

The [Nuclear Waste Management Organization](#) (NWMO) is comprised of Ontario Power Generation, Hydro Quebec and New Brunswick Power, mandated under the [Nuclear Fuel Waste Act](#) (2002) to investigate and recommend a long-term management option for all of Canada's high-level nuclear fuel waste. In 2007, the federal government accepted the NWMO's "[Adaptive Phased Management](#)" approach, including a site selection process to locate a deep geological repository for the radioactive waste, and then development of the repository and associated operations. NWMO launched their siting process in 2010. Twenty-two municipalities were the subjects of NWMO investigations.

NWMO'S SITE SELECTION PROCESS

Throughout its siting process the NWMO repeatedly declared that it would not select a site unless there was an "informed and willing community" and the community had made a "compelling demonstration of willingness". The Township of Ignace was deemed "willing" by the NWMO on the basis of an online poll that asked residents if they supported continuing in the NWMO process. The poll did not ask if respondents supported the NWMO project. In October 2024, Grand Council Treaty #3 chiefs unanimously passed a [resolution](#) opposing the DGR in Treaty #3 territory. On November 18th, 2024, Wabigoon Lake Ojibway Nation announced that they accepted further site studies being done but that they had not consented to the project.

On November 28, 2024, the NWMO [announced](#) their selection of the Revell site – in the heart of Treaty #3 territory in northwestern Ontario and in the headwaters of the Wabigoon watershed – as their intended repository location. In December 2024, Eagle Lake First Nation [announced](#) legal action against NWMO's site selection.



NWMO'S DEEP GEOLOGICAL REPOSITORY PROJECT

NWMO's project includes processing the high-level waste at the repository site, using a series of hot cells to transfer the wastes into steel containers with a very thin copper coating. The "used fuel packaging plant" will generate low-level, and intermediate-level and liquid radioactive waste, and will release radio-contaminants to the air and to surface water.

The used fuel containers will be placed deep underground in "placement" rooms using robotic equipment, as the levels of radioactivity will be too high for human workers. The blasting of rock to create placement rooms will occur concurrent to other rooms are being filled and sealed. After the placement rooms are sealed, there will be no monitoring of the waste containers and no means to detect or respond to the expected failure. Eventually the containers will fail, and the contents will be released to groundwater and then to the surface.



There is [no deep geological repository](#) for high-level nuclear waste operating anywhere in the world, despite decades of effort by the nuclear industry. In some countries, repositories have been proposed then cancelled, and others have been proposed and are under review (the proposed repository in Sweden has been in the regulatory process since 2011) but none has received final approval or been brought into operation.

TRANSPORTATION

NWMO's plan to bury and abandon all of Canada's high-level nuclear fuel waste in northwestern Ontario will involve 2-3 shipments per day for more than 50 years, with each truck hauling 35 tonnes of radioactive waste per trip. Over 90% of the shipments will come from southern Ontario, averaging 1,700 km per trip, with most of those kilometres travelled on the poorly maintained and mostly 2-lane roads of northeastern and northwestern Ontario. The remaining shipments will be coming from the east – Chalk River in the Ottawa Valley, Quebec and New Brunswick. Again, mostly 2-lane roads, and – again – riding a road of radioactive risk that will cut across northern Ontario. In May 2025, Alberta Energy announced their plan to construct four large reactors 30 km north of Peace River in northern Alberta and their intention to transfer the high-level radioactive wastes to the NWMO for transportation, burial and abandonment at the Revell site. NWMO has not yet identified their preferred or intended route(s) and retain the option of sending the waste by rail.



RADIOACTIVITY RELEASED EN ROUTE

Each shipment involves constant emission of low levels of radioactivity. Calculations of “safe exposure” are based on moving vehicles. Travel delays are common in northern Ontario, due to traffic stoppages in the many communities the route traverses and for road construction. Road closures due to highway accidents, forest fires, flooding and winter weather conditions occur regularly. If an accident results in a breach of the containers, it is expected that the releases would be much larger. The shipments will be routed through numerous northern communities, cross major rivers, and in many instances closely follow the edges of lakes, separated from the water only by steeply graded embankments.

There is no level of exposure to ionizing radiation that does not pose an associated risk to human health.

There is very little experience with nuclear fuel waste transportation in Canada, international experience has a mixed record, and there are substantial gaps in the testing of the transportation containers and training for emergency responders. No international program has involved similar distance, volume, frequency or duration so there is no equivalent experience to draw on.

Canada has no public registry of the transportation of nuclear materials, and no central repository of accident analysis. However, Transport Canada reports 90 transport-related radiological emergencies since 2015, and the Canadian Nuclear Safety Commission posts summary reports of select accidents that have involved the release of radioactive materials or have involved shipments of radioactive waste.

FEDERAL REVIEW PROCESS

The NWMO proposal is still in the concept stage. Despite this, the project has moved forward to a federal impact assessment, with the Notice of Commencement issued on July 3, 2026. This marks the beginning of a multi-year process which will include the NWMO producing a series of detailed reports to describe their project, a public hearing, and a decision by the federal government.

In May 2025 the federal government released a discussion paper outlining a number of changes to the impact assessment and federal permitting process overall, including the potential handing over of the impact assessment process from the independent Impact Assessment Agency to the Canadian Nuclear Safety Commission, which is led by nuclear industry insiders.

The federal government then announced in June that it is considering deeming NWMO's DGR to be a “Project of National Interest” (a PONI) which would guarantee approval and bypass the full impact assessment process.