

Pinawa Community Engagement Session – June 22 Summary Report

The objective of the Integrated Strategy for Radioactive Waste's (ISRW) community engagement sessions is to invite and facilitate broad dialogue to develop a strategy for managing Canada's radioactive waste, in particular low- and intermediate-level waste. We approach this goal by listening to the perspectives of attendees across multiple Canadian communities. The development of the strategy is grounded in a range of guiding principles and objectives as we explore key questions and issues discussed at our events. This summary report details what we heard from the participants at the session focused on the community of Pinawa, Manitoba.

The session began with a brief land acknowledgement, recognizing and expressing gratitude for the land we are on. This was followed by an introduction and an overview of logistics for the evening. The event offered several opportunities for attendees to participate, give feedback and ask questions about various topics.

Following our initial presentation and educational videos, we received several questions and feedback from participants. One such comment encouraged us consider the teachings of Indigenous peoples. The plans for dealing with radioactive waste should look seven generations into the future and protect mother earth at all costs. Participants added that we must not compromise the health of the planet and its people, and we ought to ensure that seven generations ahead are fully protected.

Participants also had questions about transportation, and we heard that it may be reasonable to keep the waste near where it was produced and stored today. We explained that transportation of radioactive materials is the most regulated transportation sector in Canada. There are strong safety and security requirements in place, and the packages being transported are designed assuming there will be an accident.

Participants asked how we distinguish low-level from intermediate-level waste, and are radionuclides different between the two? We responded by saying that there are no actual measurement criteria in terms of level of radiation, but that we measure by length of time that containment is necessary. Waste requiring isolation for more than 300 years is considered intermediate-level waste. In addition, low-level waste generates no or very little heat, whereas intermediate-level waste may generate some. There is no hard and fast rule that says certain isotopes are which level.

Another question was posed about distinguishing levels of nuclides, and how we can tell how long materials need to be stored. We explained that, at the facility design stage, there will be a need to determine nuclide levels, where waste characterization will be essential. It is important to note that the level of the current conversation is more about how many facilities, disposal vs rolling stewardship, and who should be responsible for implementing the plan. However, we noted that there is a CSA standard about waste characterization.

We heard that some participants were pleased to hear us define our terms but felt disturbed by the abuse of language by people at large and that we need to use the proper terms. Participants felt that there is a lack of clarity between storage and disposal and that they could not get the answers they were

seeking. Further, the industry needs to bring the language down to the people, using their vernacular, and when doing so there is criticism from industry insiders.

The difference between storage and disposal was on the minds of participants. We explained that it is defined in the CNSC regulatory document. Disposal means you place the waste in a facility with no intent of retrieval providing containment to isolate it from the environment.

Attendees were asked to associate which words came to mind when they heard “the management of radioactive waste in Canada.”

We heard that planning was front of mind and that they are beginning to understand the nature of the waste that will need disposal in the future. They reflected about their experience and stated that when working with other physicists, if it was not about the reactor itself, it became unimportant. We heard from participants that the waste needs to be out of our hands as soon as possible. Canada’s plan started in 1978 and it has been a bumpy road ever since. Socially, it has not been accepted over the years.

We heard that planning continues to be important. For example, OPG is working with MOLTEX to reuse used nuclear fuel – right from the beginning – they should be considering the nature of the waste they will have in the future.

The first thing that came to mind for some participants is when nuclear started it seemed like a good option several decades ago, back when green energy seemed like science fiction, but today they asked if there is really a need for nuclear energy considering our current technology. It was added that when they think about nuclear, there are two models: developing countries, and instances like Chernobyl and Fukushima. The “hand of God” can always occur even in places like Japan where safety and technology are renowned.

It was suggested that we need to know what we are managing. That is the most important ingredient in the sense of knowledge and expertise. Participants expressed that in their personal experience, you have bags of waste of all types, you hold up your bag, and if the meter indicates it is low, it goes into a trench. If the meter indicates intermediate level waste, it is put in barrels, and as such, it is a ‘dogs’ breakfast’.

We heard from participants that Chalk River is so bad, and contamination is in the environment already – same at Whiteshell. Considering low-level waste, it was said that waste owners have no idea what is in it, and by making simplistic designations for management with lack of records, lack of knowledge of what we are dealing with, we are doomed to a process that will not work. And so, we must know what we are managing and how to characterize it.

We asked if the attendees thought the following guiding principles addressed or reflected the most important aspects that a Canadian strategy for the long-term management of radioactive waste should include and what we need to ensure. And having heard from other participants, is there anything they would like added?

We described the principles that guide every aspect of the ISRW project and asked the audience to review these principles and tell us if anything is missing or should be modified.

We heard that waste for storage should be handled in the safest possible way, and that participants would have appreciated more information about what low-, intermediate- and high-level waste is. There

is uncertainty of exactly what is low- and intermediate-level waste, and what current quantities are, and what the plans are for the future. Participants said that it is not possible to accomplish all the guiding principles because they can be contradictory.

We also heard that one thing that everyone must be aware of when it comes to nuclear matters is that it is political. The entire industry is political, and always has interference as a result. There was a view expressed that nuclear energy is an extension from bomb-making. Participants also stated that we run into a myriad of problems as to what we want or society to be. They were thinking about reprocessing used fuel and taking out the plutonium because they thought there was not enough uranium, then we found all kinds of uranium in Saskatchewan. To follow up, the question was posed of what we will do when we run out of natural resources, since we don't really know how much resources exist.

We asked participants to consider the information we presented and this important challenge, and then asked, what is most important for us to get right when developing Canada's plan for managing waste?

We heard that the shorter the distance we need to move the waste, the better. Transporting it multiplies the risk. This exposes the waste to different dangers such as people who may have the wrong intention. It would be best to move it as little as possible.

It was frequently stated during the discussion that low and intermediate level waste should never be mixed.

For disposal of hazardous waste, we heard that the deeper you go, the safer it is. Some participants expressed that low level is a misnomer because we do not know what is in it. We heard that near surface is more dangerous, and contamination is more likely to escape into the environment. According to participants, the waste is not managed safely. As an example, they stated that at Chalk River, in the old days, they took liquid from hot cells and dumped it into sand pits, so now it is in the environment. We heard also that people do not understand the mess they are getting into with reprocessing of fuel and SMRs, concentrating the uranium and that we need to stop that as we have enough trouble knowing what to do with the waste we have. We heard that the safest thing is really going deeper with more isolation. Participants stated that there are simply not many options, it is one or the other and near-surface is more dangerous. We heard that it is just a question of how much money are we willing to spend.

Also, of great importance to the attendees was the question of how much waste will be generated in the future? Participants stated that Chalk River is a very contaminated site, and it was reported to be safe, but it is not. We heard that Canada must curtail new intermediate- and low-level waste and stop generating waste because we have enough trouble figuring out what to do with what we already have. Some of the participants added that there is very long-term low-level waste of Uranium at sites and that future glaciations may impact the safety of their storage.

Several other points that arose during conversation were that the local metal recycler has a nuclear detector, and it goes off quite a lot, there is nuclear waste cleared to be disposed of as general waste and there is a need to have multiple disposal facilities. There is a worry of the immense cost to building any disposal facilities because it comes under such scrutiny, so in this sense it comes down to economics. We heard that the concerns are not only economics, however, it is also about social

acceptability, and so it is better to dispose of the waste where it currently resides. As soon as we begin moving it off the property, nobody wants it.

The following was feedback based on if low-level waste and intermediate-level waste should be separate or together, or one facility or several.

A participant asked the group, would you want to put medical waste under Vancouver? Makes sense for sites like Chalk River, but not for every hospital.

About a deep geological repository, we heard that there should be one. It is such a big investment and there are good transportation flasks so the waste can be moved. It could be acceptable for some of the intermediate level waste to go into the high-level repository. Participants expressed that they felt the best option is to deep-dispose of high-level waste and intermediate-level waste.

We asked in what manner should we deal with Canada's low- and intermediate-level waste over the long term.

We heard the importance of not cutting corners on this. Participants stated that, in the past, waste owners were only self-interested and not willing to take other waste located less than a thousand kilometres away. We heard that this was confounding, so perhaps a national group would be ideal. Further, some participants expressed that they felt there would be no issue with the NWMO leading the implementation of the strategy.

One piece of information that participants felt was missing from our presentation was that, in the case of the OPG DGR, the community came forth with the proposal for the facility and that it would only be OPG's waste. This is not simply an institutional or political fight; it is a societal one as well.

We heard that when thinking of co-locating intermediate-level waste and high-level waste, the big problem is heat and temperature. Participants expressed that we cannot comingle other materials with used fuel but we could have one community with two nearby repositories in a 'heat unaffected zone'. We provided information on the three options (co-location, nearby repositories, and separate facilities in different locations) that internationally are being considered.

Participants expressed that present day waste owners are only interested in cutting corners. There should be an organization with enough capacity to oversee, solve problems, and enforce proper rules.

Participants had some final questions as we approached the end of the session which were answered by Karine Glenn, Strategic Project Director at the NWMO.

We heard questions regarding clarity about how ubiquitous waste from hospitals was. How common and distributed is it? We explained that most of the medical waste is very short-lived. They employ 'delay and decay' for 30-60 days until it is no longer radioactive waste and can be disposed similarly to household waste.

It was asked if hospitals create nuclear materials to which we answered that, in some cases, there are adjacent facilities that generate their own isotopes. Any waste from that facility needs to go to an appropriate facility for disposal.

People wanted to know how common nuclear waste is at low-level, and how much was there currently in Canada.

We heard that the option of deep underground storage for intermediate- to high-level material sounds like an expensive operation. Another question was once a deep underground mine is created – can you keep adding waste or is it only one filling? The response to this is that, in some designs, there are different rooms that are sealed shut one at a time as they are filled, and some facilities leave the space to add rooms

Could these facilities be used to store other types of hazardous materials by charging a fee to other corporations? There is a waste acceptance criterion set when facilities are designed which specifies the characteristics of the waste that can be accepted, and facilities are therefore designed accordingly.