Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 22-H7.131

File / dossier : 6.01.07
Date: 2022-04-11
Edocs: 6771729

Oral presentation

Written submission from the Brilliant Energy Institute at Ontario Tech University

In the Matter of the

Canadian Nuclear Laboratories (CNL)

Application from the CNL to amend its Chalk River Laboratories site licence to authorize the construction of a near surface disposal facility

Commission Public Hearing
Part 2

May and June 2022

Exposé oral

Mémoire de la Brilliant Energy Institute at Ontario Tech University

À l'égard des

Laboratoires Nucléaires Canadiens (LNC)

Demande des LNC visant à modifier le permis du site des Laboratoires de Chalk River pour autoriser la construction d'une installation de gestion des déchets près de la surface

Audience publique de la Commission
Partie 2

Mai et juin 2022

Canada

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April 10, 2022

Senior Tribunal Officer, Secretariat
Email: interventions@cnsc-ccsn.gc.ca

RE: Canadian Nuclear Laboratories application to amend its Chalk River Laboratories site licence to authorize the construction of a near surface disposal facility IAA Reference Number: 80122

Dear Secretariat,

I am pleased to provide this letter, and would like to present it orally, in support of the Canadian Nuclear Laboratories license amendment to allow for a near surface disposal facility.

My name is Jacquie Hoornweg and I am the executive director of the Brilliant Energy Institute (BEI) at Ontario Tech University.

BEI has been created as a change agent to support Canada's transition to net zero, building on the strength of Ontario Tech's deep energy expertise. The university has a long history of nuclear research and education and a long-standing partnership with Canadian Nuclear Laboratories (CNL), as well.

With respect to my own background, over more than two decades in the energy sector, I have spent much of it working in and covering the nuclear industry. Early in my career, I was a reporter and news editor in Durham Region where I covered the nuclear plant activities, as well as, for four years, Canada's bid for the ITER fusion project. During my subsequent career at Ontario Power Generation, I served as public affairs manager at Pickering, director of Nuclear Public Affairs, and, for the last four years, as part of the executive leadership team, as vice president Corporate Relations and Communications. For about seven years, following that, I worked as a consultant and wrote about the industry, with clients that included Natural Resources Canada, CANDU Owners Group, the University Network of Excellence in Nuclear Engineering, the Canadian Standards Association, utilities and SMR technology vendors. I am also a long-standing contributor to Nuclear Engineering International magazine.

In my time at OPG, I worked extensively on communicating and engaging with publics on waste management at the stations and as part of the team working on development of the deep geologic repository project for low and intermediate waste. I also worked in collaboration with the Nuclear Waste Management Organization on planning and engagement of Adaptive Phased Management. This included engagement with communities, including Indigenous communities, and other stakeholders.

I recognize this is a long introduction but wanted to provide context of what informs my submission.

My support for CNL's near-surface disposal facility is based on three key areas:

- The importance of a sustainable Chalk River site as a key contributor to innovation and technology advancement in clean energy and nuclear medicine;
- The critical role that demonstration of sustainable full life-cycle management of nuclear facilities and materials will have on the viability of the use of nuclear energy in integrated clean energy systems, critical to meeting Canada's climate change and sustainability goals; and
- Research and observations of CNL's technical and engagement process undertaken over the past several years in technical studies and engagement on the project.

Chalk River and the people who have worked at the research facility and the National Research Universal (NRU) reactor over several generations can be credited for much that the Canadian Nuclear industry has achieved in safe, effective and environmentally sound use of nuclear power for reliable, low-carbon electricity, for nuclear medicine and other peaceful nuclear applications.

Ontario Power Generation and Bruce Power can take credit for Ontario's ability to shut down coal plants and for generating low-carbon electricity that has avoided a great deal more air pollution and greenhouse gas emissions in Ontario. But without the research and development that occurred at Chalk River, our economic history and our air-shed could look a lot different, today.

For more than 40 per cent of Canadians – those in Ontario and New Brunswick -- the primary source of electricity is low-carbon nuclear generation. Canada's economic engine, the Greater Toronto Area, gets 60 per cent of its electricity from nuclear power.

I recognize that if we look back on the long history of Chalk River, it is imperfect. This could be said of any pioneer mission undertaken by humankind. By its nature, research is a process of learning from trial and error.

However, if we look at the benefit we have received from the work at CNL: the lives saved from the absence of air pollution; the lives improved by ample access to electricity and to nuclear diagnostics and treatments.

With some remote community exceptions, access to reliable electricity is almost universal in Canada. We take this as a right and so we should. But for one and a half billion people on the planet and in those aforementioned remote communities, secure access to electricity is a privilege they do not yet have. Think for a moment of what that means. Or think of the people in countries where coal is the primary source of electricity; places where people do not let their children play outside at certain times of the day due to smog and where life expectancy is shortened as a result of such poor air quality.

Through the work at CNL and of others, including our researchers at Ontario Tech, we are closing the gap for those people, too. But there is still so much work to do.

And this brings me to my second point. Nuclear power can play a critical role in Canada's goals for net zero by 2050 and for global clean energy security. It can do so by integrating with renewables, as a feedstock for hydrogen, and continuing its current role as a baseload

electricity, virtually free of carbon emissions. But this cannot happen without public confidence, not only in in the operation of nuclear power but in the management of the waste.

We must have the courage to move forward with nuclear waste solutions where the science supports them. If we do fail to do so, we risk losing this valuable tool in our fight against climate change.

Which in turn, brings me to my third point: Excellence in waste management is in part a technical solution but with a crucial social aspect, as well. It is not enough to have a demonstrable technical answer. It must be an answer that meets the expectations and needs of society. It must consider truth and reconciliation and it must be a plan that can endure in both of these regards.

I believe that CNL is committed to doing the hard work both technically, and of social engagement, to ensure the success of this project. I believe CNL understands the value of this project's contribution to nuclear sustainability, which in turn is a key contributor to CNL and the industry's own success, Canada's energy sustainability and the global fight on climate change.

In closing, I support the hard work CNL is doing to strengthen Canada's position as a global clean energy leader and to bring equitable access to clean, emission-free energy to all.

Sincerely,

Jacquie Hoornweg
Executive Director
Brilliant Energy Institute
Ontario Tech University