

Darlington Refurbishment Project: 25% Over-Budget and Six Years Late

According to Energy Minister Stephen Lecce's Feb. 2, 2026 news release, the Darlington Refurbishment project was completed ahead of schedule and under budget and will extend the life of the station's four nuclear reactors until at least 2055.¹

Ontario Power Generation's (OPG's) application to the Ontario Energy Board for a 72.6% increase in its price of nuclear energy in 2027² tells a different story.

According to OPG, it will have to spend an additional \$3.3 billion on the following projects to ensure the safe operation of the Darlington Nuclear Station until 2055:

Steam Generator Primary Moisture Separators Replacement Projects: \$359.2 million ; ³
Darlington Unit 1 and 2 Generator Stator Rewind Project: \$350 million ; ⁴ and
Darlington Turbine Rotors Replacement Project: \$2.589 billion . ⁵

Steam Generator Primary Moisture Separators Replacement Projects

After the refurbishment process commenced, OPG discovered that the steam generators' primary moisture separators had deteriorated causing thinning of the carbon steel from which they were fabricated.⁶

As a result, OPG has decided that it is necessary to replace all the moisture separators "in view of the substantial risks (including generation of foreign material that could rupture steam generator tubes, causing leaks that disrupt the steam generators' performance, compromises to nuclear safety, and forced outages), disruption and cost that this condition could pose for future operations".⁷

Replacement of these separators was not part of Darlington Refurbishment Project's \$12.8 billion budget.⁸

Darlington Unit 1 and 2 Generator Stator Rewind Project

The generator stator converts energy from the rotor's magnetic field into electrical energy.

The Darlington Refurbishment Project included a full stator rewind for Units 3 and 4, while Units 1 and 2 were determined to be at "low risk of requiring a rewind to meet the station's post-refurbishment end of life".⁹

During the refurbishment process, OPG determined that there is a risk of damaging the Units 1 and 2 stator cores if insulation degrades and multiple short-circuiting occurs.¹⁰

According to OPG:

“This poses a risk of failure, such that continued reliability cannot be assured through Darlington’s “second” life. Failure of the stators would result in an extended unplanned outage and severely impact Darlington’s generating output.”¹¹

As a consequence, OPG “has determined that the generator stators in Unit 1 and 2 will require an in-situ rewind to address insulation degradation.”¹²

The rewinding of these generators was not part of the Darlington Refurbishment’s \$12.8 billion budget.¹³

Darlington Turbine Rotors Replacement Project

Darlington’s turbines convert thermal energy into mechanical energy, which drives the generator to produce electricity.

According to OPG, critical cracks in turbine rotors could lead to “catastrophic component failure, which could cause a unit trip leading to significant damage extending to interfacing equipment and systems and posing a potential conventional safety risk.”¹⁴

According to OPG, inspections of the rotors prior to refurbishment did “not identify any concerning trends of stress corrosion cracking, and therefore replacements did not form part of the DRP [Darlington Refurbishment Project] scope.”¹⁵

However, subsequent reviews during the refurbishment process revealed that “rotor replacement will be required prior to station end-of-life as the critical crack depth would ultimately be approached.”¹⁶

OPG is forecasting that this project will be completed in July 2032.¹⁷ That is, six years after the original date for the completion of the Darlington Refurbishment Project.¹⁸

Cost Overrun

If OPG is able to complete the above projects on budget, the total cost of the Darlington Refurbishment will be \$15,948,200,000 (\$12,650,000,000 + \$3,298,200,000) which is 25% greater than its original budget of \$12.8 billion.¹⁹

Despite spending \$38 million to build a “Mock-Up and Training Facility” for the Darlington Refurbishment Project, OPG could not accurately anticipate conditions even in parts outside the reactor core.²⁰ This is important context for weighing claims that OPG’s \$26.8 billion Pickering Refurbishment Project will be completed on time and on budget.

Endnotes

- 1 Ontario Energy and Mines, News Release, “Ontario Delivers Darlington Refurbishment Project Ahead of Schedule and Under Budget”, (February 2, 2026).
- 2 Ontario Energy Board Docket No. EB-2025-0297, Exhibit I1, Tab 1, Schedule 2, Table 2.
- 3 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 15.
- 4 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 16.
- 5 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 17.
- 6 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 13.
- 7 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 14.
- 8 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 14.
- 9 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 15.
- 10 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 15.
- 11 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, pages 15 & 16.
- 12 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 16.

- 13 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 15.
- 14 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 17.
- 15 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 16.
- 16 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, pages 16 & 17.
- 17 Ontario Energy Board Docket No. EB-2025-0297, Exhibit D2, Tab 1, Schedule 3, page 17.
- 18 Ontario Energy and Mines, News Release, “Ontario Delivers Darlington Refurbishment Project Ahead of Schedule and Under Budget”, (February 2, 2026).
- 19 Ontario Energy and Mines, News Release, “Ontario Delivers Darlington Refurbishment Project Ahead of Schedule and Under Budget”, (February 2, 2026); and Ontario Energy, Northern Development and Mines, News Release, “Nuclear Refurbishment Begins At Darlington Generating Station”, (October 14, 2016).
- 20 <https://globalnews.ca/news/1645506/darlington-nuclear-unveils-training-facility-calls-it-unique-in-the-world/>