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Written submission from the International Irradiation Association

Mémoire de l'International Irradiation Association

In the Matter of

À l'égard d'

Ontario Power Generation

Ontario Power Generation

Ontario Power Generation – Licence amendment application for the Darlington Nuclear Generating Station regarding the commercial production of Cobalt-60 Ontario Power Generation – Demande concernant la modification de son permis pour la centrale nucléaire de Darlington en vue de produire commercialement du Cobalt-60

Public Hearing – Hearing in writing based on written submissions

Audience publique – Audience fondée sur des mémoires

Spring 2024

Printemps 2024







To the Canadian Nuclear Safety Commission

30th January 2024

Comments on Application from Ontario Power Generation - Licence amendment for the Darlington Nuclear Generating Station regarding the commercial production of cobalt-60

Hearing Notice Number: 2024-H-101 Hearing Date: 24-04-22

I am the General Manager of Gamma Irradiation at the International Irradiation Association (iia) and a subject matter expert on the cobalt-60 (Co-60) and gamma irradiation markets. The iia is a not-for-profit organization that supports the safe and beneficial uses of irradiation and has a diverse global membership that includes corporations and research institutes that apply irradiation. This includes gamma irradiation using the cobalt-60 that is manufactured in a small number of nuclear power reactors. The iia wishes to make the following comments regarding the application made by Ontario Power Generation:

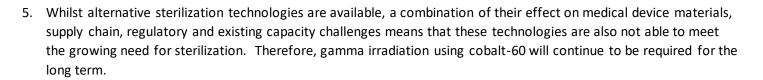
Comments:

- The largest application of gamma irradiation using cobalt-60 is the sterilization of medical devices by the healthcare industry in order to reduce the risk of patient infection. A patient in surgery or receiving wound care or simply having a blood sample taken, is highly likely to be treated using product that has been sterilized using cobalt-60. Globally, it is estimated that 30-40% of medical devices are sterilized using cobalt-60. In the US alone, approximately 40% of medical devices are sterilized using cobalt-60, equivalent to approximately 16 billion devices per year.
- 2. Other important uses of cobalt-60 include the non-invasive treatment of cancers and brain tumours, polymer processing, food treatment and environmental applications.
- 3. The demand for sterilization, and therefore cobalt-60 is growing at rates not previously seen. This is due to an increasing and aging population, greater access to healthcare globally, and the development of new medical devices that require sterilization.
- 4. The supply of cobalt-60 is currently not able to grow at a rate that enables industry to meet this additional demand. This is due to the very small number of nuclear reactors that are able to produce cobalt-60. This issue is well understood and of great concern to the healthcare industry.

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- 6. The Darlington Nuclear Generating Station (DNGS) operates CANDU type reactors. These CANDU type reactors are well established for cobalt-60 production. However, the number of CANDU reactors globally is very small (~30 reactors in operation) and therefore the opportunities to increase cobalt-60 production are very limited.
- 7. The authorization of commercial cobalt-60 production at DNGS would be a great contribution to meeting the growing demand for sterile medical devices that keep the global population safe and healthy.

Yours sincerely

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