

## Comments on: The Energy East Pipeline Conversion

by WCA's Environment Cmte.

May 27, 2017

The routing of this pipeline passes through the Whiteshell Provincial Park in eastern Manitoba. The Whiteshell Cottagers Association (WCA) with membership of 2500 cottagers, responded to TCPL's request for support for the **Energy East Pipeline** conversion project - wherein one of their multi-tube cross Canada pipelines is to be converted from transporting natural gas, to transporting crude oil with consistency ranging from heavy bitumen to light crude. Our Environment Committee reviewed selected portions of their proposal, and met with their delegates on July 20, 2016 with a summary of the conclusions below.

The WCA as an association of cottage owners, neither supports nor opposes the delivery of oil from Western Canada to Eastern Canada by pipeline. However, because the Whiteshell area would be severely affected by even small leaks or spills from this pipeline, our association and its members are intensely sensitive to:

- the measures being proposed to minimize the potential for leak development ;
- the measures being proposed to ensure the existence and effectiveness of leak detection and monitoring equipment; even to detection and arresting of very small leaks; and
- the responsiveness of the management protocol that will be applied to leak detection and spill control.

The Whiteshell area is comprised of exposed bedrock, and shallow burial bedrock overlain by highly permeable organic soils, swamps, lakes, and creeks. In addition, much of the bedrock is highly fractured and subject to rapid subterranean dispersion of any leaks that may occur. As a result, complete clean-up of spills of any size would be virtually impossible. Therefore, we have selected portions of the Energy East project proposal to the NEB for review (specifically Vol. 19 regarding "Accidents and Malfunctions") with a view to minimizing the risk and frequency of leaks in the Whiteshell, and specifically with a view to eliminating where possible, the delay in pipeline shutdown following detection of a leak. With these objectives, we have developed a list of the conditions that would have to be met in order to gain our support for TCPL's project proposal.

Generally, we found that the technology to minimize the risk was either unavailable, or **not being applied with a frequency sufficient to assure ongoing minimum risk**. The issues of concern examined and considered by this committee included:

1. **Corrosion Protection:** (both interior and exterior), and Stress Cracking protection for the entire length of the pipe must be provided. The only acceptable means of exterior protection is the fusion bonded epoxy (FBE) applied to the exterior of new pipe prior to installation, with field

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connections being coated with field applied liquid epoxy. Conversion of pipe that is not so coated is not acceptable. We were assured by the representatives of TCPL in attendance that the existing pipeline that is to be converted, is relatively new, and was equipped with the FBE exterior coating prior to initial construction throughout the Whiteshell Provincial Park area.

Cathodic Protection as proposed (and as currently installed on the pipeline to be converted) is recognized as reducing the rate of corrosion on both internal and external surfaces.

Inspection of the line for weld integrity and stress corrosion cracking assessment by use of an In-Line Inspection tool is also acceptable, providing the inspection frequency is adequate to prevent leaks from occurring.

2. We were advised that the frequency of use of in-line inspection tools is prescribed and monitored by the NEB. Further, that the most valuable information available from this type of testing is the trends evident from comparing each test run to previous runs. We were assured that trend lines indicating an escalating risk are acted upon as soon as an unacceptable risk of leakage is evident. We were pleased to hear this from a management perspective, but ***management decisions must be secondary to an automated spill detection response.***

Internal corrosion must be monitored by the use of In-line Inspection tool with a frequency that is adequate to be reliably predictive. Prevention of water and sediment accumulation and proposed methods of removal are commendable, though further information on how monitoring of the oil quality being introduced into the pipe is needed. ***Use of tariffs to control the quality is not seen as a sufficiently positive means of ensuring that abrasive or corrosive conditions do not develop within the pipe, nor that they are being managed effectively.*** We were assured that every batch of oil introduced into the line is sampled and tested reliably – standards for the testing protocol need to be stipulated by NEB.

3. The risk of **faulty materials** used (in selection of both pipe and control devices) shall be limited by ensuring they are produced by qualified North American manufacturers in accordance with published (proven) standards. We were assured that all materials used were inspected for compliance with the standards developed by NEB., by TCPL staff prior to use.
4. 100% of longitudinal welds shall be monitored on both new and converted pipe by being inspected by in-line instrumentation tools. We are reliant upon the NEB to establish the inspection frequency needed to provide a minimal risk of failure.

Representatives of TCPL were unwilling to increase the monitoring frequency beyond that stipulated by the NEB. Actual leak detection (or hydrostatic testing) is only required at the completion of initial construction. Therefore, use of double walled pipe with continuous leak

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detection monitors located in the annular space, appears to be the only functional means of reducing the risk of leakage to an acceptable level, while at the same time providing the ability to physically locate the leak. Lacking functional alternatives to achieving this level of leak detection, we believe This technology must be refined and developed for use on pipelines. We are not willing to accept the level of risk inherent in operating a pipeline without it.

**Pending the development of automatable leak detection systems, all pipe and sub-assemblies shall be hydrostatically tested proving leak free status at least once every 5 years at minimum 100% of maximum operating pressure.**

**5. Automated Line Shut-down:**

TCPL provided very convincing arguments against implementation of automated flow diversion valves in emergency situations. Their seemingly legitimate concerns do not override the need for immediate automated line shutdown in a detected spill situation. Use of a double walled pipe together with fluid sensors in the annular space would permit an automated shutdown of the pumping stations delivering oil to the leak site.

Because of the effect of even very small leaks, the WCA request that an automated **Flow Interruption capability** be added to the line passing through the Whiteshell. This would of course, have to work in conjunction with existing pressure monitoring and flow diversion devices to cause fully automated shut down of the line.

This is recognized as unconventional technology requiring some applied research and development effort to confirm its viability. The alternative is hydrostatic testing at a frequency of 5 years or less.

**6. Failure Management:**

The WCA would like to see considerably more detail in the description of remedial measures that shall be in place in case of failure of any of the preventative measures that have been discussed in items 1-5 above. Despite all preventive steps, the likelihood of failure remains significant. The physical state of the terrain of the Whiteshell, and its position as a major recreational site in Manitoba, demands ***not only a warranty to provide full clean-up services should a spill ever occur, but also a 3<sup>rd</sup> party liability provision capable of purchasing the interests of all cottagers and business affected by one or more leakage incidents***. Such a warranty should have a valuation in the order of \$1 billion, and must be included as a condition of the NEB Approval and / or that of the Government of Canada.

Whiteshell Cottagers Association

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By the: Whiteshell Cottagers Association – Environment Committee