



International Institute of Concern for Public Health

March 6, 2013

The Honourable Joe Oliver
Minister of Natural Resources
Member of Parliament for Eglinton-Lawrence (Ontario)
House of Commons
Ottawa, ON K1A 0A3

Transmission by email: joe.oliver@parl.gc.ca

Dear Minister Oliver;

Re: Shipment of Liquid Radioactive Waste from Chalk River Laboratories to the U.S.

We welcome the recent announcement on February 28 2013 that the Federal Government has pledged to phase out the use of weapons-grade highly-enriched uranium (HEU) for the production of medical isotopes by 2016, and is promoting alternative accelerator-based technologies for producing these isotopes thereafter. We have strongly supported such a move for several years.

At the same time, we are very concerned to learn that Atomic Energy Canada Limited (AECL) is planning to truck 23,000 litres of highly radioactive liquid waste containing highly-enriched uranium (HEU) from its Chalk River Laboratory (CRL) facility to the U.S. Department of Energy (DOE) Savannah River Site (SRS) in South Carolina. These shipments could begin as early as this summer.

This liquid waste comes from many decades of using weapons-grade HEU (enriched to 93% of the fissile uranium-235) in Chalk River's National Research Universal (NRU) reactor as a target material to produce molybdenum-99 (Mo-99), the source for the technetium-99m used in medical diagnostics procedures. In order to produce Mo-99, the HEU target is first irradiated, then dissolved in an acid solution and chemically treated to separate out the Mo-99. This process yields highly radioactive liquid waste that contains residual HEU, along with plutonium, tritium, and mercury, as well as numerous other highly radioactive fission products.

The nature of this waste leads to two significant issues. First, and most alarming, is the intense radioactivity of the fission products. This generates heat that could cause an accidental chain reaction, unleashing intense radioactivity, if not a nuclear explosion. Secondly, the presence of residual HEU in the liquid waste is a security issue, as HEU can be used as a nuclear explosive material.

From 1986-2003, this liquid HEU-bearing waste has been stored in a 24,000 litre capacity double-walled stainless steel vessel at Chalk River, known as the Fissile Solution Storage Tank (FISST). The tank contains approximately 175 kilograms of the residual HEU, which is enough to make about 7 nuclear bombs. In 2003, the FISST came close to its full capacity and was taken out of service. Since then, HEU-bearing waste produced during the production of Mo-99 has been solidified by cementing it and storing it in Waste Management Areas at Chalk River. Based on the description of the liquid waste to be shipped, we assume that it is the contents of the FISST.

To date, HEU has only been shipped between the two countries in solid form. The shipment of highly radioactive liquid waste containing HEU is unprecedented in Canada, as far as we know. Even the casks being used to ship the waste have never been used for liquid radioactive waste.

Considering the volume of this waste, and the capacity of the transport casks, as many as 40-50 truckloads may be required to transport this waste to the Savannah River Site (SRS). The shipments could extend over a period of approximately four years.

The transportation of such a highly dangerous payload over a distance of approximately 2000 kilometres presents unprecedented risks: the safety of containment of the liquid itself, the hazards to workers, the potential for accidents enroute, theft, terrorism and other scenarios, including the potential of accidentally triggering a self-sustaining chain reaction.

Regardless of the route taken, trucks would travel through or near many communities in Canada and many more in the US and would cross significant waterways. Unlike solid waste, liquid waste can leak into the environment, in very large quantities, if a serious accident occurred. Cleaning it up would be very difficult, if not impossible. Any incident that resulted in human and environmental exposure to this material would be disastrous and unconscionable.

The shipment of this liquid waste is purportedly being considered to fulfill non-proliferation requirements, by consolidating and repatriating US-origin HEU and its byproducts. But this liquid waste is highly radioactive, so the HEU it contains is much harder to make into nuclear weapons than the original HEU that was shipped to Chalk River in the first place. Indeed, the HEU that is still being imported to Chalk River is a far greater threat to non-proliferation than the HEU in the liquid waste. Hence, there is no non-proliferation urgency for these shipments.

Despite the potential for this shipment to cause enormous and unprecedented public endangerment, the Canadian Nuclear Safety Commission (CNSC) considers it unnecessary to hold public sessions that would allow for public scrutiny of this plan and other means of dealing with this waste. We totally disagree with this position. This is an issue that affects the public. It is critical that the public have full access to information and are able to participate in the decision-making process regarding this issue.

Shipping highly radioactive HEU-bearing waste in liquid form to the U.S. is unwarranted and sets a highly dangerous precedent. It could even legitimize such shipments of similar wastes around the world. It is incumbent upon the Federal Government to find alternative means for handling this liquid waste, such as cementing the contents of the FISST on-site.

Given the seriousness of this issue, we urge you to stop plans to ship this waste and allow for further investigation of this matter, for the safety and protection of the public good, and for international security.

Sincerely,



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