

No Liquid Radioactive Waste on Public Roads – Background

Plan to Ship Highly Radioactive Liquid Waste

Atomic Energy Canada Limited (AECL) is planning to truck 23,000 litres of highly radioactive liquid waste from its Chalk River Laboratory (CRL) facility approximately 2000 kilometres to the U.S. Department of Energy (DOE) Savannah River Site (SRS) in South Carolina. The shipments could begin as early as August 2013, if approved by regulators in both countries. But the shipments may be stopped if elected officials ban the transport of liquid radioactive waste on public roads.

The liquid radioactive waste in question has resulted from almost two decades of using weapons-grade uranium in AECL's National Research Universal (NRU) reactor to produce radioactive isotopes. The liquid waste contains highly radioactive fission products such as cesium-137, iodine-129, and strontium-90. Such high-level waste is the most radioactive material to be found on Planet Earth.

From 1986-2003, this intensely radioactive liquid was stored in the Fissile Solution Storage Tank (FISST) at Chalk River. In 2003 the tank was nearly full, so it was taken out of service. Now the liquid contents of the FISST is to be trucked to Savannah River, whereas all the radioactive liquid waste generated at Chalk River since 2003 is routinely solidified and stored on-site.

Key Issues

- The shipment of highly radioactive liquid waste over public roads is unprecedented in North America. The casks to be used to ship the waste have never been used for **liquid** radioactive waste transport.
- Unlike solid waste, liquid waste is easily dispersed into the environment, if a serious accident occurs. Cleaning it up would be difficult, if not impossible. The resulting radioactive contamination could last for centuries.
- One or two-truck convoys, each carrying a single cask of about 256 litres of the FISST solution, each escorted by armed guards, would travel weekly from Chalk River to Savannah River during the summer months. The entire consignment, about 76 shipments, would take four or more years.
- Trucks carrying liquid radioactive waste would travel over public highways past many communities in Canada and the US. Each shipment would cross numerous waterways, including the St. Lawrence River.
- Transporting such a highly dangerous payload presents *unprecedented risks*: the safe containment of the corrosive liquid itself, the hazards to workers and bystanders, the potential for accidents enroute, the risks of theft, terrorism and other mishaps.
- The shipment of this liquid waste is purportedly to fulfill non-proliferation objectives, by repatriating US-origin weapons grade uranium (HEU = highly enriched uranium). But the HEU can be "down-blended" on-site so that it is no longer weapons-usable material, whereupon it will no longer pose a proliferation risk and will not require repatriation.
- The intense radioactivity of the fission products generates heat. In addition, the presence of weapons grade uranium could lead to an accidental chain reaction (called a "criticality" accident). Together, these factors could conceivably breach the container and allow the liquid to seep out.
- There have been no public hearings or any other public forum to examine the possible impacts of transporting this waste or to consider alternatives to handle it, such as solidifying it and storing it on site, or denaturing the weapons-grade uranium so that it is no longer weapons usable.

Summary

Shipping highly radioactive waste in liquid form over public roads is unwarranted. It sets a dangerous precedent, as it could legitimize future shipments of liquid radioactive wastes on a global scale. The plan to ship this waste must be halted and a public decision-making process instituted to deliberate on this matter, for the safety and protection of the public, and for the sake of international security. The message is clear.

"NO LIQUID RADIOACTIVE WASTE ON PUBLIC ROADS".

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