



April 13, 2018.

Sent via email to ☐ boh@toronto.ca

Toronto Board of Health – City of Toronto
 City Hall, 10th Floor, West Tower
 100 Queen Street West, Toronto, ON M5H 2N2.

Re: Meeting on April 16th: Item HL26.1, Re-affirming City of Toronto as a Nuclear Weapons-Free Zone

Toronto Board of Health Members:

Durham Nuclear Awareness (DNA) is a group of concerned citizens dedicated to raising awareness about nuclear issues and risks facing the communities of Durham Region. We intervene regularly at Canadian Nuclear Safety Commission (*nuclear licensing*) hearings, communicate with politicians, and organize public events. Our current main focus is the issue of nuclear emergency planning.

In addition, we are of course aware of serious and overarching issues around the handling and transportation of nuclear wastes. We realize that a nuclear accident/incident occurring in Durham Region would surely have impacts on the City of Toronto and indeed the Greater Toronto Area.

Since 2013 we've been following the issue of plans to transport very dangerous liquid nuclear waste from the Chalk River site – over 2000 kilometres of public roadways – to the Savannah River Site in South Carolina. (*The acronym we use is HRLM, for highly radioactive liquid material.*)

With U.S. colleagues, we've been involved in a variety of efforts to stop these shipments.

Our efforts have met with failure. The opposition of many citizens (*on both sides of the border*) and a legal intervention in the U.S.; all of the efforts of a wide coalition of citizens (*buttressed by political support, mostly from U.S. Senators from New York State*) have failed at stopping the proposed shipments – between 100 & 150 times – from Chalk River to South Carolina.

Quick Summary of the Facts

This project is supposedly about returning weapons-grade material to the U.S. in line with non-proliferation goals. In fact, we believe the entire project exists under a veil of secrecy due to:

- deeply technical, difficult-to-grasp details about the materials involved (*I estimate there may be 20 people in Canada who really understand this issue deeply; 20 may be an overstatement*)

- high-level efforts to conceal the facts & the stated (& *actual*) rationale from the public & politicians
- widespread lack of awareness of the material's true level of dangerousness
- lack of transparency regarding the lack of safety of the casks involved
- *refusal to convey that the project is ultimately utterly unnecessary, as the material can be solidified or "down-blended" in its current location at Chalk River.*

Why Should Toronto Care? What Can You Do?

These trucks could be travelling through Toronto, both endangering the population here and rendering any notions about being nuclear-weapons-free somewhat academic.

Dr. Gordon Edwards of the Canadian Coalition for Nuclear Responsibility estimates that "a single litre of the Chalk River liquid would be sufficient to ruin the entire drinking water supply for any city in North America."

Thankfully, leadership on this issue has come from Niagara Region, which passed a resolution in June 2015:

"That Regional Council EXPRESS opposition, in principle to any shipment of radioactive liquid waste over public roads and bridge, or on any navigable waterways, or by air, recognizing that such waste can be, has been and should solidified so that it is far less accessible to the environment and living things, and, That Regional Council URGE the governments of Canada and the United States to halt the shipment of high-level radioactive liquid waste from Chalk river Laboratories to the Savannah river, pending the outcome of full public consultations on the advisability and the potential adverse impacts of the proposed shipments, as well as the alternative procedures to achieve the stated objectives for such shipments." <https://niagaraatlarge.com/2015/11/24/regional-government-joins-womens-council-in-calling-for-halt-to-plans-to-ship-high-grade-nuclear-waste-through-niagara-to-border-crossings/>

As stated above, however all efforts to stop or suspend this project have so far met with failure, and the shipments have now been underway (*since Spring 2017*). For all we know, trucks carrying this extremely dangerous liquid nuclear waste have already passed through Toronto (*or will be doing so in future*), and since between 100 and 150 shipments are projected, we are not even close to being "out of the woods" yet.

Last year I ran across this pointed quotation about nuclear shipments:

"Transportation is the Achilles' heel of nuclear security and everyone knows that," said Bruce Blair, a retired Air Force missile officer, Princeton University researcher and founder of Global Zero, a nonprofit group that seeks elimination of nuclear weapons.

The danger is not a traffic accident — even a fiery crash is not supposed to explode a warhead — but a heist.

"In an age of terrorism, you're taking a big risk any time you decide to move nuclear material into the public space over long distances via ground transport," Blair said. "Bad things happen."

Source: 'This troubled, covert agency is responsible for trucking nuclear bombs across America each day' <http://www.latimes.com/nation/la-na-nuclear-couriers-20170310-story.html>

To Conclude

We in Durham Nuclear Awareness have learned from years of experience that nuclear matters are routinely conducted in high secrecy, with few citizens (*or indeed politicians*) really having a firm grasp on what is actually taking place, or for what reasons (*real or concealed*).

Our group (*and others*) have called unsuccessfully upon the Government of Canada (*we also called upon President Obama, to no avail*) to halt this project and to put it under the microscope of an Environmental Impact Statement, conducted publicly and transparently. As citizens of Toronto (*and Durham Region*), we are very concerned given the:

- nature of the shipments (*highly dangerous; all risk, no reward for the public whatsoever*)
- unprecedented level of secrecy regarding every aspect of the project
- total lack of transparency from all officials, including the manufacturers of the cask (*which was designed for solid material, not liquid*)
- deliberately misleading information provided about the actual contents of the material
- lack of proper training for emergency responders who might be obliged to deal with an accident.

Considerable detail about this project can be found in various locations.

I suggest scanning this April 2017 posting from the Durham Nuclear Awareness (DNA) Web site, as it links to many other useful sources. Given the very complex nature of this project and the material involved, it is difficult to do the topic justice succinctly. I apologize for likely failing at this task, at short notice, in very busy times.

<https://www.durhamnuclearawareness.com/blog/2017/04/14/radioactive-roads-this-plan-must-be-stopped>

I am attaching a few other items that may be helpful:

- Backgrounder
- Petition to the Federal Government (*awaiting response*)
- DNA letter to the Canadian Nuclear Safety Commission (CNSC) – Feb. 2015

Janet McNeill

Toronto resident & coordinator of Durham Nuclear Awareness (DNA)

Background information on the transport of highly radioactive liquid waste

Down-Blending as an Alternative to Transport

From the US Federal Register, February 22, 2016.

<https://www.federalregister.gov/documents/2016/02/22/2016-03572/proposed-subsequent-arrangement>

“The purpose of the down-blending of the HEU is to achieve permanent threat reduction by eliminating HEU from Indonesia. PT INUKI will down-blend the HEU contained in 514 bottles of irradiated HEU targets in liquid form and 14 containers of un-irradiated liquid HEU used in the plating process for medical isotope production, on-site at the Pusat Penelitian Ilmu Pengetahuan dan Teknologi facility in Serpong. The quantity of uranium will increase from 1.3 kg to 6.72 kg while the U-235 enrichment will decrease from 93 percent to 18 percent. The down-blend operation is scheduled to last for approximately three months.”

Niagara Regional Council resolution of June 11,2015.

“That Regional Council *EXPRESS* opposition in principle to any shipment of radioactive liquid waste over public roads and bridge, or on any navigable waterways, or by air, recognizing that such waste can be, has been and should be solidified so that it is far less accessible to the environment and living things, and,

That Regional Council *URGE* the governments of Canada and the United States to halt the shipment of high-level radioactive liquid waste from Chalk river Laboratories to the Savannah river, pending the outcome of full public consultations on the advisability and the potential adverse impacts of the proposed shipments , as well as the alternative procedures to achieve the stated objectives for such shipments.”

Radioactivity of the Liquid Waste in the FISST Tank

From CNSC’s December 2014 “Technical Assessment Report: NAC-LWT Package Design for Transport of Highly Enriched Uranyl Nitrate Liquid”

**Table 2: Concentration of radionuclides in the solution
(actinides, gamma emitters and their daughter products)**

Isotope	Activity (Bq/L)	Isotope	Activity (Bq/L)	Isotope	Activity (Bq/L)
Nb-95	6.63E9	Ba-137m	70.19E9	Eu-155	1.95E8
Nb-95m	25.35E9	Cs-137	70.19E9	U-234	2.84E7
Zr-95	25.35E9	Ba-140	58.50E9	U-235	5.59E5
Rh-103m	18.13E9	La-140	58.50E9	U-236	3.66E5
Ru-103	18.13E9	Ce-141	42.88E9	U-238	5.59E3
Rh-106	5.46E8	Ce-144	8.19E9	Np-237	4.51E3
Ru-106	5.46E8	Pr-144	8.19E9	Pu-239	1.3E6
I-131	19.50E9	Pr-144m	8.19E9	Pu-240	8.99E4
Xe-131m	19.50E9	Nd-147	15.80E9		
Te-132	10.33E9	Eu-154	8.4E7		

The total radioactivity in this table (which is incomplete) is 17,000 times greater than the radioactivity of all the uranium isotopes combined. It is misleading to call this liquid “Highly Enriched Uranyl Nitrate”.

Background information on the transport of highly radioactive liquid waste

- 2016 Law suit filed in US Federal Court by seven plaintiffs on August 12, 2016, calling for an injunction against the proposed shipments.
http://ccnr.org/lawsuit_2016.pdf
- 2016 Recent reports in the media on the proposed shipments compiled by Kevin Kamps of Beyond Nuclear, in Takoma Park Maryland
<http://tinyurl.com/zo2fss8>
- 2016 A map of one of several possible routes for the proposed shipments (courtesy of Beyond Nuclear)
<http://tinyurl.com/zc9lpgm>
- 2015 Comments by CCNR on the CNSC Technical Report of December 2014
http://ccnr.org/CCNR_CNSC_HEUNL_2015.pdf
- 2011 “A FISST Full of Trouble” by Ian McCleod of the Ottawa Citizen with a 2013 background commentary by Gordon Edwards
<http://ccnr.org/FISST.pdf>
- 2013 Background info on proposed shipments by Gordon Edwards and Anna Tilman
http://ccnr.org/backgrounder_CRL_SRS_2013.pdf
- 2013 Resolution opposing the transport of highly radioactive liquid waste
http://ccnr.org/resolution_CRL_SRS_2013.pdf
- 2013 Endorsers of the 2013 resolution opposing the proposed shipments
http://ccnr.org/Endorsing_Groups.pdf
- 2011 Chalk River: Canada’s Nuclear Sacrifice Area, by Gordon Edwards
http://ccnr.org/crl_sacrifice.pdf



February 9, 2015.

Sent via email to consultation@cnsccsn.gc.ca

Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
280 Slater Street, Ottawa,
Ontario, K1P 5S9.

Re: Comments on Technical Assessment Report – HEUNL Shipments

CNSC Tribunal Members:

Durham Nuclear Awareness (DNA) is a volunteer group of concerned citizens dedicated to raising awareness about nuclear issues and risks facing the communities of Durham Region. While our focus is primarily on matters of direct concern to citizens *within* the Region, we are aware of serious and overarching issues around the handling and transportation of nuclear wastes.

Notwithstanding the assurance that “Canada has an excellent safety record for the transport of nuclear substances,” we have a number of concerns about this technical report and the possible ramifications of its endorsement by CNSC staff who “are satisfied it meets all Canadian and international regulatory requirements and will ensure the protection of the public and the environment.”

We would like to acknowledge that this issue, as with many nuclear issues, is a matter of technical complexity well beyond the understanding of the average person. Fortunately, there are knowledgeable individuals on both sides of the border who *do* grasp the technical issues, and whose concerns we share.

We are aware of the following matters of serious concern with respect to the technical assessment report:

- The external package in question – the NAC-LWT – has up until now been used only for solid materials, never for liquid.
- While claims about plans for modification are made, design details are not available due to “proprietary” considerations.

How can the Canadian (or indeed the American) public have any confidence in the safety of a container about which essential details are being kept secret?

Additional issues:

- Large numbers of citizens on both sides of the Canada/U.S. border and along 2000-kilometer route(s) are being asked to be unwitting guinea pigs for these unprecedented shipments.
- Most citizens (and indeed politicians and other public officials) have no knowledge of the complexity of the materials involved, the politics involved, the risks involved, and the fact that this is an unprecedented set of circumstances.
- The actual need for this dangerous and unprecedented series of shipments has not been demonstrated.
- It is acknowledged that workers and members of the public may or will receive a radiation dose even if there is no “accident.” Claims that this will be “below regulatory limits” offer no comfort to those who may unwittingly and unwillingly be exposed.
- We are aware that there are routine accidents and incidents involving leaks of nuclear material, and that these accidents/incidents/leaks are not necessarily even reported to the nuclear regulator!¹
- The authority for emergency response falls to municipal, regional or provincial (or presumably state) agencies that are in no way adequately educated or prepared for the kinds of consequences that would result from a spill of liquid nuclear waste containing a dangerous cocktail of highly toxic radionuclides / chemicals.

Conclusion and Recommendation

Unfortunately, the unthinkable does indeed happen. And not even rarely. So we have learned from the Three Mile Island, Chernobyl, Fukushima and Lac Megantic disasters, to name but a few.

There is a whole history of risks, incidents and accidents involving the transport of nuclear waste.

In our view, it is unacceptable that a project of this magnitude and potential danger not be subject to a public hearing at which the potential need, risks and alternatives may all be fully discussed and explored – among nuclear experts, citizen experts, “regular” citizens and public officials.

Transportation of nuclear wastes is much too risky to leave in the hands of a “designated officer” at the CNSC.

We believe strongly that a full and transparent public review of this proposal is essential.

Sincerely,

Janet McNeill
DNA Coordinator

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¹ <http://www.wiseinternational.org/node/4175>