

The actual head and pump pressure to maintain this requirement may vary as the vessel moves down the track and LNG moves in the tank collapsing head pressure. Also it may be found that head pressure may vary based upon the volume of LNG remaining in the tank. Algorithms of pump operation may be altered with additional knowledge gained in Phase 2 testing.

**g) What other parameters will be tested or measured to provide a basis for using cryogenic pumps in LNG tenders?**

Recognizing that FECR has the first LNG ISO style Tender design with an internal pump, FECR is especially interested in how much heat is being imparted upon the LNG and what level of operation provides the highest reliability and availability of the tender to provide natural gas when locomotives are calling for gas. FECR will perform an operational study during Phase 2 testing to determine the time needed to fulfill locomotive demand for gas. Additionally, long term monitoring of tank pressure will be another parameter to be examined. Finally, the relationship of tank pressure, gas flow rate/notch setting and the resulting pump speed starting point will be evaluated.

**h) Are there any way-side systems for data collection of locomotive-tender performance parameters? Also, will there be instrument car in the consist to measure and record various events?**

The FECR property has several types of wayside equipment for equipment monitoring. Car performance can be observed from Wheel Impact Load Detection (WILD), hot bearing and dragging equipment and clearance detection systems. An instrumentation car shall not be used in the consist. FECR shall monitor the LNG Tender critical parameters such as pressure and volume of LNG as discussed above.

**i) Will there be speed restrictions for the LNG consist train? What are the track speeds in different operating territories?**

FECR will operate LNG consist train at track timetable (see attached) speed. This document was in an earlier submittal but shall be resent with current revision.

**j) Nature of the train(s) (i.e., the loads on the train) in which LNG consist will be operating.**

FECR will operate LNG consists as it would deploy conventional diesel locomotives. Trains are typically powered to approximately 1.10 horsepower per trailing ton (HPTT). Southbound trains often have greater tonnage than Northbound trains. At this time, trains would average between 7,500 and 9,000 tons and be operated by 2 LNG locomotives. FECR is absent of any severe gradient on its rail network resulting in very low gallons of fuel per gross ton mile.