

Subject: Background on Chalk River liquid nuclear waste to SRS by Dr. Gordon Edwards, Chair, Coalition for Nuclear Responsibility

Followed by *Niagara-Wheatfield (New York) Tribune, article March 18, 2016*
"Higgins asks feds to keep HEU shipments out of Western New York"

Background: March 19, 2016

When uranium is irradiated, dozens of highly radioactive byproducts are created called "fission products". They are the broken pieces of uranium atoms that have been "split". They include radioactive varieties of iodine, cesium, strontium, hydrogen, carbon, and many others. In addition, transuranic elements -- man-made radioactive elements that are heavier than uranium, such as neptunium, plutonium, americium, and curium -- are also created.

When irradiated uranium is dissolved in nitric acid, all of these radioactive byproducts are rendered into a liquid solution that is far more radioactive and much more damaging to health and to the environment than the original uranium. This "post-reprocessing" liquid radioactive waste has never before been transported over public roads in North America. But now the US and Canada are planning to do just that, in a series of more than 100 truckloads with heavily armed guards using secret routes that will not be announced publicly for security reasons.

There is a double-walled steel tank at Chalk River (called FISST) containing 23,000 litres (about 6,000 US gallons) of this intensely radioactive liquid material. The concentration of cesium-137 (measured in becquerels per litre) in the liquid in the FISST tank is ***four times greater than the average concentration of cesium-137 in the high-level radioactive liquid waste tanks at the military weapons plutonium production plants at Hanford Washington.*** This material is acknowledged to be among the most dangerous materials on earth.

In 2011, the Canadian Department of Natural Resources reported that the liquid material in the FISST tank would be "down-blended" on site at Chalk River to remove any nuclear bomb-making security risk there might be, and in the licensing application submitted in 2011, Chalk River Laboratories (CRL) declared that it was planning to solidify the material on-site using a process of "cementation". By the way, for the last ten years, high-level radioactive liquid waste of the same composition has been successfully cemented and stored at Chalk River without shipping the liquid or the solidified material offsite.

There has never been a public hearing, in either country, to examine the health and environmental risks associated with shipping this liquid material about 2000 kilometers over public roads and bridges. There has been no specific environmental assessment conducted, nor has there been any explicit study of security risk of the shipments.

One thing is crystal clear: these shipments are unnecessary. Safer alternatives exist.

PS. For more information on the weld failures described in the article, see recommendations #13-16 and the associated text passages in www.ccnr.org/CCRC_CRL_2016.pdf .GE



NIAGARA FRONTIER PUBLICATIONS

Congressman Higgins asks feds to keep highly enriched uranium shipments out of Western New York

Congressman says risks are too great given recent container flaws and lack of environmental or threat assessment

Niagara-Wheatfield (New York) Tribune, March 18, 2016

<http://tinyurl.com/zc3jeay>

Congressman Brian Higgins, D-NY-26, is asking the U.S. Nuclear Regulatory Commission to take its shipments of highly enriched uranium elsewhere. The request comes as the agency plans up to 150 shipments of the hazardous material over the northern border from Chalk River Laboratories in Ontario, Canada, to the Savannah River Site in South Carolina.

"Recent equipment failings and the lack of current environmental or threat assessments raise very serious concerns about the risks associated with the transport of this hazardous material," Higgins said. "With too many unanswered questions, the risks are just too great for this community, and we are asking the Nuclear Regulatory Commission to keep these shipments out of Western New York."

In recent months, the U.S. Department of Energy released a [report](#) that details plans for the shipment of 6,000 gallons of highly enriched liquid uranium across the northern border. The Peace Bridge and Western New York has been identified as one potential shipment route.

Expressing great concern of the impact a terrorism-driven or accidental disaster could have on the Peace Bridge, Great Lakes and the entire Buffalo-Niagara community, Higgins has called for a full and formal environmental review. Instead, the DOE insists it will move forward, relying on data from a 1995 report Higgins said pre-dates today's realities in a post 9/11 world.

Higgins also said an incident occurring on Oct. 28 at Chalk River Laboratories contributes to the alarming nature of the impending shipments. Documented in the [transcript](#) of the Canadian Nuclear Safety Commission public meeting held on Jan. 28 was an account of the incident that includes: failure of a fuel caddy, cracks in the weld of end plates on several fuel caddies, and failure to properly report the incident to Canadian and U.S. oversight agencies in a timely manner.

The company found to have inadequate welds is the same company responsible for casks that will be transported, potentially through Western New York, later this year.

Higgins outlined his concerns in a [letter](#) to Nuclear Regulatory Commission Chairman Stephen Burns. He wrote: "The liquid nuclear waste that DOE plans to begin shipping is highly radioactive, and complicating matters, it has never before been shipped by truck or in the transport cask that your agency recently approved. Furthermore, in contrast to solidified spent nuclear fuel, the material's liquid form could vastly exacerbate the consequences of a spill and the ability to contain it. A recent component failure during preparation of another spent fuel shipment at Chalk River, reportedly due to faulty welding, demonstrates that the risks of an accident are far from remote."

Higgins asks feds to keep highly enriched uranium shipments out of Western New York

Submitted

Fri, Mar 18th 2016 11:05 am

Congressman says risks are too great given recent container flaws and lack of environmental or threat assessment

- See more at:

<http://www.wnypapers.com/news/article/current/2016/03/18/123987/higgins-asks-feds-to-keep-highly-enriched-uranium-shipments-out-of-western-new-york#sthash.UD6dw1WV.swuJcCcz.dpuf>

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