

# Overhaul of Ontario reactors gets ‘green’ light

By Ian MacLeod, OTTAWA CITIZEN March 17, 2013



**Aerial photo of Darlington nuclear facility. The federal nuclear regulator has issued environmental approval for the planned multi-billion-dollar refit of the Darlington nuclear station.**

**Photograph by:  
Merlin**

OTTAWA — The planned multi-billion dollar refit of the Darlington nuclear station has won environmental approval from the federal nuclear regulator.

“The proposed project is not likely to cause significant adverse environmental effects,” the Canadian Nuclear Safety Commission said in a statement. Public hearings to assess the project’s environmental impacts were held in December.

Ontario Power Generation (OPG) can now pursue a federal licence to begin the massive, mid-life overhaul. Darlington’s four CANDU reactors went into service 1990-93 and supply up to 3,512 megawatts or 20 per cent of the Ontario’s electrical power.

“OPG is very pleased with the CNSC’s decision,” Wayne Robbins, OPG’s Chief Nuclear Officer, said in a statement. “We were confident in our conclusions that Darlington refurbishment and continued operation of the station will not result in any significant, adverse environmental effects, given the mitigation measures identified.”

The reconditioning work is in addition to a lingering proposal to construct up to four new reactors at Darlington, 70 kilometres east of Toronto.

The costs associated with each are controversial.

Three years ago, the Ontario government estimated the Darlington refurbishment would cost \$6 billion to \$10 billion. OPG says a final projected cost won’t be known until a detailed plan is completed in 2015.

Ontario MP and NDP energy critic Peter Tabuns has demanded the provincial government put the brakes on the project until more precise costs are known and considered.

Pending final CNCS approval, refurbishment of the four reactors is to start in 2016 and extend the life of the machines into the middle of the century.

The job will be monumental and inherently dangerous. OPG has already awarded a \$600-million contract to a joint venture of SNC-Lavalin Nuclear and Aecon Construction for the planning phase.

About 6,000 radioactive fuel bundles and contaminated heavy water will have to be removed from each reactor and safely shielded and stored. Inside each reactor core, 480 pressure and calandria tubes and more than 900 feeder pipes will be replaced. Turbine generators and fuel handling systems will be overhauled. Then the reactors will have to be refuelled and restarted.

OPG plans to shut the reactors sequentially for 3.5 years each for refurbishment from 2016, so that no more than two are out of action at the same time, according to World Nuclear News.

During a similar refurbishment of the CANDU reactor at Point Lepreau, N.B., problems with the newly installed calandria tubes led to a three-year work delay and \$1-billion budget overrun.

Meanwhile, whether work actually goes ahead on Darlington's four proposed reactors remains unknown. OPG began seeking the licence in 2006, part of an Ontario government strategy to maintain nuclear energy as the province's chief source of energy.

Three years later, in 2009, a bid by federally-owned Atomic Energy of Canada Ltd. (AECL) to build the two reactors seemed to have the edge over bids from France's nuclear giant Areva and the U.S.'s Westinghouse.

But the provincial government soon brought everything to a halt, announcing it was suspending the procurement process until a restructuring of the Crown corporation was completed. Then-provincial energy minister George Smitherman added AECL's undisclosed price would need to come down by "billions of dollars."

AECL's commercial reactor division was sold to SNC-Lavalin in 2011 for \$15 million and renamed Candu Energy Inc.

With its future more certain, the province last summer said it was resuming the Darlington expansion process, with an eye to generating 2,000 more megawatts of nuclear power.

Nuclear power supplied 56.4 per cent of Ontario's total energy output last year.

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