

Comments on the Deep Geological Repository for Canada's Used Nuclear Fuel Project

Concerned Citizens of Renfrew County and Area (CCRCA)

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CCRCA appreciates this opportunity to provide comments on Draft Integrated Tailored Impact Statement Guidelines prepared by the Impact Assessment Agency of Canada (IAAC) for the Nuclear Waste Management Organization (NWMO) Deep Geological Repository (DGR) for Canada's Used Nuclear Fuel Project. The draft Guidelines are supposed to identify specific factors to be considered by a Review Panel in assessing the DGR project, and provide direction for the NWMO in preparing an Impact Statement.

In their current form, the IAAC's draft Guidelines would not allow a credible assessment. Our detailed comments on the Initial Project Description have been ignored. Most fundamentally, the draft Guidelines would not allow assessment of a clear, fully detailed plan for nuclear fuel waste management.

A credible assessment of the DGR project requires an examination of activities at reactor sites, including used fuel types in storage, used fuel inventories and accumulation rates, storage containers and their expected life span, and methods of used fuel transfer into casks. The design and function of transport casks, means of transport, and transportation routes, require adequate consideration as well.

Activities at the proposed DGR site are essentially ignored in the draft Guidelines, including those taking place at the Used Fuel Packaging (or "Processing") Plant, the Underground Characterization Facility, the shallow cavern for centralized storage, and the radioactive liquid waste handling facility.

We asked that the alternative of packaging used fuel in disposal-ready form at reactor locations be considered. This has been ignored. We pointed out the safety advantages of ramp access to the underground portions of the facility instead of an elevator shaft. This too has been ignored. Cost considerations are involved here as well. Ramps are generally cheaper for mines at depths of up to 500 metres, especially when low tonnages are involved.

Since we submitted our comments on the project description, we have learned that other countries plan to construct DGRs using tunnel boring equipment, rather than using standard mining activities involving drilling and blasting. Tunnel boring causes less damage to bedrock, leaving it in a better condition to contain and isolate nuclear substances from the biosphere. It should be the preferred alternative.

The principle of containing and isolating nuclear waste and its radioactive emissions from the biosphere should be applied to all phases of the project, not only to the post-closure safety case.

We wish to note the importance of getting these Guidelines right. This impact assessment provides the only opportunity to examine the DGR project in its entirety. By splitting its licensing processes into different phases (site preparation, construction, operation, decommissioning, abandonment), the Canadian Nuclear Safety Commission (CNSC) puts off examining specific radionuclides found in used fuel and other nuclear waste, and thereby ignores their behaviour in the environment.

The CNSC may argue that section 3(1)(c) of the General Nuclear Safety and Control Regulations, which requires information on "name, maximum quantity and form of any nuclear substance to be encompassed by the licence," will not apply to the site preparation and construction phases of the DGR

project. These phases would only involve constructing an access road, building above- and below-ground facilities, and drilling and blasting into bedrock—not waste emplacement. In theory, the CNSC could licence full construction of a DGR facility without even considering whether it would contain and isolate specific nuclear substances from the biosphere.

This strongly emphasizes a need for the final Guidelines to require examination of individual radionuclides found in used fuel and their likely behaviour in the environment. The draft Guidelines contain only a few general references to radionuclides, without recognizing that different radionuclides will interact with water, microorganisms, and native geology in very different ways. The draft Guidelines completely ignore microbial interactions with the nuclear substances in used fuel. They treat bedrock as an inert medium rather than a dynamic living microbial ecosystem.

About Concerned Citizens of Renfrew County and Area

Concerned Citizens of Renfrew County and Area (CCRCA) is an incorporated, non-profit organization that has been working for the clean-up and prevention of radioactive pollution from the nuclear industry in the Ottawa Valley for 40+ years. Our current focus is the proposed giant mound for one million cubic meters of radioactive waste at Chalk River, Ontario and the proposed “entombment” of the Nuclear Power Demonstration reactor at Rolphton, Ontario. The Chalk River Laboratories would be one of the sources of used fuel to be sent to the DGR. AECL’s research reactors at Chalk River used a variety of fuel types. Their varied properties are a management consideration for long-term storage or disposal. Within Renfrew County there are 200 kilometres of Highway 17. It would be part of the route for used fuel shipments from the Point Lepreau reactor, the Gentilly-2 reactor, and from Chalk River itself to the Ignace DGR site. Used fuel transport should be assessed in the impact assessment. We have concerns about accidents on this busy highway, and radiation exposures associated with proposed fuel shipments.