Day 25 – October 18 2012 – Prince George

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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

Kelly Marsh for Douglas Channel Watch 15032
Murray Minchin for Douglas Channel Watch 15451
Barry Robinson for the Coalition16040

Examination by Kelly Marsh for Douglas Channel Watch 15032

Full bore spills in the SQRA

Mr. Marsh said he has done some research on spill return periods. He confirmed first with Mr. Doering that the probability of a full bore rupture on the proposed pipeline is

18.81% over 50 years, as derived from the Semi-Quantitative Risk Analysis (SQRA) (Exhibit B75-2) and shown in Exhibit B101-2.

Mr. Marsh asked why only full bore ruptures are provided in the SQRA. Mr. Kresic said it was to help Enbridge identify the sorts of mitigations they would want to apply to prevent them, to help prioritize the locations for geotechnical and spill response activities.

"The role of the risk assessment needs to be scoped out very clearly. It's an engineering tool." The rest of his explanation begins at paragraph 15075. Later, Mr. Kresic said the calculations were used to communicate with engineers, and regulators. 15118

A more useful presentation of risks for people

Mr. Marsh appeared to be looking for a comparison which has a different purpose. He brought up Table 3-2 in Exhibit B3-20 which shows "return periods" on the pipeline route in six regions, for medium and large spills, and asked why this was not done in the SQRA.

The questions relate generally to why information about spill risks has been presented in different ways by NGP and the answers generally are that it has been presented differently because it is for different purposes. The discussion should be followed directly in the transcript.

At Mr. Marsh's urging, NGP undertook to provide an updated Semi-Quantitative Risk Analysis (SQRA) once the most recent Route Revision V is finalized.

Mr. Green said that Table 3-2 was used to complement the environmental assessment. 15161. Mr. Marsh replied, "Having that table is a help to people without a lot of suffixes after their name who are interested in this project and would like follow along and see the improvements as they come."

Small spills

Mr. Marsh asked why NGP does not provide information about small spills. Mr. Green said that essentially they capture what they need to know, and issues they need to address with small spills, by focussing on larger spills. NEB defines any spill over 1.5 m^3 as a rupture, otherwise it is a leak. Mr. Callele noted that these do not occur frequently "off of our property." 15172

Rollans' report on spill risks

Mr. Marsh turned to "Risk of a Hydrocarbon Spill During the 50 Year Operational Life of a Pipeline" by Dr. Shane Rollans (Exhibit D54-19-2). This report calculates that the probability of at least one large spill in a 50-year period is 41%, and of a medium or large spill is 82.8%. Mr. Kresic disagreed with these findings for a number of reasons which he explains in the transcript. 15291

Dr. Ruitenbeek's 70.9% risk calculation

Mr. Marsh cited from the the hearing transcript for September 21st, in which Dr. Ruitenbeek supplied probability risk percentages for the three parts of the proposed

project over a 50-year period: the tankers, 18.2%; the Kitimat Terminal, 56.2% and for a rupture it corresponds to a probability of 18.8%. 15310

He verified that Dr. Ruitenbeek was combining marine spills of any size, spills of any size at the Kitimat Terminal and full bore ruptures rather than spills of any size from the pipeline.

The transcript says, “The probability of a spill event of any particular size is 70.9%.”

Mr. Marsh examined this statement, and proposed that if all pipeline spills were included, the chance of a spill would rise to 100%. Dr. Ruitenbeek provided a lengthy explanation, and Mr. Kresic disagreed with the 100% assertion. The dialogue begins at 15328.

Mr. Marsh also had questions about a letter Mr. Doering wrote in 2010 in which he stated that “a significant pipeline leak is unlikely.” 15370

Increased production will increase risk

Mr. Marsh’s final question was about the increased risk that would result if or when production is increased to use the pipeline’s full design capacity of 850,000 bpd. Mr. Underhill said that any increase would involve a separate filing to the NEB. Mr. Marsh noted that an increase in pipeline throughput would also increase risk at the terminal and in the marine component. 15427

Examination by Murray Minchin for Douglas Channel Watch 15451

Questions on spill response

Mr. Minchin referred to information in yesterday’s hearing that NGP was committing to respond to Tier 1 (own personnel) and Tier 2 spills within 6 and 12 hours. He asked, “What does ‘respond’ mean? Mr. Underhill said it means getting somebody initially on site to assess the situation and ensure that they are calling fort the necessary resources.

Mr. Minchin put up orthophotos of the pipeline through Hoult Creek and Hunter Creek, then posited a dreadful full bore spill scenario in the upper Kitimat of 2000 m^3, or two million litres, “for those of us who don’t think in cubic metres.” This would be twice the size of the Pine River spill in 2000.

He asked, would this be a Tier 3 event, and what time commitments are there for Tier 3 events? Mr. Underhill says it would definitely be Tier 3, which expands the resources that would be called in. The response time would be to augment the team that is already on the site. 15492

Scenario: both NGP and Pacific Trails are ruptured

What then, if both Northern Gateway and Pacific Trails are ruptured? Would that be Tier 4? Mr. Underhill said that Tier 3 is the worst-case scenario and could involve resources from abroad.

Mr. Doering said he "can't comment on how PTP is undertaking similar assessment." Despite that assertion, Mr. Underhill said, "We work quite closely with one another."

Mr. Kresic said, "In your assumption you had made the point that a landslide could wipe out all three pipelines and the whole point of the risk-based design in the geohazard process is to route away from those areas. We aren't relying on the pipeline to support that sort of hazard. It's being designed to avoid that hazard. 15538

Mr. Minchin pointed out that "nature has a way of affecting things that humans design."

Mr. Minchin asked a number of questions about the actual logistics and details of spill response, beginning at 15553. It is an extensive discussion.

Dr. Taylor explains that many details are not known at this point, but will be developed in the next year or two. Mr. Minchin said, "It would be wonderful to have an opportunity at that time, once all that information is available, to test that evidence again. But I don't know if that's part of the process." He has occasion later to repeat this. 15608

Flow rates and booms in the Kitimat River

In Exhibit B3-21, NGP stated that "Based on water velocities, a release [at Hunter Creek] could reach the Kitimat River estuary 60 km downstream within four to ten hours." Dr. Horn said that subsequently, his models said it may take a day to get to Kitimat. 15693

Mr. Minchin noted that the Kitimat is a fast river from Hunter Creek to the estuary, with few places that oil and sediments can fall out. He calculated that the flow rate at ten hours-to-Kitimat is 1.66 metres per second, and at four-hours-to-Kitimat, it is 4.16 m/s. NGP's evidence says that for containment booms to be effective, the current must be less than 1 m/s and for diversion booms, less than 2 m/s. 15711

Dr. Taylor suggested they maybe able to use multiple sets of booms to slow down the river. And again – "It points out the work that has to go into the detailed planning."

Remoteness, roads, snow and the Hardisty spill

Mr. Minchin posed some questions and offered some information with respect to access to the remoter sections of the route, particularly with respect to plowed roads in winter. . To emphasize a point, he elicited the information from Mr. Green that snowfall in the upper Kitimat and Hoult Creek is eight to nine metres of accumulation. 15796

Mr. Minchin illustrated the challenges, by citing the Hardisty spill in 2001, where 3.8 million litres was spilled. The valves were shut off, everything worked but it took 14 hours to find the spill site in the flatlands of Alberta and we're talking Northern B.C here so it's a different game altogether. 15834

What roads are plowed in winter?

Mr. Minchin asked for an undertaking to provide a report on the access roads which are plowed in winter. Mr. Langen objected, but the Chairperson said that this would be of

interest to the Joint Review Panel. As a result, NGP will report back on October 29. 15837

Cold water = reduced oil recovery

In evidence, NGP said that "Northern Gateway believes detection and recovery [of submerged oil] in colder temperatures would still be possible, but likely at [a] reduced efficiency." Mr. Minchin asked, "Could somebody explain how cold temperatures would reduce the efficiency of submerged oil clean-up?" Dr. Horn spoke to the physics of it, and Dr. Elliott spoke about recovery. Readers are directed to the transcript for both answers and questions. 15884

Submerged oil, small droplets, just like salmon eggs

The Michigan experience showed that submerged oil was typically in the form of millimetre-sized droplets. Wouldn't this translate into droplets distributed amongst spawning gravels and salmon eggs, asked Mr. Minchin. Dr. Stephenson said that, in fact, that could happen. 15947

Modelling hypothetical spills

Mr. Green says that in Exhibit B3-21, "[We looked at] four hypothetical spills … as a means of assessing the types of environmental effects that might occur as a result of these spills. They were also intended to illustrate to the reader the type of response … and the types of mitigation that could be put in place." Subsequent to that, the Ecological and Human Health Risk Assessment (EHHRA), which finished in June 2012, "used a much more complex three-dimensional modelling regime." (Exhibit B80-04 of 1 to 15). Mr. Green described this in some detail in the transcript. 15972

Mr. Minchin wrapped up this discussion with, "In terms of a large bore rupture, it will be an unmitigated spill in the Upper Kitimat and Hoult Creek valleys essentially because the bulk of the oil will be in the river by the time anybody gets up there." Dr. Horn said that their model assumes absolutely zero response, but in reality there would be a response. 16002

Mr. Minchin: "Well, we're parting ways on my use of "unmitigated". I meant nobody would be there by the time the bulk of the oil got into the water, … and, for you, "unmitigated" probably means nobody's going there, ever. 16006

Fire and dredging in the Kitimat estuary

Mr. Minchin asked, "Under what circumstances would Northern Gateway Pipelines set fire to the Kitimat estuary?" The replies were that burning is not frequently used and brings in consideration of net environmental benefit as well as human health and safety. It involves an approval processit. 16017

He asked, "Would Northern Gateway Pipelines ever dredge the Kitimat River to remove submerged bitumen or dilbit?" Mr. Underhill said, "Similar response, Mr. Minchin."

Examination by Barry Robinson for the Coalition 16035

(Living Oceans Society, Raincoast Conservation Foundation and ForestEthics Advocacy)

Public safety risk analysis

Mr. Robinson turned first to the Public Safety Quantitative Risk Analysis (PSQRA) by Dr. Frank Bercha (Exhibit B69-3). He said, "I've been struggling a little bit with where your work on the quantitative risk analysis sort of fit in with the other risk analyses that have been done. The ecological and human health risk analyses (EHHRA) and the semi-quantitative risk analyses (SQRA).

He asked Dr. Bercha: is any relationship between the work that you did in the PSQRA and the SQRA or the EHHRA? Does your work feed into that or is it complementary to it?

Dr. Bercha explained that his report doesn't have a direct relationship with the EHHRA, but its reports are similar to the SQRA, even though he used historical statistics whereas the SQRA used pipeline data logs, and both used spill volumes generated by a generator they developed.

Mr. Robinson reviews Dr. Bercha's procedure, beginning with Table 4-3, Consequence Scenarios for Casino Near Whitecourt. The condensate release is 937 m^3 and the oil release is 2,062 m^3. Dr. Bercha concluded that the risk of fatality or serious, irreversible injury is less that one in a million. The discussion begins at paragraph 16057.

River control points and oil spill response

Mr. Robinson turned to the River Control Points for Oil Spill Response by Dr. Elliott Taylor (Exhibit B17-1). He said to Dr. Taylor that he had difficulty understanding the intended nature of the report.

The objective of the report is "to describe steps taken to develop oil spill response […] tactics sheets for the identified control points on select watercourse crossings. The process followed for this study is intended to form the basis for subsequent field studies and OSR planning for all sensitive watercourses along the pipeline…"

Mr. Robinson confirmed that Dr. Taylor carried out the control point analysis for 10 watercourse crossings. His questions for Dr. Tayor begin at 16251.

Dr. Taylor summarized that the report, done in 2005, lays out part of a process, demonstrates how certain parts of the work can be, or is to be, done, and provides NGP with viable locations to study in detail.

Mr. Robinson asked whether the steps that are intended further to this report will happen after the close of these hearings. Dr Taylor and Mr. Milne confirmed it.

Closing in the Wapiti River crossing, one of the 10 crossings in the report, Mr. Robinson asked Dr. Taylor about the reservoir and water filtration plant noted on the map, and about the park which is located north of the river, but is labelled on the south side of the river. Dr. Taylor said he was unaware of any of those things. 16310