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Regulator

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Final Audit Report

NOVA Gas Transmission Ltd.

Audit Topic: Damage Prevention

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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 a damage prevention audit of NOVA Gas Transmission Ltd. (NGTL) between 25 April 2022 and 3 August 2022.

The objectives of this audit were to assess whether NGTL's damage prevention program (DPP):

- is effectively integrated within the company's management system as per section 6 of the OPR; and
- is able to anticipate, prevent, manage, and mitigate damage to its pipeline as per section 47.2 of the OPR and section 16 of the *Canadian Energy Regulator Pipeline Damage Prevention Regulations – Obligations of Pipeline Companies* (SOR/2016-133) (DPR-O).

Of ten (10) audit protocols, eight (8) were deemed 'No Issues Identified', while two (2) were deemed 'Non-Compliant'.

The areas where the company's damage prevention program was found to be deficient are:

- It did not have a DPP that meets the requirements of sections 6 and 47.2 of the OPR;
- Its DPP did not clearly document or reference how it is fulfilling all the requirements of section 16 of the DPR-O; and
- It did not demonstrate that it had conducted a thorough program audit in accordance with the requirements of section 55 of the OPR.

Detailed assessments explaining the CER's rationale for concluding that the above-noted deficiencies exist can be found in Appendix 1.

NGTL shall submit a CAPA Plan, which describes how the non-compliant findings will be resolved, and when, to the CER by 20 January 2023. The CER will monitor and assess the implementation of this CAPA Plan to confirm that 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 scope of the audit.

While non-compliant findings exist, the CER believes the auditee 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 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 a damage prevention audit of NGTL between 25 April 2022 and 3 August 2022.

1.2 Description of Audit Topic

This audit focuses on the auditee's damage prevention program for several reasons:

- damage prevention regulations came into force in 2016 as a tool to support the safe execution of activities occurring near a pipeline;
- damaged pipelines pose a significant hazard to the safety of people, property, and the environment; and
- several incidents of third-party damage to pipelines have occurred over the last few years which has resulted in situations of high potential severity.

Section 47.2 of the OPR requires companies to develop, implement, and maintain a damage prevention program that anticipates, prevents, manages, and mitigates damage to its pipeline. Thus, this audit assesses activities relating to:

- depth of cover;
- clearly identifying pipeline locations;
- company liaison/ education activities aimed at potential groups that conduct activities near pipelines including contractors, municipalities, and landowners;
- monitoring and surveillance; and
- response to notifications.

1.3 Company Overview

NGTL is a natural gas company with gathering and transportation systems in Alberta and northeastern British Columbia. It transports natural gas produced in the Western Canadian Sedimentary Basin to markets in Canada and the United States. The pipeline commenced operations in 1957 and NGTL came under CER jurisdiction in 2009. Prior to that date, NGTL was under provincial jurisdiction and regulated by the Alberta Utilities Commission and its predecessors. NGTL is a wholly owned subsidiary of TC Energy Corporation.

The NGTL system has about 1,100 receipt points and over 300 delivery points. CER-regulated assets include approximately 24,500 km of operating pipeline and various auxiliary infrastructure.

The map below depicts NGTL's CER regulated assets. Key points on the map include:

- Calgary major market area
- Edmonton major market area
- Oil Sands Delivery Area (OSDA) Kirby
- Oil Sands Delivery Area Liege
- Saturn
- East Gate
- West Gate
- Upstream of James River
- North and East

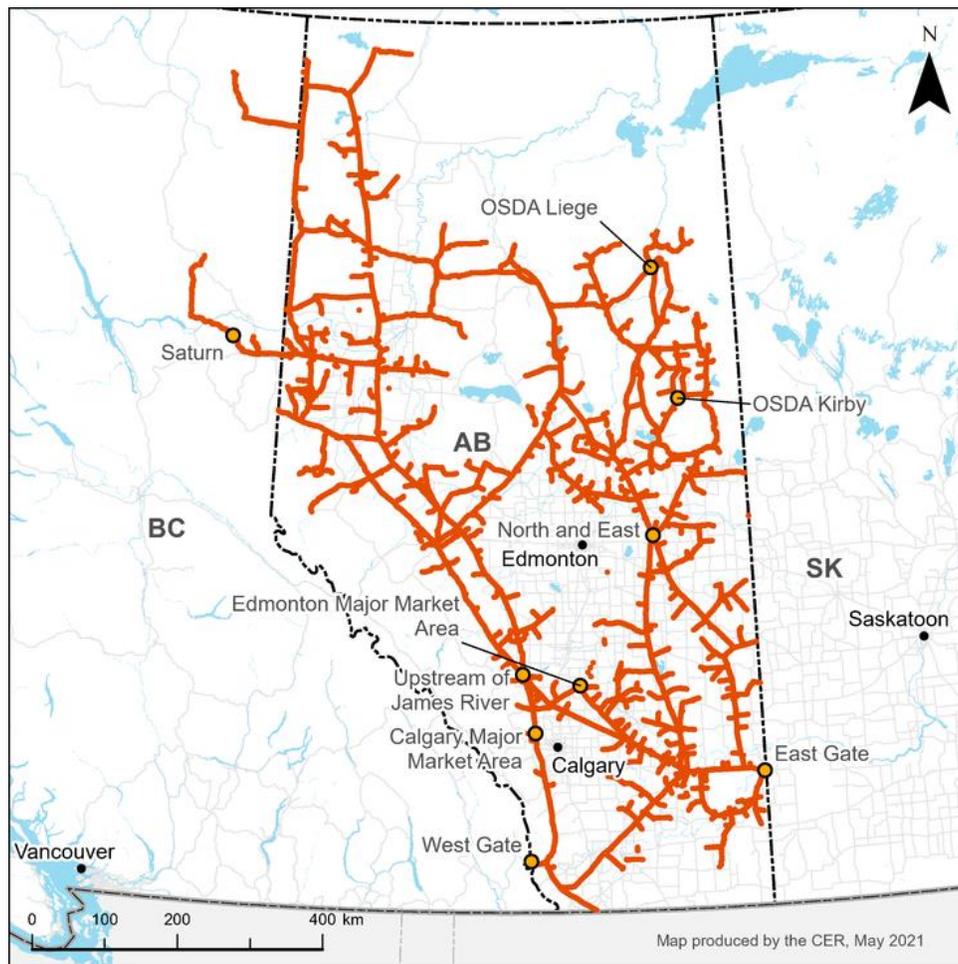


Figure 1: NGTL CER-Regulated Assets

2.0 Objectives and Scope

The objectives of this audit are to assess whether NGTL's damage prevention program:

- is effectively integrated within the company's management system as per section 6 of the OPR; and
- is able to anticipate, prevent, manage, and mitigate damage to its pipeline as per section 47.2 of the OPR and section 16 of the DPR-O.

The table below outlines the scope selected for this audit.

Audit Scope	Details
Audit Topic	Damage Prevention
Lifecycle Phases	<input checked="" type="checkbox"/> Construction <input checked="" type="checkbox"/> Operations <input checked="" type="checkbox"/> Abandonment
Section 55 Programs	<input type="checkbox"/> Emergency Management <input type="checkbox"/> Integrity Management <input type="checkbox"/> Safety Management <input type="checkbox"/> Security Management <input type="checkbox"/> Environmental Protection <input checked="" type="checkbox"/> Damage Prevention
Time Frame	Not Applicable

3.0 Methodology

The CER Auditors (auditors) conducted a sampling of NGTL's management system processes, procedures, work instructions, related to the topics being assessed in the audit. However, the auditors did not review and assess all management system documentation, nor did they review all damage prevention documentation. The auditors assessed compliance through document reviews, record sampling and interviews.

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

An audit notification letter was sent to NGTL on 25 April 2022 advising the company of the CER's plans to conduct an audit. The Lead Auditor provided the audit protocol and initial information request to NGTL on 5 May 2022 and followed up on 6 May 2022 with a meeting with NGTL staff to discuss the plans and schedule for the audit. Document review was to begin on 7 June 2022 but the auditee requested an extension of 8 days to respond to the initial information request and so document review started on 15 June 2022. Interviews were conducted between 28 June 2022 and 15 July 2022.

In accordance with the established CER audit process, the Lead Auditor shared a pre-closeout summary of the audit results on 20 July 2022. At that time, NGTL was given five business days to provide any additional documents or records to help resolve the identified gaps in information or compliance. After the pre-closeout meeting, NGTL provided additional information to assist the audit team in making its final assessment of compliance. The Lead Auditor conducted a final closeout meeting with NGTL on 3 August 2022.

4.0 Summary of Findings

The Lead Auditor has assigned a finding to each audit protocol. A finding can be either:

- No Issues Identified – No non-compliances were identified during the audit, based on the information provided by the auditee, and reviewed by the auditors within the context of the audit scope; or
- Non-Compliant – The auditee has not demonstrated that it has met the legal requirements. A corrective and preventive action plan shall be developed and implemented to resolve the deficiency.

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 finding results. See [Appendix 1: Audit Assessment](#) for more information.

Table 1: Summary of Findings

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-01	OPR & DPR-O	OPR s. 6; OPR s. 47.2; and DPR-O s. 16	Damage Prevention Program	Non-compliant	NGTL did not demonstrate that it has a compliant damage prevention program that meets all of the requirements of sections 6 and 47.2 of the OPR primarily because many process requirements were not properly documented. And although the CER Auditors found that NGTL is fulfilling many of the requirements of section 16 of the DPR-O regulations, they are not clearly documented or referenced within the DPP manual.
AP-02	OPR	6.5(1)(c)	Establish and implement a process for identifying and analyzing hazards	No Issues Identified	NGTL demonstrated that, as pertains to the scope of the audit, it has various methods and means to identify hazards to workers and facilities and carry out risk assessments applicable to its DPP. However, an overarching process is not thoroughly documented or referenced within the DPP. Given that this will be addressed through the CAPA Plan to address the deficiencies identified in AP-01, the auditors had no other issues of concern.
AP-03	OPR	6.5(1)(f)	Establish and implement a process for developing and implementing controls	No Issues Identified	NGTL demonstrated that it has a process and procedures to develop, implement and monitor controls intended to prevent, manage and mitigate hazards to people, its facilities and the environment.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-04	OPR	6.5(1)(i)	Establish and implement a process for identifying and managing change	No Issues Identified	NGTL demonstrated that it has established and implemented a process for identifying and managing change within its damage prevention program.
AP-05	DPR-O	16(b)	Damage Prevention Program – Minimum Content – Monitoring – Change in Land Use	No Issues Identified	NGTL demonstrated that it conducts ongoing monitoring for changes in land use along the right-of-way (RoW) and on lands adjacent to the RoW.
AP-06	DPR-O	16(c)	Damage Prevention Program – Minimum Content – Monitoring – Change in Land Owner	No Issues Identified	NGTL demonstrated that it conducts ongoing monitoring of changes in land ownership for both adjacent land and land within which the pipeline is located.
AP-07	DPR-O	16(f)	Damage Prevention Program – Minimum Content – Managing Requests for Consent	No Issues Identified	NGTL demonstrated that it has a process for managing requests for consent to construct a facility across, on, along or under a pipeline, to engage in an activity that causes a ground disturbance within the prescribed area or to operate a vehicle or mobile equipment across the pipeline.
AP-08	OPR	6.5(1)(m)	Establish and implement a process for internal and external communication of information	No Issues Identified	NGTL demonstrated that it has methods for both internal and external communications. The company demonstrated that it communicates internally and externally on matters related to safety, security and protection of the environment and the communications are adequate for the implementation of the damage prevention program. There is a requirement for a communication process document within the DPP to explain all of the DPP communication methods in one overarching process and explain how they are integrated and linked with the corporate communications process and other program areas. This will be addressed through the corrective action plan to rectify the deficiency identified in AP-01. Given that the DPP Communication Process will be addressed in AP-01, the auditors had no other issues of concern.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-09	OPR	6.5(1)(r)	Establish and implement a process for internal reporting of hazards and for taking corrective actions	No Issues Identified	In summary, NGTL demonstrated that it has a process for the internal reporting of hazards, potential hazards, incidents, and near-misses and for taking corrective and preventive actions. However, the process is not thoroughly documented or referenced within the DPP. Given that this will be addressed through the CAPA Plan to address the deficiencies identified in AP-01, the auditors had no other issues of concern.
AP-10	OPR	6.5(1)(u)	Establish and implement a process for inspecting and monitoring company activities for effectiveness	Non-compliant	NGTL demonstrated that it has a number of inspection and monitoring processes and activities to monitor the adequacy and effectiveness of the management system. NGTL showed that audits and evaluations are being completed on the damage prevention program for conformance to the corporate management system and some aspects of the OPR. However, NGTL did not demonstrate that it had conducted a thorough section 55 program audit within the previous three years as required by the OPR.

5.0 Discussion

NGTL makes use of the TC Energy Operational Management System (TOMS) documentation, programs, and processes, also referred to herein as the corporate management system. The objective and scope of this audit was focused on an assessment of a few select areas of NGTL's damage prevention program.

The OPR requires that a company have a management system with six specific program areas that incorporate the management system elements described in paragraphs 6.5(1) (a to x) of the OPR. These six programs include Safety Management, Environmental Protection, Security Management, Integrity Management, Damage Prevention, and Emergency Management.

The CER Auditors found that one of the mandated programs under the umbrella of the corporate management system is a Pipeline Integrity Management Program (IMP) and the DPP is a sub-program of the IMP. The audit team evaluated whether the DPP was integrated into the management system in accordance with the requirements of section 6 of the OPR and in compliance with section 47.2 of the OPR. The CER Auditors concluded that it was not. The auditors also evaluated whether the DPP was adequately addressing the requirements of section 16 of the DPR-O regulations. It was concluded that although NGTL is addressing the requirements of section 16 of the DPR-O, they are not all well-documented or referenced within the DPP.

6.0 Next Steps

NGTL is required to resolve all non-compliant findings through the implementation of a CAPA Plan using a template that will be provided by the CER. The next steps of the audit process are as follows:

- NGTL shall submit a CAPA Plan, which describes how the non-compliant findings will be resolved, and when, to the CER by 20 January 2023.
- 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 operational audit of NGTL with the scope specific to damage prevention. Out of a total of ten (10) audit protocols, eight (8) were classified as No Issues Identified, and two (2) were assessed as Non-Compliant, resulting in an audit score of 80%.

The deficient areas of the company's damage prevention program are:

- A DPP that does not meet the requirements of sections 6 and 47.2 of the OPR;
- The DPP did not clearly document or reference how it is fulfilling all of the requirements of section 16 of the DPR-O; and
- It did not demonstrate that it had conducted a thorough program audit in accordance with the requirements of section 55 of the OPR.

Detailed assessments explaining the CER's rationale for concluding that the above-noted deficiencies exist can be found in Appendix 1.

NGTL 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 closeout letter upon its completion.

Appendix 1: Audit Assessment

AP-01 Damage Prevention Program

Finding Status	Non-compliant
Regulation	OPR
Regulatory Reference	47.2
Regulatory Requirement	A company shall develop, implement, and maintain a damage prevention program that anticipates, prevents, manages and mitigates damage to its pipeline and meets the requirements set out in section 16 of the DPR-O.
Expected Outcome	<ul style="list-style-type: none"> • A compliant damage prevention program exists; • Content in the damage prevention program anticipates, prevents, manages, and mitigates potential damage to the company's pipelines; • The damage prevention program has been implemented; and • The damage prevention program is maintained.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - TC Energy Operational Management System - Canadian Onshore Gas Pipeline Integrity Management Program - TC Energy Damage Prevention Program - TC Energy Mechanical Damage Threat Management Program - TC Energy Public Awareness Program - Management System Requirements for Prime Contractors (TC Energy Standard) - Pre-Closeout Undertakings AP-01 - <p>An interview with NGTL staff in the following positions was conducted related to this finding:</p> <ul style="list-style-type: none"> - Damage Prevention Subject Matter Expert (SME) - Canada Gas Management Program Advisor - Senior Program Advisor - For a complete list of NGTL Staff that were present during the virtual interview, the CER holds a detailed list in its file directory associated with this audit
Finding Summary	NGTL did not demonstrate that it has a compliant damage prevention program that meets all of the requirements of sections 6 and 47.2 of the OPR primarily because many process requirements were not properly documented. And although the CER Auditors found that NGTL is fulfilling many of the requirements of section 16 of the DPR-O regulations, they are not clearly documented or referenced within the DPP manual.

Detailed Assessment

NGTL did not demonstrate that it has a compliant damage prevention program that meets all of the requirements of sections 6 and 47.2 of the OPR primarily because many process requirements were not properly documented. And although the CER Auditors found that NGTL is fulfilling many of the requirements of section 16 of the DPR-O regulations, they are not clearly documented or referenced within the DPP manual.

As detailed in the expected outcomes (above), NGTL was asked to demonstrate to the CER that it has a compliant DPP. To be compliant, the DPP must meet the requirements of sections 6 and 47.2 of the OPR and must also clearly indicate how it meets the requirements of Section 16 of the DPR-O.

Section 6 of the OPR requires, amongst other things, that a company establish, implement, and maintain a management system that applies to the programs referred to in section 55, which is to include a damage prevention program. It also requires that the management system ensure coordination between the programs referred to in section 55. Furthermore, subsection 6.5(1) of the OPR requires that a company, as part of its management system and programs, meet all of the requirements listed in paragraphs 6.5(1) (a to x).

Section 16 of the DPR-O lists six specific requirements of a damage prevention program, which are:

- An ongoing public awareness program;
- Ongoing monitoring of any changes in the use of land on which a pipeline is located and the land that is adjacent to that land;
- Ongoing monitoring of any change in the landowner of the land on which a pipeline is located;
- A process to ensure a timely response to locate requests;
- Standards for locating a pipeline; and
- A process for managing requests for the consent to construct a facility across, on, along or under a pipeline to engage in an activity that causes a ground disturbance within the prescribed area or to operate a vehicle or mobile equipment across the pipeline.

For a detailed list of requirements of Section 16 of the DPR-O, please refer to the regulations.

To demonstrate compliance with these requirements, NGTL provided the CER with a copy of its:

- Corporate Management System Manual;
- Pipeline Integrity Management Program Manual; and
- Damage Prevention Program Manual.

The CER reviewed the corporate management system and found that the mandated programs include:

- Safety
- Corporate Security
- Emergency Management
- Environment
- Facility Integrity
- Occupational Health and Hygiene
- Pipeline Integrity (the IMP)
- Practice of Engineering
- Project Governance
- Quality Management (deals with company assets, not the Management System)

It was noted that a damage prevention program is not one of the primary mandated programs within the corporate management system. However, it is a sub-program within the IMP and is therefore present within the management system.

The corporate management system consists of nine elements, which make up all of the overarching policies and processes that govern how the company's programs are to function; and include:

- Element 1: Leadership Commitment and Strategy
- Element 2: Risk Management
- Element 3: Operational Controls
- Element 4: Roles, Responsibilities and Competency
- Element 5: Management of Change
- Element 6: Information Management
- Element 7: Compliance
- Element 8: Incident and Non-conformance Management
- Element 9: Performance Monitoring, Assurance and Management Review

One of the processes required by section 6.5 of the OPR is a process to deal with internal and external communications. Although an internal and external communication process is not one of the nine elements of the corporate management system, these requirements are discussed in a separate section of the management system document.

According to the Damage Prevention Program manual, the DPP is made up of four elements, which include:

- Public Awareness;
- Hazard Management;
- Crossings and encroachment; and
- Surveillance Monitoring.

Therefore, except for hazard management, the other elements of the DPP are not clearly linked to the nine elements of the corporate management system.

According to the OPR, each section 55 program must meet the requirements of section 6 of the OPR. Upon review, the CER found that many of the requirements of subsection 6.5(1) of the OPR are not mentioned or referenced in the DPP, nor is it clearly explained how they are aligned with the corporate management system. However, as will be seen in the assessments for many of the Audit Protocol (AP) items in the following sections, the auditors found that the company is meeting many of these requirements; they are just not adequately documented or referenced in the DPP.

Paragraphs 6.5(1) (a to x) of the OPR require companies to establish and implement a process. In accordance with Appendix 1 of the CER Management System Requirements and CER Management System Guide, a process is defined as:

“A documented series of interrelated actions that take place in an established order and are directed toward a specific result. To be a compliant process, ensure the following are addressed:

- Describe the purpose, scope, objective and specific results that the process is intended to achieve;
- Describe the series of interacting actions or steps that take place in an established order;
- Define the roles, responsibilities and authorities of staff to ensure the process is appropriately applied;
- Where required, references other relevant processes, procedures, and work instructions; and
- Describe how it is integrated with each section 55 program.”

In other words, a process must describe the who, what, where, when, why, and how of the process. However, the auditors found that many of the OPR process requirements were largely missing from NGTL's DPP; they were not documented or even referenced

The auditors reviewed each of the four elements of the DPP and the corresponding process documents to evaluate the degree to which the DPP is meeting the requirements of section 16 of the DPR-O. Two areas that were not well documented (or even referenced) in the DPP are: the manner in which the company conducts ongoing monitoring of changes in land usage, and changes in land ownership. However, as will be seen in the assessments for protocol items AP-05 and AP-06, the auditors found that the company is in fact conducting ongoing monitoring of these two items.

As a result, NGTL did not demonstrate that it has a compliant damage prevention program that meets all of the requirements of sections 6 and 47.2 of the OPR primarily because many process requirements were not properly documented. And although the CER auditors found that NGTL is fulfilling many of the requirements of section 16 of the DPR-O regulations, they are not clearly documented or referenced within the DPP manual.

AP-02 Establish and implement a process for identifying and analyzing hazards

Finding Status	No issues identified
Regulation	OPR
Regulatory Reference	6.5(1)(c)
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 identifying and analyzing all hazards and potential hazards.
Expected Outcome	<ul style="list-style-type: none"> • The company has a compliant process that is established and implemented; • The methods for identification of hazards and potential hazards are appropriate for the nature, scope, scale, and complexity of the company's operations, activities and the damage prevention program; • The identification of hazards and potential hazards must include the full life cycle of the pipeline; • The company has comprehensively identified and analyzed all relevant hazards and potential hazards; • The hazards and potential hazards have been identified for the company's scope of operations through the lifecycle of the pipelines; and • The identified hazards and potential hazards have been analyzed for the type and severity of their consequences
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - System Wide Risk Assessment Procedure - Mechanical Damage Threat Management Program - Aerial Pipeline Patrol - Aerial Patrol Observation - Pipeline Operation Depth of Cover Assessment Procedure - Incident Management Process - Project Delivery Standard <p>An interview with NGTL staff in the following positions was conducted related to this finding:</p> <ul style="list-style-type: none"> - Damage Prevention Subject Matter Expert (SME) - Innovation and Decision Optimization - For a complete list of NGTL Staff that were on the virtual interview, the CER holds a detailed list in its file directory associated with this audit
Finding Summary	<p>NGTL demonstrated that, as pertains to the scope of the audit, it has various methods and means to identify hazards to workers and facilities and carry out risk assessments applicable to its DPP. However, an overarching process is not thoroughly documented or referenced within the DPP. Given that this will be addressed through the CAPA Plan to address the deficiencies identified in AP-01, the auditors had no other issues of concern.</p>

Detailed Assessment

NGTL demonstrated that, as pertains to the scope of the audit, it has various methods and means to identify hazards to workers and facilities and carry out risk assessments applicable to its DPP.

Within the corporate management system, Element 2 deals with Risk Management and is used to identify, assess, and communicate risks and barriers for the asset lifecycle. The management system references the Risk Management Standard as the standard to be followed by the program areas. According to the standard, its purpose is to establish the foundational requirements to identify hazards, assess risks, manage, and communicate the risks. The standard defines the risk management process steps, roles, responsibilities, and requirements to identify, analyze, evaluate, control, manage, and communicate risks.

The corporate Risk Management Standard is supported by the corporate Risk Management Procedure which is also to be followed by the program areas. The procedure details the seven risk management process steps to:

- Establish Context and Objectives within each Business Unit and Program;
- Identify the hazards and potential hazards (as noted in AP-01, hazard management is one of the four elements of the DPP);
- Identify the risks;
- Conduct risk analysis;
- Evaluate the risks against corporate risk tolerance criteria;
- Conduct risk treatment and develop controls;
- Carry out risk monitoring and reporting.

Section 10 of the IMP deals with Damage Prevention – it states that “the Damage Prevention Program is directed at both internal and external stakeholders who plan to engage in crossing and/or ground disturbance-related activities, with the intent of ensuring understanding and adherence to crossing, ground disturbance regulations and safe excavation best practices with the overall goal of preventing mechanical damage occurrences”. It references its Mechanical Damage Threat Management Program. The purpose of this program is to identify, prevent and monitor the threat of mechanical damage to the pipeline.

Within the DPP, the principal process used to identify hazards and assess risks to the pipeline is the System Wide Risk Assessment (SWRA) process. The SWRA takes inputs from a number of processes and activities such as aerial patrol observations, ground patrol observations, unauthorized activity response and investigation, in-line inspection results, one-calls and public awareness levels, depth of cover assessments, and others to assess the risk of mechanical damage to the pipeline.

The SWRA is an ongoing process used to support the identification of potential hazards. It is used to prioritize pipeline segments for integrity assessment and determine preventive and mitigative measures.

Each month, the Damage Prevention and the Public Awareness teams meet to review the Unauthorized Activity Reports, review mitigation efforts, and validate the threat classification. The Damage Prevention team analyses unauthorized activities monthly and prepares reports for each region identifying locations of increased frequency or severity. This information is used to prepare regional Public Awareness Plans and forms an input to the SWRA.

Training in the process is provided through the corporate Learning Management System (LMS) which is used to manage the training for NGTL staff on subjects such as: risk management; mechanical damage prevention techniques; threat management; and the system wide risk assessment.

Hazards which could affect workers are also identified through NGTL's Safety Management Plan (SMP) which provides a framework for planning a safety management plan for a project or a maintenance activity. It serves as the link between project work scope and the corporate management system. Section 7 of the SMP establishes the process for the identification, evaluation and management of hazards and potential hazards for construction and field level activities.

The SMP provides guidance on the conduct of a Job Safety Analysis to identify, evaluate, and control hazards on a job site, such as during excavation. The Excavation Process document has a specific section on the process to identify and manage hazards related to a specific excavation procedure. It lists the responsible party, supporting roles, and key activities to be carried out. NGTL provided the CER with documents and records to verify that the process has been established and is being used.

The Incident Management Process is also used to identify and control new hazards and risks as they materialize. It provides guidance on how to notify, respond, record, investigate, and manage hazards and risks and share learnings.

In summary, through document and record review and interviews, NGTL demonstrated that, as pertains to the scope of the audit, it has various methods and means to identify hazards to workers and facilities and carry out risk assessments applicable to its DPP. However, an overarching process is not thoroughly documented or referenced within the DPP. Given that this will be addressed through the CAPA Plan to address the deficiencies identified in AP-01, the auditors had no other issues of concern.

AP-03 Establish and implement a process for developing and implementing controls

Finding Status	No issues identified
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	<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 the damage prevention program; - 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; and - Controls are communicated to those exposed to the risks.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - TC Energy Operational Management System - Risk Management Standard - Risk Management Procedure - Pipeline Integrity Management Program - Damage Prevention Program - Safety Management Plan - Mechanical Damage Threat Management Program - System Wide Risk Assessment Procedure - Unauthorized Activity Response and Investigation - Excavation Process - Aerial Patrol Procedure - Planned Inspection Procedure - Job Safety Analysis Procedure - Incident Management Process - System Wide Risk Assessment - Management of Change <p>An interview with NGTL staff in the following positions was conducted related to this finding:</p> <ul style="list-style-type: none"> - Damage Prevention Subject Matter Expert (SME) - For a complete list of NGTL Staff that were on the virtual interview, the CER holds a detailed list in its file directory associated with this audit
Finding Summary	NGTL demonstrated that it has a process and procedures to develop, implement and monitor controls intended to prevent, manage and mitigate hazards to people, its facilities and the environment. This was verified through document and record review and through interviews with management and field staff.

Detailed Assessment

NGTL demonstrated that it has a process and procedures to develop, implement and monitor controls intended to prevent, manage, and mitigate hazards to people, its facilities, and the environment.

Within the corporate management system, Element 2 deals with risk management and is to be used by each section 55 program to identify, assess, and communicate risks and barriers for the asset lifecycle. The management system references the corporate Risk Management Standard as the standard to be followed. According to the standard, its purpose is to establish the foundational requirements to identify hazards, assess risks, manage the risks through controls, and communicate the risks.

The Risk Management Standard is supported by the corporate Risk Management Procedure, which is also to be utilized by each section 55 program area. The procedure details the seven risk management process steps to:

- Establish context and objectives within each Business Unit and program;
- Identify the hazards and potential hazards;
- Identify the risks;
- Conduct risk analysis;
- Evaluate the risks against corporate risk tolerance criteria;
- Conduct risk treatment and develop controls; and
- Carry out risk monitoring and reporting.

As such, there is a requirement for the development and management of controls at the corporate management system level and at the program level. All NGTL contractors are required to have a management system, including a hazard identification and risk assessment process that aligns with that of the company.

Within its damage prevention program, NGTL uses its SWRA process to take inputs from a number of activities and produce outputs which result in preventive and mitigative measures intended to identify areas of hazards and risks to the pipeline and take appropriate measures through controls to mitigate this risk.

For the preventive and mitigative measures to prevent damage to the pipeline, NGTL develops and implements operational controls in the form of operating procedures. These operating procedures are designed to anticipate, manage, and mitigate hazards and potential hazards. The management and mitigation of hazards includes the development of controls. These have been developed for activities such as patrols, response to one-calls, incident management, response to unauthorized activity and investigation, in-line inspection results, public awareness, depth of cover assessments, and others.

Other controls are developed in accordance with the SMP document which is the corporate level document to be used to define the framework for planning a SMP for the protection of workers involved in projects or maintenance activities. Section 7 of the SMP document defines the requirements for the identification, evaluation and management of hazards and includes a template to be used to create a SMP, including the development of controls.

The SMP document also includes guidance for the conduct of a Job Safety Analysis to identify, evaluate, and control hazards on a job site, such as during excavation. The excavation procedure in turn has a specific section on the process to identify and manage hazards, including the development of controls. It lists the responsible party, supporting roles, and key activities to be carried out. NGTL provided the CER with documents and records to verify that the process has been established and implemented.

The SMP also covers health and safety awareness and training, health and safety communication requirements, health and safety inspections and audits, and links to incident management.

Training in the process is provided through the corporate LMS which is used to manage the training for NGTL staff on subjects such as risk management including controls; mechanical damage prevention techniques; threat management including controls; and the system wide risk assessment.

Communication of controls occurs through job training provided through the Learning Management System, procedural documents, safety management plans, internal safety bulletins, daily meetings, tailgate meetings, field level hazard assessments and daily supervision of employees and contractors.

Hazards and controls are also communicated through the Incident Management Process and the Management of Change Process.

Verification of controls is carried out through the use of inspections, field level technicians carrying out their daily activities and aerial and land patrols.

In summary, NGTL demonstrated that it has a process and procedures to develop, implement and monitor controls intended to prevent, manage, and mitigate hazards to people, its facilities and the environment. This was verified through document and record review and through interviews with management and field staff.

AP-04 Establish and implement a process for identifying and managing change

Finding Status	No issues identified
Regulation	OPR
Regulatory Reference	6.5(1)(i)
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 identifying and managing any change that could affect safety, security or the protection of the environment, including any new hazard or risk, any change in a design, specification, standard or procedure and any change in the company's organizational structure or the legal requirements applicable to the company.
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process for identifying and managing change; - Methods are defined to identify and manage change; and - Impacts to the company management system the damage prevention program are identified and assessed.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - TC Energy Operational Management System - TOMS Leadership Management of Change Procedure - Pipeline Integrity Management of Change Procedure - TC Energy Damage Prevention Program - Management of Change Element Standard - Controlled Document Management of Change Procedure - Controlled Document Library Variance Procedure - SAP E3 Notification Technical and Physical Change User Guide - Pipeline Integrity Management of Change Procedure <p>An interview with NGTL staff in the following positions was conducted related to this finding:</p> <ul style="list-style-type: none"> - Damage Prevention Subject Matter Expert (SME) - Canada Gas Management Program Advisor - For a complete list of NGTL Staff that were on the virtual interview, the CER holds a detailed list in its file directory associated with this audit
Finding Summary	NGTL demonstrated that it has established and implemented a process for identifying and managing change within its damage prevention program..

Detailed Assessment

NGTL demonstrated that it has established and implemented a process to manage change within its damage prevention program.

Within the corporate management system, Element 5 deals with the management of change (MOC) and includes the requirement for each of the section 55 program areas to follow the company's MOC procedures. According to the management system manual, the MOC element is designed to ensure that a structured approach is used to manage changes. It defines roles and authorities to evaluate, implement, and communicate changes and to follow up with an evaluation of the change and any lessons learned. The corporate management system directs the section 55 program areas to use the company's Management of Change Element Standard.

The MOC Element Standard applies across the NGTL organization and describes the types of changes that are applicable and when to apply the MOC process, the requirements, the associated procedures, and the procedural steps to effectively manage change. It applies when there is a requirement to change a document, carry out a technical or physical change, or if there is a change in people. Details of these requirements are:

- Document change applies to changes in requirements within a controlled document such as legal requirements, or risk management process. NGTL's MOC process also describes how to manage temporary changes.
- Technical and physical change includes change to technology, software, equipment, facilities, assets, and the way they are operated. For changes or additions to equipment, facilities or assets requiring the creation of a project, they are managed in accordance with the Project Delivery Standard.
- People change, including organizational change is managed through the Change Management Lite toolkit with guidance from the corporate Human Resources Department.

Each of the types of change mentioned above has its own procedural document. The steps include:

- Identify the need for change;
- Evaluate the impact;
- Define the change and approve;
- Implement the change; and then
- Review and close.

Step 2 (Evaluate) the procedural documents requires NGTL to review and evaluate associated hazards or risks and controls affected by any potential change. This then leads to the application of the company's Risk Management Procedure.

Within the IMP, which also applies to the DPP, the management of change is addressed in Section 16.5 which references the Pipeline Integrity – Management of Change Procedure, which is supplemental to the corporate process and is used in conjunction when additional levels of coordination and governance are required.

Training in the MOC process is provided through the corporate Learning Management System (LMS), which provides training for NGTL staff on subjects such as:

- Introduction to the management of change;
- Management of technical and physical change; and
- Introduction to controlled documents.

In summary, NGTL demonstrated that it has established and implemented a process to manage change within its damage prevention program. The CER reviewed the documents and records provided by NGTL and verified that the MOC process is being used as described through interviews with NGTL Staff.

AP-05 Damage Prevention Program – Minimum Content – Monitoring – Change in Land Use

Finding Status	No issues identified
Regulation	DPR-O
Regulatory Reference	16(b)
Regulatory Requirement	The damage prevention program that a pipeline company is required to develop, implement and maintain under section 47.2 of the OPR must include ongoing monitoring of any changes in the use of the land on which a pipeline is located and the land that is adjacent to that land.
Expected Outcome	<ul style="list-style-type: none"> - The damage prevention program is developed, implemented, and maintained; - The damage prevention program references ongoing monitoring of changes to land use, both adjacent and on land within which the pipeline is located; and - The company can provide evidence to demonstrate ongoing monitoring of land use is occurring.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - Population and Structure Update Procedure - Aerial Pipeline Patrol. <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - ROW Management Team - For a complete list of NGTL Staff that were on the virtual interview, the CER holds a detailed list in its file directory associated with this audit
Finding Summary	NGTL demonstrated that it conducts ongoing monitoring for changes in land use along the RoW and on lands adjacent to the RoW.

Detailed Assessment

NGTL demonstrated that it conducts ongoing monitoring for changes in land use along the RoW and on lands adjacent to the RoW.

To monitor for changes in land use around the pipeline corridor, NGTL makes use of third-party planning consultants managed by NGTL's Pipeline IMP, RoW Management Team.

NGTL indicated that the local planning consultants are registered with municipal land use change application approving authorities. It is through this liaison that NGTL receives notifications of proposed land use changes and developments.

Once a notification of a proposed land use change is received from a municipal approving authority, the planning consultants circulate the land use change applications to NGTL subject matter experts to review for potential impacts and to make changes to internal records. The planning consultants provide NGTL with expertise on the application of local planning laws. They also provide a conduit of information from NGTL back to the local municipal approving authorities with damage prevention recommendations.

NGTL's damage prevention recommendations are then incorporated into statutory bylaws as conditions of approval for a change in land use or for a new development. These include key requirements such as appropriate setbacks of roads and structures from the pipeline easement, fencing of the easement and a requirement to obtain authorization for ground disturbance within the prescribed area.

In cases where the land use change or development is not ready for municipal approvals, a registry of known future developments, referred to as a watchlist is maintained by the planning consultants for ongoing tracking. The NGTL RoW Management Team conduct monthly meetings with local planning consultants to validate any assumptions and make changes, where required.

NGTL keeps track of land use changes through aerial and ground patrols. They also review the Alberta Energy Regulator Directive 56 Industry Notifications. In addition, the company obtains relevant information about land use changes through face-to-face visits with landowners.

The CER reviewed the documents and records provided by NGTL and conducted an interview with members of the RoW Management Team to verify that the process has been developed, implemented, and is being maintained.

The RoW Management Team provided the CER with two examples to demonstrate the workings of their process to monitor for changes in land use. Examples were the Travers Solar Project and the Mountain Springs Municipal Development. In both cases it was clear that the projects were following NGTL recommendations to avoid infringement of the pipeline right of way.

As noted in AP-01, the CER auditors previously concluded that NGTL does not have a compliant DPP with clearly documented (or referenced) processes to meet all of the requirements of section 16 of the DPR-O, including managing changes in land usage. This should be rectified through the corrective and preventive actions which will be taken to address the deficiencies noted in AP-01. However, the auditors did not identify any issues of concern with the manner in which NGTL conducts ongoing monitoring of land usage both adjacent and on the land on which the pipeline is located.

AP-06 Damage Prevention Program – Minimum Content – Monitoring – Change in Land Owner

Finding Status	No issues identified
Regulation	DPR-O
Regulatory Reference	16(c)
Regulatory Requirement	The damage prevention program that a pipeline company is required to develop, implement and maintain under section 47.2 of the OPR must include ongoing monitoring of any change in the landowner of the land on which a pipeline is located.
Expected Outcome	<ul style="list-style-type: none"> - The damage prevention program is developed, implemented, and maintained; - The damage prevention program references ongoing monitoring of changes of landowners, for both adjacent land and on land within which the pipeline is located; and - The company can provide evidence to demonstrate ongoing monitoring of landowners is occurring.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - TC Energy Damage Prevention Program - AP-06 Landownership Presentation - Land Works Land System – Landownership Changes QRG - NGTL Sample Landowner Changes (sample) - NGTL Calendar Mailing List – 2021 Redacted (sample) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - Interviews were conducted with Right-Of-Way Management and Land Operations Services employees
Finding Summary	NGTL demonstrated that it conducts ongoing monitoring of changes in land ownership for both adjacent land and land within which the pipeline is located.

Detailed Assessment

NGTL demonstrated that it conducts ongoing monitoring of changes in land ownership for both adjacent land and land within which the pipeline is located.

To demonstrate compliance to paragraph 16(c) of the DPR-O, the company provided the CER auditors with a PowerPoint presentation on land ownership, a copy of its Land Works Land System – Land Ownership Changes Quick Reference Guide (QRG) and a sample of a change in landownership in its Land Works system.

The auditors reviewed the landowner changes process and noted that it described the company's approach to monitoring the changes in land ownership, updating the land ownership database, and follow up communications with the landowners.

The PowerPoint presentation provided by the Right-of-Way Management subject matter experts described the methods that identify landowner changes by sale of land, seizure by mortgage lender, title change, and landowner death. NGTL is informed through several communication methods that include communication through landowner and regional NGTL representative discussions, the landowner, the landowner's lawyer or power of attorney, mortgage lender, or bank, and by third party compilation of land titles, which is the primary means for identifying the changes.

Once a change in ownership occurs, a landownership change workflow is triggered. This is described in the Land Works Land System – Land Ownership Changes QRG document. The guide tasks include:

- Verify a change in land ownership;
- Update the Land System application by the land analyst; and
- Update the landowner's rental and payment information, if applicable.

NGTL provided three samples of land record changes, which were reviewed by the CER auditors.

NGTL stated that once a change has been identified, follow up communication with the landowner is completed by the Land Operations Field Representative, usually within a week of notification.

If NGTL needs to contact the landowner, the landowner information can be accessed by NGTL's field operations, project services or the public awareness group. The Landowner Operations team compiles a landowner list on an annual basis. This is used by the Public Awareness team and a calendar, which supports the damage prevention messaging, is mailed to the landowners. A sample of the 2021 Mailing List (redacted) was reviewed by the auditors.

As noted in AP-01, the CER auditors previously concluded that NGTL does not have a compliant DPP with clearly documented (or referenced) processes to meet the requirements of section 16 of the DPR-O, including the requirement to monitor for changes in land ownership. This should be rectified through the corrective and preventive actions which will be taken to address the deficiencies noted in AP-01. However, the auditors did not identify any issues of concern with the manner in which NGTL conducts ongoing monitoring of changes in land ownership for both adjacent land and land within which the pipeline is located.

AP-07 Damage Prevention Program – Minimum Content – Managing Requests for Consent

Finding Status	No issues identified
Regulation	DPR-O
Regulatory Reference	16(f)
Regulatory Requirement	The damage prevention program that a pipeline company is required to develop, implement and maintain under section 47.2 of the OPR must include a process for managing requests for the consent to construct a facility across, on, along or under a pipeline, to engage in an activity that causes a ground disturbance within the prescribed area or to operate a vehicle or mobile equipment across the pipeline.
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process; - The process addresses requests for consent to: <ul style="list-style-type: none"> o construct a facility across, on, along, or under a pipeline; o engage in an activity that causes ground disturbance within the prescribed area; and o operate a vehicle or mobile equipment across the pipeline. - The process describes how consent is determined - The process describes how the issuance or denial of consent is communicated to the requestor; - The company is able to demonstrate the process has been used.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - AP-07 Response to Information Requests Presentation Slide - Crossing and Encroachment Process (003674617) - TEP-INT-CROSS Pipe Integrity Crossing and Encroachment Procedure (009219544) - TC Web Site Access for Requests (sample) - Stakeout Report and Ground Disturbance Report (sample) - Mountain View County Denied Application (sample) - TAQA North CER Crossing Agreement Unexecuted (sample) - PEYTO CER Consent to Ground Disturbance Unexecuted (sample) - NOVA Gas Transmission Ltd Facility Crossing Pipeline (sample) - NOVA Gas Transmission Ltd Ground Disturbance (sample) - NOVA Gas Transmission Ltd Permanent Road Crossing (sample) - Please_DocuSign (electronic sign off example) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - Regional One_Call Technician - ROW of Way Management SME
Finding Summary	NGTL demonstrated that it has a process for managing requests for consent to construct a facility across, on, along or under a pipeline, to engage in an activity that causes a ground disturbance within the prescribed area or to operate a vehicle or mobile equipment across the pipeline.

Detailed Assessment

NGTL demonstrated that it has a process for managing requests for consent to construct a facility across, on, along or under a pipeline, to engage in an activity that causes a ground disturbance within the prescribed area or to operate a vehicle or mobile equipment across the pipeline.

To demonstrate compliance to paragraph 16(f) of the DPR-O, the company provided the CER Auditors with a copy of its Crossing and Encroachment Process, Pipeline Integrity Crossing Encroachment Procedure and records demonstrating the management of requests.

A presentation was provided by the RoW Management subject matter experts which described the request process, criteria for granting consents, employee responsibilities, and the communication process and records.

Requests are evaluated by NGTL One-Call Technicians, through the Utility Safety Partners Notification System, and/or through the Third-Party Request Team (TPR) via an Online Application Tool. Once a request is received, appropriate NGTL engineering and/or field personnel are identified to perform an evaluation.

As mentioned in AP-01, the DPP is made up of four elements, which are:

- Public Awareness;
- Hazard Management;
- Crossings and encroachment; and
- Surveillance Monitoring.

Under the section titled Crossings and Encroachment, it is described that requests for consent to construct a facility across, along, on, along or under a pipeline, to engage in an activity that causes a ground disturbance, or to operate a vehicle or mobile equipment across the pipeline right of way are managed by the RoW Management Team in collaboration with multiple internal stakeholders. These activities are described in the Pipeline Integrity Crossing and Encroachment Procedure.

The Pipeline Integrity Crossing and Encroachment Procedure governs how regional personnel manage the regional component of vehicle or mobile equipment crossings, ground disturbance, and facility construction activities, on or along or under existing facilities. NGTL stated that the CER prescribed area is 30 metres on either side of the pipeline centre line.

Within this document the key activities and outcomes when a written consent is required, are:

- Vehicle or mobile equipment crossing, ground disturbance, and facility construction activities completed by third parties within the RoW require a Fully Executed Crossing Agreement or Field Approval (“Written Consent”).
- Under the DPR-O regulations, written consent is required for ground disturbances outside the RoW but within the prescribed area.
- Ground disturbances for the purpose of maintaining an existing facility require notification but do not require written consent.
- An employee or contractor driving over an entity to complete an activity for a different TC Energy entity requires written consent.

A Stake-Out Report/Ground Disturbance approval that is issued by the region also acts as a Field Approval/Written Consent for activities approved by the region. A sample of an open report was provided to the auditors.

The RoW Management team administers approvals if the applicant applies directly to the region through the online Third-Party Crossing tool found on the TC Energy’s external Crossing and Encroachment website. The region:

- Receives the communication;
- Reviews the crossing application;
- Investigates and engages internal stakeholders; and
- Approves or denies the request.

A responsibility, accountability, consult and inform (RACI) matrix identifies the internal stakeholders required for either field approval for activities within or outside the RoW. These consents or denials do not require a legal agreement with the third party but consultation with engineering stakeholders may be required. Details are documented in the Online Application System and the regional one-call technicians update the Stake-Out Report/Ground Disturbance Approval application.

The process to address the construction of a facility across, on, along, or under a pipeline and engage in an activity that causes ground disturbance within the prescribed area is described in the Crossing and Encroachment Process document. Specific requirements that include below ground pipeline installation within the ROW, trenchless excavation – bored installation within the RoW, overhead powerline, and seismic (geophysical activities) are discussed. In addition, emergency crossings, specific requirements for agricultural activities, and one-time vehicle crossings is described.

Applications that require legal agreements are processed by a TPR team as described in the Pipeline Crossings Encroachment Procedure. Third parties apply for consent through the Online Application System, which is used to track crossings and encroachments. Once an application is made, a TPR Analyst reviews the activity for accuracy, adds impacted facilities and what agreements and consents are required, and selects the appropriate reviewers.

Reviewers are subject matter experts for Land Crossings, Regional Technical Field Operations, Corrosion Prevention, Mechanical Damage, Integrity Crossings, Class Team, and Threat Management. They evaluate the suitability of construction, installation, or modification; and detail the selection of remediation, mitigation, and inspection activities to ensure pipeline integrity. After reviews are completed and the system recommends an approval or denial, the TPR Analyst is notified to prepare an agreement. If approved, a final review of the comments is completed. If no conditions are required, the consents/agreements are prepared, sent for internal execution, uploaded, and sent to the applicant for execution. Samples of screen images were provided for three consents to the auditors.

Samples of unexecuted crossing and ground disturbance agreements, and a crossing application denial were provided to the audit team. Agreements are digitally signed between NGTL and third party, and a sample was provided to the auditors. The auditors reviewed the process for managing requests and noted that it met the requirements.

In summary, the auditors did not identify any issues of concern with the way NGTL is meeting this regulatory requirement. Specifically, NGTL provided evidence to demonstrate that the company has a process for managing requests for consent to construct a facility across, on, along or under a pipeline, to engage in an activity that causes a ground disturbance within the prescribed area or to operate a vehicle or mobile equipment across the pipeline.

AP-08 Establish and implement a process for internal and external communication of information

Finding Status	No issues identified
Regulation	OPR
Regulatory Reference	6.5(1)(m)
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 and external communication of information relating to safety, security and protection of the environment.
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process that is established and implemented; - The methods for both internal communication and external communication are defined; - The company is communicating internally and externally related to safety, security and protection of the environment; and - Internal and external communication is occurring, and it is adequate for the management system and the damage prevention program implementation.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - AP08 Presentation - TC Energy's Operational Management System (TOMS) Manual (1017935461) - TOMS Communication Standard (1017932461) - CDG-GAS-IMP Canadian Onshore Gas Pipeline Integrity Mangement Program (003892900) - Legal Requirements Monitoring Process (009264333) - Incident Management Standard (1020362467) - Risk Management Standard (008749510) - Management of Change Element Standard (007923657) - Nonconformant and Opportunity for Improvement Procedure (006261835) - Pipeline Integrity Communication Procedure (006980248) - TC Energy Public Awareness Program (1016111195) - DP Power BI Scorecards for 2020, 2021 and 2022 (sample) - Land Operations, TC Monthly Meeting Notes & Actions for 2022 March, April & May (sample) - TC Energy 2021 Population Density Report – Technical Data Report (sample) - Learning from Incidents Bulleting – Coating Damage (1020362532) & Line Strike (1020362532) (samples) - Stakeout Report and Ground Disturbance Approval (TWP RD212) (samples) - Crossing Agreements D-28135, D-32059-1, D-32190-1 (samples) - TC Energy Website - Pamphlets – Pipeline safety information for excavators and farmers pamphlet, Working near our fwacilities (samples) - List of enhanced outreach communications (sample) - Annual calendars sent to landowners (sample) - Excavators Survey 2020 – public awareness effectiveness survey (sample) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - Public Awareness SME - Senior Program Advisor

Finding Summary

NGTL demonstrated that it has methods for both internal and external communications. The company demonstrated that it communicates internally and externally on matters related to safety, security and protection of the environment and the communications are adequate for the implementation of the damage prevention program. There is a requirement for a communication process document within the DPP to explain all of the DPP communication methods into one overarching process and explain how they are integrated and linked with the corporate communications process and other program areas. This will be addressed through the corrective action plan to rectify the deficiency identified in AP-01. Given that the DPP Communication Process will be addressed in AP-01, the auditors had no other issues of concern.

Detailed Assessment

Section 6 of the corporate management system describes the general internal and external communication requirements for the company. Section 6 references the Communications Standard which provides a link to the Corporate Communication Policy, the Communication Strategy, and internal and external communication references, which are to be followed by all section 55 program areas. It directs that program owners are to determine if a communication strategy is required for their specific area of responsibility to support the overall management strategy.

The corporate communication strategy identifies potential audiences; procedural steps, roles and responsibilities, defines the frequency of communications; tools available; and internal specialist contacts.

As a sub-program of the IMP, the DPP uses the Pipeline Integrity Communication Procedure which describes various internal communication methods that include management review meetings, quarterly performance reviews and technical communication presentations. Other internal communication methods are lunch and learn events; annual likelihood of failure reports, outputs from consequence and risk values from the SWRA process; baseline assessment plans for high consequence areas; management reviews; and master plans.

As an example of internal communications undertaken by the DPP, each month the Damage Prevention and the Public Awareness teams meet to review the Unauthorized Activity Reports, review mitigation efforts and validate the threat classification. The Damage Prevention team analyses unauthorized activities and prepares reports for each region identifying locations of increased frequency or severity. This information is also used to prepare regional Public Awareness Plans and forms an input to the SWRA.

A primary means of external communication for the DPP is facilitated by its Public Awareness Program. The Public Awareness Program document identifies the external stakeholder audiences as: the public; emergency and public officials; and excavators and contractors. The message and content to the audience is information regarding how to identify a potential hazard, understand measures to protect themselves, and when safe to do so, understand the method to notify NGTL and emergency officials. Contact information is provided for emergencies, one-call centres, general inquiries, applying for consent, and crossing inquiries. For other external communication methods applicable to the DPP, refer to AP05 – Monitoring for Change in Land Use, AP06 – Monitoring for Change in Landowner, and AP07- Managing Requests for Consent.

If NGTL needs to contact a landowner, the landowner information can be accessed by NGTL's field operations, project services or the public awareness group. The Landowner Operations team compiles a landowner list on an annual basis. This is used by the Public Awareness team and is the means by which an annual calendar, supporting the DPP messaging, is mailed to the landowners. A sample of the 2021 Mailing List (redacted) was reviewed by the auditors.

For guidance on external communications, Section 55 program areas have access to the Corporate Communications Department, Public Affairs Department, Public Awareness subject matter experts and the Regulatory Compliance group.

Process-specific communications requirements are embedded in related process documents. Examples of these were provided to the auditors for review and it was found that they describe the who, what, why, where, when and how of the process. Examples include:

- Incident Management Communications;
- Communications related to changes to legal requirements;
- Management of Change Communications; and
- Communications related to Nonconformances or Opportunity for Improvement.

For communications related to projects, key documents are the:

- Communication Plan;
- Community Relations Plan;
- Interface Management Plan;
- Management System Requirements for Prime Contractors Standard;
- Project Staffing and Organization Plan; and
- A Stakeholder Plan.

The Interface Management Plan references the Interface Management Procedure and is to describe how the project will identify and manage the project interfaces and help manage and mitigate the inherent risks.

Other examples of internal communications provided to the auditors included:

- Damage Prevention MS Power BI Scorecards for 2020, 2021, and 2022. These are updated monthly for internal personnel and show current and historical data for unauthorized activities;
- Land Operations, Monthly Meeting Notes & Actions for March, April, and May 2022;
- 2021 Population Density Report – Technical Data Report;
- Learning from Incidents Bulletin – Coating Damage (1020362532) & Line Strike (1020362532)

Other examples of external communications included:

- Stakeout Report and Ground Disturbance Approval (TWP RD212)
- Crossing Agreements D-28135, D-32059-1, D-32190-1
- Corporate Website where its emergency management information is available to the public as well as other corporate information about the company
- Pamphlets – Pipeline safety information for excavators and farmers pamphlet and Working near our facilities

- List of enhanced outreach communications
- Annual calendars sent to landowners
- Excavators Survey 2020 – public awareness effectiveness survey

In summary, NGTL demonstrated that it has methods for both internal and external communications. The company demonstrated that it communicates internally and externally on matters related to safety, security and protection of the environment and the communications are adequate for the implementation of the damage prevention program. There is a requirement for a communication process document within the DPP to explain all of the DPP communication methods in one overarching process and explain how they are integrated and linked with the corporate communications process and other program areas. This will be addressed through the corrective action plan to rectify the deficiency identified in AP-01. Given that the DPP Communication Process will be addressed in AP-01, the auditors had no other issues of concern.

AP-09 Establish and implement a process for internal reporting of hazards and for taking corrective actions

Finding Status	No issues identified
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 for taking corrective and preventive actions, including the steps to manage imminent hazards.
Expected Outcome	<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; and - The company can demonstrate through records that all corrective and preventive actions can be tracked to closure.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - AP09 Presentation - TC Energy's Operational Management System (TOMS) Manual (009964063) - Incident Management Process (1020314668) - Incident Management Standard (1020362467) - Nonconformance and Opportunity for Improvement Procedure (006261835) - Incident, Quality and Compliance Classification Guide (003976290) - Unauthorized Activity Response and Investigation (1013952975) - Safety Management Program (014157623) - Aerial Pipeline Patrol (003672387) - 1st and 2nd Party Incident 02-26-22 (sample) - Unauthorized Activity 03-11-2022 (sample) - Unauthorized Activity 09-26-2020 (sample) - Damage Prevention NCR OFI (sample) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - Quality Assurance SME - ROW Management SME
Finding Summary	NGTL demonstrated that it has a process for the internal reporting of hazards, potential hazards, incidents, and near-misses and for taking corrective and preventive actions. However, the process is not thoroughly documented or referenced within the DPP. Given that this will be addressed through the CAPA Plan to address the deficiencies identified in AP-01, the auditors had no other issues of concern.

Detailed Assessment

NGTL demonstrated that it has a process for the internal reporting of hazards, potential hazards, incidents, and near-misses and for taking corrective and preventive actions.

To demonstrate compliance to the requirements of paragraph 6.5(1)(r) of the OPR, the company provided a copy of the corporate Incident Management Process, and Nonconformance and Opportunity for Improvement Procedure, which the section 55 program areas are required to follow. In addition, the company provided supporting documents and samples of incidents and non-conformances that were retrieved from the Environment, Health & Safety Management (EHSM) enterprise database.

The company provided the CER Auditors with a PowerPoint presentation on the process of incident management. Within the corporate management system, Element 8 identifies the Incident Management Process and the Nonconformance Management Process and references the Incident Management Standard, and the Nonconformance and Opportunity for Improvement Procedure. These apply to all mandated programs including the DPP. Within the DPP, details and a link were provided for the non-conformance process; however, the incident management process was not documented or referenced. This is to be rectified through a corrective and preventive action plan to address the non-compliance noted in AP-01.

The company stated that reporting of hazards, potential hazards, incidents, and near misses is completed in accordance with the corporate Incident Management Process. Five steps are required when an incident occurs:

- Respond and report;
- Record;
- Investigate;
- Manage actions; and
- Share learnings.

NGTL stated that employees and contractors can report incidents and events without retribution. As proof, NGTL provided the CER Auditors with a screenshot of its Business Ethics Policy where the President and Chief Financial Officer affirms that “All Employees and contractors making reports in good faith will be protected from retaliation.”

As stated in the Incident Management Standard, preliminary incident data must be recorded in the EHSM application within 24 hours of discovery unless directed otherwise by the Legal Department. For incidents classified with a severity rating of Major or Critical Actual (MCA) or a Major or Critical Potential (MCP), an Alert is issued within 72 hours of discovery.

The Unauthorized Activity Response and Investigation procedure is the primary document used by the Damage Prevention Program to assess and investigate suspected, unauthorized, or unmonitored activities on the RoW. Initial reporting is completed within 24 hours of confirmation of an unauthorized activity and is submitted in the EHSM as a notification. The Canadian Regulatory Compliance group notifies the CER with an initial submission based on the information from the EHSM notification, no later than 24 hours after discovery of the event.

NGTL stated that “it relies on activities such as aerial and ground patrols, and operating and maintenance activities, including traveling to the site, and third-party notifications to provide input to RoW and facilities surveillance and monitoring.” Training is provided to all field-based employees who are expected to report abnormal right-of-way conditions or abnormal activities.

The Safety Management Program, which is one of the mandated programs of the corporate management system describes the approach to occupational safety risk management, injury prevention, safety governance and achievement of the NGTL's Health, Safety and Commitment policies. This program uses the incident and non-conformance processes.

Both the Incident Management Standard, and Nonconformance Management and Opportunity for Improvement Procedures use the Incident, Quality and Compliance Classification Guide.

Incidents are classified as:

- work related incident;
- work related near hit;
- undesirable consequence;
- corrective action; and
- emergency.

This guide helps employees determine the consequence severity of the event based on specific sections and categories. The consequence severity (Quality Management refers to this as the defect class) is rated minor, serious, major and critical. Depending on the severity, investigation, reporting and corrective actions are escalated. NGTL stated that the applicable sections used by the damage prevention program were:

- Asset – Equipment, Vehicle and Property
- Unauthorized Activity
- Quality Management Classifications

To report events that are not considered incidents, the Nonconformance and Opportunity for Improvement Procedure is used by the DPP. Issues or events that are listed in the Incident, Quality and Compliance Classification Guide trigger a notification in the SAP Quality module. The notification is then routed to the appropriate SME who reviews and triggers tasks to investigate and resolve through corrective or preventive actions. Notifications that are considered Level 1, which is a high or critical severity, are expected to be completed in 30 days.

Cited in the Incident Management Standard “An investigation is required for all incidents identified as MCA or MCP. Business Units may choose to investigate incidents not classified as MCA or MCP.” The TC Energy Investigation Reference Guide describes the investigation process which uses the TapRoot® root cause analysis process as a preferred method.

Samples of screenshots from the EHSM application were [provided as examples of evidence of reporting and corrective actions. These included 1st and 2nd party incidents and unauthorized activities. In addition, a list of damage prevention non-conformance (NCR) opportunities for improvement (OFI) was provided. This displayed the NCR number, description, start and end dates, author, owner, coordinator and completion dates.

In summary, NGTL demonstrated that it has a process for the internal reporting of hazards, potential hazards, incidents, and near-misses and for taking corrective and preventive actions. However, the process is not thoroughly documented or referenced within the DPP. Given that this will be addressed through the CAPA Plan to address the deficiencies identified in AP-01, the auditors had no other issues of concern.

AP-10 Establish and implement a process for inspecting and monitoring company activities for effectiveness

Finding Status	Non-compliant
Regulation	OPR
Regulatory Reference	6.5(1)(u)
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 inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process that is established and implemented; - The company has developed methods for inspecting and monitoring their activities and facilities; - The company has developed methods to evaluate the adequacy and effectiveness of the damage prevention program; - The company has developed methods for taking corrective and preventive actions when deficiencies are identified; - The company is completing inspections and monitoring activities as per the company's process; and - The company retains records of inspections, monitoring activities, and corrective and preventive actions implemented by the company.
- Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - AP10 Presentation - TC Energy's Operational Management System (009964063) - TC Energy Damage Prevention Program (009830940) - Management Review of Management Systems and Programs Procedure (0089558837) - Assurance Standard (1019653354) - Incident and Management Standard (1020362467) - Nonconformance and Opportunity for Improvement Procedure (006261835). - Damage Prevention Program Implementation – Canada Gas Operations (CGO) (1018983394) - Damage Prevention Program TOMS Compliance Audit (1018698146) - Damage Prevention – Canada Gas Report (73931929) - Damage Prevention Power BI Scorecard 2022 (sample) - Construction Monitoring Facility Crossing As Build Information (003677224) (sample) - Pipeline Inspection Report Form (1012490171) (sample) - Stakeout Report and Ground Disturbance Approval (003841204) - TOMS Alignment to the OPR – Canada Audit Report (21-T1A-TOMS-AO) (73359209) - Legal Requirements Process Audit Report (1020042336) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - Quality Assurance SME - Damage Prevention SME - Program Advisor - Assurance Office SME.

Finding Summary

NGTL demonstrated that it has a number of inspection and monitoring processes and activities to monitor the adequacy and effectiveness of the management system. NGTL showed that audits and evaluations are being completed on the damage prevention program for conformance to the corporate management system and some aspects of the OPR. However, NGTL did not demonstrate that it had conducted a thorough section 55 program audit within the previous three years as required by the OPR.

Detailed Assessment

NGTL demonstrated that it has a number of inspection and monitoring processes and activities to monitor the adequacy and effectiveness of the management system. However, NGTL did not demonstrate that it had conducted a thorough section 55 program audit within the previous three years as required by the OPR.

NGTL delivered a PowerPoint presentation and discussed the processes for Element 9 of the corporate management system (Performance Monitoring, Assurance and Management Review). Steps in this element include:

- Defining and monitoring performance indicators for business performance;
- Performing assurance activities; and
- Conducting management reviews.

The DPP describes these requirements and links to the Quality Assurance Audit Procedure and the Management Review of Management Systems and Programs Procedure.

The DPP goals are:

1. Reduction in the frequency and severity of the external interference and unauthorized activities.
2. Effective damage prevention engagement with internal and external stakeholders.
3. Meet and exceed all regulatory requirements.

Preparation of reporting metrics and performance are the responsibility of the DPP Steering Committee. They meet quarterly, review the effectiveness of the program, and discuss changes to the program to ensure continual improvement. A sample of the program's scorecard (Damage Prevention Power BI Scorecard) showed how unauthorized activity goals are measured and performance is evaluated.

The DPP uses the corporate Management Review of Management Systems and Programs procedure to ensure a regular assessment of the DPP program. This procedure standardizes management review practices and enables the identification of trends, assessment of progress, identify performance gaps and assurance findings. Cited in this document is the minimum frequency for internal audits, which is every three years.

NGTL stated that personnel are trained to identify incidents and non-conformances. The company identifies, develops, and implements corrective and preventive actions as described in the Incident Management Process, and the Nonconformance and Opportunity for Improvement Process. Reporting and monitoring of these actions is carried out through the damage prevention program report, damage prevention dashboard, steering committee minutes, and the results of management review.

Records of corrective and preventive actions are retained in the EHSM enterprise database and the SAP Quality Module enterprise database.

NGTL uses its corporate Assurance Standard which defines the required activities needed to align with the requirements of Element 9 of the corporate management system through the use of risk-based audits. The Assurance Standard states that the Damage Prevention Program is to conduct audits, with a maximum interval of three years. Audits are divided into four categories.

- Tier 1 – These are conducted by personnel within Business Units and Corporate Functions with the purpose of evaluating the implementation of the corporate management system and mandated programs and associated documents. Tier 1 assurance activities include, but are not limited to: inspections, self-assessments, management reviews and peer reviews, and must meet the minimum requirements of the Assurance Standard.
- Tier 2 – These are internally conducted assurance activities completed objectively and independent from the functional area being assessed and are dedicated to verifying the implementation and effectiveness of the corporate management system and mandated programs and associated documents within the Business Unit or Corporate Function. Tier 2 include, but are not limited to: audits, inspections, assessments, investigations, and reviews.
- Tier 3 – Assurance activities carried out by TC Energy's Internal Audit Department and reported to the Board of Directors and senior management.
- Tier 4 – These are third party independent audits and inspection conducted by external auditors, regulators, and external bodies such as joint venture partners.

NGTL stated that Tier 1 assurance audits for projects are being performed, whereas Tier 2 operations audits are planned for the future.

NGTL advised the CER Auditors that its corporate mandated programs are audited for conformance to corporate management system. These would be considered to be conformance audits as opposed to compliance audits.

Examples of NGTL's methods for inspecting and monitoring its activities and facilities were provided, including their:

- Construction Monitoring Facility Crossing as Build Information;
- Pipeline Inspection Report Forms;
- Stakeout Reports; and
- Ground Disturbance Approvals.

As examples of how NGTL evaluates the adequacy and effectiveness of its DPP and identifies gaps and/or deficiencies, NGTL provided the CER Auditors with its:

- Damage Prevention – Canada Gas implementation audit;
- Damage Prevention Program TOMS Compliance audit;
- TOMS Alignment to the OPR – Canada Audit Report (21-T1A-TOMS-AO);
- Legal Requirements Process Audit Report;
- Damage Prevention Program Steering Committee Agendas (for 2021 Q1-Q2 and Year End, and 2020 Year End); and
- Damage Prevention NCR Opportunities for Improvements list.

The CER Auditors reviewed each of the audit reports provided by NGTL. In one of the audits a process opportunity (OFI) to make damage prevention a program in itself rather than a sub-program was noted by the individuals that conducted the audit (noted in section 6, item 5 of the TOMS Alignment to the OPR – Canada Audit Report). However, none of the audit reports provided proof that that a thorough section 55 program audit had been conducted on the combined IMP/DPP or the DPP itself within the last three years.

In summary, NGTL demonstrated that it has a number of inspection and monitoring processes and activities to monitor the adequacy and effectiveness of the management system. NGTL showed that audits and evaluations are being completed on the damage prevention program for conformance to the corporate management system and some aspects of the OPR. However, NGTL did not demonstrate that it had conducted a thorough section 55 program audit within the previous three years as required by the OPR.

Appendix 2: Terms and Abbreviations

Term/Abbreviation	Definition
AP	Audit Protocol
CAPA	Corrective and Preventive Action
CER	Canada Energy Regulator
DPP	Damage Prevention Program
DPR-O	Canadian Energy Regulator Pipeline Damage Prevention Regulations – Obligations of Pipeline Companies
EHSM	Environment, Health and Safety Management
IMP	Integrity Management Program
MCA	Major or Critical Actual
MCP	Major or Critical Potential
MOC	Management of Change
NGTL	NOVA Gas Transmission Ltd.
OFI	Opportunity for Improvement
OPR	Canadian Energy Regulator Onshore Pipeline Regulations
QRG	Quick Reference Guide
RACI	Responsibility, Accountability, Consult and Inform
RoW	Right of Way
SME	Subject Matter Expert
SMP	Safety Management Plan
SWRA	System Wide Risk Assessment
TOMS	TC Energy Operational Management System
TPR	Third-Party Request