

Spectra Energy Transmission  
BC Field Services Division  
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Monty Peterson  
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August 7, 2012

**Filed via facsimile**

Ms. Sheri Young  
Secretary of the Board  
**National Energy Board**  
444 – 7<sup>th</sup> Avenue S.W.  
Calgary, Alberta  
T2P 0X8

Dear Ms. Young:

**Re: Westcoast Energy Inc., carrying on business as  
Spectra Energy Transmission ("Westcoast")  
Nig Creek Pipeline Rupture  
Restriction on Return to Service  
File OF-Surv-Inc-2012 81**

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NEB/ONE

In response to the National Energy Board ("Board") letter dated July 9, 2012, enclosed is Westcoast's proposed return to service plan for the Nig Creek Pipeline which has recently been repaired following the June 28, 2012 rupture of the line. Westcoast is requesting approval of the return to service plan by August 15, 2012 in order to enable the carrying out of the first pressure test on August 22, 2012.

As directed in the Board's July 9, 2012 letter, Westcoast will apply for leave to return the Nig Creek Pipeline to service following completion of the integrity tests described in the return to service plan.

Please contact Larry Hunt at 604-691-5660 or by email at [lahunt@spectraenergy.com](mailto:lahunt@spectraenergy.com) if the Board requires any clarification or further information.

Yours truly,

Monty Peterson

Enclosure



## **Return to Service Plan**

### **Nig Creek Pipeline**

#### **Background**

The Nig Creek Pipeline (the "Pipeline") was shut down and isolated in response to a failure that occurred on June 28, 2012.

The Pipeline is located in northeast British Columbia ("BC"), approximately 150 kilometres north of Fort St. John. The Pipeline was designed and constructed to the American Standards Association B31.1.8 code. The Pipeline is 45.56 kilometres in length and was constructed in 1960 with a licenced maximum operating pressure ("MOP") of 6 890 kPa and a minimum hydrostatic test pressure of 7 580 kPa. The Pipeline has an external diameter of 406.4 mm and a wall thickness of 6.35 mm, and is composed of Grade 359 MPa mild carbon steel with an electric resistance longitudinal weld seam.

The Pipeline collects raw natural gas from producers and interconnecting pipelines and directs the gas to Westcoast's McMahon Processing Plant. The raw natural gas has sufficient H<sub>2</sub>S content that it falls under the NACE definition of sour service.

#### **Return to Service Plan**

With the goal of returning the Pipeline to safe operational service, the following actions have been or will be completed by Westcoast.

1. Westcoast has removed and replaced all pipe affected by the failure. All replacement pipe was installed and inspected in compliance with CSA Z662-11.
2. The Transportation Safety Board ("TSB") is undertaking an investigation including a metallurgical analysis of the failed pipe. Westcoast has transported the affected pipe to the Acuren laboratories in Richmond, BC, where the metallurgical analysis will be performed. Although the TSB investigation is not complete, Westcoast noted the following based on visual examination of the pipe:
  - The failed Pipeline did not exhibit either internal or external corrosion.
  - There was no visual evidence of prior mechanical damage.
  - Failure predominantly occurred coincident with the longitudinal ERW weld seam.
3. As part of the assessment of suitability for continued service, Westcoast has reviewed the following information:
  - The detailed pressure history for the day of the failure and a general pressure history for approximately two years prior to and up to the failure
  - Construction records
  - Pressure testing records
  - Service history and repair history
  - Inline inspection reports



- Integrity excavations data
  - Over pressure protection and pressure control records
  - Cathodic protection records
  - Corrosion monitoring records
  - Inhibitor data
4. After review of the above information, Westcoast plans to conduct a hydrostatic pressure test of the entire Pipeline to a minimum of 125% of the planned operating pressure. In order to minimize the effect of elevation changes, the Pipeline will be tested in two sections. Considering the vintage of this line, Westcoast's experience with re-pressure testing other pipelines manufactured in the same era and manner, and the extensive literature available, the hydrostatic pressure test will be designed to detect flaws within the Pipeline that are similar to the flaw that caused the rupture while preventing general damage to the Pipeline.

Specifically, the hydrostatic pressure test will be designed to detect potential existing critical defects in low toughness areas with a pressure spike test, where the pressure will be brought up to a minimum of 125% of the planned MOP at the high point along the Pipeline. Literature indicates that the potential to initiate new defects and grow sub-critical defects occurs as a function of time at higher pressures and should be avoided. As such the initiation and growth of subcritical defects will be limited while still allowing the detection of critical defects by maintaining a high pressure hold period to the minimum required to demonstrate a stable pressure, but not to exceed 15 minutes.

Subsequent to the high pressure spike test, a leak test will be performed for four hours at the planned MOP.

5. To prepare the Pipeline for hydrostatic pressure testing, all off-takes will be blinded, an early Clockspring repair will be removed and replaced with a new section of pretested pipe, the line will be cleaned, and temporary barrels will be installed at the sending and receiving ends of both test sections.
6. The Pipeline will be isolated, purged and cleaned prior to adding test water. Westcoast's Environmental Engineer will conduct field analysis of the water prior to filling, immediately prior to testing and post-testing, for comparison to allowable provincial waste regulation limits. The testing contractor will be prepared to furnish appropriate filtering beds to upgrade the water quality as needed. The hydrostatic test water will be discharged onto a stable surface at a rate at which there will be no accumulation of effluent on the surface of the ground and no erosion or measurable downward and outward movement of soil, rocks, snow, mud or debris. Water used in the hydrostatic testing will not be allowed to directly enter a surface watercourse or surface water body and will not be discharged in a location where it could reasonably be expected to enter a surface watercourse or surface water body.



7. All safety risks will be identified with the testing contractor and site-specific safety plans will be prepared to address the risks during hydrostatic pressure testing. These plans include:
  - pre-job hazard assessment plans, prepared before work begins and continually updated until completion;
  - clearly defined roles and responsibilities;
  - cordoning off of areas around the Pipeline during the test; and
  - an emergency response plan.
  
8. An independent environmental assessment of the failure site is currently underway. Based on the results of this assessment, Westcoast will develop a program to remediate the site.

Westcoast considers the above actions to be a comprehensive and effective methodology for ensuring that the Pipeline can safely operate at its intended MOP.

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**FAX**

**ORIGINAL:**

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Will

**Follow by Mail**

**TO:**  
**Name:** Ms. Sheri Young **Date:** August 7, 2012  
 Secretary of the Board  
**Company:** National Energy Board **Fax:** (403) 292-5503  
**City:** Calgary **Total Pages:** 5

**FROM:** Monty Peterson **Telephone No.:** (250) 262-3659  
**Department:** Director, Field Services **Fax:** (250) 262-3410  
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**E-mail:** mpeterson@spectraenergy.com

**Re: Westcoast Energy Inc., carrying on business as  
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Attached is Westcoast's letter and return to service plan for the Nig Creek Pipeline.

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