



*Electrifying
life*

Darlington Nuclear Refurbishment Project Update

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Darlington Nuclear

- One of the world's top-performing nuclear stations.
- Four-unit station generates 3,512 megawatts.
- 20% of Ontario's electricity or enough power for about 2 million homes.
- Gold Level certification from the Wildlife Habitat Council (WHC).
- Recognized for performing to exceptionally high levels of safety, operational performance and equipment reliability by the World Association of Nuclear Operators (WANO).
- Only site in Canada licensed for new nuclear build with completed and accepted environmental assessment.

Isotope Production

- The unique design of Darlington's CANDU reactors allow isotopes to be removed while the reactor is still online.
 - Cobalt-60 (Co-60)
 - Molybdenum-99 (Mo-99)
 - Yttrium-90 (Y-90)
 - Helium-3 (He-3)



Darlington Refurbishment



\$12.8B investment



20-year project: 10 years of planning, 10 years of work. 35-44 months per unit.



14,200 jobs per year.



\$89.9B dollars into Ontario's GDP.

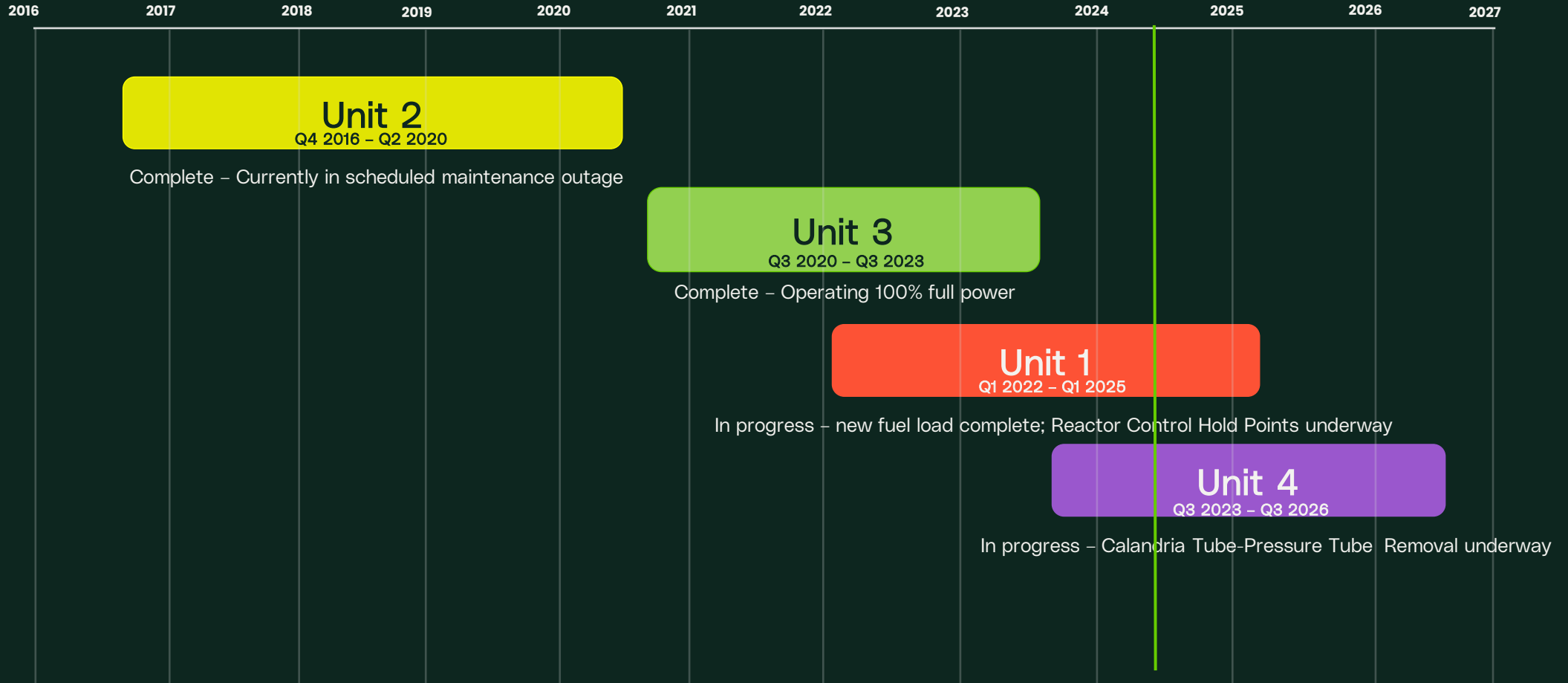


96% of expenditures spent within Ontario – revitalized nuclear supply chain.





Refurbishment Outage Schedule



**Total duration 120 months*

Unit 2 – Refurb Complete and Operating at Full Power

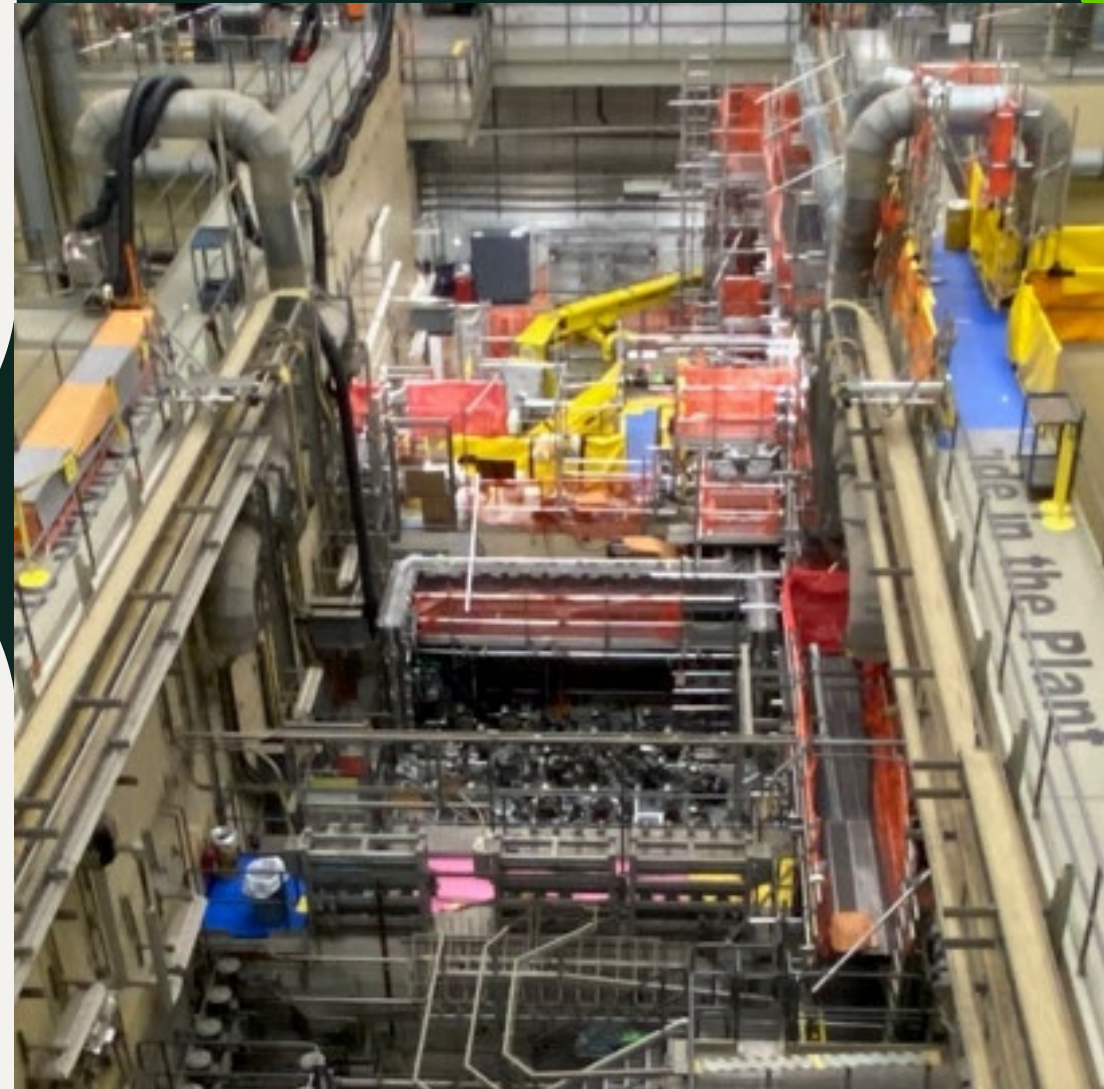
On June 4, 2020, Unit 2 was reconnected to Ontario's electricity grid, after a 44-month refurbishment

Update:

- Over 4,000 lessons learned from the knowledge and experience gained on Unit 2 during planning and execution.
- Ongoing lessons learned built into plans for Units 3, 1 & 4.

Isotope Update:

- Installation of an innovative Target Delivery System by Laurentis Energy Partners and BWXT Medical Ltd. in Dec 2022 - life-saving Molybdenum-99 (Mo-99) and Yttrium-90 (Y-90) isotopes will be produced in Unit 2 reactor (pending CNSC and Health Canada approval)
- A world-first for a commercial power reactor; Unit 2 will be the only source of Mo-99 in North America
- Mo-99 used in 30 million annual diagnostic procedures world-wide; Y-90 used in liver cancer treatment



Unit 3 – Refurb Complete and Operating at Full Power

On July 17, 2023, Unit 3 was reconnected to Ontario's electricity grid, 169 days ahead of schedule

- Unit 3 Refurbishment started September 3, 2020.
- Execution outage was deferred 3 months to ensure no COVID-19 pandemic-related issues
- Lesson Learned from Unit 2 - Combined Calandria Tube-Pressure Tube Removal series saved 30 days on Critical Path
- Static commissioning of Turbine Control modifications completed Sept 2022; successful first-of-a-kind at Darlington and in the nuclear industry

Isotope Update:

- Cobalt-60 production capabilities have been installed into Unit 3 reactor
- Ontario CANDU reactors produce 50 per cent of the world's supply of Cobalt-60





Unit 1 Status Update

- Breaker opened on Unit 1 (Feb. 15, 2022)
- Marked the halfway point in the Darlington Refurbishment Project and
- The refurbishment of two different units at the same time for the first time ever at Darlington (Units 3 & 1)
- Reactor disassembly complete (Apr 2023)
- Reactor reassembly complete (Dec 2023)
 - 960 feeder tubes, 960 endfittings, 480 calandria tubes and 480 pressure tubes
- New Fuel Load complete (May 2024)
- Restart Control Hold Points are underway
- Return to Service in Q4 2024

Unit 4 Status Update

- Breaker opened on Unit 4 (July 19, 2023)
 - One day after Unit 3 Return to Service
- Marked the three-quarter point in the Darlington Refurbishment Project and
- The refurbishment of two different units at the same time for the second time at Darlington (Units 1 & 4)
- Completed work:
 - Reactor Defueled (Sept 2023), Feeder Removal (Feb 2024), Endfitting Removal (May 2024)
- Ongoing work:
 - Combined Calandria Tube-Pressure Tube Removal (early July 2024)
 - Return to Service – late 2025/early 2026



Working with our Community



Tripled our donations to **SIX** local shelters

6,500 Trees and shrubs planted through community planting initiatives

Supported **149** non-profit organizations in **Durham Region** through the **Corporate Citizenship Program**

Donated life-saving equipment to local hospitals

Released **579** Atlantic Salmon into local streams through the **Bring Back the Salmon** initiative

3,000 meals donated by employees for **Feed the Need Durham**

Donated **\$11,000** to the **Royal Canadian Legion Poppy Campaign**

370 local families attended **"Tuesdays on the Trail"** programming

More than **\$248,000** donated to **369** local charities through the employee **Charity Campaign**

2,400+ people attended **OPG's Community Open House**



Generously supported the **Durham Regional Police Service Food and Toy Drive**

Donated over **100** meals and winter warmth kits to local **Indigenous organizations**

Assembled **Holiday care packages** for **local seniors**

63k students registered for **Virtual Power Kids**

Thank you.

Questions?

The logo consists of the letters 'OPG' in a bold, dark blue, sans-serif font. The letter 'O' is a simple vertical oval. The letter 'P' is a vertical stem with a horizontal bar that ends in a right-pointing arrowhead. The letter 'G' is a simple, blocky letter with a small notch at the bottom right.

OPG