Troublemaking: more questions about Canada's plutonium funding and nuclear weapons proliferation

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In March 2021, Intergovernmental Affairs Minister Dominic LeBlanc, pictured, along with the department of Industry, Science and Economic Development (ISED) and the Atlantic Canada Opportunities Agency (ACOA) announced funding in the amount of $50.5-million to Moltex Energy, a U.K. start-up now based in Saint John. The New Brunswick government had previously given Moltex $5-million, write Janice Harvey and Susan O'Donnell. *The Hill Times photograph by Andrew Meade*

Janice Harvey & Susan O'Donnell

Comment

The threat of nuclear weapons being deployed by Vladimir Putin, and the potential weaponization of nuclear power plants in Ukraine, has reawakened the public to the danger that these technologies pose. Much to the chagrin of the nuclear industry, the connection between military and civilian nuclear industries is now on the public agenda.

It is in the nuclear industry's interest to shut this discourse down. Indeed, the Canadian Nuclear Association has called it "fearmongering" to suggest any connection between civilian nuclear power plants and the military.

We prefer the word "troublemaking." When the nuclear industry and government backers do not want troubling questions asked, it's more important than ever to ask them.

For instance, why is the Government of Canada poised to lift its unofficial ban on extracting plutonium from the radioactive waste stockpiled at nuclear power sites?

Plutonium is created when uranium atoms are bombarded by neutrons inside a nuclear reactor. It is one of many dangerous constituents of the high-level nuclear waste (spent fuel) that results. Plutonium is deadly; it is also the primary explosive material in nuclear bombs. It is supplied to the weapons industry through a technology called 'reprocessing' which extracts plutonium from radioactive spent fuel. Plutonium can also be used as fuel for nuclear reactors.

In the 1970s, the U.S. (officially) and Canada (unofficially) banned plutonium reprocessing within the civilian nuclear industry. At the time, reprocessing was part of the nuclear industry's expansion ambitions. This changed in 1974 when India fashioned a nuclear bomb using reprocessing technology to extract plutonium from waste produced by a "peaceful" research reactor given to India by Canada as a gift. U.S. president Jimmy Carter, a nuclear engineer, rightly recognized that access to reprocessing technologies in the civilian nuclear power sector could lead to nuclear weapons proliferation. He banned it. Although no announcements were made, it appears former prime minister Pierre Trudeau followed suit shortly thereafter.

Today, one of the many prospective designs for the next-generation of nuclear reactors being supported by public money requires plutonium reprocessing. In March 2021, Intergovernmental Affairs Minister Dominic LeBlanc, along with the department of Industry, Science and Economic Development (ISED) and the Atlantic Canada Opportunities Agency (ACOA) announced funding in the amount of $50.5-million to Moltex Energy, a U.K. start-up now based in Saint John. The New Brunswick government had previously given Moltex $5-million.

The company's molten salt reactor design, now moving through the Canadian Nuclear Safety Commission's review process, would use plutonium as its fuel. The plutonium would be extracted from existing nuclear waste using a reprocessing technology called "pyro-processing."

The Moltex plutonium reprocessing and reactor complex would be located on the site of NB Power's Point Lepreau Nuclear Generating Station, which sits amidst small fishing villages on the Bay of Fundy, 50 kilometres west of Saint John. Point Lepreau's stockpile of high-level nuclear waste would be the feedstock for Moltex's pyro-processing operation.

In February 2022, Natural Resources Canada (NRCan) released a draft of its long-awaited radioactive waste policy. It includes support in principle for plutonium reprocessing, which implies that the unofficial reprocessing ban in place for several decades is now lifted.

A March 8, 2022, letter from NRCan Assistant Deputy Minister Mollie Johnson to concerned medical doctors states: "... research done to date indicates that this technology represents a potential path forward for recycling used CANDU fuel. If this technology proves viable, it would allow Canada to further extract energy from a used resource, potentially providing Canadians with emissions free energy for years to come while reducing long-lived radioactive waste."

Where is the evidence to back up these claims? Did the government conduct any scientific peer reviews of pyroprocessing technology before funding its development? Why doesn't the government acknowledge that extracting plutonium from spent fuel stockpiles is likely to result in only miniscule reductions in overall volumes of waste, if any, while creating whole new classes of long-lived radioactive wastes? The largest experiment with pyroprocessing technology to date, at the U.S. Idaho National Laboratory, has been an economic and technological fiasco.

Did the government re-examine the proliferation risks that triggered the 1970s reprocessing bans before making this policy change? Why hasn't there been any public or parliamentary debate about the implications of opening this Pandora's box? Might this not be an important matter of public transparency?

Ottawa seems to be avoiding such tough questions. A prestigious group of U.S. nuclear weapons proliferation experts and former senior White House advisers has now sent three letters expressing concerns about Moltex's plutonium reprocessing project. Their first letter sent in May 2021 to Prime Minister Justin Trudeau, copied to Chrystia Freeland and Marc Garneau (then foreign affairs minister), stated that by "backing spent-fuel reprocessing and plutonium extraction, the Government of Canada will undermine the global nuclear weapons non-proliferation regime that Canada has done so much to strengthen." These experts warn that other countries that might want to join the ranks of nuclear weapons states could point to Canada's support for reprocessing to justify their own plutonium acquisition programs.

They sent a second letter in July and a third in November. Receipt of these letters has been acknowledged, but they have not been answered.

Indirectly, the government has given lip service to Canada's obligations in regard to nuclear proliferation. In her letter referenced above, NRCan ADM Mollie Johnson stated, "Canada remains committed to the Treaty on the Non-Proliferation of Nuclear Weapons, including the full implementation of safeguards set by the International Atomic Energy Agency to provide assurances that nuclear materials are used solely for peaceful purposes in Canada."

Therein lies the problem. Johnson refers to using nuclear materials for peaceful purposes *in Canada*. Last year, in signing an MOU with the Port of Belledune, Moltex CEO Rory O'Sullivan was explicit in their intent to sell its reactors "around the world." Canadian-subsidized plutonium reprocessing technology is fully intended to be deployed far beyond Canadian borders. Any export of Moltex technology would have to be approved by the Government of Canada.

This raises questions as to whether Canada is serious about meeting its responsibility for ensuring that publicly-funded plutonium technologies in Canada do not increase the risk of nuclear proliferation abroad. In his February 2022 presentation to a committee of the U.S. National Academies of Sciences studying new and advanced nuclear reactors, O'Sullivan acknowledged that his company was developing a very controversial technology. To allay concerns, O'Sullivan said, Moltex has an obligation to "ensure we've got the risk of weapons proliferation managed and sufficiently low" by directly engaging independent experts.

What, do we suppose, might be a "sufficiently low" risk of weapons proliferation? Is Ottawa leaving this to Moltex to figure out, after filling its pockets with millions of dollars? Is it not the obligation of the Government of Canada, a signatory to the nuclear non-proliferation treaty, to prevent any such risk? Why would Canadians fund any nuclear weapons proliferation-vulnerable technologies at all?

This is a matter of grave concern. Canadians should be alarmed—outraged, even—by Ottawa's seemingly cavalier attitude to the security dangers inherent in its embrace and subsidization of private companies hawking promises of nuclear techno-fixes to our climate change obligations.

Ottawa needs to answer these troubling questions now, before one more tax dollar is spent paving this road that ultimately leads to a global plutonium economy.

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