Trans Ocean Gas to Test CNG Cylinders

By: J.M. Sullivan

St. John's-based Trans Ocean Gas is gearing up to test its patented proto-type cylinders to store and ship compressed natural gas (CNG) early next year. "We'll be testing by the first quarter of 2005," said company president Steve Campbell.

Testing is expected to take three to four weeks at a cost of $2.4 million and the hope is to have regulatory approval to construct the fibre-reinforced cylinders—lighter and more durable than the usual steel containers—to follow within eight to 10 weeks.

The American Bureau of Shipping and Norway's Det Norske Veritas will also be involved in verification and approval. So far, designing and testing have been done at the Institute of Ocean Technology's Enterprise Centre in St. John's, which is mandated to help build Atlantic Canada's ocean technology industry.

Trans Ocean has partnered with EADS-Composites Atlantic of Lunenburg, NS, who have manufacturing capability for the 7 1/2- to 8-metre compressed pressure vessels (CPV) and protective cassette frames. "We'll test the vessels where they're manufactured," said Campbell. "Logistically, that's preferable."

The cylinders will be subject to a variety of stresses and risk analyses. Some will be bursted as they are, while others will be bursted to the strength of five to 10 years, which is their expected life span. The cylinders will also be burst-tested to confirm their integrity. Some will be previously damaged, like from the drop of a hammer, to simulate a non-recognized, pre-installation impact, and then subject to the same testing. Some will even be shot with a bullet to show safe rupture characteristics. "Its important to exemplify their safety, should there be a side impact collision at sea," explains Campbell.

Trans Ocean Gas has initiated talks with the Newfoundland government via the province's minister of Natural Resources Ed Byrne to discuss the possibility and potential of opening Newfoundland plants for CPV manufacturing. Campbell foresees a great employment opportunity for rural Newfoundland. "The pressure vessels can be loaded on tractor trailers for transport to quayside facilities for installation. Even the cassette modules are designed for shop fabrication." He also points out that the Nova Scotia government has half ownership of EADS, which employs 170 and also works on aeronautic and defence-related projects.

Newfoundland has about a half dozen deepwater harbours capable of handling 300-metre ships, including Bull Arm, Argentia, Long Harbour, Corner Brook and Marystown. Nova Scotia's North Sydney and Halifax would also qualify.

"To manufacture one CPV of our proposed size requires 50 to 60 person hours of labour," said Campbell. "Our flagship will require approximately 20,000 CPVs to carry one Bcf of gas and a typical project needs three or four such couriers. There could be immense economic benefits with the potential of thousands of jobs within a five-year period." Possible spin-offs include harnessing the demand for raw material suppliers of carbon fibre and/or glass fibre.

Campbell says these cylinders, with their upright storage configurations, would be appropriate for shipping CNG from the White Rose field offshore Newfoundland. The company is currently preparing a response to Husky Energy's recent call for submissions on transporting CNG from the Grand Banks to market. He also adds that this technology would be well suited to transporting Labrador gas.

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