

February 23, 2015

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

RE: EB-2014-0261 – Union Gas Limited (“Union”) – Dawn Parkway 2016 Expansion Project – Updated interrogatory response to include attachment to Exhibit B.GAPLO.2

Pursuant to its response to Exhibit B.GAPLO.2 a), Union has attached an updated response including a copy of Union’s Standard Operating Practice for Depth of Cover. This will be filed in the Board’s RESS and copies sent to the Board.

If you have any questions with respect to this submission please contact me at (519) 436- 5473.

Yours truly,

[original signed by]

Karen Hockin
Manager, Regulatory Initiatives

cc: Zora Crnojacki, Board Staff
Mark Kitchen, Union Gas
Crawford Smith, Torys
All Intervenors (EB-2014-0261)

UNION GAS LIMITED

Answer to Interrogatory from
Gas Pipeline Landowners of Ontario ("GAPLO")

Reference: Application, Exhibit "A", Tab 11, page 6 of 15, Engineering and Construction
Stantec EA Report, Section 4.1.2, page 4.3

Preamble: Union Gas Limited states: "Minimum depth of cover required will be 1.0 metre from top of pipe to final grade. Where necessary, additional cover will be used to accommodate planned or existing underground facilities, and road, railway and watercourse crossings. In agricultural areas the minimum depth of cover will be 1.2 metres, except where bedrock is encountered at a depth less than 1.2 metres, in which case the pipe will be installed with the same cover as the bedrock, but not less than 1.0 metres below grade."

The EA Report states that operational activities for the pipeline will include "completing depth of cover surveys, so that the amount of soil cover over the pipeline is maintained."

- a) Please provide a copy of Union Gas Limited's depth of cover monitoring program documents.
- b) What is the depth of cover monitoring program proposed for the proposed pipeline?
- c) What is the minimum depth of cover that will be maintained by Union Gas Limited over the proposed pipeline following construction (i.e. during operation)?
- d) Please provide details of all locations in the existing easements in the section where Union has identified insufficient depth of cover of less than 24 inches and all identified locations in agricultural lands with less than the minimum depth of cover proposed and/or required at the time leave to construct was granted.
- e) With respect to those locations where depth of cover is insufficient, what steps, if any, has Union Gas Limited taken to establish sufficient depth of cover? Provide details of any such operations including a copy of any report prepared.
- f) Are there locations on the Dawn to Parkway system where Union Gas Limited, due to the presence of insufficient cover or other factors, has indicated to landowners that they should exercise extra caution when carrying out activities, including farming operations, above the pipeline? Please provide details of any such communications made to landowners including: location affected, copies of correspondence, records of responses from landowners.

- g) Are there any locations on the Dawn to Parkway System where Union Gas Limited has restricted land use above the pipeline due to insufficient depth of cover or the condition of the pipe itself? Provide details of the location, the nature of the deficiency (depth of cover, etc.), and the nature of the restriction imposed on land use.
 - h) How does Union Gas Limited monitor nearby houses, buildings and facilities for possible damage from blasting and/or excavation of bedrock during construction? Please explain.
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Response:

- a) Please see Attachment 1 for a copy of Union's Standard Operating Practice for depth of cover.
- b) The depth of cover program on the proposed pipeline will meet or exceed current code and regulation requirements. Please see response to a) above.
- c) Ontario Regulations require that pipelines are installed and operated to meet the requirements of the CSA Z662 Standard. The standard has separate requirements for the design, installation, and operation of the pipelines. Union installs pipelines at elevations that provide cover in excess of the minimum Standard requirements and operates such pipelines to comply with the depth of cover requirements of the Standard and TSSA for operating pipelines.
- d-g) Union complies with current TSSA requirements for depth of cover surveys. When locations are found that do not meet minimum requirements, the pipeline is lowered, fill is placed over the pipeline, or the land is taken out of agricultural production and isolated with fencing. In all cases, compensation is paid to the landowner. The work is done to maintain existing pipeline integrity in compliance with regulations. There are currently no locations on this section of pipe that have been identified as having insufficient depth of cover.
- h) Union does not anticipate the need for blasting near houses, buildings and facilities during construction of the Project. For the excavation of bedrock during construction, Union would retain an expert (blasting, structural) to design and monitor a plan specific to the structure in question. This could involve, pre-construction, during construction and post-construction monitoring, if required.

Depth of Cover - Practice

Intention

To provide a standard practice to define the frequency of inspections on all pipelines operating over 30% of SMYS, to provide for the priority level by degree of hazard, and to establish the maximum time to perform mitigation.

References

- [C&M Manual Section 16.6, "Asbuilt Records"](#)

Act Reference

- Technical Standards and Safety Act, 2000

Code or Regulation Reference

**Ontario Regulation 210/01, Oil and Gas Pipeline Systems
Code Adoption Document, November 2012**

Clause 10.6.5.5 Operating companies shall develop written procedures for periodically determining the depth of cover for pipelines operated over 30% of SMYS. Such written procedures shall include a rationale for the frequency selected for such depth determinations. Where the depth of cover is found to be less than 60 cm in lands being used for agriculture, an engineering assessment shall be done in accordance with clause 3.3 of Z662-11 and a suitable mitigation plan shall be developed and implemented to ensure the pipeline is adequately protected from hazards.

CSA Z662-11, Oil and Gas Pipeline Systems

10 Operating, maintenance, and upgrading
10.6 Right-of-way inspection and maintenance
10.6.1 Pipeline patrolling
10.6.1.1

Operating companies shall periodically patrol their pipelines in order to observe conditions and activities on and adjacent to their rights-of-way that can affect the safety and operation of the pipelines. Particular attention shall be given to the following:

- (a) construction activity;
- (b) dredging operations;
- (c) erosion;
- (d) ice effects;
- (e) scour;
- (f) seismic activity;
- (g) soil slides;
- (h) subsidence;
- (i) loss of cover; and
- (j) evidence of leaks.

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Exhibit B.GAPLO.2

Attachment 1

Note: Where pipeline patrolling reveals conditions that can lead to failure of the pipeline, see Clause 10.3.1.

10.6.1.2

The frequency of pipeline patrolling shall be determined by considering such factors as:

- (a) operating pressure;
- (b) pipeline size;
- (c) population density;
- (d) service fluid;
- (e) terrain;
- (f) weather; and
- (g) agricultural and other land use.

10.6.4 Crossings

10.6.4.2

Underwater crossings shall be inspected periodically for adequacy of cover, accumulation of debris, and other conditions that can affect the safety or integrity of the crossing.

10.3.1 Integrity of Existing Pipeline Systems

10.3.1.1

Where the operating company becomes aware of conditions that can lead to failures in its pipeline systems, it shall conduct an engineering assessment to determine which portions can be susceptible to failures and whether such portions are suitable for continued service.

10.3.1.3

Where the engineering assessment indicates that portions of the pipeline system are susceptible to failures, the operating company shall either implement measures preventing such failures or operate the system under conditions that are determined by an engineering assessment to be acceptable.

Note: Clause N.10 provides options that may be used to reduce the frequency of failure and damage incidents

N.10 Options for Reducing Frequency and Consequences of Failure or Damage Incidents

N10.2 External Interference

The options that may be used to reduce the frequency of failure and damage incidents associated with external interference include the following as applicable:

- (a) Participations in one-call utility location organizations
- (b) Measures to improve public awareness of and education about the pipeline system
- (c) Vegetation control to improve right of way visibility
- (d) Supplemental markers and signs to identify the presence of pipeline systems
- (e) Increased frequency of right of way inspections and patrols
- (f) Enhancement of procedures for pipeline system location and excavation
- (g) Installation of structures or materials (e.g., concrete slabs, steel plates, or casings)
- (h) Increase depth of cover
- (i) Increased pipe wall thickness

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Compliance

The Manager of Pipeline Engineering is responsible to ensure that the program is executed on and adhered to.

Definitions

Agricultural Lands are those lands that are currently being worked with mechanical farm equipment for the production of crops or grazing farm animals. Pasturelands are considered agricultural since such lands may be periodically worked with similar equipment to croplands.

Depth of Cover is the required depth of the pipe, from the top of the pipe to the ground surface. Any structure, such as weights or casings, connected to the pipe through mechanical means is considered part of the pipe and must meet the required depth of cover.

Specific Requirements

General Depth of Cover Survey Frequency

All targeted pipelines will be surveyed for depth of cover in accordance with approved locating and surveying procedures, at the frequencies shown in Table 15.1.

Table 15.1: General Depth of Cover Survey Frequency

Location	Survey Frequency
Sections of pipeline with less than 60 cm of cover	Annual until mitigation completed
Sections of pipeline through Agricultural Lands with 60 cm to 75 cm of cover	5 years
All other pipelines operating above 30% SMYS in Agricultural Lands	10 years
All other pipelines operating above 30% SMYS	20 years

Standard Operating Practices

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Approver: Shawn Khoshaien
Owner: Engineering, Construction and STO

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Corrective Action or Notification Requirements

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Mitigation of Shallow Areas

Any location on a pipeline with a depth of cover of 60 cm or less requires a response to ensure the pipeline is adequately protected from hazards. A large amount of the depth of cover survey will occur on private agricultural property. If a shallow area is found on private property, the Lands department shall contact the landowner before initiating any mitigation to protect the pipeline.

All locations found with depth less than 60 cm shall have a Direct Current Voltage Gradient (DCVG) survey completed within 1 year of discovery and prior to any mitigation to identify any coating damage in the area. Temporary protection shall be implemented within 60 days of identification to prevent further damage to the pipeline.

Mitigation measures shall be implemented to limit any further damage to the pipeline. Mitigation methods may include adding suitable fill material over the pipeline, fencing off the shallow area with fencing suitable to keep machinery from putting loading stress on or causing damage to the pipeline, placing protection such as concrete slabs over the pipeline, or lowering the pipeline to a suitable depth.

Retention of Records

Survey results shall be stored in the pipeline directory in the survey folder for each pipeline section surveyed. A minimum of three consecutive surveys shall be kept for each pipeline segment.

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