

Indigenous First Nations, Local Communities Oppose Canada’s Chalk River Radioactive Waste Dump

By Lindsay Potter

This is Part II of a story from Nukewatch’s Summer 2024 Quarterly, for Part I visit nukewatchinfo.org. The Canadian Nuclear Safety Commission (CNSC) approved a license for a Near Surface Disposal Facility (NSDF) one kilometer (0.62 miles) from the Ottawa River at the famed Chalk River Site.

Industry Inside Job

Canadian Nuclear Safety Commission president Dr. Timothy Berube was a “nuclear operator” at Ontario Hydro, according to the Commission’s website. Commissioner Andrea Hardie’s biography on the Commission’s site says she has 20 years of experience working “in various capacities with the Canada Energy Regulator, the Alberta Energy Regulator, and Energy Efficiency Alberta, in addition to holding industry association and private industry roles.” Commissioner Jerry Hopwood is president of the University Network of Excellence in Nuclear Engineering leading Canada’s university-industry partnership, and has over four decades of experience in the nuclear industry — including as a reactor safety specialist for Atomic Energy of Canada Limited (AECL), where he held “progressively senior positions.” Hopwood also worked for SNC-Lavalin and was a consultant for the IAEA and the Canadian Nuclear Society. Dr. Marcel Lacroix worked for AECL at Chalk River and for the Gentilly-2 nuclear station — owned by Hydro-Quebec.

SNC-Lavalin and AECL, Hopwood and Lacroix’s former employers, are part of the “Canadian National Energy Alliance” — the private sector group chosen by the Canadian government to run Canadian Nuclear Laboratories (CNL), which includes Chalk River, since 2015. Many of the sites are owned by AECL.

“What we see, quite frankly, is a captured regulator ... [t]here is no independence,” said Lance Haymond, Chief of the Kebaowek First Nation. Kerrie Blaise, a member of the legal team representing Kebaowek First Nation, said the commission was originally founded with the mandate to promote, as well as regulate, the nuclear industry and Natural Resources Canada.

The dump would be managed by three private multinational contractors, all with a history of legal problems including convictions for fraud. Two of the groups are based in Texas and work in the cyber, intelligence, or weapons sectors: Fluor, which also manages the Savannah River Site; and Jacobs, which won a \$6.4 billion contract to clean up the Idaho National Lab in 2021.

A Dark Past, A Deadly Legacy

Threats to the Ottawa River watershed from the Chalk River Lab are an 80-year-old problem. Chalk River began as part of the Manhattan Project, building the world’s first heavy water reactors to produce plutonium for bombs in 1944. Canada sold uranium and plutonium to the U.S. for nuclear weapons production until 1965. In 1974, India used a copy of the early reactors at Chalk River, a gift from the Canadian government, to build its first bomb.

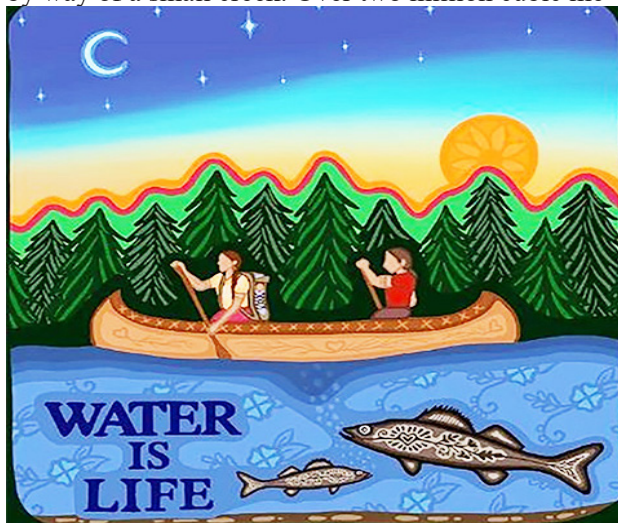
In 1952, the National Research Experimental nuclear reactor at Chalk River suffered a catastrophic meltdown and explosion which destroyed the core, unleashed radioactive gas into the atmosphere, and left intensely toxic wreckage and radioactive water. The core was removed and buried nearby, and other contaminated reactor wreckage was put in sandy trenches. “Refuse from that day remains ... part of an immense toxic legacy,” according to the *Ottawa Citizen*. The site suffered another major accident six years later.

The Chalk River site is home to 70 percent of all the radioactive waste generated by AECL and its predecessor. In 2005, AECL began an estimated 70-year, \$7 billion federal cleanup program which includes its sites at Chalk River, Whiteshell Laboratories, and several reactors.

There are several waste management areas at Chalk River that date back decades and have caused radioactive contamination of groundwater, streams, lakes, and rivers. The high-level waste includes more than 12,000 used fuel rods, used fuel bundles and assemblies, as well as depleted uranium, thorium, and plutonium — all from eight reactors across the region. In addition, there are about 300,000 liters (79,252 gallons) of liquid radioactive waste from medical isotope production and fuel processing experiments now stored in underground tanks that were built between 1947 and 1960.

Natural Resources Canada found “aging tanks that contain higher-level radioactive liquid waste are rusting.” Intensely hot, high-level uranium and thorium is kept in 750 concrete “tile holes,” 16 feet below ground, alongside fuel rods from over a half century of reactor operations. One hundred of these, housing 175 old fuel rods shrouded in aluminum, have water intrusion and are corroding.

The existing waste management areas are largely located in sandy soils that drain to Perch Lake, at the center of the site, which drains to the Ottawa River by way of a small creek. Over two million cubic me



Drawing from the Kebaowek campaign to stop the Chalk River nuclear dump site. Donate at raventrust.com/campaigns/kebaowek/

ters (528,000,000 gallons) of waste has already been dumped into “unlined sand trenches” or pits with “three aquifers in the vicinity,” the *Ottawa Citizen* reported.

As a result, tests show more than 83 acres of land that drains into Perch Lake and other nearby basins are contaminated with radioactive cesium-137, strontium-90, cobalt-60, tritium, plutonium, as well as metals, industrial chemicals, mercury, and lead.

In addition, other toxic radionuclides found at Chalk River or at Whiteshell Laboratories — which has sent decommissioned material to Chalk River — include: carbon-14, iodine-125 and -131; argon-41, plutonium-238, -239, and -240; and americium-241, according to a report by CNL. In total, 19 of the 29 radionuclides found at Chalk River have half-lives of more than 1,000 years, 12 have half-lives of 100,000 years, and some could remain in the environment for millions of years.

“A terrible mistake and one that future generations will curse us for” – Gordon Edwards

The newly green-lighted waste site would sit less than one km (0.62 miles) from the Ottawa River and would include planned releases of radioactive tritium and “treated” wastewater into Perch Lake.

Gordon Edwards, president of the Canadian Coalition for Nuclear Responsibility (CCNR), told Libbe HaLevy of Nuclear Hotseat, “They’re building basically ... an Earthen mound which is essentially a glorified landfill on the surface right beside the Ottawa River.” Why? Edwards believes it is just a matter of industry convenience.

Theresa McClenaghan, executive director of the Canadian Environmental Law Association, described the NSDF design as “tantamount to an ordinary

domestic landfill and we know that such facilities always eventually leak to the surrounding environment.”

Edwards points out that the liners intended to prevent leakage are only designed to last at most 1,000 years, and many of the radionuclides are supposed to be kept out of the environment for hundreds of thousands of years. Though they call the waste inventory “low-level,” Edwards explains that it does not need to go to this site: “99 percent of the initial radioactivity in the mound is going to be Cobalt-60 ... one of the most intense gamma-emitting radionuclides,” from imported commercial waste that is completely man-made, Edwards said. This waste is already packed for shipment and could be taken to concrete vaults further from water bodies rather than buried in the sandy ground by the river.

Tritium, one of the most impactful elements likely to leach from the mound, will “readily escape into the Ottawa River in the form of radioactive water molecules,” Edwards says. There is no way to remove tritium from water, so it will move easily downstream into people’s tap water.

The CCNR and two other groups have asked a Canadian federal court to review the decision on procedural grounds. The groups documented seven procedural errors that the regulatory industry committed.

Appeal Brought by Kebaowek First Nation

On July 10 and 11, the Kebaowek First Nation presented opening arguments in their appeal against the dump’s approval. The Kebaowek case argues the CNSC failed to meet the requirements for free, prior, informed consent under the UN Declaration on the Rights of Indigenous Peoples and in Canada under the UN Declaration Act.

The Council of Canadians, a nonprofit social justice group, writes, “Kebaowek, Kitigan Zibi Anishnabeg, and Algonquins of Barriere Lake First Nations detailed the threats the NSD(F) poses to the land, water, wildlife, trees, and Algonquin inherent rights to the CNSC in August 2023. They did not give consent to the project, but approval was a foregone conclusion, consultation nothing but an afterthought.”

To the Kitigan Zibi and Kebaowek, the dump is another chapter in the “nuclearization of the Kichi Sibi” (Ottawa River). It continues the legacy of dispossession, disregard, and displacement represented by the lack of consent to the original Chalk River Laboratories site in 1944.

A group of more than 60 supporters joined the Kebaowek outside the Supreme Court on July 10th to demonstrate solidarity with protection of water, life, and the Algonquin cultural way of life, and to protest the threat to drinking water.

Kebaowek community member Rosanne Van Schie, who sat in on the hearings in Ottawa, said, “With the proximity of the potential Chalk River facility to the Ottawa River, the chances of a catastrophic event involving drinking water is ... a serious concern.” Van Schie believes the appeal has a strong case and targets a clear breach of the regulator’s duty.

The dump risks the destruction of 37 hectares of old growth forest, could displace deer, moose, bears, and wolves, and would add more radioactive contamination to the watershed that provides drinking water for more than ten million people.

“It’s a betrayal of a series of sacred trusts. Anishinaabe aki was not created for business profit. Our Nation was not built to turn the [Kichi Sibi], our great river, into a self-storage unit for nuclear waste,” said Councilor Verma Polson.

— *You may make a tax-deductible contribution to the Kebaowek First Nation’s legal effort to protect the Kichi Sibi here: raventrust.com/campaigns/kebaowek/*