

ENBRIDGE GAS INC.
Answer to Interrogatory from
Board Staff (STAFF)

Reference: Exhibit C1/ Tab 2/ Schedule 1/ pg.122 and 131

Question:

The evidence indicates that Enbridge Gas Distribution is engaged in a comprehensive, on-going program to measure, quantify and take remedial action to preserve the integrity of its steel mains.

However, according to Enbridge Gas Distribution's analytical models, the projected rate of increase of leaks in its steel pipe is forecasted to grow "exponentially" over the next 40 years (Figure 5.2-13: Steel Mains Leak Projections (2017 – 2057)).

- a) Is Enbridge Gas anticipating having to commit significantly more financial resources per year to adequately fund the steel main repair/replacement program based on the potential to increase its nominal replacement rate from 9km/year to a higher number (e.g. 18km/year) to align with the "100 years of age" criterion that is noted? If this is the case, when will this higher level of expenditure begin and what is the forecasted magnitude of the increase?
- b) Does Union Gas have similar issues? Is Enbridge Gas participating with industry bodies such as the CSA Z662 standards committee and the applicable American Gas Association and Canadian Gas Association committees to address this issue?
- c) Is the Enbridge Gas Distribution Steel Main Leak Analytical Model(s) unique to Enbridge Gas Distribution or is it based on an "industry standard" that it applies to its unique pipeline integrity data?
- d) Does Union Gas have similar leak forecast data as Enbridge Gas Distribution put forward in Figure 5.2-13: Steel Mains Leak Projections (2017 – 2057)? If yes, please provide the data and a graphical representation.
- e) Will Enbridge Gas provide a similar level of detail as Enbridge Gas Distribution when it submits the integrated AMP?

Response

- a) Yes, Enbridge Gas expects a significant increase in its level of spend to adequately manage the lifecycle of steel mains. As outlined in the EGD rate zone AMP:

At the current rate of replacement (approximately nine kilometers per year) it would take over 200 years to address 2,200 kilometers of 1950s pipe alone. The potential volume of leaks associated with the increasing amount of pipe over 100 years in age could eventually compromise EGD's ability to maintain a safe and reliable distribution system; depending on the timing and annual rate of replacement, EGD's ability to respond to leaks will be impacted. EGD will continue to refine its Distribution Steel Mains Replacement Strategy to manage this aging asset population based on advancements in the understanding of leak projections, asset age limit, and resource capacity.¹

The NPS 30 Don Valley crossing, Windsor Line and London Line replacement projects are examples of some priority replacements that Enbridge Gas is advancing in the near term based on known asset condition and risk results.

- b) The Enbridge Gas combined asset base will be evaluated to determine if there are similar issues with the Union rate zone assets.

Yes, Enbridge Gas is currently participating in the CSA and AGA forums and conferences.

- c) Statistical models are developed internally using failure data. Currently there is no industry standard, i.e. similar to the CSA Z662, for leak analytical models. However, the methodology is considered to be an industry methodology that is currently used in Europe. Based on the company knowledge from the AGA, CSA and GTI industry committees, Enbridge Gas is the first North American company to use this form of predictive analytics. Recently, several other companies have indicated adoption of a similar approach.
- d) No, leak projection data is not available for the Union rate zone assets.
- e) Enbridge Gas will assess the data availability and compatibility of the combined assets to determine the appropriate level of detail to provide in the integrated AMP.

¹ Exhibit C1, Tab 2, Schedule 1, page 131.