

Directorate of Environmental and
Radiation Protection and Assessment

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Via electronic mail to: lpayette@nirb.ca

Ms. Leslie Payette
Manager of Environmental Administration
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU XOB OCO

Dear Ms. Payette:

Subject: Notice of Part 4 Screening for AREVA Resources Canada's "Kiggavik"
Project Proposal

Thank you for your January 20th, 2009 correspondence in which you ask Interested Parties to comment on the Kiggavik uranium mine proposal by AREVA Resources Canada Inc.

The Canadian Nuclear Safety Commission (CNSC) is an Authorizing Agency for this project, as licences would need to be issued to the proponent for site preparation and construction, operation, decommissioning, and abandonment, as per Section 24(2) of the *Nuclear Safety and Control Act*, in order for the project to proceed.

The mission of the CNSC is to protect the health, safety and security of Canadians as well as the environment, and to respect Canada's international commitments on the peaceful use of nuclear energy. As Canada's nuclear regulator, we are pleased to bring our expertise to the Nunavut Impact Review Board (NIRB) process.

We have reviewed the proponent's November 14, 2008 project proposal and their January 9, 2009 documentation that addressed the CNSC's application requirements. We found the project proposal to be well written and comprehensive for the purposes of initiating an environmental assessment process.

We offer the following comments based on our review:

- There is a potential for the Kiggavik project to cause significant public concern due to uranium not having been mined in the territory in the past.
- The Kiggavik project covers a relatively large geographical area with multiple mine pits and associated facilities for which a potential for significant adverse environmental and socio-economic effects exist. Examples include potential effects on caribou migration and heritage resources from the siting of project infrastructure and potential effects on groundwater quality due to permafrost degradation during operation, decommissioning, and post-closure of the tailings management facilities (TMFs).
- The Kiggavik project is of a type where technological innovation could apply, with consequent unknown effects. Examples include mine pit and TMF design and underground excavation in a permafrost environment with the additional influence of underlying fractured rock.

As these comments are consistent with the items listed in Section 12.4.2 (a) of the Nunavut Land Claims Agreement (NLCA), the CNSC believes that the project requires a review under Part 5 or Part 6, as per Section 12.4.4 (b) of the NLCA.

The CNSC recognizes that the Guidelines developed for this project will direct the proponent on the content that is to be included in the Environmental Impact Statement (EIS). The proponent's submission appears to adequately identify the core facility design considerations and their potential interactions with the environment that will require detailed assessment in the EIS, though the CNSC would like to highlight certain elements:

- The continued importance of traditional hunting and harvesting activities and the significance of country foods within the diet of the stakeholder communities requires emphasis on the potential influence of the Kiggavik project on the traditional diet. This requires up-to-date dietary surveys, baseline characterization of the human – country food dietary exposure pathways and prediction of the influence of the project on these pathways.
- The socio-economic and environmental importance of caribou further highlights the importance of the assessment of potential influences of the project on caribou habitat and migration activities.
- Permafrost conditions (pre-operational, operational and upon decommissioning) have the potential to strongly influence the project. The CNSC will be particularly interested in the proponent's characterization of present permafrost conditions, its predicted behavior upon disturbance by mining activities and how these may influence the short-and long-term performance of the TMFs. Climate change impacts on permafrost and performance of the TMFs are also of interest for this project. The present understanding of site fault lines and potential influence of rock fractures on TMF performance and the potential for influencing deep groundwater quality will require careful scrutiny.

- Further decisions by the proponent with respect to final proposed mine, mill, and TMF designs (e.g. mill processes to be used, the location of the final effluent discharge point, the use of a tailings thickener and in-pit under-drain layer) are required or alternative design options are to be carried forward for detailed assessment within the EIS as a means of determining the most appropriate final mine, mill and TMF designs.

The CNSC looks forward to working with NIRB on this environmental assessment. Please call Brian Torrie at 613-992-7231 if you have any questions regarding these comments.

Sincerely,

Patsy Thompson, Ph.D.
Director General

c.c.: B. Torrie, R. Jammal, T. Jamieson, M. Leblanc