

NUCLEAR *facts*

What is the Qinshan Project ?

IN 2003, ATOMIC ENERGY OF CANADA LIMITED (AECL) COMPLETED THE CONSTRUCTION OF TWO 728

MEGAWATT CANDU REACTORS AT QINSHAN IN EASTERN CHINA, APPROXIMATELY 125 KM SOUTH OF SHANGHAI.



The first of two nuclear reactor cores is shipped from its Canadian manufacturing site at Tracy, Quebec on its journey to a new reactor in China.

The two CANDU units are the first built in China and were delivered four months ahead of schedule and under budget. The project holds the record for the shortest construction schedule ever accomplished for a nuclear power plant in China.

Total capital and construction cost of the project is \$4 billion, of which Canada provided \$1.5 billion in an interest-bearing loan to China.

Facts and figures:

- o Unit 1, the first CANDU unit built in China, began commercial operation on December 31, 2002 - 43 days ahead of schedule.
- o Unit 1 was built with the shortest construction period of any nuclear plant in China - 54 months from the first concrete to full power operation.
- o Unit 2 began commercial operation on July 24, 2003 - 112 days ahead of schedule.
- o World records were achieved for slip-forming, as well as the installations of fuel channels, steam generator and pressurizer.
- o The project was completed 10% under budget, and generated additional income from earlier-than-scheduled power production.

China's need for electricity

China has a large demand for new sources of electricity. Currently, each Chinese citizen has access to about 5% of the electricity available per capita in any modern industrial nation. As a result, growth of China's electricity system is expected to be much larger than its already robust economic growth for many decades to come. Qinshan will thus provide China with an additional source of clean, low-cost, reliable electricity.



Shown above are the two CANDU reactors at Qinshan, China under construction. Both reactors were placed in service in 2003.



New generating stations are urgently needed in China, as it has a fast-growing demand for electricity.

Environmental impacts

China has large reserves of soft, or brown, coal which is being used to generate electricity but with serious environmental consequences. If the electricity to be generated by the two CANDU units at Qinshan were generated by coal, about 9 million tonnes of carbon dioxide and tens of thousands of tonnes of sulphur and nitrous oxides would be emitted each year. In addition, CANDU 6 reactors produce only about 3.3 cubic metres of used nuclear fuel waste each year; waste material that is completely contained and stored to prevent release to the environment.

Jobs for Canadians

The CANDU project at Qinshan resulted in the creation of 27,000 person-years of work for Canadians through the Chinese purchase of goods and services from more than 100 Canadian private-sector companies. This includes 9700 person-years of work for Atomic Energy of Canada Limited. Finally, the provision of the \$1.5-billion loan is being repaid at an interest rate of 7.49%, meaning that Canada will profit from providing financing as well as through direct employment.

Updated: November 2009



Canadian Nuclear Association

130 Albert Street, Suite 1610
Ottawa, Ontario K1P 5G4
Tel. (613) 237-4262
Fax (613) 237-0989
www.cna.ca

