

NATURAL ENVIRONMENT IMPACTS



Overview

The Ontario Energy Board (OEB) asked Det Norske Veritas (Canada) Ltd. (www.dnvgl.com) to review TransCanada's Energy East Application (the Application) and provide advice with respect to impacts on the natural environment in Ontario.

We reviewed about 2,500 pages of the Application and associated Environmental and Socio-Economic Effects Assessment (ESA) to assess how well the Application addressed industry best practice and environmental issues raised by First Nations and the general public.

Preliminary Assessment

What guided our work

The Application was reviewed in regards to:

- » the six principles stated in the Minister's letter;
- » the Part One Public Consultation Report by Swerhun Inc.;
- » the Part One First Nations and Metis Report by Counsel Public Affairs;
- » the Background Environmental Considerations Report prepared by TERA;
- » the NEB Filing Manual; and
- » professional judgement.

Was the information we need supplied in TransCanada's Application?

The Application is incomplete. Additional information to be filed includes numerous Technical Data Reports (TDRs) for a number of environmental and socio-economic disciplines, additional information supporting

ESA Volume 6 Accidents and Malfunctions and additional project description information on the converted pipeline. TransCanada committed to file this additional information in Q4 2014 but will now file it in 2015. Additional site specific environmental protection information is to be filed in Q1 2015. Thus it is only possible to conduct a high level assessment of the Application at this time.

The natural environment-related information in the part of the Application pertaining to the 1928 km of the converted portion of the pipeline:

- » is narrowly limited to 28 new pump stations and access roads, 2 new trenchless river crossings (Madawaska and Rideau) and pipeline operations and maintenance; and
- » provides no distinction in route selection criteria between an oil and a gas pipeline. In the Enbridge Northern Gateway Panel Report, the NEB recognized the importance of route selection in mitigating environmental impacts of an oil pipeline.



NATURAL ENVIRONMENT IMPACTS (CONTINUED)



The ESA addresses spills during operations (on both the converted and new construction portions of the pipeline) only in Volume 6 Accidents and Malfunctions, which as stated earlier is incomplete.

With an incomplete Application, it is premature to assess:

- » the Application's general conclusion of "no significant adverse environmental effects";
- » if the Application meets "the highest available technical standards for environmental protection"; or
- » if the Application reflects "world leading contingency planning".

Key Observations

Impacts on Water

- » The Application is incomplete with respect to impacts on drinking water.
- » Trout Lake, Rideau River, Private Well Clusters in Rideau Area and water wells are properly addressed but information on surface water intakes and springs on 95% of the route is absent.
- » The Application commits to provide alternative sources of drinking water in the event of a spill.
- » Of 102 water crossings on the 104 km new pipeline segment in eastern Ontario, the Application proposes 7 to be crossed using trenchless technology, 49 to be crossed using the isolation method and the remainder to be open cut if dry or frozen. At a high level, this proposal appears to be consistent with industry best practice.
- » Routing in proximity to the St. Lawrence River is not addressed. A potential alternative route along a railway right-of-way further north is not discussed. even though it is shorter, crosses fewer watercourses, encounters fewer environmentally sensitive features and increases the separation distance from the pipeline to the River, which would assist with emergency response efforts in the event of a spill.

DNV GL puts forward the following for consideration:

- » Undertaking full-bore rupture modelling to demonstrate potential spill paths into watercourses for each 1-kilometre long segment of the converted and new pipeline in Ontario.
- » Mapping of all surface water intakes and springs within areas of potential spill paths.
- » Consulting the public, First Nations and agencies regarding water use, including recreation.
- » Rerouting the pipeline where too close to sensitive water resources or justifying why rerouting is not necessary to protect sensitive water resources.
- » Rerouting the new pipeline to follow the railway route north of the St. Lawrence River or justifying why rerouting is not necessary.
- » Using above information to inform designation of "significant water crossings", reroutes, valve spacing, contingency plans and emergency response plans (ERPs).
- » Preparing source water protection plans for high profile areas including Trout Lake, the Rideau River and Nepean and Oxford Aquifers.
- » Preparing Watercourse Crossing Management Plans for all crossings prior to pipeline operation.



NATURAL ENVIRONMENT IMPACTS (CONTINUED)



Impacts on Rideau Canal

» The Application recognizes the Rideau Canal as a National Historic Park and UNESCO World Heritage Site. The Rideau River is recognized as a Canadian Heritage River. The Application proposes a trenchless crossing technique with a contingency open-cut.

DNV GL puts forward the following for consideration:

» Preparation, implementation and monitoring of a detailed Rideau Canal Trenchless Crossing Environmental Protection Plan complete with contingency open-cut crossing protection measures if the trenchless crossing methodology proves infeasible.

Impacts on Fish and Wildlife Habitat

» The Application predicts no significant effects on fish and wildlife habitat except the potential for cumulative effects on woodland caribou habitat at two pump stations (Smooth Rock Falls and Potter) in the Kesagami Range.

» Offset measures consistent with the Woodland Caribou Recovery Program are proposed in the Application to compensate for the permanent loss of woodland caribou habitat; however details are not provided.

Impacts on Provincial Parks, Conservation Areas and other natural areas

» The converted pipeline crosses 8 Provincial Parks, 4 Conservation Reserves and 4 Conservation Areas, but there is no detail on impacts or mitigation.

» Wetlands are addressed at a high level but there is no detail on impacts or mitigation.

DNV GL puts forward the following for consideration:

» Preparing detailed protection plans for Provincial Parks, Conservation Reserves and Conservation Areas.

» Conducting proper wetland study to address avoidance, function, mitigation, monitoring and compensation for wetland loss.

Impacts on Agricultural Resources

» Agricultural soils and land use are described and mapped in the Application. No detailed ERPs for land based spills are provided. No drain tile are noted on new pipeline segment.

DNV GL puts forward the following for consideration:

» Mapping and repairing any agricultural drain tiles crossed on the new construction segment.

» Developing an approved project specific ERP to address land based spills.

Other Considerations

» Completing Traditional Ecological Knowledge (TEK) and Traditional Land Resource Use (TLRU) studies and demonstrating how this new information has been integrated into the ESA and changed project planning.

» Studying the 125+ km of power lines (that will serve pump stations and remotely controlled mainline valves) and other ancillary facilities and incorporating mitigation into this Project.

