

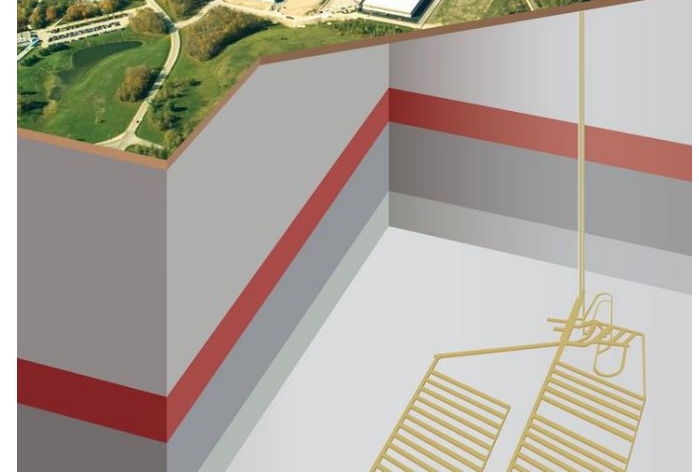


# Responsible Nuclear Waste Management

Presentation to Pickering CAC – May 19, 2020

# Agenda

- 1 | Nuclear Waste Management – Overview
- 2 | Lasting Solutions – Permanent Disposal
- 3 | Response to COVID-19 at the P WMF


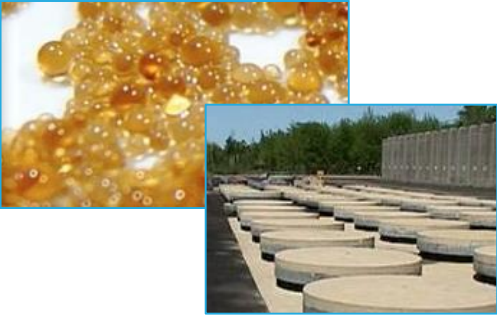
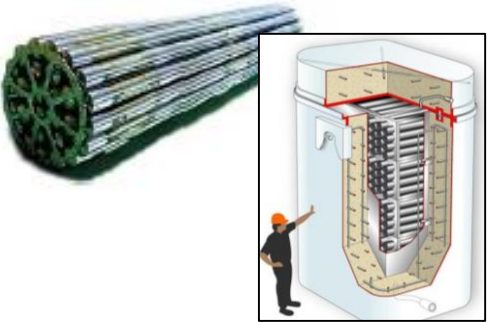


# Handling with Care

- OPG's nuclear waste management division has "three pillars":
- **Stewardship**
  - We look after the waste thoughtfully and responsibly. Our employees do their jobs with pride and purpose.
- **Lasting Solutions**
  - Seeking a permanent solution for disposal
- **Peace of Mind**
  - For the public, based on meeting or exceeding all regulatory requirements, and protecting people and the environment.

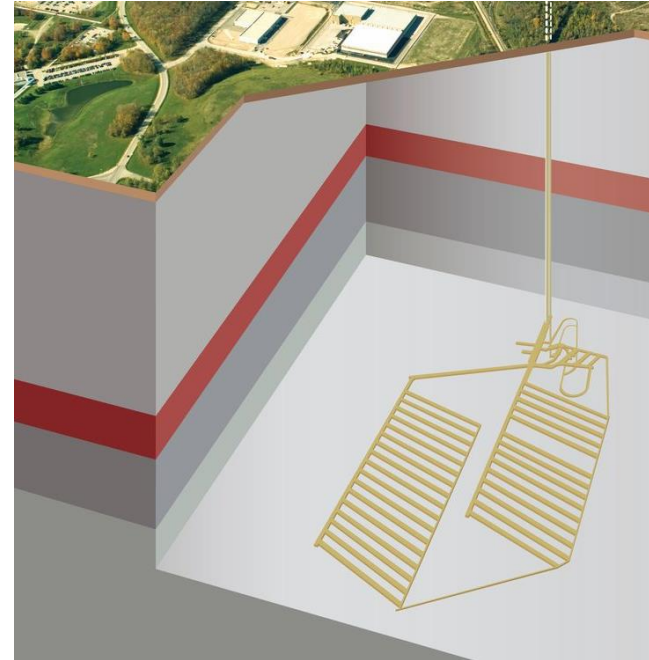


# Three Types of Nuclear Waste

Low-level	Intermediate-level	High-level
<p>Clothing, mops, rags, paper, plastic, wood</p> 	<p>Resins, filters, used reactor components</p> 	<p>Used fuel rods (spent uranium)</p> 
<p>Radioactive for 100 to 300 years</p>	<p>Radioactive for 100,000 years</p>	<p>Radioactive for 1 million years</p>

# Lasting Solutions

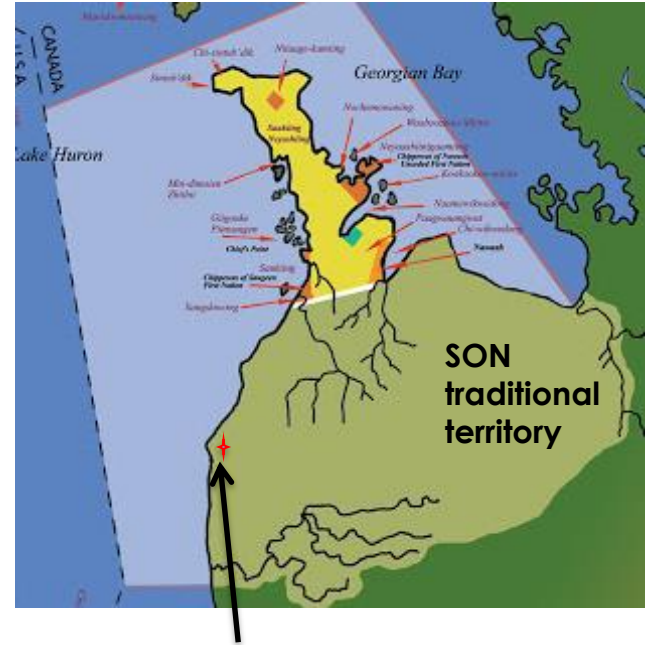
- Current storage of OPG's nuclear waste is interim:
  - Used fuel is stored at each OPG-owned station.
  - Low- and intermediate-level waste (L&ILW) is stored at the Western Waste Management Facility, within the Bruce site.
- OPG is committed to lasting solutions, for permanent disposal, in new facilities:
  - Used fuel is destined to go a Deep Geologic Repository (DGR) for all of Canada, a plan being developed by the NWMO.
  - Up until this year, the plan for OPG's L&ILW was a separate proposed DGR, at Bruce nuclear site in Kincardine.



**Cutaway view of OPG's proposed DGR for L&ILW, 680 metres below Bruce nuclear site.**

# First Nations vote on OPG's DGR

- Saugeen Ojibway Nation (SON) members voted on January 31, 2020, not to support OPG's DGR for low- and intermediate-level waste at the Bruce site
  - The proposed site is in SON Traditional Territory.
  - 1,058 voted no (86%), 170 voted yes, 4 spoiled ballots.
- OPG is upholding its 2013 commitment not to construct the DGR without SON support
- OPG is moving forward to develop alternate solutions.



Proposed DGR site in SON Traditional Territory.

# Developing Alternate Solutions for L&ILW

- OPG is assessing parallel options for permanent disposal of L&ILW:
  - Re-evaluate 2016 study of Alternate Locations for a L&ILW DGR elsewhere in Ontario.
  - Explore developing a Near-Surface Disposal Facility for low-level waste (LLW) only. Examples exist in the U.S., France.
  - Support an expected review of Canada's radioactive waste policy framework, to see whether it identifies alternate solutions:
    - Natural Resources Canada has publicly committed to undertake to such a review, as recommended in 2019 by a mission of the International Atomic Energy Agency .
- OPG will engage with key stakeholders to develop any new site-selection process. Any new process would engage Indigenous communities as well as interested municipalities.



**Low-level waste is stored at OPG's Western Waste Management Facility, at the Bruce nuclear site.**

# Continual Waste Minimization

- OPG is continuing its long-term focus on waste minimization, to reduce its environmental footprint.
- Waste minimization includes the Three Rs:
  - **Reduce** – Waste is sorted to reduce volumes:
    - Close to half the waste is incinerated, to reduce volumes up to 90%. Other waste is compacted.
    - Incinerator is monitored by Ministry of Environment, for compliance with strict emissions requirements.
  - **Re-use** – including the possible future re-use of used fuel through emerging new reactor technologies.
  - **Recycle** – Clean materials such as metals are free-released.
- Innovative new technologies are being researched and implemented to reduce the volume of large metal objects.

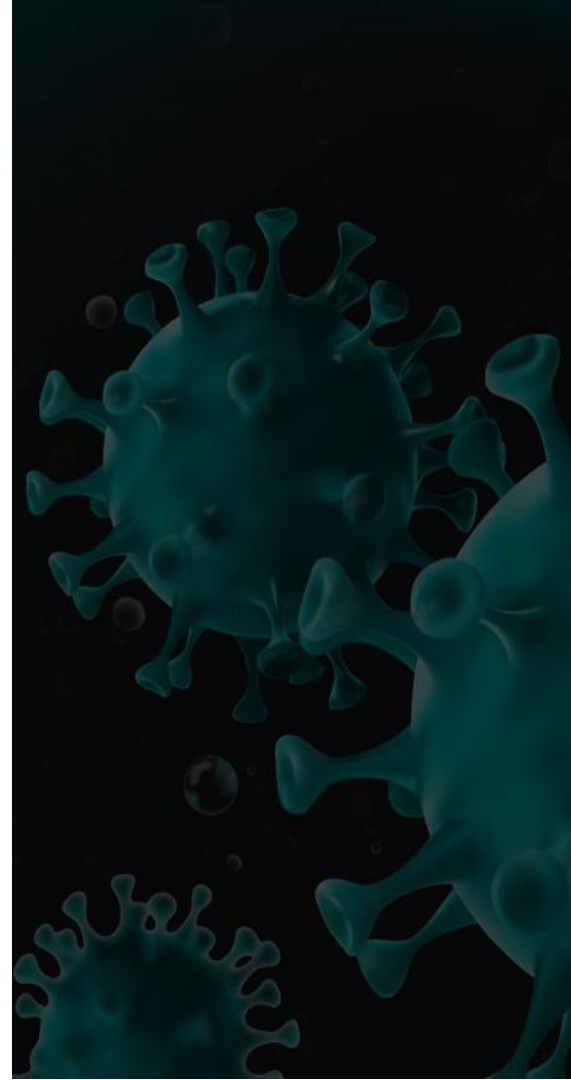


Waste sorting occurs at OPG's Western Waste Management Facility – to reduce volumes.

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# COVID-19 - PWMF Response

- Focus on supporting Pickering NGS goal of reducing the number of staff entering the Protected area while maintaining the safety and reliability of the operating units.
- March 17<sup>th</sup> , non-essential visitors barred from OPG sites.
- March 17<sup>th</sup> , cancelled all non-essential work travel.
- March 19<sup>th</sup> , Operations and Maintenance successfully staff safe stated the PWMF Processing Building and placed dry storage container processing on hiatus for 4 weeks.
- Preventative Maintenance Program (Licensing, Mandated, Fire and Valve)



# PWMF Response

- Facility Review to adopt physical distancing
  - hand sanitizer dispensing at common entry and exit points
  - Split crews for Operations and Maintenance
    - Crew A and B, one week on, one week WFH
  - Maximum of 8 staff per shift
  - No more than 5 people per meeting
  - Lunch room modifications
  - Added plastic screen partitions in the welding control room
  - Virtual Meetings, using Teams, Skype



# PWMF Response

- Facility Review to adopt physical distancing



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**This is a historic time that will be remembered for generations.**

**We are all in it together. Our greatest source of strength and support is sharing with and caring for each other.**

***Stay Well and Stay Safe***



# ONTARIO **POWER** GENERATION

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