

1 Q. Hatch's letter of May 16, 2012 states that it is Hatch's opinion that it is essential to
2 have two functional fenders on both the North and South ends of the jetty. Can
3 Hatch provide support for this opinion in any of the published standards and/or
4 guidelines referred to at p. B9 of its Holyrood Marine Terminal 10 Year Life
5 Extension Study (at Appendix B)? If so, please provide the excerpts in support.

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8 A. There are no recommendations contained in the published standards and
9 guidelines referenced in the Marine Terminal 10 Year Life Extension Study. Hatch's
10 opinion, that two functional fenders are required on both the north and south ends
11 of the terminal, is based on sound engineering judgement and experience as
12 outlined in the attached correspondence.



March 8, 2013

Mr. M. Leonard, P.Eng.
Newfoundland and Labrador Hydro
500 Columbus Drive
P.O. Box 12400
St. John's, NL A1B 4K7

Dear Sir:

**Subject: Requests for Information by The Consumer Advocate
CA-NLH-01 to CA-NLH-13 - March 4, 2013**

CA-NLH-04

There are no recommendations in the published standards and guidelines referenced in our Holyrood Marine Terminal 10 Year Life Extension Study. Hatch's opinion, that two functional fenders are required on both the North and South ends of the terminal, is based on sound engineering judgment and experience as follows.

The South end of the jetty currently has only one functioning fender (Fender No. 3) out of four. Fender No. 4 failed and dropped into the ocean, Fender No. 2 is seized into a pulled back position and Fender No. 1 never makes contact with the oil tankers due to the geometry of the jetty.

Fenders No. 1 and 2 are non-functioning and cannot be relied on for docking vessels.

Repairs were made to Fender No. 3 in 2008 but these repairs did not put the fender into original operating condition. Due to the time available, as oil deliveries were imminent, the only repairs completed were the replacement of the lower ends of the front suspension arms. The existing hinge brackets and 6" diameter pins were not replaced even though the upper pins were found to be worn.

All hinge components have had little or no preventative maintenance as there were no provisions in the original design to seal or lubricate the bearing surfaces, so we have no way of knowing the amount of wear in the components.

Consequently it is our recommendation two fenders on the North and South ends of the jetty are necessary for a safe operation of the facility.



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Mr. M. Leonard, P.Eng.
Newfoundland and Labrador Hydro
March 8, 2013

CA-NLH-05

The original design life of the facility was approximately 30 years and the facility has been operating in a very harsh environment, due the salt water emersion and spray, for about 40 years.

Visual observations of the fenders, in the years following the failure of Fender No. 4 in 2008, have indicated the free rotational movement of the suspended concrete is being hindered by misalignment and corrosion of the hinged supports. This is undoubtedly due to the corrosion and wear of the unprotected steel and the stress due to gravity and docking forces.

It is impossible to accurately predict the capacity of the remaining fenders to transfer the docking loads under all conditions, including controlled docking, into the supporting structure. When these circumstances occur it is important that engineers, based on sound judgment and experience, provide a margin of safety to avoid overstressing any part of the jetty structure.

The current docking practice does reduce the load on the fenders, however, there is no margin for error. In our opinion it is important to build in a safety margin to allow for human error or mechanical failure. When docking vessels the consequence of a mishap at the terminal could be catastrophic to the ship, the jetty and the environment.

In our opinion relying on perfect docking execution each time is not sound engineering or adequate protection of the facility, the tankers or the environment.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'G.D. Saunders'.

G.D. Saunders, P.Eng.
Hatch St. John's, General Manager

GDS:cdh



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