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June 20, 2013



To: Captain Gordon Houston (Chair), Mr. Richard Gaudreau and Dr. Michael Sinclair,

I am pleased to make this submission to the Tanker Safety Review Panel to ensure that a distinction is made between liquefied natural gas (LNG) carriers and heavy oil tankers in the context of the operations of these very different vessels in Canadian waterways. Most importantly, I wish to highlight the extraordinary safety record of LNG shipping, which since 1959 has traversed the globe in over 100,000 voyages without a single marine accident resulting in fatality or damage to the environment. We think of LNG safety as a continuum from field to sea, and I would like to draw the Panel's attention to certain features of the maritime dimension.

**Natural gas:**

We applaud the Government of Canada and the Panel for seeking to further enhance the marine safety regime for vessels operating off our coast, however would like to note the considerable differences between natural gas/LNG and heavy oil as cargoes and in terms of vessel characteristics and operating procedures.

Liquefied natural gas is natural gas cooled to 162 degrees below Celsius. Once cooled, it becomes a clear, odourless, colourless and non-corrosive liquid. LNG is stored at atmospheric pressure, is lighter than water, and disperses quickly when exposed to air. In the unlikely event of a marine or terrestrial incident, there would be no major or permanent risk to the environment.

**Shipping safety:**

Our parent company, PETRONAS, has more than 30 years of LNG shipping experience. As the principal shareholder of MISC, the world's second largest LNG carrier fleet, PETRONAS has successfully delivered more than 6,900 shipments since 1983.

LNG carriers are designed and constructed to manage their cargoes in all phases of the operation with safety and protection of the environment paramount. They are built, maintained and inspected to International Gas Carrier standards and stringent LNG-specific



codes. All carriers operated by PETRONAS are double hulled in order to prevent failure of cargo containment under worst-case accident scenarios. The ships are also equipped with sophisticated detection, containment and suppression systems in the unlikely event of a loss of containment. They are crewed to specialized license and experience standards and are navigated into port with safeguards in place that exceed those practiced by other cargo vessels, although complementary to the precautions now employed in the shipment of oil. Finally, I should mention that the LNG Terminal itself operates with state of the art technology in the safety and environmental protection systems that back-stop all phases of the operation, from berthing the ships, through cargo transfer and ultimately to the emergency response capabilities that protect against every possible scenario.

As Pacific NorthWest LNG participates in the regulatory processes towards project approval, including voluntary participation in a marine safety study, we look forward to bringing our industry's reputation and experience into the discussions and proposals that will enhance navigation safety in Canadian coastal waters.

**Conclusion:**

In conclusion, I would like to thank the panel for the important work they are undertaking and for the time to read our short submission. We hope in your deliberations that appropriate recognition is given to the unique characteristics of LNG and LNG carriers – the industry has an enviable safety record that we will continue to build upon.

If you require any further information, please do not hesitate to contact me.

Best regards,

Greg Kist

President, Pacific NorthWest LNG