

I. Enhancing Safety and Security Standards of Nuclear Power Facilities

Since the construction of its first nuclear power plant in 1962, Canada has understood that clean and safe nuclear energy is a key element in maintaining a sustainable world. Nuclear energy has an important role to play in combating climate change as a much cleaner energy source than fossil fuels. Canada recognizes that nuclear energy is not without drawbacks, both in terms of potential safety of the nuclear plant, and its surrounding environment. In addition, countries must maintain security over the products and byproducts produced therein. Canada believes that Member States with active nuclear power facilities within their borders must take the highest precautions to ensure that the benefits of nuclear energy outweigh the risks. Each nuclear power plant in Canada has multiple, robust safety systems designed first and foremost to prevent accidents, and subsequently to reduce their effects should any accidents occur. Canada stands by the statement of Michael Binder, president of the Canadian Nuclear Safety Commission (CNSC), when he declared in the 2012 CNSC annual report that “Canada will never compromise safety.”

In 2016, Canada celebrated seventy years of successful nuclear safety. As a country with a long history of reliable and accident-free domestic nuclear energy use, Canada has developed a mature nuclear regulatory framework that combines federal oversight and local control. The decision to build nuclear plants resides with the nation’s provinces. By giving local governments ownership in the decision to build, Canada believes this enhances the potential safety of such sites. To ensure consistency across local sites, the federal CNSC takes responsibility for ensuring that systems are maintained and inspected regularly and upgraded when necessary.

Canadian policy is built on a foundation of having strong safety precautions in place for its nuclear facilities. To that end, nuclear safety is coordinated by the CNSC to ensure the safety of workers, close-by communities, and the environment. The top priority of the CNSC, as laid out in Canadian Directive SOR/2007-272, is the prevention of unreasonable risks to the health of people in and around nuclear facilities. In order to ensure this safety, the General Nuclear Safety and Control Regulation, SOR/2000-202, requires a complex process for obtaining licensing to operate a nuclear facility.

Canada is proud of the progress the IAEA has made over the years to promote the safety and security of the world’s nuclear facilities. As one of the founding members of the IAEA, Canada has long been a supporter of its mission. Canada provided a home for one of the IAEA’s two regional offices, opened in Toronto in 1979. More directly related to the topic of nuclear safety, Canada has signed every relevant international agreement, including the Convention on Nuclear Safety (CNS), the Convention on Physical Protection of Nuclear Material and the subsequent 2005 Amendment thereof, and the 2015 Vienna Declaration on Nuclear Safety.

Despite the progress the IAEA has made, the agency faces hurdles in carrying out its mission in the twenty-first century. Canada calls attention to the results of the 7th Review Meeting of the CNS, which took place in Austria this past April chaired by a Canadian, Mr. Ramzi Jammal. The panel recommended having the IAEA develop guidelines to help countries strengthen regulatory body oversight and encouraging Member States to practice a culture of safety in their nuclear facilities. Canada believes that its own CNSC structure could be used as a potential role model for other countries looking for credible regulatory structures.

Canada encourages the IAEA to consider several potential solutions to improve the safety and security of nuclear facilities. First, Canada believes that to build a long-term commitment to safety, there must be more information sharing among IAEA Member States, particularly those with active nuclear power facilities. To encourage this information sharing, Canada proposes a more formal peer review process for nuclear facilities, under the purview of the IAEA. Canada would also push for stricter international safety standards that Member States would be encouraged to adopt. To incentivize countries

to comply with stricter standards, the IAEA should consider issuing interest-free loans to allow older nuclear facilities in developing countries the ability to modernize. With ideas such as these fully implemented, the IAEA can continue to do its part to ensure a safe environment for the production of nuclear energy.

II. Developing Solutions and Promoting Cooperation for the Disposal of Nuclear Waste

Recognizing the important role that nuclear energy plays in the policies of many Member States, Canada also acknowledges that it is essential that nuclear waste be disposed of in as safe a manner as possible. The challenge of making nuclear power safer does not end after the power has been generated. Nuclear fuel remains dangerously radioactive for thousands of years after it is no longer useful in a commercial reactor. The resulting waste disposal has become an international challenge. To that end, Canada strictly adheres to the standards of the IAEA with regard to the disposal of nuclear waste.

Over the past fifty years, since the creation of Canada's nuclear safety commission, nuclear waste control has gotten progressively stronger. Canada has long subscribed to the IAEA's Code of Conduct on the Safety and Security of Radioactive Sources, particularly as it strives to "establish an adequate system of regulatory control of radioactive sources, applicable from the stage of initial production to their final disposal, and a system for the restoration of such control if it has been lost." Canada is also a party to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Domestically, Canadian regulatory guide G-320 and regulatory policy P-290 lay out the foundations of Canada's nuclear waste management policies. All Canadian facilities that handle radioactive waste are licensed by the Canadian Nuclear Safety Commission (CNSC). Canada considers High Level Waste (HLW) to be fuel that has been declared as radioactive waste. HLW is stored in licensed facilities such as the aforementioned, and they are monitored by specially trained personnel, provincial and federal authorities, and international organizations, such as the IAEA. Canada's regulatory framework is guided by the Nuclear Fuel Waste Act (NFWA), which created the Nuclear Waste Management Organization (NWMO). The NWMO is active in exploring both old and new methods of nuclear waste disposal. Overall, Canada has twenty monitored disposal sites, sixteen of which are still actively in use. Canada also believes in exploring the potential of deep geologic disposal of nuclear waste and agrees with the World Nuclear Association that "Deep Geological Disposal is widely agreed to be the best solution for final disposal of the most radioactive waste produced." As such, Canada is in the final regulatory steps of approving its first deep geological repository in Kincardine, Ontario. Canada is amenable to sharing the results of this storage technique with other IAEA Member States. Such collaboration among Member States will provide the opportunity to work jointly as international partners to further the goal of safe nuclear waste disposal.

Canada believes that there are a number of ideas that the IAEA should endorse to encourage safer disposal of the world's radioactive waste. First, attention should be paid to the sighting of future disposal locations. Canada recommends the IAEA create a panel to provide technical expertise, on a voluntary basis, to Member States looking to create future disposal sites. Second, the methodology chosen for disposal should also be reviewed by the IAEA. Two concrete proposals would be to encourage Member States to follow the example of France and the Czech Republic in the way they treat their very low-level waste identically to their low-level waste. Storing low-level waste in surface trenches is extremely detrimental to the surrounding environment and should be discouraged. Similarly, Canada believes further attention should be paid to Deep Geological Disposal and the promise thereof. Finally, the IAEA should strengthen regional partnerships among Member States and encourage shared disposal facilities. Canada believes that by implementing these suggestions the IAEA can ensure that all Member States maintain the highest standards of safety and security, both for their own citizens and for the world.