

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

Reference: AMP – Exhibit C1/Tab 2/Schedule 1/Pg.140

Question:

Pre-1977 plastic services refer to Aldyl A vintage plastic using early manufactured resins. These services range in age from 41 to 50 years, and account for 4% of the total services (approximately 84,000). Though Aldyl A services are not subject to the same stressors as Aldyl A mains, their failure modes are identical, with consequences more severe than the typical pinhole failure of steel services. Cracking failures have higher consequences, as sudden cracking produces a higher volume of natural gas released compared to pinhole failures due to corrosion observed in steel services. The GTI study identified that the remaining life of Aldyl A varies between 10 and 50 years. It is expected that when failures do occur, the rapid degradation of Aldyl A services may prove difficult to manage. Further studies are required to identify which stress intensifiers are applicable in the Enbridge Gas Distribution network and how the combined effect of environmental factors affect Aldyl A useful life.

- a) Has Enbridge Gas Distribution experienced any failures of Aldyl A services? If yes, please provide details, impacts and number of occurrences.
- b) Are there any solutions to prevent the rapid degradation of Aldyl A services?
- c) Enbridge Gas Distribution has noted that further studies are required to identify which stress intensifiers are applicable in the distribution network and how the combined effect of environmental factors affect Aldyl A useful life. When are the further studies expected to be completed and will this issue be addressed in the next AMP?

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**Response**

- a) 106 failures have been recorded between 2007 and 2017. There is an ongoing effort to review and understand the failure mechanism. The impact of a service leak is summarized in table 1.8.2 in the Risk/Opportunity column.<sup>1</sup>

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<sup>1</sup> Exhibit C1, Tab 2, Schedule 1, page 21.

- b) No, the rapid degradation of Aldyl A plastic pipe is a material property that is highly dependent on temperature and total hoop stress of the pipe.
- c) Further study on vintage plastic mains is expected to be completed in the next 5 years.