

To: Commissioners of the CNSC  
From: Gordon Edwards, Ph.D.  
Date: October 1 2010  
Re: Application from Bruce Power

Following the two days of hearings on Bruce Power's original application for a licence to transport 16 radioactive steam generators from the WWMF to Sweden, it has occurred to me that neither the intervenors nor the commissioners had access to a factually correct application from the proponent. I believe that the Commissioners should insist that a factually correct application be prepared and submitted by the proponent, and the CNSC Staff issue a new advisory document based on that factually correct application,

As we learned through the additional filings of CNSC Staff on September 27, the day before the hearings began, the radioactive inventory of the steam generators had been underestimated by about 50%, and the external gamma dose rate had also been underestimated by a significant amount.

Evidently the nature and composition of the radioactive inventory inside the steam generators and the external gamma dose rate outside the steam generators have an essential bearing on all radiological calculations and assessments of radiological impacts under both normal and accident conditions.

It is therefore essential that Bruce Power submit a new application that is factually correct in all its details. This affects estimated doses to workers handling, loading and shipping the steam generators, and estimated doses to bystanders who find themselves in proximity to the steam generators for various periods of time. It also affects the calculated consequences of various accident scenarios that are appropriate to the land transport and shipment of the steam generators, not only through the Great Lakes and the other channels such as those associated with Georgian Bay, the St. Clare River, the Detroit River, and the St. Lawrence River.

I feel certain that the Commissioners would not want to grant a licence based on an application document which is known to be factually incorrect. Although the omission of plutonium-241 was described as a transcription error by CNSC staff at the Hearing, this is much more than a transcription error, since the error was carried into all of the subsequent calculations and analyses. This is not just a transcription error, it is a major factual oversight leading to demonstrably incorrect calculations and analyses.

There was some discussion at the hearings about whether the total amount of radioactivity in the proposed Bruce Power shipment would exceed the IAEA regulatory standard by 50 times (standard appropriate for inland waterways) or 6 times (standard appropriate for other waterways such as open oceans). With the new revised inventory, the amount by which the proposed Bruce Power shipment would exceed the IAEA regulatory standards would be approximately 75 times (standard appropriate for inland waterways) or 9 times (standard appropriate for other waterways such as open oceans).

But there was also discussion at the hearings about whether the cargo is correctly categorized as SCO-1 as opposed to SCO-2, and this depends entirely upon the quantity, composition and distribution of the radioactive inventory inside the steam generators, deposited on the “inaccessible surfaces” (that is the phrase used in the IAEA regulations). This is a crucial question, because the SCO-1 category allows for special arrangements to dispense with the regulations in certain respects, as the CNSC staff has advised, whereas the SCO-2 category does not allow for such special arrangements.

Under the application by Bruce Power, the internal contamination on inaccessible surfaces is in one case estimated to be 36 percent and in another case 45 percent of the maximum limit allowed for an SCO-1 object. Since the discovery of a 50 percent underestimate of the radioactive inventory as a result of just one undetected oversight, it is reasonable to demand a careful re-evaluation of the existing estimates with special attention to the possible error bands. If the error bands might be as much as two or three times higher or lower than what is reported, then the limits for a SCO-1 object could well be exceeded which would make not only the analysis incorrect, but even the classification of the shipment incorrect, and thus the special arrangements themselves would be invalidated.

I would urge the Commission not to grant a licence based on an application that is now known to be factually incorrect. I would also urge the Commission to require a careful analysis of error bands in the estimates provided by Bruce Power to ensure that the classification of the waste shipment under IAEA regulations is in fact correct. And finally, I would urge the CNSC to consider whether it is in the public interest to grant a licence for a shipment which exceeds the maximum amount of radioactivity allowed for a single shipment by as much as 9 or 75 times.

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