

QINSHAN PHASE III: A RESOUNDING SUCCESS

The Qinshan Phase III CANDU® nuclear power plant is owned and operated by the Third Qinshan Nuclear Power Company Limited (TQNPC). The plant is located in Haiyan County, Zhejiang Province, China and consists of two 728 MWe CANDU 6 pressurized heavy-water reactors (PHWR) – designed by Atomic Energy of Canada Limited (AECL). The Qinshan Phase III Project was the first CANDU project in China and established the new benchmark against which all future nuclear power projects will be measured. Its two units were built to international quality standards, well in advance of schedule and under budget. The project is hailed as the model for all future collaborations.

Multi-national companies in close partnership executed the project. AECL provided the design and equipment for the nuclear steam plant (NSP) and was responsible for overall project management and construction management of the NSP.

In addition:

- The consortium of Hitachi and Bechtel were responsible for the design and supply of the balance of plant (BOP).
- TQNPC managed the construction of BOP and commissioned the plant with AECL providing direction and guidance.
- Chinese subcontractors such as CNI 23, Huaxing, CNI 22, Zhejiang Thermal Power Construction Company (ZTPC) performed the construction and installation work.
- Canatom NPM designed a portion of the NSP and provided construction management and procurement services.
- Hydro Quebec provided training to TQNPC plant management, operations and maintenance personnel.



Qinshan Phase III - Units 1 and 2

CITED AS THE BEST NUCLEAR PROJECT IN CHINA BY THE CHINESE GOVERNMENT

- *Unit 1, the first CANDU unit built in China, began commercial operation on December 31, 2002 – 43 days ahead of schedule.*
- *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.*
- *Unit 2 began commercial operation on July 24, 2003 – 112 days ahead of schedule.*
- *World records for slip-forming, installations of fuel channels, steam generator and pressurizer were achieved.*
- *Project completed 10% under budget saving 2.5 billion RMB and generating additional income of 1.5 billion RMB from early power production.*

The record-setting short construction schedule was a result of teamwork among all project participants and the use of advanced technology including:

- Up-to-date integrated electronic engineering tools such as 3-D Computer Aided Design and Drafting (CADD) systems, an integrated project management tool Primavera (P3) and AECL's advanced systems such as the Asset Information Management (AIM), CANDU Material Management System (CMMS)
- Modern construction and delivery technologies such as open-top construction and the use of pre-fabricated equipment modules and structures

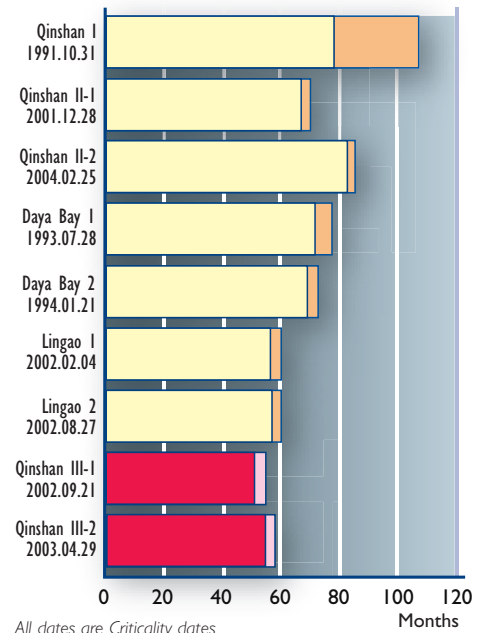
Experience gained from the Qinshan Phase III has been extremely valuable towards enhancing the CANDU technology basis. As a result, AECL is confident that future projects, such as a replication of Qinshan Phase III or the ACR-1000®, will achieve a short construction schedule and low cost.



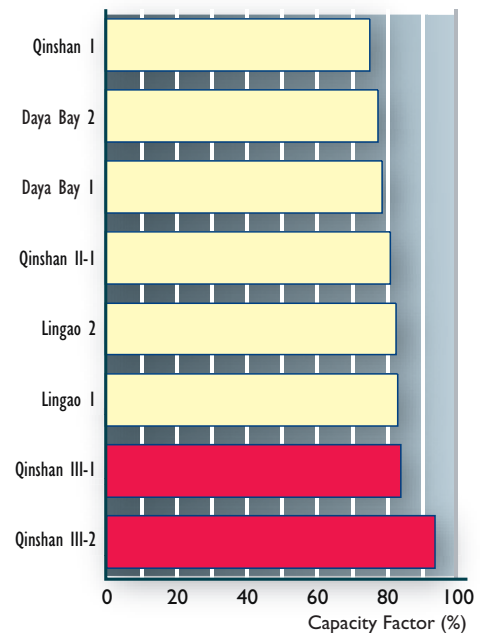
Use of open top construction method reduced installation schedule of dousing system from 6 months to 5 days

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Fastest Construction Schedule (First Concrete - Criticality - In-Service)



Lifetime Capacity Factor



Year Ending Dec. 2004
Source: IAEA