Handling With Care

Responsible Management of Nuclear By-Products in Canada

Canada-Romania Partnership in Nuclear Technologies

March 3, 2021

ONTARIO POWER GENERATION

Regulatory and Policy Oversight

- In Canada, radioactive waste is regulated by the Canadian Nuclear Safety Commission (CNSC).
- Waste is classified by the Canadian Standards Association, following International Atomic Energy Agency (IAEA) guidance: low-level, intermediate-level, and high-level – used fuel.
- Currently, all storage is interim, in structures at the surface.
- Planning is underway for permanent disposal:
  - **Used fuel:** A federally mandated organization is planning a Deep Geologic Repository (DGR), for all of Canada. Two candidate sites have been identified. Final site selection by 2023, facility in-service by 2045.
  - **Low- and intermediate-level:** The government of Canada is holding a public review in 2020-21, to seek integrated solutions across the industry.

Handling with Care

- Ontario Power Generation has more than 50 years' experience in managing nuclear by-products:
  - Beginning in 1968 (first commercial nuclear reactor in Canada).
  - In the 1970s and 1980s, OPG began waste services to three nuclear stations at Pickering, Darlington and Bruce.
- No other company or utility in Canada matches OPG's scope and diversity of services:
  - All levels of waste, including used fuel, through entire life-cycle.
  - Our own transportation fleet.
  - One of only two incinerators in North America.
- Excellent safety record: In 50 years of radioactive materials transportation, no injury to any driver or any member of the public, and no release of radiation.

Our 3 pillars of waste management:

- **Stewardship** – we look after the waste safely and responsibly.
- **Lasting Solutions** – we are committed to safe and permanent disposal.
- **Peace of Mind** – we earn the trust of the public and regulators.

Environmental Practices

- OPG embraces the environmental "three Rs" – Reduce, Re-use, Recycle.
- Nuclear by-products are carefully sorted and segregated – including at source – to find items that are clean and divert them away from storage.
- Materials are reduced in volume, to lower costs, build fewer buildings and maintain public support:
  - Close to half of all the low-level materials are incinerated, with up to 90% reduction in volume.
  - Compaction further reduces volumes.
- Innovation: OPG continually researches best practices and new technologies, to further support diversion – including metal melt, and new techniques for improved sorting.