

# Has NWMO earned the public's trust?

by Gordon Edwards, Canadian Coalition for Nuclear Responsibility, October 25 2024  
[www.ccnr.org/NWMO\\_and\\_Public\\_Trust\\_2024.pdf](http://www.ccnr.org/NWMO_and_Public_Trust_2024.pdf)

The Nuclear Waste Management Organization (NWMO) represents Canada's nuclear waste producers. For 14 years, NWMO has been searching for a "willing host community" to accept all of Canada's high-level radioactive waste (used nuclear fuel) for burial in a Deep Geological Repository (DGR). In 2010, [NWMO promised](#) "the industry's plan will only proceed in an area with informed and willing hosts."

The residents of South Bruce are now voting on whether or not to lock themselves into the NWMO plan. I am deeply disappointed to find that, for more than a dozen years, NWMO has been consistently misleading these residents about the true nature of the hazards from used nuclear fuel. In fact, NWMO has systematically withheld the most relevant scientific information from candidate host communities.

*[Note: the referendum vote approved the NWMO project by 51%: a difference of 78 votes.]*

Each candidate community has a Community Liaison Committee (CLC) that meets with NWMO 10 times a year under a program called "Learn More". Despite more than a hundred meetings over a dozen years, NWMO has never called attention to the dozens of varieties of human-made radioactive materials – the very thing that makes used fuel so dangerous. These toxic materials include radioactive varieties of commonly occurring non-radioactive elements like iodine, cesium, and strontium.

All reactor-created radioactive waste materials are known carcinogens. Most of them are not found in nature. They are particularly dangerous when ingested, inhaled or otherwise absorbed into the body. To get into the environment, they must leak out of the used fuel – something that happens regularly in reactor cooling systems, including the used fuel storage pools.

Does NWMO think that Canadians are not entitled to know about these materials and their dangers to humans and the environment?

When [I spoke to the South Bruce Community Liaison Committee](#) (CLC) in 2020, one man who had already served for seven years on the CLC for South Bruce was caught completely off-guard when I spoke about these things.

[He said](#), "You mentioned about radioactive materials. I guess that's the first I've heard of them. There are names I have not heard of before – strontium [radioactive strontium], iodine [radioactive iodine]. That's the first I've heard of it. How are they created, or generated? How do they come about?"

*from a South Bruce CLC member, November 4 2020*

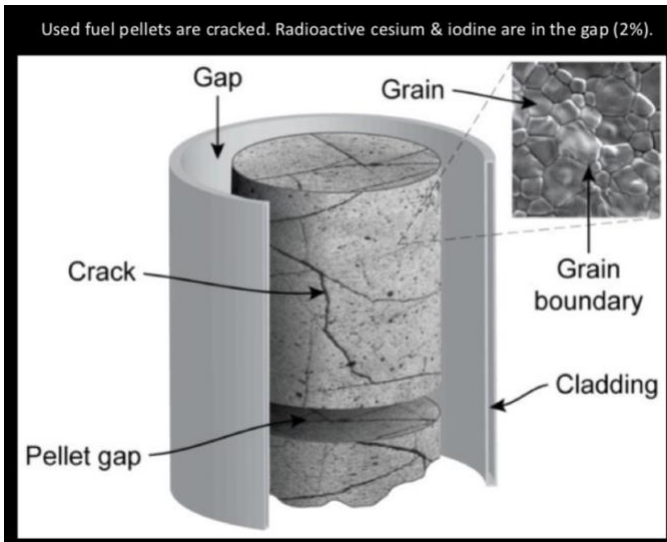
I was stunned. This man had met with NWMO at least 60 or 70 times to “Learn More”, yet he knew nothing about the nature of these radioactive waste materials that will almost certainly be released into the local environment when six million individual fuel bundles are repackaged for burial. Even tiny cracks or pinholes in the metallic fuel cladding will allow radioactive iodine and cesium to be released in the form of a gaseous vapour that is difficult to contain completely. These gases turn back into a solid on contact with any cool surface.

In particular, [radioactive iodine](#) contaminates cattle feed such as hay or alfalfa, and then re-concentrates in the cow’s milk. When children drink that milk, the radioactive iodine concentrates even further in the thyroid gland. The iodine in the thyroid is typically 10,000 times more concentrated than the iodine released in the air. In Belarus, [5000 children](#) had to have their thyroid glands surgically removed as a result of radioactive iodine from the 1986 Chernobyl accident. Do the dairy farmers in the South Bruce area not deserve to be informed of such facts?

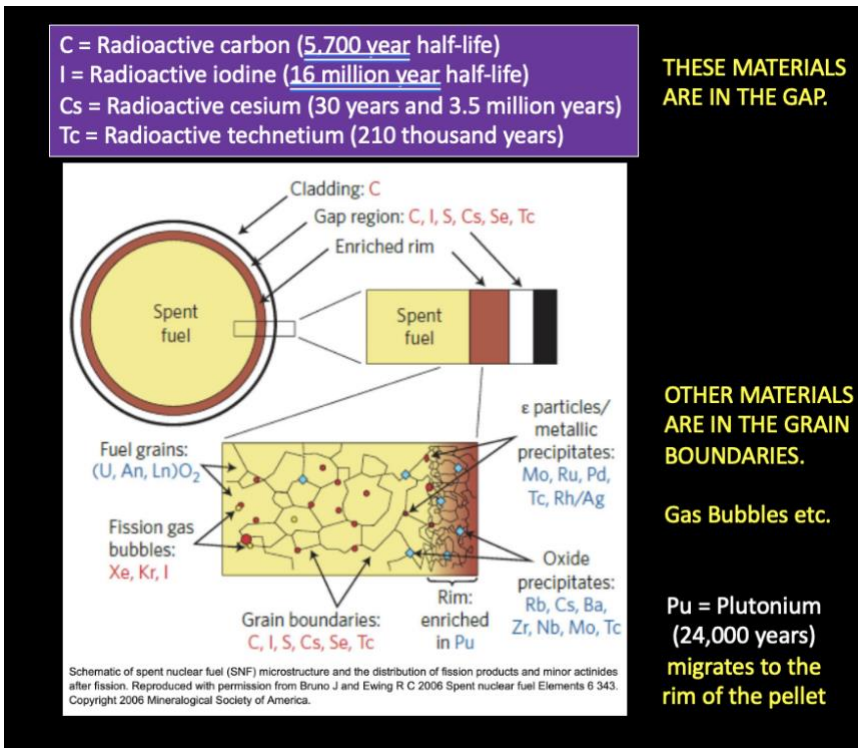
Radioactive cesium released from Chernobyl contaminated [sheep meat](#) in Northern England and Wales for twenty years after the accident. Even today, when hunters kill a [wild boar](#) in Germany or Eastern Europe, the meat is unfit for human consumption due to radioactive cesium contamination from Chernobyl. Radioactive cesium concentrates in the soft tissues, hence the meat of farm animals. On the other hand, radioactive strontium goes to the bones, where it can cause bone cancer and/or leukemia.

NWMO has insisted that the used fuel is completely solid, implying that there can be no leakage. [On the NWMO web site we are told](#) that, in order to prevent leakage, “the first barrier in the multiple-barrier system is the fuel pellet ... a ceramic material, which is baked in a furnace to produce a hard, high-density pellet.”

But NWMO does not reveal that used fuel pellets are always badly cracked and fractured. About 2 percent of the radioactive iodine and cesium vapours have already escaped from the used pellet and are available for immediate release as soon as there is the slightest penetration of the cladding. See the diagrams below.



Source: [https://www.researchgate.net/figure/Schematic-diagram-of-an-irradiated-fuel-pellet-with-cladding-The-fuel-pellet-cracks\\_fig2\\_281811031](https://www.researchgate.net/figure/Schematic-diagram-of-an-irradiated-fuel-pellet-with-cladding-The-fuel-pellet-cracks_fig2_281811031)



Source: [https://www.researchgate.net/figure/Schematic-of-spent-nuclear-fuel-SNF-microstructure-and-the-distribution-of-fission\\_fig4\\_325972965](https://www.researchgate.net/figure/Schematic-of-spent-nuclear-fuel-SNF-microstructure-and-the-distribution-of-fission_fig4_325972965)

Iodine-129 has a half-life of 16 million years, so when it is released into the environment it is there to stay. Cesium-135 has a half-life of 3.5 million years, so it too will be a permanent threat. Cesium-137 has a half-life of only 30 years, so half of it is already gone by the time the used fuel arrives at its final destination, but the amount released into the local environment will stick around for several centuries.

As a science educator, I find NWMO's failure to highlight these facts unforgivable. They are asking the public to trust them for countless generations to come. I do not believe they have earned that trust.

Gordon Edwards.

P.S. Here is a link to a video of my presentation to the residents of Teeswater and South Bruce on October 5, 2024. Other speakers included David Suzuki, Brennain Lloyd of Northwatch, Dale Dewar of IPPNW-Canada (International Physicians for the Prevention of Nuclear War), and Theresa McClenaghan of the Canadian Environmental Law Association.

<https://www.youtube.com/watch?v=sM1kFDsS9Uc><<https://www.youtube.com/watch?v=sM1kFDsS9Uc>> (34m)

Here is a link to a video of the entire event:

<https://youtu.be/qdeOZOpwViM><<https://youtu.be/qdeOZOpwViM>> (2h25m)