Trans Mountain Pipeline ULC (Trans Mountain)
Onshore Pipeline Regulations and Filing Manuals Update
Phase 2 – Engagement Overview
Due Date: March 31, 2025

A. OPR – Damage Prevention Topic Paper

This paper describes potential amendments to the OPR to improve the CER's oversight of damage prevention. Any suggestions for improvement regarding this section are welcome.

Background: Damage Prevention

Pursuant to section 94 of the *Canadian Energy Regulator Act* (CER Act), the holder of a certificate or permit must take all reasonable care to ensure the safety and security of persons, the safety and security of regulated facilities and abandoned facilities and the protection of property and the environment. CER regulations apply to any activity that disturbs the soil near federally regulated pipelines or federally regulated power lines.

Depth of Cover

Depth of cover is the depth of the soil measured from the top of the pipeline to the ground surface. The depth varies for each pipeline, depending on ground conditions and when the pipeline was first constructed. Depth of cover can change over time with compaction, activities, soil removal, ground settling, wind erosion and flooding, etc. Other pipes and cables may be installed at shallower depths than federally regulated pipelines. The *CER Pipeline Damage Prevention Regulations* (DPR) restrict excavation such as digging or auguring 30 cm or deeper in the prescribed area to protect people, the pipe, and the environment.

The OPR further requires pipeline companies to have a management system which must include a damage prevention program that anticipates, prevents, manages and mitigates conditions that may lead to damage to their pipelines. The damage prevention program must contain the minimum requirements of the DPR and is subject to the OPR management system processes such as those for hazard identification and control.

On 13 April 2022, the CER issued *Safety Advisory SA 2022-01 – Depth of Cover in Agricultural Areas*, a reminder that pipeline companies are required under the OPR to identify and analyze all hazards and potential hazards, including those relating to depth of cover, and to develop and implement a Damage Prevention Program.

Further, Canadian Standards Association (CSA) Standard Z662 Oil and Gas Pipeline Systems (CSA Z662) contains requirements for depth of cover at the design and construction phase yet is silent on the requirement to maintain minimum depth of cover for the rest of the lifecycle of the pipeline.

In the first phase of engagement on the OPR Review, the CER heard that the OPR should provide an improved understanding of ground disturbance in relation to agricultural activity. Responsive to this feedback, the CER intends to introduce new requirements to enhance its oversight of depth of cover.

Objectives for Improvement

The objectives of new requirements will be to help ensure that companies:

- are clear about what a surveillance and monitoring program should contain and aim to accomplish with respect to depth of cover; and

- are able to make a clear connection between the Damage Prevention Regulations and the OPR around agricultural safety as agricultural activities do not require company consent (within an allowable threshold).

Proposed Option

The CER is considering the following option to meet the objectives outlined above:

- Adding a requirement to section 39 of the OPR that the company's surveillance/monitoring program must include depth of cover monitoring for:
    - the purposes of section 7 of the *Canadian Energy Regulator Pipeline Damage Prevention Regulations – Obligations of Pipeline Companies* (DPR-O) (thus ensuring agricultural safety), and
    - monitoring the areas which may be impacted by hazards and potential hazards related to normal and abnormal weather conditions and land use.

Discussion Questions

a.1) Are there industry best practices, standards or provincial requirements that could inform new OPR requirements regarding depth of cover monitoring or maintenance/minimum earth cover?

Response:

Under the management system requirements of the OPR companies are required to establish and implement a process for evaluating the risks associated with identified and potential hazards, including the risks related to normal and abnormal operating conditions (s.6.5(1)(e)).

Depth of cover, monitoring or maintenance of, is one of many considerations in assessing the ongoing safe operation of the pipeline. Trans Mountain implements an internal risk management program that comprises data collection to verify the orientation of the pipe, and physical confirmation of the depth of cover. Further, Trans Mountain relies on other sources of data to inform decisions in relation to the safety of the pipeline such as inline inspection and whether there is a history of unauthorized activities in a given area. Geohazard monitoring plans require inspection of the pipeline after a significant weather event. Different thresholds may exist for minimum depth of cover given land use, with agricultural lands typically requiring the greatest depth of cover and residential or developed lands having the least. Where there may be low depth of cover, an option for a pipeline company is to undertake temporary or permanent mitigation measures, where appropriate.

CSA Z662, incorporated by OPR 4(1)(d) relays the depth of cover requirements for buried pipelines. Specifically, Table 4.9 relays the minimum cover requirements for distribution and service pipelines for a variety of land uses. *CSA Z247 Damage prevention for the protection of underground infrastructure*, while not a regulatory requirement, provides guidance on how to prevent damage to pipelines including processes for locate requests and written safety practices.

For these reasons, Trans Mountain believes that adding a depth of cover requirement and monitoring requirement into section 39 of the OPR is not only duplicative of existing CSA Z662 requirements it is redundant given the hazard-based approach to managing risks as required by the management system requirements. Depth of cover monitoring is a part of a broad monitoring and assessment program utilizing a variety of technologies, and companies must have flexibility in establishing internal programs accordingly.

a.2) What are the benefits and implications (e.g., costs) that regulated companies anticipate from incorporating requirements for depth of cover monitoring into the OPR?

Response:

It is Trans Mountain's view that depth of cover monitoring, at a frequency defined to be appropriate by the company, is already required under the management system requirements in the OPR as an element of all-hazards approach to managing pipeline safety. Should the CER prescribe a frequency greater than what is currently undertaken by the company, additional costs for patrols and administration will be incurred for little to no safety benefit, especially for pipelines with a large geospatial span. Further there may be access limitations for privately held lands that may challenge the company's ability to comply with the requirement.

Please also see the response to request a.1).

a.3) What are the benefits and implications (e.g., costs) that regulated companies anticipate from incorporating requirements for minimum depth of cover into the OPR?

Response:

Should the CER mandate a minimum depth of cover requirement, regardless of the hazard, where there are areas of low depth of cover, the company would be required to either lower the line (replacement) or add earth cover. In either case, there would be a substantial environmental impact (disturbance), operational disruption (installation of replacement pipe and tie-in), and costs to the company. Depending on the location of the cover remediation, there may be impacts to privately-owned lands including agricultural, roadways, traditional territories and lands designated as traditional land use. There would be adverse impacts to landowners, agricultural landowners, land users, Indigenous groups and municipalities. A line lowering program would require authorization under s.214 of the CER Act, as well as other federal and provincial permits, which could have lead times of one year or more. In Trans Mountain's view this would be a very costly program with significant environmental impact, for little to no benefit.

a.4) For regulated companies, would adding a depth of cover monitoring or maintenance/minimum earth cover requirement in the OPR align with current business practices, or substantially change corporate operations?

Response:

Adding a depth of cover monitoring requirement at a frequency greater than that required by the risk-based approach would not align with the hazards-based approach of the OPR, and substantially change corporate operations. Please see the response to request a.2). Adding a minimum depth of cover requirement beyond what is required in CSA Z662 would constitute a substantial change to corporate operations for reasons described in response to request a.3).

a.5) How can the OPR improve the connection between the company surveillance and monitoring program and the DPR-O requirements and overarching Damage Prevention Program to ensure that depth of cover is adequately managed by pipeline companies?

Response:

The current OPR section 39 requirement for monitoring and surveillance programs, under the governance structure of the management system (s.6.1-6.5) which requires identification of hazards, evaluation of risk, and implementation of controls, among other requirements, provide sufficient clarity of expectations for monitoring and mitigation of hazards. DPR-O Section 7 Obligations Respecting Certain Locations contains clear requirements for notifications to landowners and persons engaged in agricultural activities in circumstances where operation of vehicles or mobile equipment across a pipeline at specific locations for the purposes of performing an agricultural activity could impact the pipeline's safety or security.

Additionally, CSA Z662:23 Section 10.3.2.1, which is incorporated via OPR s.4(1)(d), requires companies, when they become aware of conditions that could lead to failures in their pipeline systems, to conduct an engineering assessment to determine which portions can be susceptible to failures and whether such portions are suitable for continued service.

For these reasons, Trans Mountain is of the view that the requirements of, and the connection between these requirements are clear to ensure depth of cover, and potential hazards to the safe operation of the pipeline are adequately managed by pipeline companies.

a.6) How can the OPR improve the connection between the definition of ground disturbance (including cultivation) in the CER Act and the overarching Damage Prevention Program to ensure that depth of cover is adequately managed by pipeline companies?

Response:

Section 335(1) of the CER Act prohibits the construction of facilities across, on, along or under a pipeline or for a person to engage in an activity that causes a ground disturbance within the prescribed area unless the construction or activity is authorized or required by orders of the Commission of the CER. Section 335(5) of the CER Act permits the regulator to make regulations to this effect. OPR section 47.2 requires companies to develop, implement and maintain a damage prevention program that anticipates, prevents, manages and mitigates damage to its pipeline and meeting the requirements set out in section 16 of the DPR-O.

The DPR-O relays the obligations of the pipeline to be a member of a one-call centre (section 2), to provide consent to a ground disturbance request or reasons for not doing so (section 3), and if the ground disturbance is to take place within the prescribed area, the safety practices to be followed, ensure the pipeline is clearly marked and the significance of the markings are understood (section 6), and that in the case of an agricultural activity, where such activity could impair the pipeline's safety or security, the company must notify the landowner and the persons engaged in agricultural activities in writing (section 7). The DPR-O also has requirements of companies to undertake inspections (section 8), provisions for when companies may suspend consent previous granted and under what conditions (section 10), and obligations to report to the CER every contravention of the DPR-O, and all damage to the pipe as a result of a ground disturbance within the prescribed areas (section 11). Further, the DPR-O relays the elements required for a damage prevention program which includes a public awareness program, ongoing monitoring of changes in the use of land and the landowner, a process to ensure a timely response to locate requests, standards for locating a pipeline, and 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 (section 16).

There is a clear connection from the enabling legislation to the regulations (OPR and DPR-O), which then contain requirements for a damage prevention program, including the requirement for advance notification of ground disturbance or agricultural activity, safety practices to be followed, or limitations that need to be put in place to ensure the safe operation of the pipeline. Further, companies are required to continuously monitor for changes in the use of land and the landowner. The connection is clear and does not warrant improvement. Further, and as described in response to request a.1), above, depth of cover is one of many considerations used by companies in assessing the ongoing safe operation of the pipeline.

a.7) How should the CER be more explicit about requirements for depth of cover monitoring or maintenance? Explain why.

Response:

Please see the response to request a.1).