apply to NorthRiver Midstream's current CER-regulated pipelines.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-14	CSA Z662:19	E.5.2.1	Safe Shut Down of Pipeline in an Emergency	Non-compliant	NorthRiver Midstream did not demonstrate that the control room had adequate procedures for the safe control or shutdown of the pipeline during an emergency.
AP-15	OPR	6.5(1)(j)	Defining Competency and Training Requirements	Non-compliant	NorthRiver Midstream did not demonstrate it has defined competency and training requirements for facility operators consistently for both the West Doe and the Tupper Main facility.
AP-16	OPR	6.5(1)(k)	Verifying Competency and Training	Non-compliant	NorthRiver Midstream did not demonstrate it has a consistent approach that meets regulatory requirements for verifying operator training and competency at the pipeline level and supervising workers to ensure that they perform their duties in a manner that is safe, ensures the security of the pipeline, and protects the environment.
AP-17	OPR	56(b)	Annual Training Program Report	Non-compliant	NorthRiver Midstream demonstrated it is meeting the requirements of paragraph 56(b) of the OPR as concerns Environment, Health, and Safety (EHS) training; but did not demonstrate the same for training requirements on operational equipment that employees could reasonably be expected to use at the facility level.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-18	OPR	55	Control Room Audits	Non-compliant	NorthRiver Midstream did not demonstrate to the CER that it has conducted a section 55 audit of its program areas that included an audit of its pipeline control system within the previous three years.
AP-19	CSA Z662:19	E.9	Audits of Leak Detection System	Not Applicable	This protocol item was not evaluated due to the fact that Clause E.9 of CSA Z662:19 does not apply to NorthRiver Midstream's current CER-regulated pipelines.
AP-20	OPR	6.5(1)(x)	Annual Management Review	Non-compliant	NorthRiver Midstream demonstrated to the CER it has established a process for conducting an annual management review of the management system, the management programs, and for ensuring continual improvement in meeting the company's obligations under the OPR. It also demonstrated that, by activity, it is conducting the quarterly and annual management reviews and generating the required outcomes of an annual report and a meeting record. However, NorthRiver Midstream did not demonstrate that it has fully implemented the process due to the fact that the process document is still shown as being in draft.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-21	OPR	37(a)	Pipeline Control System	Non-compliant	NorthRiver Midstream demonstrated that it has developed and installed a pipeline control system used to control and monitor the operation of its CER-regulated pipelines but did not demonstrate it has documented procedures for all normal and abnormal operations.

5.0 Discussion

Effective Control Room Management is an important component of operations that helps regulated companies ensure the safety of people, property, and the environment. Control rooms monitor a variety of parameters across the pipelines, such as flow rates, pressure, and temperature readings, and are often the first line of defence in locating and responding to abnormalities. Auditing Control Room Management practices is a proactive method to determine the company’s state of readiness to respond to abnormal conditions and emergencies.

Several audit protocols in this audit were found to be non-compliant due to the company’s informal processes and not properly documenting the processes the staff were following. Several other audit protocols had the proper documentation in place for their respective processes, however the processes were still listed as draft and therefore deemed to not be in formal use. While these are relatively easy to correct, several other challenges will require NorthRiver Midstream to analyze how it operates its facilities. Primarily, that the two control rooms visited by the auditors are unique in their operation as each asset is allowed to determine how the various processes and procedures that make up NorthRiver Midstream’s management system are applied at the various sites.

Overall NorthRiver Midstream demonstrated many of the elements expected as part of a functional management system. The auditors find the majority of gaps that were identified are related to a lack of documentation for the activities that are being performed. NorthRiver Midstream indicated that its legacy owners left behind a management system which it has been updating to reflect the current size and scale of its operations. Further, company staff indicated that as the majority of its assets are provincially regulated, it tends to follow the provincial requirements first which, according to the CSA Z662:19, still requires a safety and loss management system to be implemented. While NorthRiver Midstream has a management system in development, it has not matured to the level required to meet federal regulations.

6.0 Next Steps

The company is required to resolve all non-compliant findings through the implementation of a CAPA plan. The next steps of the audit process are as follows:

- Within 30 calendar days of receiving the Final Audit Report, the company shall file with the CER, a CAPA plan that outlines how the non-compliant findings will be resolved.

- The CER will monitor and assess the implementation of the CAPA Plan to confirm that it is completed:
 - on a timely basis; and
 - in a safe and secure manner that protects people, property, and the environment.
- Once implementation is completed, the CER will issue an audit close out letter.

7.0 Conclusion

In summary, the CER conducted an audit of NorthRiver Midstream. The topic of the audit was Control Room Management. Out of a total of 21 audit protocols, 4 were classified as no issues identified, and 2 were not assessed as they did not apply to the system in use by the company, resulting in an audit score of 21 percent.

NorthRiver Midstream is expected to resolve these deficiencies through the implementation of a CAPA Plan. The CER will monitor and assess the implementation of this CAPA Plan and issue an audit close-out letter upon its completion.

Appendix 1: Audit Assessment

AP-01 Policy and Commitment Statements

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.3(1)
Regulatory requirement	The company shall establish documented policies and goals to ensure that the purposes referred to in paragraphs 6(a) to (c) are achieved and its obligations under these Regulations are met. The policies and goals shall include: (b) goals for the prevention of ruptures, liquid and gas releases, fatalities, and injuries and for the response to incidents and emergency situations.
Expected outcome	The expected outcome is as follows: <ul style="list-style-type: none"> The company can demonstrate that it has established documented policies and goals for the prevention of ruptures, liquid and gas releases, fatalities, and injuries and for the response to incidents and emergency situations.
Relevant information provided by the company	The following key documents and records are related to this finding: <ul style="list-style-type: none"> Integrity Management Program for Pipelines Goals, Objectives and Targets Health, Safety and Environmental Policy Values and Principles Management System – Safety Management Program Incident Management Reporting Procedure North River Midstream Emergency Management Manual Accountable Officer Report
Finding summary	NorthRiver Midstream has demonstrated that it has policies and goals that meet the requirements of subsection 6.3(1) of the OPR.

Detailed Assessment

NorthRiver Midstream’s IMPP indicates it is written to meet both federal, and provincial BC ER and AER requirements. This document goes on to state that it was prepared in compliance with CSA Z662:19 and the Safety and Loss Management principles, the relevant clauses of Pipeline Integrity Management, and specifically to Annex N titled “*Guidelines for pipeline system integrity management programs.*”

NorthRiver Midstream staff stated that senior management provides direction as to how to set up the GOTs at the program level. Once developed, the GOTs are approved by senior management. The IMPP, which is at the program level, provides the GOTs that apply to the company’s pipelines and associated installations. The two goals that NorthRiver Midstream referred to for this audit are:

- 1) Establish a record of zero pipeline ruptures and loss-of-containment incidents which result in fatalities or serious injury to the public, contractors or employees; and,
- 2) Effectively manage and limit the environmental effects of the NorthRiver Midstream owned and operated pipeline assets for their full lifecycle from design and construction, through service life of safe operation and including deactivation and abandonment.

The IMPP also contains a policy statement that specifically includes the CER Act and the OPR. This policy statement indicates that the lifecycle requirements of the pipelines owned and operated by NorthRiver Midstream are done so in accordance with applicable company and regulatory requirements.

NorthRiver Midstream has demonstrated that it has policies and goals that meet the requirements of subsection 6.3(1) of the OPR.

AP-02 Hazard Identification

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(d)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and maintain an inventory of the identified hazards and potential hazards.
Expected outcome	<p>The expected outcomes are as follows:</p> <ul style="list-style-type: none"> • The company has a compliant inventory that is established and maintained. • The inventory includes hazards and potential hazards associated within the company scope of operations and activities through the lifecycle of the pipelines. • Hazards and potential hazards are identified for the control room. • The inventory has been maintained, it is current, and is up to date including changes made to company operations and activities. • The inventory is being used as part of the risk evaluation and controls processes.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Integrity Management Program for Pipelines • West Doe Pipeline Hazard Assessment and Inventory • Tupper Main Hazard Inventory • Occupational Health and Safety Manual • Asset Management of Change Program • West Doe Area Hazard Identification Training Records
Finding summary	<p>After reviewing all provided information, the auditors concluded that NorthRiver Midstream has gaps in its inventory of hazards and potential hazards and how the inventory is kept up to date. For the two CER regulated pipelines, the current inventories of hazards and potential hazards have different hazards listed for each pipeline. While the auditors understand that each pipeline may have subtle differences to its inventory, some basic hazards should show up on each inventory such as ergonomics and SCADA displays, which are both important for control room management.</p>

Detailed Assessment

The NorthRiver Midstream IMPP document provides a list of six large integrity management plans that address specific pipeline hazards. These include:

- Class Location Plan;
- Corrosion Plan;
- Mechanical Damage Plan;
- Geotechnical Plan;
- Stress Corrosion Cracking Management Plan; and,
- Material and Construction Hazard plan.

Each of these plans is its own subcomponent of the Integrity Management Program and addresses a specific component of the safety and loss management requirements for the IMPP.

NorthRiver Midstream staff stated that hazard inventories are developed independently for each facility as there are subtle differences between each one that need to be accounted for. NorthRiver Midstream provided the West Doe Pipeline Hazard Assessment and Inventory for 2023 and the Tupper Main Hazard Inventory for 2022. The format of each inventory is different from one another and the list of hazards for each site is also different. When the auditors asked NorthRiver Midstream staff why there was a difference between the two sites, they indicated that the company was in the process of updating its hazard inventory template for all its facilities and what we were observing was one site in the new format and another site still transitioning to the new format.

After reviewing both inventories, neither inventory indicates which hazards are considered potential hazards, or if all hazards are to be considered potential hazards. When reviewing both hazard inventories, it is not immediately evident to the reader which hazards would be related to control room operation. NorthRiver Midstream staff indicated that control room management hazards are not concentrated in one location in the inventory but are scattered throughout and are addressed by the Health and Safety Department. When reviewing the inventories for both sites, the auditors used ergonomics and SCADA displays as examples of what they thought should be included as part of the inventories as they are important for control room work, and neither facility included them in their inventory. While the auditors acknowledge that there may be some differences in the hazard inventories between each facility, the inventories should also identify the same hazards where operations are the same, such as control room management. The auditors noted that both inventories included a review of the inherent and residual risks associated with each hazard listed, but the Tupper Main inventory does not indicate if the residual risk is still too high for safe work to take place.

A review of the Asset MOC Program shows that it is intended to ensure that equipment and process design changes are recognized, documented, risk assessed, and approved before being implemented. A review of the document shows that it does not include any CER references. The document also does not demonstrate that any of the changes made as a result of the MOC process are included in an updated hazard inventory.

After reviewing all provided information, the auditors concluded that NorthRiver Midstream has gaps in its inventory of hazards and potential hazards and how the inventory is kept up to date. For the two CER regulated pipelines, the current inventories of hazards and potential hazards have different hazards listed for each pipeline. While the auditors understand that each pipeline may have subtle differences to its inventory, some basic hazards should show up on each inventory such as ergonomics and SCADA displays, which are both important for control room management.

AP-03 Risk Assessment

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(e)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for evaluating the risks associated with the identified hazards and potential hazards, including the risks related to normal and abnormal operating conditions.
Expected outcome	<p>The expected outcomes are as follows:</p> <ul style="list-style-type: none"> • The company has a compliant process for evaluating and managing risks that is established and implemented. • The method(s) for risk evaluation confirm that the risks associated with the identified hazards (related to normal and abnormal operating conditions) are based on referenced regulatory standards and are appropriate for the nature, scope, scale, and complexity of the company's operations and activities; and are connected to the purposes and intended outcomes of the section 55 programs. • Risks are evaluated for all hazards and potential hazards and include normal and abnormal conditions. • Risk levels are monitored on a periodic basis and as needed and re-evaluated for changing circumstances. • Risks are managed using defined method(s) appropriate to the section 55 programs. • Risk tolerance/acceptance criteria is determined for all hazards and potential hazards.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Operational Risk Management Program • Operational Risk Management Process • Integrity Management Program for Pipelines • Risk Matrix • Asset MOC Procedure • Emergency Management Manual

**Finding
summary**

NorthRiver Midstream has gaps in its process for evaluating the risks associated with the identified hazards and potential hazards. When reviewing the provided documentation, it was not possible to determine what the identified hazards vs. the potential hazards were. The auditors did not see the process addressing abnormal operating conditions. This appears to be done by activity and not by process. In addition, the auditors did not observe a reference in the Emergency Management Program document to control room management.

Detailed Assessment

NorthRiver Midstream staff stated that this process was originally brought over from its legacy owners, and it was deemed not a good fit for its operations. Changes were made, such as removing financial risk from the process and developing a NorthRiver Midstream specific risk matrix.

The IMPP states that a risk assessment is a necessary component of the risk management process, which is intended to control the likelihood or impact of undesirable consequences (e.g., loss of life or injury, harm to the environment, and damage to property). This activity is also necessary during all phases of the pipeline lifecycle. The document goes on to say that at a minimum, a risk assessment needs to document the system or pipeline being risk assessed for any limitations and assumptions, hazard identification, probability analysis, and consequence analysis results. The auditors note that this document does not address both normal and abnormal operating conditions. Addressing abnormal operating conditions appears to be done by activity and not by a documented process.

The company provided the auditors with its Operational Risk Management Program document, which sets out the framework that NorthRiver Midstream has in place to govern its operational risk management activities. The operational risks identified are associated with activities directly related to the transport, processing, storage, disposal, and the development of natural energy resources.

Meanwhile, the Operational Risk Management process document outlines the steps and activities by which risk items are added, assessed, communicated, and managed on the risk register throughout its lifecycle. The document states that the risk management process is to be used to understand the nature of the risk and determine the significance of the risk level or magnitude based on NorthRiver Midstream's risk criteria. The document also states that a qualitative risk analysis methodology will be used to establish the risk level based on consequences and likelihood. As part of the regular risk management process, review meetings are held to provide regular status updates, capture changes in risk levels, and to identify a recommended path forward for each risk. These review meetings are held regularly for three different levels of review. Each level of review involves a higher level of leadership who, in turn, each deal with more significant risks and the paths required to address them. A risk sign-off provides the formal approval by the appropriate level of leadership, to continue to operate an asset with the understanding that a risk(s) may still exist. The auditors note that neither the Operational Risk Management Program nor the Operational Risk Management process address both normal and abnormal operating conditions.

The NorthRiver Midstream Emergency Management Manual states that the company takes a management system approach to provide coordination between the company's management and protection programs. The management system approach ensures that hazards that are identified are considered in the Emergency Management Protection Program. When reviewing the Emergency Management Manual, the auditors did not identify a section or area of the document where control room management would apply. The control rooms are an important consideration in evaluating risks and the associated hazards and potential hazards.

After reviewing all provided information, the auditors concluded that NorthRiver Midstream has gaps in its process for evaluating the risks associated with the identified hazards and potential hazards. When reviewing the provided documentation, it was not possible to determine what the identified hazards vs. the potential hazards were. The auditors did not see the process addressing abnormal operating conditions. This appears to be done by activity and not by process. In addition, the auditors did not observe a reference in the Emergency Management Program document to control room management.

AP-04 Controls

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(f)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards, potential hazards and risks and for communicating those controls to anyone who is exposed to the risks.
Expected outcome	<p>The expected outcomes are as follows:</p> <ul style="list-style-type: none"> • The company has a compliant process for developing and implementing controls. • The method(s) for developing controls are appropriate for the nature, scope, scale, and complexity of the company's operations and activities and section 55 programs. • Controls are developed and implemented. • Controls are adequate to prevent, manage and mitigate the identified hazards and risks. • Controls are monitored on a periodic basis and as needed and re-evaluated for changing circumstances. • Controls are communicated to those exposed to the risks.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Health and Safety Manual; • Integrity Management Program for Pipelines • Pipeline Integrity Plan – Corrosion Plan • Mechanical Damage Plan • Geotechnical Plan • Stress Corrosion Cracking • Emergency Management Manual • PA Brochure 2023 South Peace Region • PA Brochure 2023 AB North • EHS Communications Plan • Health and Safety Manual

Finding summary

By activity, NorthRiver Midstream is developing and implementing controls to prevent, manage and mitigate the identified hazards and potential hazards. However, NorthRiver Midstream was not able to provide a documented process for these tasks. In addition, while NorthRiver Midstream has many activities on its communication plan, it appears that the communication of controls to prevent, manage, and mitigate the identified hazards and potential hazards is completed in an ad hoc fashion which does not meet the requirements set in the OPR.

Detailed Assessment

During staff interviews, NorthRiver Midstream stated that the process for developing and implementing controls has been pushed down to the program level within the company. Staff also indicated that the majority of controls associated with the control room would be found in the Health and Safety Program. As part of this process, NorthRiver Midstream brings together all relevant staff and as a group they assess the “*who, what, when, where, why and how*” to develop and implement the necessary controls for a hazard.

The Health and Safety manual contains some high-level information on hazard identification, assessment, and control. The manual states that NorthRiver Midstream uses common industry processes to identify, assess, and control hazards. It goes on to list four main processes for formal hazard identification, assessment, and control which are:

- Formal hazard assessments;
- Exposure control plans for hazardous substances and biological exposures (there are 18);
- Confined space hazard assessment; and
- Safe work permitting.

Formal hazard assessments are to be used to determine the effectiveness of barriers to control the hazardous energy from causing harm. The manual also states that formal hazard assessments are to document the known and potential hazards and to provide an analysis of those hazards. While this is useful and important information, in the auditor’s opinion, it does not meet the process requirement for this audit protocol. Controls are being identified and implemented but it is being done as an activity and not following a documented process.

The IMPP section on Hazard Identification and Controls states that the integrity plan documents outline the methods and data used for hazard analysis and the recommendations for implementing controls. The IMPP provides six different integrity management plan documents with each taking on an important aspect of pipeline safety. The NorthRiver Midstream integrity management plans are:

- Class Location Plan;
- Corrosion Plan;
- Mechanical Damage Plan;
- Geotechnical Plan;
- Stress Corrosion Cracking Management Plan; and
- Material and Construction Hazard Plan.

These plans act as a potential control for hazard management and are activities that reduce the likelihood and consequences of failure or incidents. In the auditor’s opinion, the IMPP does contain

controls and some high level information on the use and application of these controls, however it does not provide a process as is required by the audit protocol.

NorthRiver Midstream provided its EHS Programs: 2023 Communication Plan to the auditors. The document breaks down planned environment, health, and safety activities with key stakeholders by audience, purpose, communication medium, and frequency. The document provides for 35 different planned communication activities ranging from quarterly EHS Team meetings to the annual Management System reviews. NorthRiver Midstream staff also indicated that a flexible approach to contractor communication is applied depending on the size, scope, and types of hazards that the contractors are expected to encounter. For smaller projects or activities, the contractor is told the specific hazards to be aware of and controls it will need to follow. For larger projects this approach is scaled up with a more detailed approach to how to inform the contractors of the hazards present and controls to be applied. After reviewing the documents and interviewing NorthRiver Midstream staff, it is evident there is a significant amount of communication ongoing within NorthRiver Midstream in the safety, protection, and damage prevention areas. However, communicating controls to those potentially at risk appears to be ad hoc in nature and not directly built into the process currently being done as part of developing and implementing controls for identified or potential hazards.

In the auditor's opinion, by activity NorthRiver Midstream is developing and implementing controls to prevent, manage and mitigate the identified hazards and potential hazards. However, NorthRiver Midstream was not able to provide a documented process for these tasks. In addition, while NorthRiver Midstream has many activities on its communication plan, it appears that the communication of controls to prevent, manage, and mitigate the identified hazards and potential hazards is completed in an ad hoc fashion which does not meet the requirements set in the OPR.

AP-05 Goals, Targets and Objectives

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(a)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, 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.
Expected outcome	<p>The expected outcomes are as follows:</p> <ul style="list-style-type: none"> • The company has a compliant process that is established and implemented. • The company can demonstrate that it has established and implemented a process for setting the objectives and specific targets to achieve the company's goals for the prevention of ruptures, liquid and gas releases, fatalities, and injuries and for the response to incidents and emergency situations applicable to the company's control room operations. • The company has set objectives and targets that are required to achieve the goals established under subsection 6.3(1). • All objectives are relevant to the company's management system when considering the scope of the process and their application to section 55 programs. • An annual review of the objectives and targets is performed by the company. • The review determines if the objectives were achieved or if corrective or preventive actions are needed
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Management System Goals, Objectives, and Targets Process (DRAFT) • Accountable Officer Report • OMS Management Review Process
Finding summary	The auditors concluded that NorthRiver Midstream is developing and distributing its GOTs throughout the organization by activity. With the draft management system Goals, Objectives and Targets Process, the company does have the tools for the development of its objectives and specific targets; however as the process is only in a draft state, the CER does not consider it fully implemented.

Detailed Assessment

NorthRiver Midstream provided a draft document titled Management System Goals, Objectives and Targets Process. The objectives of this process are to develop GOTs that are aligned with the

management system commitment statement to manage risks and hazards associated with the company's assets. The process requires Management System (**MS**) program owners to develop MS Program GOTs that are in alignment with the MS Policy and Commitment statement. In conjunction with this, the MS program owners are to develop performance measures to evaluate success in achieving the MS Program GOTs. These GOTs and performance measures are reviewed and revised until they reach the Accountable Officer (**AO**) for final approval and implementation. Once approved they are communicated to the facilities through regular EHS and Engineering dashboards.

NorthRiver Midstream provided its Accountable Officer's report for the 2021 calendar year. A significant amount of the report is directed at discussing the company's GOTs for 2021 and planned GOTs for 2022. For 2022 all six of the section 55 OPR programs are listed with planned objectives and targets; however, none of the objectives and targets are specifically tied to or related to control room management.

NorthRiver Midstream's November 2022 IMPP document contains information on its objectives and targets. As previously stated above, the IMPP document was developed by NorthRiver Midstream for both federally regulated and provincially regulated pipelines and to meet the requirements for all its regulators. The objectives and targets build upon, and provide additional direction to achieve, the goals provided in Audit Protocol 1. The objectives are:

- To identify hazards acting on the pipeline system and manage these hazards using sound technical assessment, and to prevent the hazards from becoming threats to the safe operation of the company pipelines;
- To execute planned integrity activities as required by the programs, plans and standard operating procedures within this integrity management program; and
- To demonstrate compliance with the legal requirements for the company pipeline system.

The relevant targets are to:

- Track and measure the execution of integrity work required by the integrity management plans on a monthly basis through Key Performance Indicators;
- Complete 100% of planned pipeline integrity activities listed below at the sub-program level annually including, but not limited to:
 - Inline inspections
 - Integrity excavations
 - Cathodic Protection surveys and remediation
 - Geohazard/Hyrotechnical monitoring and remediation
- Perform an annual review and update of the Pipeline Integrity Management Program, Plans and Standard Operating Procedures (**SOPs**); and
- Perform annual management reviews of the IMPP to assess the performance of the program and to promote continuous improvement.

The auditors concluded that NorthRiver Midstream is developing and promulgating its GOTs throughout the organization by activity. This is demonstrated with the GOTs and their evaluation within the Accountable Officer's report and the development of new objectives and targets for 2022. With the draft Management System Goals, Objectives and Targets Process the company does have the tools for the development of its Objectives and specific targets; however, as the process is only in a draft state, the CER cannot consider it fully implemented.

AP-06 Organizational Structure, Roles, and Responsibilities

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.4
Regulatory requirement	The company must have a documented organizational structure that enables it to, (a) meet the requirements of the management system and meet its obligations under these Regulations; (b) determine and communicate the roles, responsibilities and authority of the officers and employees at all levels of the company; and, (c) demonstrate, based on an annual documented evaluation of need, that the human resources allocated to establishing, implementing and maintaining the management system are sufficient to meet the requirements of the management system and to meet the company's obligations under these Regulations.
Expected outcome	<p>It is expected that the company can demonstrate that:</p> <ul style="list-style-type: none"> • It has a documented organizational structure for its control room, operations staff, SCADA support staff and other support staff. • The documented organizational structure matches the way the control room is organized and staffed. • It has determined and communicated the roles, responsibilities and authorities for control room management and operation to all control room staff and those who interact with them. • It has a documented process that it uses to communicate roles, responsibilities, and authorities to control room staff and others that need to know (for example, training notes). • It conducts an annual documented evaluation of need of the human resources required to operate and maintain its pipeline control system and leak detection system.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Organizational Structure • Health and Safety Manual • Integrity Management Program for Pipelines • JOSH Committee Meeting Example • EHS Communications Plan 2023 • 2023 Business Planning Cycle 5 year plan

Finding summary

NorthRiver Midstream was able to demonstrate a detailed organizational chart that flowed from senior management down to the facility or plant level. The auditors heard from NorthRiver Midstream staff that they were conducting an annual evaluation of need. However, the auditors did not see any documentation that demonstrated NorthRiver Midstream was implementing what had been described by staff. No documentation was available to demonstrate that NorthRiver Midstream had the correct number of people with the correct skill sets, in the needed positions to ensure its system was operating in a safe and secure manner. In addition, some of the documents reviewed were written at such a high level, they fail to provide adequate direction to staff tasked to implement them.

Detailed Assessment

During audit interviews, NorthRiver Midstream staff demonstrated organizational charts starting at the headquarters level and were able to show the breakdown of positions down to both West Doe and Tupper Main facilities.

NorthRiver Midstream follows a five-year business planning cycle which is updated annually and includes such things as work planning and retirements. As part of the business planning cycle, NorthRiver Midstream evaluates the human resources needs on an asset-by-asset basis. This plan is cascaded down to the facility level where asset teams have been organized to operate each facility.

To address its annual evaluation of need to determine the resources needed to operate and maintain its pipeline control and monitoring system, NorthRiver Midstream staff indicated that it takes into consideration several different factors. These factors include, but are not limited to, operator fatigue management, limiting overtime requirements by having available staff, material changes to operations (i.e., expansion of facilities), skill gaps, changes to regulations, and changes to business needs. In the auditor's opinion, all the factors identified by NorthRiver Midstream are useful and would contribute to the company completing its annual evaluation of need. However, while reviewing all the documentation provided, the auditors did not identify any document(s) that demonstrate how these factors are implemented on an annual basis. NorthRiver Midstream staff are aware of the steps they follow to complete this exercise, but documentation provided did not demonstrate implementation.

The NorthRiver Midstream Health and Safety Manual contains a section on Roles, Responsibility and Accountability. This section is written at a very high level with little detail as to specific roles and responsibilities. As an example, the document states that one of the general duties is to provide and maintain personal protective equipment, devices and clothing as required by the regulations. The auditors consider this to be written at a level too high to provide adequate direction to staff.

NorthRiver Midstream's IMPP has an organizational chart, including job descriptions, that describes the reporting structure for people who are needed to fully implement the IMPP. This includes 10 different positions starting with the CEO and moving down the organizational structure to the Operations and Maintenance staff. The auditors did not observe any mention of control room management or operators whose responsibilities include the SCADA system of the pipelines.

NorthRiver Midstream was able to demonstrate a detailed organizational chart that flowed from senior management down to the facility or plant level. The auditors heard from NorthRiver Midstream staff that it conducts an annual evaluation of need. However, the auditors did not see any documentation that would demonstrate NorthRiver Midstream had implemented what had been described by staff. No documentation was available to demonstrate that NorthRiver Midstream had

the correct number of people, with the correct skill sets, in the needed positions to ensure its system was operating in a safe and secure manner. In addition, some of the documents reviewed were written at such a high level that they fail to provide adequate direction to staff tasked to implement them.

AP-07 Operational Control

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(q)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, 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 safety and security of the pipeline and protects the environment.
Expected outcome	<p>It is expected that the company is able to demonstrate that it has established and implemented a process for coordinating and controlling the operational activities of control room staff 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. It is expected that:</p> <ul style="list-style-type: none"> • The company has a compliant process that is established and implemented to supervise and ensure the operations of the control room are correct. • The methods for coordinating and controlling operational activities are defined. • Employees and other people working with or on behalf of the company are aware of the activities of others. • Employee's operational activities are planned, coordinated, controlled, and managed. • People working for or on behalf of the company: <ul style="list-style-type: none"> ○ are pre-qualified for their assigned duties to ensure safety, the security of the pipeline and to protect the environment; ○ are assigned work plans that have been reviewed by the company and are assessed for the interoperation with the work to be performed by other people working on behalf of the company; and ○ have adequate oversight performed by company representatives for their assigned tasks to ensure safety, security of the pipeline and the protection of the environment.

<p>Relevant information provided by the company</p>	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Manage Work Requests • Plan and Schedule Work • Execute and Document Work • Health and Safety Manual • West Doe Work Management Meetings • Integrity Management Program for Pipelines • Tupper Main Mid Point Riser Logs • Tupper Main Daily Summary • Cross Shift Summary for West Doe Operations • West Doe Elogger Examples • Health and Safety Manual • Vegetation Management Permit
<p>Finding summary</p>	<p>NorthRiver Midstream is generally, by activity and not by process, coordinating and controlling the operational activities of employees and other people working on behalf of the company so that each person is aware of the activities of others. The structure of the Safe Work Permit procedure contains many of the steps expected of a compliant process. However, there are several gaps that need to be addressed. Examples of the gaps identified include the interoperation between different work groups, clarity of what the Permit Issuer is inspecting and its frequency, along with the lack of documented pre-qualification of workers for the task to be completed, to name a few.</p>

Detailed Assessment

NorthRiver Midstream provided its Manage Work Requests document for review. The document contains an overview of the notifications process, clarification for each process step, and links to additional resources. The process is triggered when non-routine work is identified to correct an equipment malfunction or to make an improvement. While the document appears to be useful in the planning of maintenance improvements or for corrective maintenance, it appears to only indirectly coordinate or control the activities of employees or others working on behalf of the company.

The Plan and Schedule Work document states that its process is to ensure work orders are properly estimated, planned, and scheduled. As part of this process, external contract workers need to have job plans communicated via site personnel. The document also states, “*It is **recommended to print the job card for contract personnel to ensure work is completed as planned***” (emphasis added). The auditors are concerned this step is not a requirement of the process, only a recommendation which may not always be followed. As the job cards are not a requirement, the coordination and control of staff and those working on behalf of the company does not appear to be achieved by a documented process. The auditors are also concerned how well a job card can coordinate a large-scale activity with multiple contractors and activities taking place at the same time.

NorthRiver Midstream’s Health and Safety Manual contains a section on Safe Work Permits whose purpose is to communicate the hazards of the planned work and the controls to be applied to

mitigate the hazards. The manual states that NorthRiver Midstream issues safe work permits for seven types of high-risk work including:

- Confined space entry;
- Critical lift;
- Energized electrical work;
- Ground disturbance;
- Radiography;
- Immediately Dangerous to Life or Health atmosphere (sour gas work); and
- Work being done where workers are not protected by fixed guardrails and from which a fall of 7.5 m or more may occur.

All workers, including contractors, are expected to follow the requirements identified on the Safe Work Permit and the work procedure. After a review of this document, the auditors noted several deficiencies in relation to the requirements of this audit protocol. The Safe Work Permit procedure, as provided, did not indicate the procedure needed to make workers or others working for the company aware of the activities of others at the site or facility which would or could impact their work activities. While the Health and Safety Manual, on page 350, does refer to coordinating and controlling the activities of workers and others employed by the company, the linkage to the requirements laid out in the safe work permit are not explicit nor intuitive. The procedure also does not have a step or stage where the pre-qualification of the workers is considered to ensure the safety, security of the pipeline, and to protect the environment. While it appears work activities are planned, coordinated, and managed by the Safe Work Permit Issuer, there does not appear to be a step for larger projects where the interoperation between different work groups is considered and assessed prior to the start of the work task. According to the manual, oversight of the work activity by the company appears to be done by the Permit Issuer through ongoing inspections to ensure Safe Work Permit conditions are being followed. However, it is not clear what exactly the Permit Issuer will be inspecting as permit conditions do not appear to have a focus on coordination of workers and interoperation.

In the auditor's opinion, NorthRiver Midstream is generally, by activity and not by process, coordinating and controlling the operational activities of employees and other people working on behalf of the company so that each person is aware of the activities of others. The structure of the Safe Work Permit procedure contains many of the steps expected of a compliant process. However, there are several gaps that need to be addressed. Examples of the gaps identified include the interoperation between different work groups, clarity of what the Permit Issuer is inspecting and its frequency, along with the lack of documented pre-qualification of workers to the task to be completed, to name a few.

AP-08 Operating and Maintenance Manuals

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	27
Regulatory requirement	A company shall develop, regularly review, and update as required, operation and maintenance manuals that provide information and procedures to promote safety, environmental protection, and efficiency in the operation of the pipeline and shall submit them to the Regulator when required to do so.
Expected outcome	<p>It is expected that the company can demonstrate that:</p> <ul style="list-style-type: none"> • It has developed, regularly reviews and updates as required, control room operations and maintenance manuals that provide information and procedures to promote safety, environmental protection, and efficiency in the operation of the pipeline. • The manuals include procedures for shift handover communications; fatigue management; alarm management; and procedures to handle Operation Beyond Design Limits (OBDL) incidents and leak alarms. • If shift handover communications, fatigue management, alarm management and procedures are not in the O&M Manuals, the company is able to provide the documents and procedures, where they are located. • The manuals have been established and implemented for a minimum of three months. • The manuals are reviewed regularly and updated as required.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • IMPP • North River Midstream Health and Safety Manual • West Doe Emergency Response Plan • Tupper Emergency Response Plan • Asset Management of Change Program • West Doe Cross Shift Summary • <i>Pressure Control and Overpressure Protection</i> • <i>Field Pigging Procedure</i> • <i>Smart Pig Tool Run</i> • West Doe Procedures List • West Doe Dealing with HMI Issues • West Doe Shift Change Summary (record) • Tupper Turnover Reports (record) • Tupper Main Daily Summary (record) • West Doe Elogger Example (record)

Finding summary

NorthRiver Midstream did not demonstrate control room procedures were developed that addressed tasks during all normal and abnormal operations. Written procedures to manage shift handover; 24x7 shift fatigue management; response to abnormal pipeline events that may include leaks; over pressurization and gas quality; and how SCADA is used to monitor and control the pipeline and investigate abnormal operating conditions were not observed. The records retention policy was not implemented at the time of audit.

Detailed Assessment

NorthRiver Midstream provided documents that included corporate and facility procedures and manuals. Interviews were conducted along with observations of two field control rooms, used for monitoring and controlling CER regulated pipelines. The auditors noted several concerns with the company's procedures.

The control room is identified as having responsibilities in the following documents:

- Pipeline Integrity Program, Overpressure Protection during Maintenance Activities states "Gas Control or Operations in control of a pipeline under repair shall immediately notify onsite repair personnel if the pipeline pressure rises above, or is expected to rise above, the safe operating pressure during repair." The statement does not meet the requirements of a procedure. The steps are not defined and it does not clearly identify who would do this or how.
- The West Doe Emergency Response Plan (**ERP**) Step - Internal Emergency Notification Flowchart identifies Gas Control's responsibility to receive a call from the NorthRiver Midstream 24 Hour incident telephone system. A procedure that describes how Gas Control performs this function is not documented or referenced.
- Tupper ERP Internal Emergency Notification Flowchart identifies Gas Control's responsibility to receive calls from the NorthRiver Midstream 24 Hour Incident telephone system. The Eight Step Initial Response Strategy table states the Gas Controller should perform eight steps if a pipeline incident occurs. This section is written as guidance using the term "*should*", which implies the steps are optional or a recommendation.

NorthRiver Midstream provided the auditors with its Field Pigging and Smart Tool Run procedures and it was noted that the control room responsibilities and communication between field operations was not explained. It is unclear if the inline tool speed and location is monitored by the control room or whether they are aware when this work is conducted. The Pressure Control and Overpressure Policy describes the mechanical methods used to protect the pipeline. NorthRiver Midstream uses the SCADA to monitor the pipeline pressures and flows and employs automatic shutdown systems which isolate the pipeline in the event of an overpressure condition. A procedure that addresses how this is done was not observed.

NorthRiver Midstream's Health and Safety Manual (Fatigue Management section) states the purpose of the procedure is to protect the worker against the hazard of fatigue. This section applies to business day workers and contractors. Interviews with control room staff indicated the management of fatigue, while on shift, which includes utilization of countermeasures is not defined and the process is ad hoc. The Control Room staff work schedule is 12-hour days and nights. The length of each rotation is seven days with time off between rotations. The Supervisors consider fatigue and staff availability when they schedule short term shiftwork coverage. This process and other fatigue-related considerations, such as how to determine fitness to work based on hours of work and utilization of fatigue mitigation and countermeasure strategies are not documented.

The requirement to report OBDL is shown in the Incident Reporting procedure – Types of Incidents, Near Misses or Hazards are Reportable sections. It was noted in the Pipeline and Facility Physical Integrity sections that maximum operation pressure (**MOP**) excursions above safe operating limit require a report, escalation to the Chief Operating Officer (**COO**), an investigation, and learning to be trended and communicated.

The IMPP further states that NorthRiver Midstream will “Perform annual review and update of the Pipeline Integrity Program, Plans and SOPs”. The Records Retention Policy was dated 2023-04-07 and was not implemented at the time of audit.

From the detailed interviews conducted with the company’s staff at both control rooms, the auditors also made the following observations:

- The ERPs are the primary documents used by the control room and no specific detailed procedures to address normal operating conditions, abnormal operating conditions, and emergencies on the pipeline were observed.
- Training manuals are used as references and include four modules specific to control room operations. These are incorrectly being used as procedures.
- Logging application and logging methods were inconsistent. One plant utilizes the Elogger application, while the other is a written document. Written logs were used and some logging documents did not have a standardized format showing what information requires documentation. In addition, an example of a weekly turnover report did not show who created the document or what events should be noted. A process that clearly explains what logging is required, how it is done, what content should be included, who is responsible to document the information and when this task is done was not clearly explained.
- The control room generates written records, and the retention process was not clearly explained.
- The shift change process did not have the formality required to ensure information is shared accurately and consistently. Shift change logs were provided; however, a procedure describing how the shift change is conducted is not documented.
- Control Room Operators were able to explain how to utilize SCADA to investigate and diagnose an abnormal operating condition; however, no detailed procedures were provided that explain how the Control Room Operator utilizes the SCADA to monitor and control the pipeline under normal conditions, responds to abnormal operations and emergencies, and how SCADA problems are reported and escalated.

Based on the review of documents and records submitted, interviews with NorthRiver Midstream staff and observation of the control room facilities, the auditors did not observe control room procedures that address tasks during all normal and abnormal operations.

AP-09 Pipeline Control System - Leak Detection System

Finding status	No issues identified
Regulation	OPR
Regulatory reference	37(c)
Regulatory requirement	A company shall develop and implement a pipeline control system that (c) includes a leak detection system that, for oil pipelines, meets the requirements of CSA Z662 and reflects the level of complexity of the pipeline, the pipeline operation and the products transported.
Expected outcome	It is expected that the company can demonstrate that: <ul style="list-style-type: none"> • It has developed and implemented a pipeline control system that includes a leak detection system that, for oil pipelines, meets the requirements of CSA Z662:19. • The company can explain and demonstrate the operation of its leak detection system.
Relevant information provided by the company	The following key documents and records are related to this finding: <ul style="list-style-type: none"> • IMPP • Pipeline Patrol • Patrol Checklist 2021 09 28 MS South Peace • Patrol Checklist 2022 10 31 R1 MS South Peace • Patrol Checklist 2022 11 02 MS South Peace
Finding summary	NorthRiver Midstream demonstrated the SCADA systems were configured to monitor pressures and flow, and implemented alarms to alert the control room operator of abnormal conditions, including gas leaks.

Detailed Assessment

The auditors observed the SCADA systems at the Tupper Main and West Doe facilities. NorthRiver Midstream's leak detection system includes internal and external methods. Some examples include right of way patrols, aerial and field operations staff facility visits, and notification through the NorthRiver Midstream emergency line by 3rd parties.

On-site field interviews demonstrated the SCADA systems have monitoring and control capabilities. This includes pressure, flow and temperature analogues and status points on the CER-regulated pipelines. These points can be plotted in a trend line and historical information can be reviewed. Alarm setpoints have been configured to warn the control room operator of an abnormal condition that potentially can be a gas leak. Control room operators explained how they monitor the pressure and flow trends and respond when an alarm is triggered.

The company's IMPP also describes the processes and activities used to detect leak conditions. This applies to a total pipeline flow (full bore) release and less than total pipeline flow releases (i.e., leaks and fugitive emissions.) This IMPP states that full bore releases may be detected by:

- Gas control pressure monitoring systems and associated response in compliance with various Gas Control Plans and Procedures including the “Emergency Line Break” procedure;
- Rate of Change of Pressure (**ROCP**) alarming and low-pressure detection at remote Remotely Controlled/Automated Shutoff Valve (**RCV/ASV**) sites and high flow detection at some ASV sites; and
- ROCP alarming and low-pressure detection at pipeline compression facilities.

Control room procedures explaining an analysis process to investigate SCADA abnormal conditions that may have the potential to be small to large leaks were not provided to the auditors. The control room staff were able to demonstrate how they utilize SCADA to determine if there is a potential leak based on flow and/or pressure, and how they use other sources of information, like a 3rd party notification, in the decision-making process.

The auditors are of the opinion that once changes are made through a CAPA to rectify deficiencies noted in Audit Protocol #8 (AP-08), those changes will impact this Audit Protocol. The changes to AP-08 will filter down throughout NorthRiver Midstream’s other process and procedural documents resulting in the problems with this Audit Protocol being addressed. As a result, the auditors are of the opinion that the finding of this Audit Protocol should be no issues identified.

AP-10 Pipeline Control System - Data Recording System

Finding status	No issues identified
Regulation	OPR
Regulatory reference	37(b)
Regulatory requirement	A company shall develop and implement a pipeline control system that (b) records historical pipeline operation data, messages, and alarms for recall.
Expected outcome	<p>It is expected that the company can demonstrate that it has developed and implemented a pipeline control system that records historical pipeline operation data, messages, and alarms for recall. It is further expected that:</p> <ul style="list-style-type: none"> • The company can explain and demonstrate the operation of the data, messaging, and alarm recording system. • The company can produce a printout of alarms and incidents including OBDL and leak incidents. • The company can demonstrate that the list of OBDL and leak incidents matches the CER list of reported incidents. • The company can provide justification for any non-reported OBDL incidents and leak incidents.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Attachment 2 Screen shot SCADA Tupper Sales • Attachment 3 SCADA Values • NorthRiver Records Retention Policy
Finding summary	NorthRiver Midstream demonstrated that it has a pipeline control system which is capable of retaining historical information.

Detailed Assessment

During the auditor's visits to the control rooms at the Tupper Main and West Doe facilities, observations of the SCADA system's functions were noted. SCADA information was shown, and event and alarm bins were observed. These can be filtered based on time and type of event. The control room has the capability of trending historical information, including pressures and flows. Control room staff stated that the SCADA record management system can retain 50,000 records or specific periods of time, based on the configuration.

The NorthRiver Midstream Records Retention Policy identified that records related to the database system used to control, measure, and monitor the flow of gas through the pipeline are retained for "Life of Asset + 10 years".

At the time of audit, NorthRiver Midstream has not reported any OBDL or leak incidents that require CER mandatory reporting.

The auditors are of the opinion that once changes are made through a CAPA to rectify deficiencies noted in Audit Protocol #8 (AP-08), those changes will impact this Audit Protocol. The changes to AP-08 will filter down throughout NorthRiver Midstream's other process and procedural documents resulting in the problems with this Audit Protocol being addressed. As a result, the auditors are of the opinion that the finding of this Audit Protocol should be no issues identified.

AP-11 Investigation of Incidents, Near Misses and Non-Compliances

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(r)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for the internal reporting of hazards, potential hazards, incidents, and near-misses and taking corrective and preventive actions, including the steps to manage imminent hazards.
Expected outcome	<p>It is expected that the company can demonstrate that it has established and implemented a process for the internal reporting of hazards, potential hazards, incidents, and near-misses related to the operation of the pipeline and for taking corrective and preventive actions, including the steps to manage imminent hazards. It is expected that:</p> <ul style="list-style-type: none"> • The company has a compliant process that is established and implemented. • The company has defined its methods for internal reporting of hazards, potential hazards, incidents, and near-misses. • Hazards and potential hazards are being reported as required by the company's process. • Incidents and near-misses are being reported as required by the company's process. • The company has defined how it will manage imminent hazards. • The company is performing incident and near-miss investigations. • The company's investigation methodologies are consistent and appropriate for the scope and scale of the actual and potential consequences of the incidents or near misses to be investigated. • The company has defined the methods for taking corrective and preventive actions. • The company can demonstrate through records that all corrective and preventive actions can be tracked to closure.

Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Incident Management Reporting • Incident Investigation • Incident Learning Communication • Incident, Near Miss or Safety Observation Reporting • SAP IM User Guide Manage Incidents • SAP IM User Guide Incident Near Misses or Safety Observation • SAP IM User Guide Manage and Analyse Incidents, Near Misses and Safety Observations • NorthRiver Management System Corrective and Preventive Actions (CAPA) Process • Field Guide to Regulatory Notification • NorthRiver Incident Review Meetings - Examples
Finding summary	<p>NorthRiver Midstream demonstrated through interviews and observation that a process was established and implemented; however, the company has not defined how imminent hazards are managed. In addition, the CAPA process document was in draft and not approved at the time of the audit.</p>

Detailed Assessment

NorthRiver Midstream has developed an incident management process and demonstrated the application used by NorthRiver Midstream staff to enter information. The Incident Management Reporting Procedure describes the instructions for reporting incidents, near misses and hazards. Roles and responsibilities are defined, and steps are explained. This procedure states “Any person (worker, employee, contractor, or visitor) who identifies or is involved in an incident, near miss or hazard will immediately (report) notify (verbally or by email) their people leader or Supervisor.” Time to report and escalation varies depending on the severity rating. The types of incidents, near misses or hazards that are reportable include:

- People, Health, and Safety;
- Electrical;
- Environmental;
- Motor Vehicle, UTV, ATV, Trailer, Mobile Equipment;
- Pipeline Integrity (Property);
- Facility Integrity (Property);
- Lands and Right of Way;
- Security;
- Operational Discipline; and
- Measurement.

The Incident Management processes are integrated into other NorthRiver Midstream programs and cited in the IMPP, Safety Management Program, Emergency Program Manual, Environmental Management Program, Land Damage Prevention Program, and Security Program.

SAP Incident Management is the application used to report and manage incidents. The SAP User Guide - Incident Near Misses or Safety Observation describes the steps to be taken by the user to enter a report. The SAP User Guide Manage and Analyse Incidents, Near Misses and Safety Observations is another comprehensive procedure describing how to manage events. The Incident Investigation procedure describes the steps to investigate and perform an analysis. This procedure requires incident investigations to be complete within 30 days of occurrence. Extensions for the timeline can be requested by the incident owner. The incident investigation team is expected to use an appropriate causal analysis technique appropriate for the type and severity of the incident.

NorthRiver Midstream provided the NorthRiver Management System CAPA Process. The purpose statement is “to manage CAPAs: identified through audits, inspections, assessments, incidents and investigations; and identified during management review.”

Other documents reviewed include the Field Guide to Regulatory Notification; and Incident Learning Communication procedures which provide steps for staff to communicate learnings from incidents, near misses and hazards.

Examples of incident review meetings were provided for 2021 and 2022. In addition, there were two Agenda and Minutes of Incident Review Meeting records provided that supported the process.

The incident management application was demonstrated by NorthRiver Midstream staff in Calgary. Reporting of hazards was shown in an example of an incident that occurred at the West Doe facility. Company staff stated that all incidents require a process safety analysis. The SAP application provides notifications to users on tasks and deadlines and tickets are reviewed every 30 days until they are closed. NorthRiver Midstream provided an overview of its corrective action process and provided three examples. An example of a hazard reported by an employee was reviewed. CAPA details, applicable documents and completion dates were all identified. The application is not part of the SAP Incident Management system but links information which can be referenced.

The auditors identified that the CAPA process submitted as part of the audit for review was in draft and not approved. In addition, the NorthRiver Midstream incident management documentation did not define how the company managed imminent hazards from a control room perspective.

AP-12 Emergency Procedures Manual

Finding status	No issues identified
Regulation	OPR
Regulatory reference	32.(1.1)
Regulatory requirement	The company shall develop an emergency procedures manual, review it regularly and update it as required.
Expected outcome	<p>It is expected that the company can demonstrate that:</p> <ul style="list-style-type: none"> • It has developed, regularly reviews, and updates as required an emergency procedures manual to respond to control room specific emergencies (i.e., bomb threat). • It tests the emergency procedures to ensure workers are familiar with them.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Emergency Management Program • NorthRiver Midstream Core Emergency Response Plan (Tupper) • NorthRiver Midstream West Doe South / Peace Regional Emergency Response Plan (West Doe) • West Doe ERP Summary (record) • Tupper ERP Summary (record)
Finding summary	Emergency procedure manuals are available and list the control room responsibilities. Control room operators understand and use the ERP as a reference.

Detailed Assessment

NorthRiver Midstream Emergency Management Program documentation describes the system for responding to incidents and emergencies that could impact the health and safety of employees, the public, the environment, and property. The emergency response procedures are identified and include sections on:

- Public protection measures;
- Spill response;
- Medical emergencies;
- Responder safety;
- Fire/explosion;
- Transportation incidents;
- Weather and natural disasters;

- Security incidents;
- Animal encounters; and
- Drinking water emergencies.

The Emergency Management program describes the requirements for each region to have a site-specific ERP. NorthRiver Midstream submitted two ERP's that are applicable to the pipelines under the jurisdiction of the CER:

- NorthRiver Midstream Core Response (Tupper); and
- NorthRiver West Doe / South Peace Regional Emergency Response Plan (West Doe).

At the facility level, training is annually reviewed by people leaders. Employees are required to participate in competency assessments or assurance exercises. Contractors must have proof of qualification and training records for individual workers available upon demand.

Annual tabletop exercises are conducted for each region and a full-scale exercise is conducted every three years. Functional exercises that test and validate coordination between the Emergency Operations Centre and other internal groups are conducted annually and drills are conducted regularly in the field to ensure immediate actions and the emergency response procedures are understood. The ERPs are developed, reviewed, revised, updated, and maintained on an annual basis or as required by the Emergency Management Program Coordinator.

West Doe/South Peace Regional ERP and Tupper Main / Tupper West Regional ERP were submitted for review by the auditors. Both documents are comprehensive and address the emergency incident command and Emergency Operations Centre roles and responsibilities. This includes meeting and record templates for the various incident response roles. In addition, steps are outlined for post incident/accident investigation and reporting.

Each ERP has a list of procedures for various emergency scenarios applicable to their assets. The control rooms are identified in their respective ERP incident notification flow charts. They are responsible to monitor the 24x7 incident reporting telephone line and respond to incidents or emergencies reported by an external contact. NorthRiver Midstream utilizes the Incident Command System (**ICS**) as its approach to command, control, and coordinate an emergency response.

The ERPs address control room emergencies, such as security threats. Security training is offered to control room staff and was observed in the curriculum shown to the auditors during interviews.

NorthRiver Midstream provided examples of emergency response tabletop exercises that were conducted at Tupper Main & Tupper West on 22 March 2022 and West Doe on 19 October 2022. Emergency exercises are reviewed during safety meetings for continual improvement of operations staff.

Field interviews were conducted at both NorthRiver Midstream control room facilities that are responsible for CER-regulated pipelines. The control room operators identified the ERP as one of their primary sources of information when an incident or emergency occurs. NorthRiver Midstream stated that it utilizes a software application on cell phones that allows the employees to access critical documents during events.

The auditors are of the opinion that, once changes are made through a CAPA to rectify deficiencies noted in Audit Protocol #8; those changes will impact this Audit Protocol. The changes to Audit Protocol #8 will filter down throughout NorthRiver Midstream's other process and procedural

documents resulting in the problems with this Audit Protocol being addressed. As a result, the auditors are of the opinion that this Audit Protocol should be identified as no issues identified.

AP-13 Analysis of Leak Alarms

Finding status	Not Applicable
Regulation	CSA Z662:19
Regulatory reference	Clause E.4.2.1
Regulatory requirement	Analysis of leak alarms shall be conducted to determine the cause of the alarm. The leak alarm shall not be discounted and declared invalid without such analysis. All alarms shall be assumed to have a cause. Methods to determine the cause of the leak alarm shall be documented in a leak alarm analysis procedure.
Expected outcome	<p>It is expected that the company can demonstrate that:</p> <ul style="list-style-type: none"> • It analyzes all leak alarms to determine the cause and has developed methods to determine the cause. • It has procedures and records that demonstrate how leak alarms are handled within the control room. • It has developed and follows methods to determine the cause of leak alarms. • It has records that demonstrate that it analyzes all leak alarms. • It does not discount any alarms or declare alarms false without investigating their cause.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • N/A
Finding summary	Not applicable.

Detailed Assessment

This protocol item was not evaluated due to the fact that Clause E.4.2.1 of CSA Z662:19 does not apply to NorthRiver Midstream's current CER-regulated pipelines.

AP-14 Safe Shutdown of Pipeline in an Emergency

Finding status	Non-compliant
Regulation	CSA Z662:19
Regulatory reference	Clause 10.5.2.1
Regulatory requirement	Operating companies shall establish emergency procedures that include: <ul style="list-style-type: none"> (a) procedures for the safe control or shutdown of the pipeline system, or parts thereof, in the event of a pipeline emergency; and (b) safety procedures for personnel at emergency sites.
Expected outcome	It is expected that the company can demonstrate that: <ul style="list-style-type: none"> • It has established emergency procedures for the safe control or shutdown of the pipeline system in the event of an emergency. • It has established safety procedures for personnel at emergency sites. • It trains and tests control room personnel on the emergency shutdown procedures. • There is someone on each shift who has the authority to shut down the pipeline.
Relevant information provided by the company	The following key documents and records are related to this finding: <ul style="list-style-type: none"> • Emergency Management Program • Safety Management Program • NorthRiver Midstream Core Emergency Response Plan (Tupper) • NorthRiver Midstream West Doe South / Peace Regional Emergency Response Plan (West Doe) • Tupper Tabletop ERP Summary • West Doe Tabletop ERP Summary
Finding summary	NorthRiver Midstream did not demonstrate that the control room had adequate procedures for the safe control or shutdown of the pipeline during an emergency.

Detailed Assessment

The Safety Management Program provides the framework for managing occupational health and safety risks. This program is intended to prevent work related injury and ill health and provide a safe and healthy workplace. NorthRiver Midstream's Occupational Health and Safety Manual describes the applicable procedures. There were occupational health and safety, industrial hygiene, along with emergency response and preparedness procedures. The emergency response and preparedness section identifies the need for readily accessible site-specific emergency plans and training.

The control room operators are part of the operations crew that work 12-hour day and night shifts. They are first trained on plant operation and once they understand those processes, the control room is considered the last training step. The auditors found that training programs at the Tupper Main facility are different than at West Doe. For additional information on training, refer to audit protocols #15 and #16.

Control room operators described their operational responsibilities and their response during abnormal operations or emergencies. They indicated the ERP is their primary source of information during incidents and emergencies. In addition, the control room staff confirmed that every employee has the ability to stop work if an unsafe condition occurs and all facility operators are trained to shut down the plant if an incident or emergency occurs.

The auditors' review of NorthRiver Midstream documents and interviews conducted did not clearly explain who has the responsibility to bring the CER-regulated pipeline to safe control or shut down the pipeline. Depending on the time of day, facility supervisors are physically working at the plants and are a first point of contact when an incident or emergency occurs. They work with the control room operator to mitigate and manage the event. Interviews did not clearly explain whether the decision to bring the pipeline to safe control or shutdown was based on a role, consensus, or seniority. Procedures were not available that stated who is responsible and what scenarios would invoke safe operation or a shutdown of the pipeline. Procedures were not available that address how the pipeline will be monitored should the control room operator become incapacitated.

As a result, the auditors are of the opinion NorthRiver Midstream did not demonstrate documented procedures for the safe control or shutdown of the pipeline system in the event of a pipeline emergency.

AP-15 Defining Competency and Training Requirements

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(j)
Regulatory requirement	A company shall, as part of its management system and the protection programs referred to in section 55, establish and implement a process for developing competency requirements and training programs that provide employees and other persons working with or on behalf of the company with the training that will enable them to perform their duties in a manner that is safe, ensures the safety and security of the pipeline and protects the environment.
Expected outcome	<p>It is expected that the company can demonstrate that it has established competency criteria and training programs for pipeline controllers. It is expected that:</p> <ul style="list-style-type: none"> • The company has a compliant process for developing competency requirements and training programs. • The company has defined what competency requirements are required. • Training programs are traceable and trackable to the defined competency requirements and effective at achieving the desired competencies. • Persons working with or on behalf of the company are provided with adequate training to operate and maintain the pipeline control system. • Employees and those working on behalf of the company are competent to carry out their assigned work.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Integrity Management Program for Pipelines • Health and Safety Management Program • Emergency Management Program • Security Management Program • Environmental Management Program • Damage Prevention Program • North River Midstream Health and Safety Manual • Training and Competency Assurance Program Charter • NorthRiver Training Course Matrix • Tupper Area – Training Records • West Doe Area – Training Records

**Finding
summary**

NorthRiver Midstream did not demonstrate that it has defined competency and training requirements for facility operators consistently for both the West Doe and the Tupper Main facility.

Detailed Assessment

NorthRiver Midstream provided the auditors with its Training and Competency Assurance Program Charter. According to the document, the purpose is to define the standards and processes that are required to ensure NorthRiver Midstream employees, contractors and supervisors are qualified and competent to perform their roles in an effective and safe manner. The Charter states that the Training and Competency Assurance Program has the following standardized business processes that apply to NorthRiver Midstream training programs:

- Assess and define the training needs;
- Develop the learning solution or program;
- Assign, implement, and establish the training;
- Evaluate the training outcomes; and
- Training and competency oversight.

The auditors were advised that control room operations fall under the responsibility of the Health and Safety Program. All of the section 55 program documents included the requirement to identify competency and training requirements for each of the various programs. However, the NorthRiver Midstream Health and Safety Program did not make any reference to the Training and Competency Assurance Program.

The Charter and the Training and Competency Assurance Program are not referenced in any of the program documents. There is a lack of integration of processes across the management system. Ideally, there should be overarching process documents for issues such as competency and training, which would then be referenced and adhered to at the individual section 55 program level. However, this was not evident with the NorthRiver Midstream management system.

NorthRiver Midstream provided the auditors with the NorthRiver Training Course Matrix and training records for Tupper Main and the West Doe facilities. The training course matrix and the training records apply to courses pertaining to EHS. NorthRiver Midstream advised the auditors that the NorthRiver Training Course Matrix is a catalogue of all NorthRiver Midstream EHS training and is a tool used by leaders to identify training needs for their direct reports based on their specific job function. It was noted that the training course matrix contains a list of courses showing which positions should attend and at what frequency.

The West Doe and Tupper Main facility training records show:

- A list of courses each employee is required to attend;
- When the training is due; and
- Whether they have been completed or not.

NorthRiver Midstream demonstrated to the auditors that it has a process for identifying competency and training requirements for EHS-related courses. However, when it comes to defining competency and training requirements for operations at the facility level, including control rooms, the auditors noted during document review, site visits, and interviews there was a considerable difference in what is provided for operational training between West Doe and Tupper Main pipelines.

At the West Doe facility, the company demonstrated that it has an extensive package of competency and training documents which cover many operator scenarios. At Tupper Main facility there were only three documented competency and training documents. The auditors were advised that NorthRiver Midstream is in the process of documenting all operator training modules for the Tupper Main facility. At the time of the audit, only three had been completed. As such, there is a considerable difference in the way NorthRiver Midstream is managing competency and training for operators at the two facilities operating CER-regulated pipelines.

At the West Doe facility, operator trainees are required to demonstrate their knowledge and competence at carrying out the operator training modules before being signed off by a qualified mentor. At the Tupper Main facility, the auditors were advised the training of operator trainees is completed on an ad hoc basis. Trainees are guided and observed by a mentor until the mentor feels that the trainee is ready to be deemed trained and competent.

As a result, the auditors are of the opinion NorthRiver Midstream did not demonstrate that it has defined competency and training requirements for facility operators consistently for both the West Doe and the Tupper Main facility.

AP-16 Verifying Competency and Training

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(k)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for verifying that employees and other persons working with or on behalf of the company are trained and competent and for supervising them to ensure that they perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.
Expected outcome	<p>It is expected that the company can demonstrate that it has established and implemented a process for verifying that control room personnel are trained and competent and for supervising them to ensure they perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment. It is expected that:</p> <ul style="list-style-type: none"> • The company has a compliant process for verifying employees and other persons working with or on behalf of the company are trained and competent. • Records are maintained demonstrating employees and other persons working on behalf of the company are trained and competent as applicable to the Integrity Management Program and specifically, the control room. • The company has a compliant process for supervising employees and other persons working on behalf of the company. • Supervision of employees and other persons is adequate to ensure they perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Integrity Management Program for Pipelines • Health and Safety Management Program • Emergency Management Program • Security Management Program • Environmental Management Program • Damage Prevention Program • NorthRiver Midstream Health and Safety Manual • Training and Competency Assurance Program Charter • NorthRiver Training Course Matrix • Tupper Area – Training Records • West Doe Area – Training Records

	<ul style="list-style-type: none"> • West Doe – Work Management Meetings Reporting Examples • Tupper Main – Example Work Management Meeting Minutes • NorthRiver Operator Job Posting Example
Finding summary	<p>NorthRiver Midstream did not demonstrate that it has a consistent approach that meets regulatory requirements for verifying operator training and competency at the pipeline level and supervising workers to ensure that they perform their duties in a manner that is safe, ensures the security of the pipeline, and protects the environment.</p>

Detailed Assessment

NorthRiver Midstream provided the auditors with its section 55 program documents including:

- Integrity Management Program for Pipelines;
- Health and Safety Management Program;
- Emergency Management Program;
- Security Management Program;
- Environmental Management Program; and
- Damage Prevention Program.

At the program level, the documents described the requirement to verify competency and training.

NorthRiver Midstream also provided its corporate Training and Competency Assurance Program Charter. The Charter does address the requirement to evaluate training and provide ongoing oversight over competency and training. The Charter’s purpose is to define the standards and processes that are required to ensure NorthRiver Midstream employees, contractors and supervisors are qualified and competent to perform their roles in an effective and safe manner. To address this audit protocol, the Training and Competency Assurance Program has several applicable standardized business processes that make up the overarching Training and Competency Standards that apply to NorthRiver Midstream training programs:

- Assign, implement, and establish the training;
- Evaluate the training outcomes; and
- Training and Competency oversight.

NorthRiver Midstream advised that the NorthRiver Training Course Matrix is a catalogue of all NorthRiver Midstream EHS training and is a tool used by leaders to identify training needs for their direct reports based on their specific job function. CER auditors noted that the training course matrix contains a list of EHS courses but not operational type courses.

For EHS competency and training, NorthRiver Midstream adequately demonstrated that it was doing a satisfactory job of:

- Defining competency and training requirements;
- Delivering the training;
- Keeping track of who had completed the training; and

- Monitoring ongoing competency and training.

The auditors identified issues with operator competency and training with non-EHS related training.

At the West Doe facility, there is a comprehensive list of training modules and the supervisory team appeared to be doing an adequate job of keeping track who had conducted each training module and when. At the Tupper Main facility, the company was in the process of developing training modules and, at the time of the audit, had completed only three, with the remaining modules still under development. At Tupper Main facility, operator training was conducted in an ad hoc manner in which trainees would be under the supervision of a mentor. Once the trainee had suitably demonstrated to the mentor that the trainee knew how to carry out a procedure, they were given the okay to perform the activity. Given the two different approaches to training, it can be stated that employees at the two NorthRiver Midstream sites are not being managed and supervised in a consistent manner. It also points to uneven supervision from the corporate management team as it has permitted the two facilities to conduct training and competency verification using two different methods.

In summary, NorthRiver Midstream did not demonstrate that it has a consistent approach that meets regulatory requirements for verifying operator training and competency at the pipeline level and supervising workers to ensure that they perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.

AP-17 Annual Training Program Report

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	56(b)
Regulatory requirement	A company shall, in addition to complying with the record retention requirements set out in the CSA standards referred to in section 4, retain an annual report on the training program developed under section 46 that compares the actual training received by employees to the planned training.
Expected outcome	It is expected that the company can demonstrate that: <ul style="list-style-type: none"> • It prepares an annual report that compares the actual training received by employees and other staff working on behalf of the company in the control room to the planned training.
Relevant information provided by the company	The following key documents and records are related to this finding: <ul style="list-style-type: none"> • NorthRiver Training Course Matrix • Tupper Area – Training Records • West Doe Area – Training Records
Finding summary	NorthRiver Midstream demonstrated it is meeting the requirements of paragraph 56(b) of the OPR as concerns EHS training; but did not demonstrate the same for training requirements on operational equipment that employees could reasonably be expected to use at the facility level.

Detailed Assessment

NorthRiver Midstream advised the auditors that the NorthRiver Training Course Matrix is a catalogue of all NorthRiver Midstream EHS training and is a tool used by leaders to identify training needs for their direct reports.

The West Doe and Tupper Main facility training records show:

- A list of courses each employee is required to attend;
- When the training is due; and
- Whether they have been completed or not.

A review of the training provided by NorthRiver Midstream indicated that it meets the majority of the requirements of section 46 of the OPR. Paragraph 46(2)(c) of the OPR requires that the company's training program include training on the procedures for the proper operation of the equipment that the employees could reasonably be expected to use. While this was found to be the case at the

West Doe facility, the same was not observed at the Tupper Main facility. This facility did not have training material in place for the general operation of all equipment that is at the facility.

As explained in Audit Protocols 15 and 16, the West Doe and Tupper Main facilities have two different approaches to track training. West Doe had a series of training modules that trainees were required to complete until they had demonstrated competency to an experienced mentor. At this point they would be approved by the mentor as being ready to operate the equipment. At Tupper Main, only three training modules had been developed at the time of the audit. The auditors were advised during interviews that trainees completed an ad hoc process in which an experienced mentor would oversee their training, not necessarily with the benefit of a training module, and give them the okay to operate the equipment once the mentor was satisfied.

NorthRiver Midstream did not demonstrate to the auditors that operator training results, at the facility level, are being incorporated into an annual training report that would meet the requirements of paragraph 56(b) of the OPR. As such, senior management, including the Accountable Officer, would have no insight into how well operator training is being managed and completed at either facility.

In summary, while NorthRiver Midstream demonstrated it is meeting the requirements of paragraph 56(b) of the OPR as concerns EHS training; but did not demonstrate the same for training requirements on operational equipment that employees could reasonably be expected to use at the facility level.

AP-18 Control Room Audits

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	55
Regulatory requirement	A company shall conduct audits with a maximum interval of three years of the following programs, (1)(b) the integrity management program referred to in section 40, including the pipeline control system referred to in section 37; and (2) the documents prepared following the audit shall include (a) any deficiencies noted; and (b) any corrective action taken or planned to be taken.
Expected outcome	It is expected that the company can demonstrate that: <ul style="list-style-type: none"> • It conducts audits of the pipeline control system with a maximum interval of three years. • The audit reports note any deficiencies and any corrective actions taken or planned to be taken.
Relevant information provided by the company	The following key documents and records are related to this finding: <ul style="list-style-type: none"> • Alberta Energy Regulator SRI Inspection Report 2022 • NorthRiver response – AER SRI 2022 Audit Action Items • Alberta Energy Regulator POI P43001 Inspection Report • NorthRiver_rsp-AER_POI43001_Insp530112-Action Items Template • Alberta Energy Regulator - SRI Insp Complete Jan 2023 • NorthRiver 2022 Certificate of Recognition Audit Report
Finding summary	NorthRiver Midstream did not demonstrate that it has conducted a section 55 audit of its program areas that included an audit of its pipeline control system within the previous three years.

Detailed Assessment

The OPR requires companies to conduct internal audits as per the requirements of section 55 of the OPR. These are to be completed at intervals not exceeding three years. These audits are to be carried out on all of the protection programs listed in section 55 which, in the auditor's opinion, need to include the operation of the pipeline control system. These audits are intended to verify that each specific program is meeting the requirements of the OPR, and other applicable legislation requirements such as the CSA Z662:19 and is operating in conformance with the company's own specific requirements.

NorthRiver Midstream provided the auditors with copies of inspections conducted by the AER in November/December 2022 and January/April 2023 along with NorthRiver Midstream's responses to those reports. When the auditors advised that AER inspection reports are not a suitable substitute for a section 55 program audit, NorthRiver Midstream provided the auditors with a Certificate of

Recognition (**COR**) audit which had been conducted on its Health and Safety Program, which included aspects of its control room management.

The auditors reviewed the COR audit report and noted that it had been carried out by a third party in 2022. While the audit addressed some of NorthRiver Midstream's legal requirements as they pertain to safety management, it did not account for all of the applicable legislation. There is little to indicate that the COR audit addressed control room management at either the West Doe or Tupper Main facility.

The auditors note that COR audits are based on provincial safety legislation and do not directly account for CER regulations, Canada Labour Code, or applicable Canadian Standards Association (CSA) requirements such as CSA Z662:19. These audits are primarily used to assess conformance to internal processes, practices and procedures and do not assess whether the Safety Management Program is effective as required by the OPR. Another issue of concern is that several of the COR audit findings are based solely on interviews with company staff and are not backed up with the results of document and record review. In short, the COR audit submitted by NorthRiver Midstream cannot be accepted as a substitute for a section 55 program audit.

In summary, NorthRiver Midstream did not demonstrate to the CER that it has conducted a section 55 audit that includes all aspects of its pipeline control system within the previous three years.

AP-19 Audits of Leak Detection System

Finding status	Not Applicable
Regulation	CSA Z662:19
Regulatory reference	Clause E.9
Regulatory requirement	<p>The leak detection system shall be reviewed and audited periodically to determine whether it is in accordance with the provisions of this Annex. Where discrepancies are identified, appropriate revisions shall be made. The methods, responsibilities and results of the reviews and audits shall be documented. Such reviews and audits should include</p> <ol style="list-style-type: none"> a) Scope and objectives; b) Review/audit frequency and timing; c) Responsibilities for managing and performing the audit; d) Previous incidents or false alarms; e) Occasions where the leak detection system was inoperative; f) Previous reviews, internal audits and external audits; g) Reviewer/auditor independence; h) Reviewer/auditor competency; i) Reviewer/auditor procedures; and j) Operations under normal and special conditions.
Expected outcome	<p>The company can demonstrate that:</p> <ul style="list-style-type: none"> • It conducts reviews and audits of the leak detection system periodically. • Its evaluations have determined the root cause of incidents and recommended corrective and preventive actions. • Corrective and preventive actions stemming from the audits and evaluations have been (or are being) implemented.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • N/A
Finding summary	Not Applicable

Detailed Assessment

This protocol item was not evaluated due to the fact that Clause E.9 of CSA Z662:19 does not apply to NorthRiver Midstream's current CER-regulated pipelines.

AP-20 Annual Management Review

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(x)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for conducting an annual management review of the management system and each program referred to in section 55 and for ensuring continual improvement in meeting the company's obligations under these Regulations.
Expected outcome	<p>It is expected that the company can demonstrate that it has a process for conducting an annual management review of its control room operations and for ensuring continual improvement in meeting the company's obligations under the OPR Regulations. It is expected that:</p> <ul style="list-style-type: none"> • The company has a compliant process that is established and implemented. • The company's methods for conducting the management review are defined. • The company has defined methods for reviewing the management system and each section 55 program. • The company has maintained records to demonstrate the achievement of meeting obligations the OPR Regulations is continually improved. • The company has identified, developed, and implemented corrective actions as part of its continual improvement.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Integrity Management Program for Pipelines • Health and Safety Program • NorthRiver Midstream Emergency Management Manual • NorthRiver Midstream Security Management Program Manual • Environmental Management Program • Land Damage Prevention Program • NorthRiver OMS Management Review Process Draft • 2021 Accountable Officer Annual Report • 2022 Accountable Officer Annual Report

**Finding
summary**

NorthRiver Midstream demonstrated that it has established a process for conducting an annual management review of the management system, its management programs, and for ensuring continual improvement in meeting the company's obligations under the OPR. It also demonstrated that by activity, it is conducting the quarterly and annual management reviews and generating the required outcomes of an annual report and a meeting record. However, NorthRiver Midstream did not demonstrate that it has fully implemented the process as the process document is still shown as being in draft.

Detailed Assessment

To demonstrate compliance NorthRiver Midstream provided the CER with:

- A copy of its management review process;
- 2021 Accountable Officer Annual Report; and
- 2022 Accountable Officer Annual Report.

The CER auditors reviewed the management review process document and noted that it is still in a draft state. The draft management review process describes the:

- Purpose, scope, and objectives of the process;
- Key roles and responsibilities;
- Key inputs and outputs; and
- Process workflow.

According to NorthRiver Midstream's management review process, the quarterly and the annual management review meetings are to be held with one of the expected outcomes being the preparation of the Accountable Officer's annual report. NorthRiver Midstream demonstrated that it is conducting the quarterly and annual management reviews and generating the Accountable Officer annual report as an outcome of the process.

The two annual reports that NorthRiver Midstream provided to the CER auditors included discussions on:

- The company's performance in achieving its goals, objectives and targets as evaluated by the performance measures for all the section 55 programs;
- Updated goals, objectives, and targets for the coming year;
- The adequacy and effectiveness of the management system; and
- Recommendations for continuous improvement.

Another expected outcome from the management review process is a management review meeting record. NorthRiver Midstream demonstrated that it generated this record at the conclusion of its annual management review meeting discussions on each of the preceding four topics for each section 55 program. Through a review of documents and records provided by NorthRiver Midstream and through discussions during interviews, it was concluded that NorthRiver Midstream has a management review process and is following it. The process is still in draft and therefore cannot be viewed as having been fully implemented.

In summary, NorthRiver Midstream demonstrated that it has established a process for conducting an annual management review of the management system, its management programs and for ensuring continual improvement in meeting the company's obligations under the OPR. It also demonstrated that by activity, it is conducting the quarterly and annual management reviews and generating the required outcomes of an annual report and a meeting record. However, NorthRiver Midstream did not demonstrate that it has fully implemented the process as the process is still shown as being in draft.

AP-21 Pipeline Control System

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	37(a)
Regulatory requirement	A company shall develop and implement a pipeline control system that (a) comprises the facilities and procedures used to control and monitor the operation of the pipeline.
Expected outcome	<p>It is expected that the company can demonstrate that it has developed and implemented a pipeline control system for its pipelines that meets the requirements of CSA Z662:19. It is further expected that:</p> <ul style="list-style-type: none"> • The company can explain how the pipeline control system is used to control and monitor the operation of its pipelines. • The company provides documentation that explains the pipeline control system design, maintenance, and operation. • The company provides documentation and records that explain how alarm setpoints and control limits are determined, and changes are managed and monitored. • The company provides documentation and records that explain how malfunctioning, inhibited, and stale data and alarms are analyzed, and managed. • The company can provide documentation and records that explain the backup pipeline control system and when it is used. • The company can provide documentation and records that explain the pipeline system commissioning.
Relevant information provided by the company	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> • Asset Management of Change Program • Pressure Control and Overpressure Protection (DCOPP) Policy • Gas compressor Process and Instrumentation Drawings (P&ID) for West Doe and Tupper Main along with a written description of how the systems work; • A 2022 calibration and inspection report for a PCOPP device; • Sales compressor package #2 P&ID diagram; • A description of how pressure control and overpressure protection function • CER-regulated pipeline overview, calibration records, P&ID diagrams, and descriptions of how systems work • West Doe Area CER Pipeline Overview

	<ul style="list-style-type: none"> • 11-01-81-15-K-101 Gas Compressor Pressure and Instrumentation Diagram • CNRL 11-01-81-15_PCOPP Written Description • RP500111 PCOPP Calibration 20221104 • Sales Gas - Over Pressure Protection (OPP) - Piping and Instrumentation Diagram 11-01-81-15 • PC Sales to XG-99 OPP 1 of 2 P&ID • PC Sales to XG-99 OPP 2 of 2 P&ID • PC Sales to XG-99 PC P&ID • PC Sales to XG-99 PCOPP Calibration 1 of 2 20230330 • PC Sales to XG-99 PCOPP Calibration 2 of 2 20230330 • PC Sales to XG-99 PCOPP Written Description • Tupper Area CER Pipeline Overview • TPM PCOPP Calibration 20220208 • TPM PCOPP PIDS 20230509 • TPM PCOPP Written Description 20220208 • North River Midstream PSM GDL 0003 Asset MOC Scope Guidance • Critical Defeat Standard Operating Procedure (NRM PSM SOP 0001) • North River Midstream PSM FRM 0003 PSSR Form
Finding summary	<p>NorthRiver Midstream demonstrated that it has developed and installed a pipeline control system that comprises the facilities used to control and monitor the operation of its CER-regulated pipelines but did not demonstrate that it has documented procedures for all normal and abnormal operations.</p>

Detailed Assessment

NorthRiver Midstream provided the auditors with an overview of the CER-regulated pipelines as part of the West Doe and the Tupper Main facilities, which consist of three independent point-to-point pipelines. At their inlets, these pipelines include independent pressure control and overpressure protection systems.

NorthRiver Midstream provided the auditors with the company's PCOPP policy. The policy covers the requirements for the design, installation, maintenance, operation, and calibration of the PCOPP systems dedicated to NorthRiver Midstream at measurement points delivering to its gathering systems. The policy describes the roles, responsibilities, and expectations to ensure the integrity and reliability of the PCOPP systems within the overall gathering system. The policy applies to NorthRiver Midstream operators and its customers that own or operate measurement points connected to the NorthRiver Midstream gathering systems.

According to the policy, measurement points connected to the NorthRiver Midstream gathering system must have a PCOPP system approved by NorthRiver Midstream to protect the downstream pipeline from an overpressure event. The system must include a pressure control device and an

overpressure protection device, which must be standardized and work independently from each other.

NorthRiver Midstream advised the auditors that it has facility independent control panels for the control and operation of pipelines at the Tupper Main and the West Doe facilities. NorthRiver Midstream does not have a single centralized system to control both. NorthRiver Midstream also advised the CER that it does not have backup control panels in the event of a failure of its primary system. Both West Doe and Tupper Main advised the auditors that they use the Rockwell/Allen-Bradley line of remote telemetry and supervisory control and data acquisition systems for their pipeline monitoring and control systems. The company also advised the auditors that both systems had been upgraded within the previous three years. The systems for both facilities are straightforward in their monitoring and controlling capabilities and largely consist of the ability to monitor pressure and flow, control the start and stop of gas compressors, monitor pressure trends and record system data and alarms. This information was verified during site tours of the West Doe and Tupper Main facility control rooms on 5 July 2023 and during interviews with NorthRiver Midstream's staff.

NorthRiver Midstream provided the CER with:

- Gas compressor P&ID for West Doe and Tupper Main along with a written description of how the systems work;
- A 2022 calibration and inspection report for a PCOPP device;
- Sales compressor package #2 P&ID diagram;
- A description of how pressure control and overpressure protection function; and
- CER-regulated pipeline overview, calibration records, P&ID diagrams, and descriptions of how systems work.

One of the requirements of paragraph 37(a) of the OPR is that the company be able to demonstrate that it has developed and implemented the procedures to control and monitor the operation of the pipeline. However, during document review, site visits and interviews, NorthRiver Midstream failed to demonstrate that it had developed and implemented control room procedures for all normal and abnormal operations (refer to the assessments in AP-08 and AP-14).

In summary, NorthRiver Midstream demonstrated that it has developed and installed a pipeline control system that comprises the facilities used to control and monitor the operation of its CER-regulated pipelines but did not demonstrate that it has documented procedures for all normal and abnormal operations.

Appendix 2: Terms and Abbreviations

For a set of general definitions applicable to all operational audits, please see Appendix I of the CER Management System Requirements and CER Management System Audit Guide found at www.cer-rec.gc.ca.

Term or Abbreviation	Definition
AER	Alberta Energy Regulator
AO	Accountable Officer
AP	Audit Protocol
BC ER	British Columbia Energy Regulator
CER	Canada Energy Regulator
CER Act	<i>Canadian Energy Regulator Act (S.C. 2019, c.28, s.10)</i>
COO	Chief Operating Officer
CSA Z662:19	<i>Canadian Standards Association Z662:19</i>
EHS	Environment, Health & Safety
ERP	Emergency Response Plan
GOTs	Goals, Objectives, Targets
ICS	Incident Command System
IMPP	Integrity Management Program for Pipelines
MS	Management System
MOP	Maximum Operation Pressure
MOC	Management of Change
NRM	NorthRiver Midstream
OPR	<i>Canadian Energy Regulator Onshore Pipeline Regulations (SOR/99-294)</i>
OBDL	Operation Beyond Design Limit
PCOPP	Pressure Control and Overpressure Protection
P&ID	Process and Instrumentation Drawings
ROCP	Rate of Change of Pressure

SCADA	Supervisory Control and Data Acquisition
SOPs	Standard Operating Procedures
The company	NorthRiver Midstream G and P Canada Pipelines Inc. as General Partner and on behalf of NorthRiver Midstream G and P Canada Pipelines Limited Partnership NorthRiver Midstream Canada Partner Limited, as General Partner and on behalf of NorthRiver Midstream Canada LP