



Canadian Nuclear Society / Société Nucléaire Canadienne

c/o AMEC NSS Limited

4th Floor, 700 University Avenue, Toronto, Ontario, Canada M5G 1X6

<http://www.cns-snc.ca>

Tel./Tél.: 416-977-7620

Fax/Télécopieur: 416-977-8131

E-mail/Courriel: cns-snc@on.aibn.com

Speaking Notes for DGR Joint Review Panel Hearing – Sept 17, 2013

Presentation by Dr. Adriaan Buijs, CNS President

Good afternoon, and thank you for this opportunity to address the Joint Review Panel, on behalf of the Canadian Nuclear Society (or CNS). My name is Dr. Adriaan Buijs, President of the CNS, and also a Professor at McMaster University. With me today is Dr. Jeremy Whitlock, Communications Director for the CNS, and also a Physicist and Manager at Atomic Energy of Canada Limited.

The Canadian Nuclear Society is a volunteer, not-for-profit technical organization dedicated to effective communication on nuclear issues – communication with the public, as well as within the nuclear science and technology community. We represent about 1100 scientists, engineers, professors, students, operators, administrators, and others who are interested in improving the understanding of nuclear science and technology. We do not represent any corporation, university, or sector of the nuclear industry.

Our written submission to the Joint Review Panel addresses three aspects of the DGR proposal: justification, technical support, and public consultation. Of these three topics, we are most concerned with the third – public consultation – as we feel it represents the greatest risk to the viability of this project. More on that in a moment.

Let us first consider the justification for this DGR project.

The CNS feels that it is not only *appropriate* that an industry (any industry) take responsibility for the long-term management of its waste material, it is an *expectation* of the Canadian people. Canadians, and Ontarians in particular, have enjoyed a high standard of living due to over fifty years of reliable, low-cost electricity from nuclear power, and they expect a high standard environmental stewardship from this process. In this respect, the nuclear industry is a leader among other industries – including, since 1976, the operation of the Western Waste Management Facility here at the Bruce site, for the management of Low and Intermediate-Level Waste.

Given the current and projected volumes of Low and Intermediate-Level Waste at the Western Waste Management Facility, it is appropriate for OPG and the Town of Kincardine to begin a process now for long-term management of this material. This reflects a sense of social responsibility and environmental sustainability, and a recognition that increasing resources will be needed to actively manage the growing volume of waste in above-ground structures.

Now to the second topic, technical support.

The CNS notes that the DGR project, through the EA process, has undergone a broad scope of technical evaluation looking at the potential impact on the biosphere. The outcome of these evaluations, reported in the Environmental Impact Statement, is that there will be no long-term environmental impact from the DGR. The isolation of radioactive nuclides from the biosphere employs a defence-in-depth principle, or a layering of multiple barriers between the hazard and the biosphere. The first barrier is the waste material itself, which radioactively decays – transforming itself into non-radioactive material over the period that it is isolated within the repository. Successive barriers depend heavily upon the geology and

hydrology of the surrounding host rock. We note that a four-year site-specific geoscientific investigation concludes that the suitability of the DGR site is high, due primarily to the low permeability of the host rock, and the long-term isolation of groundwater, at the DGR's depth, from shallow water supplies.

This is an important point: we have confidence that the site is suitable because Nature herself has isolated the water in the host rock for hundreds of millions of years. There are several examples around the world where “natural analogues” of similar isolation capability exist, lending credibility to the DGR concept – including in Saskatchewan, where the world's richest deposits of uranium have sat for millions of years without movement and with no radioactive signature at the earth's surface. This uranium has been protected from groundwater flow – much greater than that which the DGR will ever experience – by naturally-occurring, low-permeability buffer material.

This brings us to the third point – public consultation.

As an organisation dedicated to effective communication on nuclear issues with all stakeholders, the Canadian Nuclear Society views with interest the level of public engagement associated with the DGR project. We note that, regardless of the convincing justification and technical merit for the DGR, a project of this nature will often stand or fall on its public perception.

This is, of course, an important part also of the EA process, including the extensive public hearing we are participating in today. To be blunt, however, the CNS is concerned that a number of aspects of the DGR project have the potential to be “showstoppers” in the eyes of certain stakeholders, particularly those living on the shores of Lake Huron and the

downstream communities. On the face of it, the simple proximity to the lake itself can cause concern, particularly if one doesn't fully appreciate the geoscience arguments – as most people outside of this room almost certainly don't – that, somewhat ironically, make the DGR probably one of the safest and most sustainable proposals from any Canadian industry for dealing with its long-term waste legacy.

We encourage OPG to continue engaging the public, and to seek effective ways to communicate the safety of this project – in particular, the role played by natural barriers, and the high level of confidence that the scientific community has in these barriers, based partly upon natural analogues. We also encourage OPG to engage as wide a stakeholder community as possible, beyond that typically required for EA consultation. We note that both the management of radioactivity and the management of water resources are top-of-mind concerns for Canadian and American citizens alike. Put another way, the enormity of the Great Lake that sits beside this project is matched only by the enormity of the “nuclearphobic meme” that sits at the root of public perception of this project.

In conclusion, the CNS feels that the proposed DGR project is an ethical approach to sustainable waste management, addressing a large volume of current and future Low and Intermediate-Level Waste. The technical risks associated with the proposed DGR are minimal, as shown by a broad scope of environmental interaction studies, and the study of the geology of the site itself. Of most importance to the well-being of stakeholders in this project, however, and therefore to the well-being of the project itself, is the breadth and clarity of public communication on the safety of the DGR. The value of effectively addressing the social side of the safety risk analysis cannot be underestimated.

Thank you for your time. We will be pleased to answer any questions you may have.