



COG GOES TO THE DARLINGTON ENERGY COMPLEX

This summer, as Ontario Power Generation was ramping up for the beginning of the Darlington refurbishment execution phase, the CANDU Owners Group staff went out for a look at the training facility and project campus where thousands of contractors and OPG staff were preparing for the work ahead.

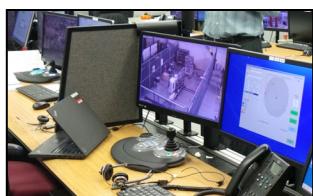
COG has an important role helping the industry collaborate and prepare for the refurbishments at both OPG and Bruce Power.

As the first unit came down for refurbishment at Darlington, Oct. 14, COG, the utilities and project vendor partners were **ready, set, go...**



Photos: Jacquie Hoornweg

Ready, Set, GO!



Photos this page: The Darlington Training Facility allows the OPG refurbishment project team contractors and staff to train and test tools and processes in replica conditions before they head into the plant, saving time and cost where it counts most.

DARLINGTON REFURBISHMENT Enters Execution Phase

It's a project the Conference Board of Canada projects will create more than a half million person years of employment.

The \$12.8 Billion infrastructure investment in Darlington comes with exponential economic impact for the local area, province and country. Here's a look at the project as it transitions from preparation phase to execution.

First unit offline: Unit 2: A 40-month project

Total project: Four units over 10 years

Historical electricity output: About 20 per cent of Ontario's power

Source: Ontario Power Generation



Photos: Jacquie Hoornweg

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The 'what' and 'how' of the Darlington Refurbishment Project

Four pillars of refurbishment success:

As of August, 2016:

Safety: 2,372 days without a lost-time accident

Quality: 722 work packages developed with 75,000 tasks scheduled: No significant quality events in the reporting period

Schedule: Refurbishment execution phase began with Unit 2 on schedule this October, 2016.

Cost: Tracking to meet is \$12.8 Billion budget with \$2.6 Billion spent to date.



Above: Construction central: Darlington Nuclear has made a multi-million dollar investment in site improvements to support refurbishment and continued operation with 18 new buildings.

Top of page: Turbine generator sets will undergo inspection and repair during refurb execution.

Campus Plan:

- 18 new buildings to support refurbishment and continued operation
- 12 completed, 6 in-progress and on track

Execution Phase:

Re-tube and feeder replacement: Removal and replacement of fuel channels, calandria tubes and feeders inside each reactor

Turbine generators: Inspections and repairs on the four turbine generator sets and replacement of analog systems with digital systems

Defueling of the reactor: Remove of used fuel and refurbishment of fuel handling equipment

Steam generators: Mechanical cleaning, water lancing, inspection and maintenance work

Balance of plant: Many smaller projects to replace and repair components on both the nuclear and conventional (e.g. electrical system, piping and valves) side of the plant