

Contents

Order of Appearances	1
Enbridge Northern Gateway Pipelines Panel #3.....	1
Examination by Christopher Jones for the Province of British Columbia.....	1
Fast-flowing, remoteness and sinking oil	2
Winter weather.....	2
Waste oil recovery	2
Access	3
Work force in a spill response situation.....	3
Spill on the Clore River	3
Development of a response plan, training and SCAT.....	4
Terminology.....	4
Helicopters	4
NTSB: poor response planning.....	5
When doing nothing may be the better decision.....	5
Rupture on Reach 2 of Morice River.....	5
Economic benefits at risk.....	6
Questions about the NTSB report and the Michigan spill	6
10 minute rule	6
Crack detection	6
Enbridge record in the list of largest spills	7

Order of Appearances

Enbridge Northern Gateway Pipelines Panel #3

Pipeline Operations, Emergency Preparedness & Response Panel

Kevin Underhill	Allan Baumgartner	Frank Bercha
Dale Burgess	Barry Callele	Ray Doering
Jeffrey Green	Matthew Horn	Walter Kresic
Greg Milne	Jack Ruitenbeek	Malcolm Stephenson
Elliott Taylor		

Examinations

Christopher Jones for Province of British Columbia 13578

Examination by Christopher Jones for the Province of British Columbia 13578

Mr. Jones continued this morning with a line of questioning which revealed that Northern Gateway’s readiness to deal with an oil spill in watercourses is undeveloped and untested. Citing NGP’s Submerged Oil Recovery Plan ([Exhibits B-132-5](#) & [B-132-6](#)), Mr. Jones asked if any of those tactics have been evaluated. Mr. Underhill said they have not.

Mr. Jones asked about certain tactics filed in [Exhibit B-74-2](#), page 27 & 28. He confirmed that the tactics would have to be employed quickly to be effective. 13587

His questioning led to agreement that there is still uncertainty and a lack of data, of empirical evidence, about the behaviour of oil, and specifically dilbit, in water. Equally, there is much to learn about how to clean up oil in water.

Fast-flowing, remoteness and sinking oil

Mr. Jones drew attention to differences in the flow rates of Talmadge Creek and the Kalamazoo River in Michigan and rivers in British Columbia. The NTSB gives an average flow rate of 1.44 miles per hour or 0.64 metres per second in Michigan during a 1 in 40 year flood period. Dr. Taylor says that rivers in BC have higher velocities, up to 1.6 metres per second, and these higher gradient courses have more cobble bottoms indicative of higher energy environments. 13660

The Preliminary Kitimat River Drainage Area Emergency Preparedness Report ([Exhibit B92-3](#)) states that NGP will review new technologies associated with response in fast-flowing watercourses. Dr. Taylor lists a few examples of what they have looked at: a high velocity boom, such as the “current buster,” and some geotextiles, and some techniques used on the Alyeska pipeline. Mr. Jones asked, “Should we not know today, and shouldn’t this panel be able to evaluate today, whether or not there are in fact technologies which are practicable and can actually -- can effectively deal with spills into fast-flowing rivers?” 13707

Dr. Taylore replied, “There are operations throughout the world that entail detailed response plans around intercepts and controls on fast-flowing rivers and tactics that would be appropriate.” 13708

Mr. Jones also discussed conventional booms with Dr. Taylor

Winter weather

Another challenge is winter weather, said Mr. Jones, and parts of the pipeline could be covered by heavy snow. Access and avalanches are both challenges. Mr. Underhill mentioned a few things they will do, a few considerations that will inform development of their plans. 13741

Mr. Jones quoted from BC’s IR 2.23d, “Ice cover on a river would result in local containment, allowing for cleanup prior to spring melt.” He questioned why the 15 degree oil wouldn’t melt snow and ice. Dr. Horn said that winter temperatures, oil flowing on snow or ice would become more viscous, reducing the chance that it would melt river ice, and would also allow for a response crew to get there before it hit the river.

On avalanches, Mr. Milne said that proactive release of avalanches, similar to highway systems, is a possible method of controlling of avalanche risk in winter. 13820

Waste oil recovery

Mr. Jones concern is that spill recovery, and clean up must be limited by the ability to store and remove the volumes of oil recovered. Mr. Milne replied, “We have not developed these exact specific plans for Gateway. As we’ve indicated, that would occur

during the next several years, post-project approval.” He explained that large volume tanks and bladders are already established and available. 13788

Access

Mr. Jones asked about access to remote locations. Mr. Underhill said they would need to determine where control sites should be located, and perhaps clear helicopter landing areas. 13839

Work force in a spill response situation

Mr. Jones noted that in Michigan there were 2000 people at times working on response and cleanup. How will you get them to the site, where will you house them, he asked. Mr. Underhill said he did not agree with the scenario of a Kalamazoo-type spill on Northern Gateway, that it is very unlikely. “You bring the forces to bear. It has to be done and nothing is insurmountable.” 13882

Mr. Milne added that Enbridge utilizes the incident command system.

Spill on the Clore River

Referencing [Exhibit B109-13](#), a map showing a full-bore spill on the Clore River, Mr. Jones put up another map as an aid to questioning that showed a larger area downstream on the Clore and into the Skeena River. He hoped to enlist the witness panel to understand where a spill might end up at progressive intervals. 13970

Mr. Underhill prefaced the discussion by noting that valves will be located at 1074.2, 1075.6 and 1076 and that the full bore release would be about 1355 m³. Mr. Horn said that their assumptions are that oil will travel with the velocity of the river, 3.6 metres per second in the Clore, and 1 m/s downstream. It’s likely the oil would stop somewhere before Terrace, he said.

“We’re dealing with a fixed amount of oil here and you can’t assume that it just keeps moving forever and ever.” Shorelines have oil holding capacities, and some bitumen will end up in the sediments. 13999

Asked how much time it might take, Mr. Horn said that he could not answer that, and that it would take a fair amount of effort to come up with an estimate.

To illustrate some aspects of a spill on the Clore, Mr. Jones hoped to show a Google Earth video. The Chairperson instructed him to ask his questions without the video. Mr. Jones proposed a scenario which is a late fall or winter full bore rupture, at night, with the valves closing within 13 minutes. Deep snow covers the site of the spill, but the river is not iced. He asked the witness panel to lead him through the response. 14079

Dr. Taylor walks through the steps. His narrative is dramatic, and should be read in the transcript. 14096

Access for crews and equipment is kept open at both ends of the Clore Tunnel. Crews will likely come from Terrace. Because it is a large spill, so tier one (own personnel) and tier two crews would be mobilized.

Ensure that the valves are closed. Locate the spill site. If oil is still spilling, divert it to catchment.

A second crew would be moved to just upstream of the confluence with the Copper (Zymoetz) River. If anything made it that far, they would divert and collect it. Other collection points would be established as needed.

Mr. Burgess added to the narrative. Additional crews could be brought in from Kitimat, (85 km to the tunnel), Clearwater (55 km), Houston, Burns Lake. The first response is still at night, so no helicopters, all vehicles and snow machines. 14114

The incident command post location would most likely be in Kitimat, as it is best equipped with communications equipment and personnel.

Development of a response plan, training and SCAT

Mr. Jones explored the oil spill response plan, “exercising” it on the tabletop and in the field, and submitting it to the NEB for approval. He had a number of questions about training. 14167

Shoreline Cleanup Assessment Technique (SCAT) is a process that defines the bank characteristics of watercourses, and builds up a database for use during an incident. 14210

Mr. Underhill said that all Northern Gateway personnel will be trained with respect to emergency response, and all are on call in the event of an incident. Personnel are available 25 hours a day at the terminals and pump stations, though not all pump stations will have emergency response personnel. 14288

Mr. Jones noted that NGP has a commitment to respond to marine spill within 6 to 12 hours. Mr. Underhill said that the same commitment applies for tier 1 spills on the pipeline. Tier 1 spills are those which can be addressed with onsite capabilities, “our internal capabilities.” Some discussion about response times follows. 14319

Terminology

Mr. Jones asked for some clarification with respect to terminology used “in different spots”. This section might be helpful to readers. His questions begin at 14247

Helicopters

Mr. Jones asked: Will NGP have its own helicopter fleet or will it have contracted helicopters or will it obtain what is available? Mr. Underhill said they don’t know at this time. Mr. Burgess said they plan to have at least one helicopter for aerial patrols and emergency response. 14396

NGP states that its pipeline oil spill response plans won't be ready until six months in advance of operations. Why is that, asked Mr. Jones? What facts are currently missing? These questions elicit a number of replies. 14439

NTSB: poor response planning

The NTSB report was harshly critical of Enbridge's response to the Michigan spill for a number of reasons. "These deficiencies were all a result of poor response planning." A few lines down from that, the report says, "5 days before the Marshall accident, [Enbridge] had concluded that its plan was complete and appropriate for responding to a worst-case discharge."

The witnesses responded to Mr. Jones questions about this beginning at 14466.

When doing nothing may be the better decision

Mr. Jones posited that "end points are chosen for spill remediation ... where more harm than good would be done by continuing spill recovery operations." "Is the possibility of doing nothing in response to a spill is in fact a possible option?" 14492

Mr. Underhill said that "harm versus benefit is an assessment, but that is later," and Mr. Burgess stated "We would respond to every spill."

The discussion that follows expanded on and provided some illustrations of the question. 14530

Mr. Jones said, "We noted that the estimates for the costs of responding to certain scenarios of spills, were remarkably lower than the amount that Enbridge had" incurred in Michigan. He asked if this might be because of different end points in BC. Dr. Ruitenbeek replied that the difference had nothing to do with end points, but was primarily related to different legal standards dealing with compensation. They differ by a factor of three to four depending on oil type, location and other factors. 14549

Rupture on Reach 2 of Morice River

Mr. Jones turned to a report entitled "Potential Effects of an Oil Pipeline Rupture on Reach 2 of Morice River" submitted by the Northwest Institute for Bioregional Research ([Exhibit D155-6-09](#)). He quoted: "In our opinion the proponent has not provided the information needed to demonstrate that an oil spill from a pipeline rupture adjacent to Reach 2 [on the] Morice River could be effectively controlled or remediated," and asked if the panel disagrees with this opinion. 14560

Mr. Underhill said, "We disagree with the statement." Mr. Doering said that they have changed the route in the area under discussion. Mr. Jones tried to reframe the question, Mr. Langan for NGP objected, and Mr. Jones moved on, with the note, "I'll let the authors of this report, and presumably, counsel for the Northwest Institute to pursue this." 14597

Economic benefits at risk

Mr. Jones quoted from an IR response, "...it is not possible to predict the economic benefits that would be at risk in a spill...". He asked if the costs associated with lost benefits were included in the potential costs of spills. Dr. Ruitenbeek said they were, in the context of the entire project cost benefit analysis, but not for specific spills at specific locations. 14614

Mr. Jones quoted from another IR response, "...there is no acceptable way of quantifying cultural effects in economic terms." He asked that this statement be squared with the previous quote. Dr. Ruitenbeek said that economics can value goods and services, but not culture.

Mr. Jones said he would assume then, that cultural impacts had not been included in the costs of spills in BC. Dr. Ruitenbeek confirmed that assumption. 14649

Questions about the NTSB report and the Michigan spill

Mr. Jones asked to have [Exhibit B92-3](#) displayed. He asked if NGP would be willing to have its pipeline control procedures audited. Mr. Baumgartner said they already were audited, by the NEB, and that the results are available. 14692

Noting that "... control center staff attributed the alarms to the shutdown, Mr. Jones asked how we can be sure that a similar mistake cannot happen with NGP. Mr. Baumgartner said that the company initiated an internal investigation, changed personnel and organization, and revamped its procedures, implemented new control systems and training programs, etc. Mr. Callele described changes in the attention paid to leak detection in Enbridge, including creation of his job, Director of Pipeline Control Systems and Leak Detection, with explicit accountability for these areas.

10 minute rule

Mr. Baumgartner described the 10-minute rule: if something unusual or abnormal happens on the pipeline system, if it can't immediately be analyzed, like if we can't come to a conclusion as to exactly what is causing it within 10 minutes, then we insist that our operators shut down the pipeline and bring it to a safe state. 14791

The rule was put into place following a 1991 spill, and was not followed then, despite assurances that similar changes had been made then.

Mr. Jones asked the same question he had asked earlier: "Why are we to believe it will be followed?"

Crack detection

Mr. Jones had a lengthy discussion with Mr. Kresic about crack detection, the NTSB's finding that "Enbridge's crack management program [...] fail[ed] to consider all potential crack growth mechanisms [...] such as environmentally assisted cracks sometimes referred to as EAC, including corrosion fatigue cracks." 14845

Enbridge's record in the list of spills

Mr. Callele and Mr. Jones continued a conversation that started on a previous day. The approximate question was how many releases were in Enbridge pipelines and how many were detected by leak detection systems.

Mr. Callele said, industry reported 1,786 releases from 2002 through 2012. Enbridge had 167 of those releases. From 2002 through 2009, for releases greater than 1,000 barrels, industry had 56, Enbridge had six. From 2010 through 2012, industry had 18 releases, Enbridge had five.

For all 11 releases greater than 1,000 barrels, from 2002 through 2012 the CPM or SCADA detected two of those; our controllers detected three; public or third-party detected two; our local operations personnel or our air patrol detected three, and we had one in there as other.