

TITLE

YEC Whitehorse Diesel-Natural Gas Conversion Project – Pressure Test
Inspection Exemption

AUTHORITY

Section 7 of the Gas Processing Plant Regulations (“GPPR”)

USE

Purpose: Whitehorse Diesel-Natural Gas Conversion Project
Scope: LNG Facility Licence #1140
Licensee: Yukon Energy Corporation (“YEC”), ID Code #522472

REQUEST

YEC requests an exemption from the requirements of s. 23(2)(b) of the GPPR, such that, for the purposes of conducting the pressure testing referred to in s. 23(1) of the GPPR, it may be allowed to engage the same contractor that fabricated the components to be tested. Pursuant to s.11(3)(a) of the GPPR, YEC’s request is within its application dated December 6, 2013.

DIRECTION

In accordance with section 7(1)(c) of the GPPR, and subject to the conditions set out below, the Chief Operations Officer (the “COO”), under the *Oil and Gas Act* hereby directs that YEC is exempt from the requirements of section 23(2) of the GPPR for those components manufactured in compliance with Canadian Standards Association (“CSA”)

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B51 and approved under Licence #1140.

This direction is made subject to the following conditions:

1. that YEC complies with all requirements for pressure and leak testing as set out in CSA Z276;
2. that, prior to commissioning and start up, YEC provides to the COO the following:
 - a. a copy of all inspections, pressure tests including stretch pressure testing of inner LNG vessels, leak tests, CRNs, piping data reports, shop authorization certificates and any other information related to the pressure testing of the equipment as requested by the COO;
 - b. a satisfactory quality assurance plan for shop and field testing which includes descriptions of the pressure test witnessing and;
3. that YEC does not perform, or permit to be performed by any person, a pressure test at any physical location other than those required by CSA B51 unless under specific approval by the COO.
4. that YEC notify the COO at least 7 days in advance of any field pressure testing.

RATIONALE

In accordance with section 7(2)(c) of the GPPR, the COO has determined that section 23(2) provisions for independence of contractors for pressure testing and fabrication is inconsistent with the *Boiler and Pressure Vessels Act (Yukon)* (the "BPA"). The BPA adopts CSA B51, which ensures pressure testing is conducted in compliance with standardized quality assurance procedures and completed by certified shops and personnel.

BACKGROUND

Some components of the LNG facility, including storage vessels, piping, valves, and instruments are pressure-retaining. YEC proposes to design and



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construct these components to CSA Z276, in accordance with Section 5(1) of the GPPR. CSA Z276 adopts other relevant standards, including CSA B51 (Boiler Pressure Vessel and Piping Code). Compliance with CSA B51 is required under the BPA.

CSA B51 requires that the components be constructed to relevant American Society of Mechanical Engineers ("ASME") or National Fire Protection Association ("NFPA") or American Petroleum Institute ("API") or other relevant standards. Each applicable standard defines pressure testing requirements for a particular component and these form part of the procedures necessary to prove integrity.

A manufacturing shop must have their quality assurance and control procedures audited by a certification organization as determined by the standard, in order to qualify to produce components under that applicable standard. Reliability of any required pressure test is then ensured through following internal procedures and through independent witnessing by a certified third party inspector, and in some circumstances witnessing by the client representative. The results of the pressure test are documented in the final manufacturing data book. Standards do not specifically define who should be conducting the pressure testing other than qualified personnel.

In addition to the above-noted requirements, to be approved for use in the Yukon in accordance with the BPA, pressure equipment must also have a Canadian Registration Number ("CRN"). Manufacturers must submit technical design information to the Chief Inspector under the BPA. The Chief Inspector contracts ACI Central in Prince Edward Island to provide engineering analysis. Upon recommendation from ACI Central, the Chief Inspector may issue the component a specific and unique CRN. The CRN must be displayed and the final manufacturing report is reviewed by the Chief Inspector. The Chief Inspector would then issue a registration certificate following successful inspection of the installed component.



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In the case of YEC's proposed Whitehorse LNG Facility, the licensee proposes to use components manufactured from across North America, Europe, and Asia and supplied by a variety of contractors. These would be pressure tested and inspected in the manufacturer's shop in compliance with the relevant design and manufacturing standard pursuant to CSA B51. Industry practice is to conduct shop pressure testing as part of the manufacturing process, except potentially in cases when components are fabricated at the site. In that case, industry practice is for a certified fabricator (or sub-contractor) to conduct field pressure testing in the presence of client representatives and/or the Chief Inspector (or designate), in compliance with the applicable standard. It is expected that all pressure testing required under CSA B51 will be done in manufacturing shops for the YEC project, except piping that will be assembled and tested on site.

The licensee wishes to engage a contractor to conduct pressure testing of a component who is the same as the manufacturer of the component. Section 23(2) of the GPPR requires the pressure testing contractor to be independent of the construction contractor or component manufacturer. The intention is to ensure reliability and integrity of the pressure test. However, compliance with CSA B51 provides this assurance through already established practices.



Kyle Rolling, P.Eng, Chief Operations Officer

JULY 11 2014

Date