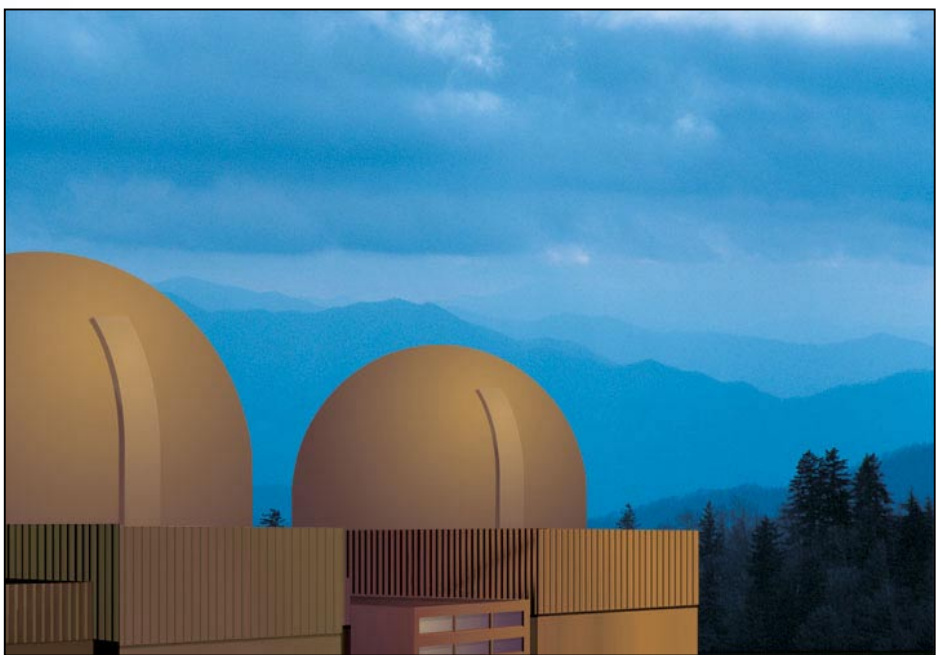
ACR-700 Status & Plans



Ken Hedges

Vice-president, ACR Business Unit

Atomic Energy of Canada Limited

Meeting with NRC and CNSC

May 27th 2003

Washington D.C.

AECL TECHNOLOGIES INC.

North American Market

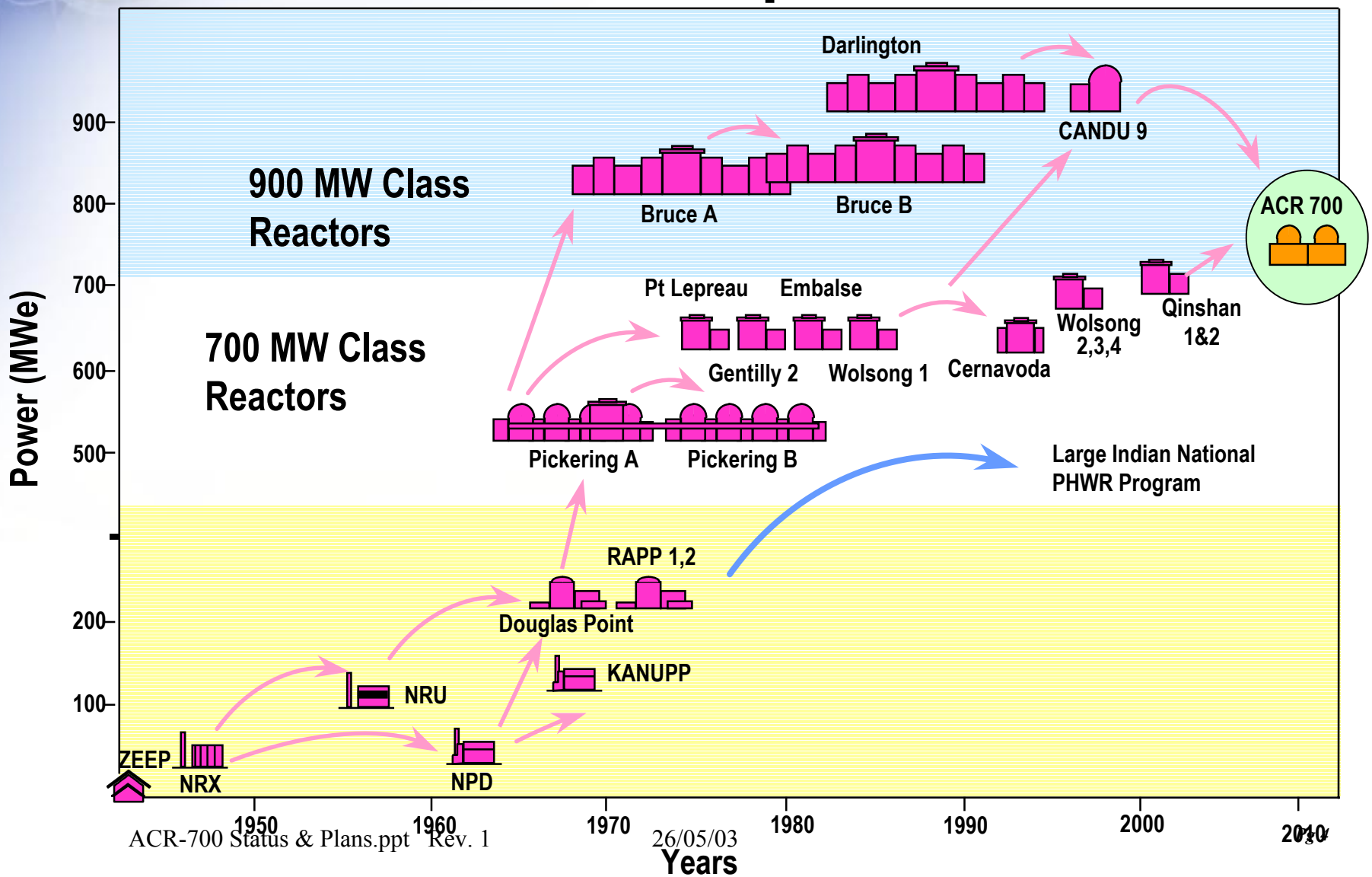
- ACR-700 is an evolutionary advance on successful CANDU plants
  - Starts from technology implemented in 32 CANDUs to date
  - Advances in safety, cost, operability, construction
- Developed to meet need for safe, competitive energy source for Canada and U.S., and later UK
- All these countries have mature nuclear programs
- Fits in well with US policy on development of new designs for near-term deployment

Near-Term Deployment Roadmap

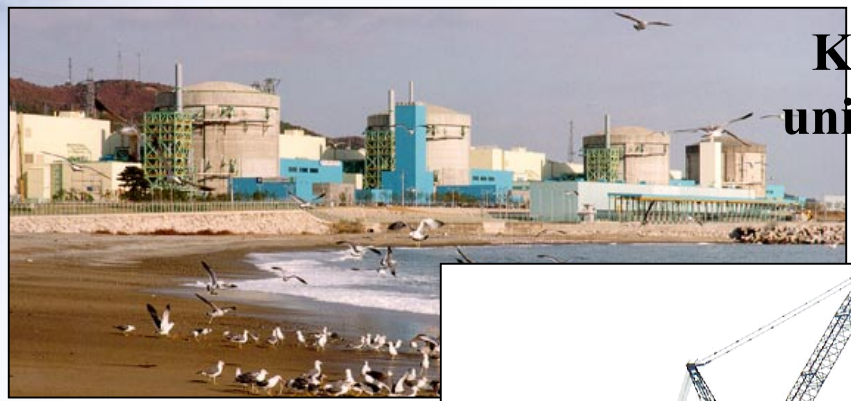
- "…new plant DCs should be completed in a much shorter time frame for designs which are mature and for which DC applications are complete and technically sound"*
- "Industry and NRC should also pursue the development of risk-informed and performance-based regulatory framework for future plants."*
- ACR can help meet these recommendations & has been developed in the context of performance-based licensing

*"A Roadmap to Deploy New Nuclear Power Plants in the United States by 2010", prepared for the US DOE and its Nuclear Energy Research Advisory Committee, October 31 2001.

CANDU Experience



CANDUs in Other Countries



Korea - four units operating

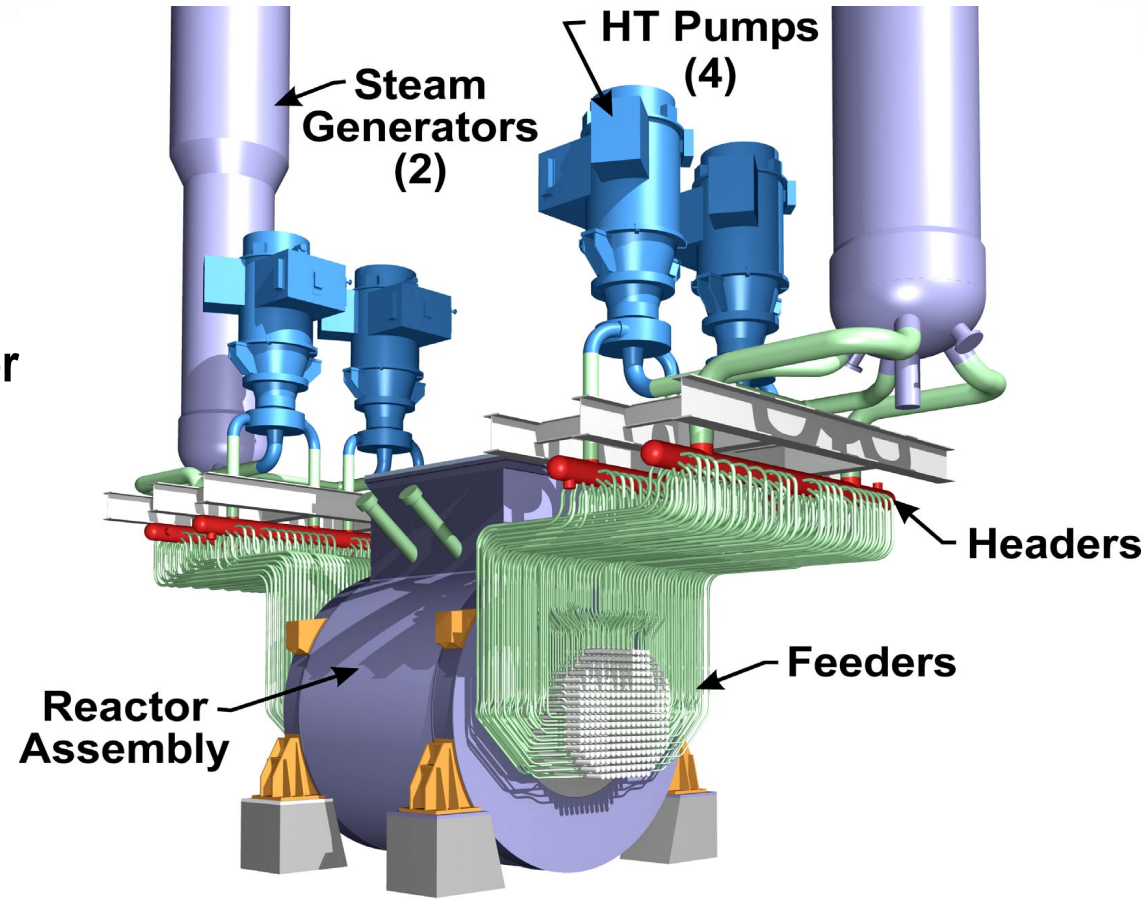
Romania – one unit operating, one under construction

Argentina - one unit operating

China – two units operating. Note open-top construction

ACR Characteristics

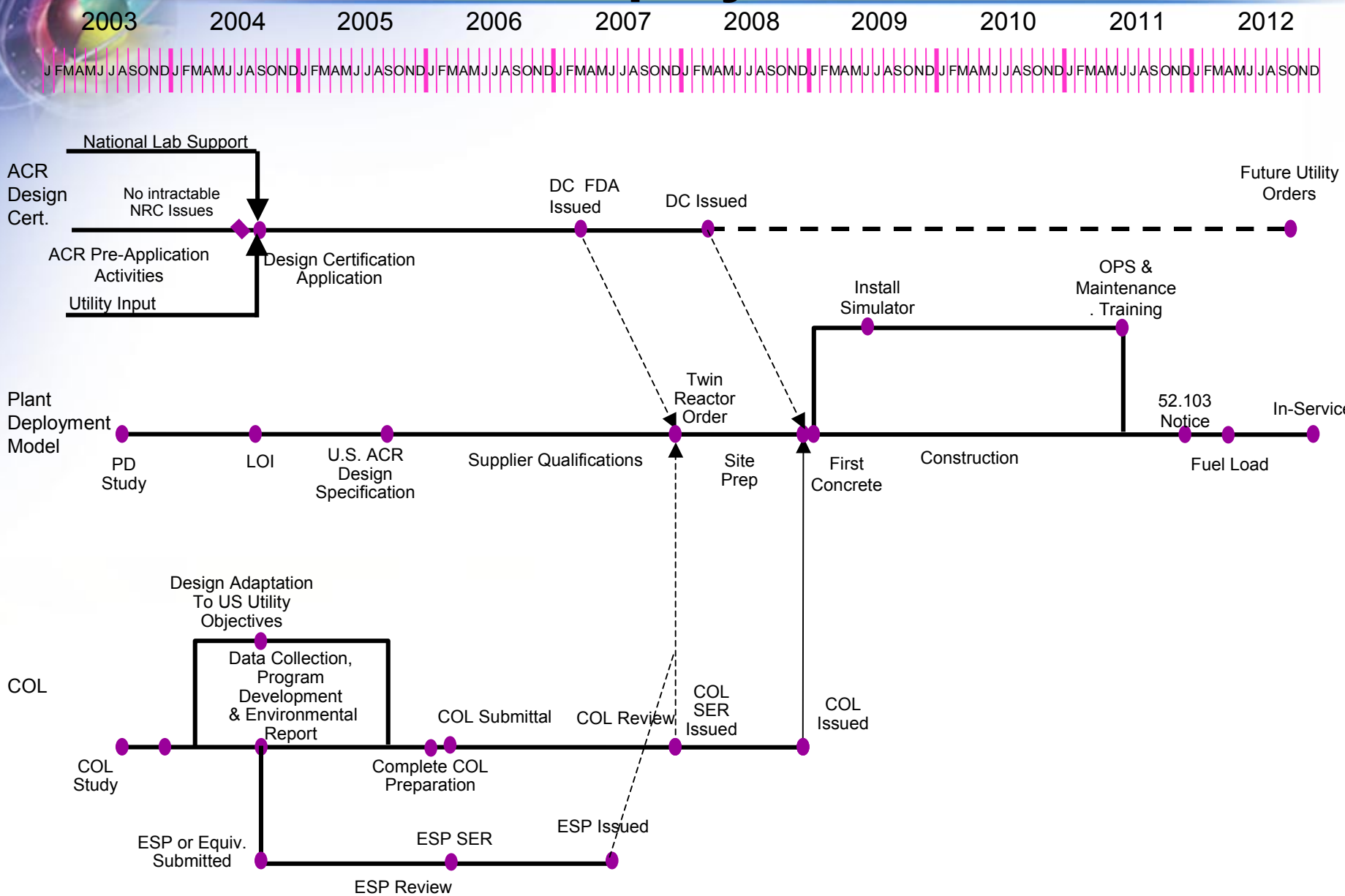
- Horizontal fuel channels (distributed core)
- Light-water coolant
- Heavy water moderator
- Simple fuel bundle
- On-power fueling
- Small, negative reactivity coefficients
- Large passive heat sinks around the reactor (moderator & shield tank, replenished by reserve water tank)



ACR Program

- Conceptual design completed March 2001
- Financial commitment from AECL
- Currently 240 project staff including 70 in supporting R&D, on upward ramp
- Completing generic engineering & pre-project licensing to have market-ready product in 2006
- Licensing cases being prepared for Canada & US

U.S. ACR Deployment Plan



Recent Activities

- Canada
  - CNSC Pre-Licensing review
    - Completed familiarization
  - Electrical generation utilities
  - Energy utilities
- US
  - USNRC pre-application review
  - AECL Technologies office in Gaithersburg
  - ACR Project office at Bechtel offices in Frederick, Maryland
  - Constructability workshop with utilities, CNSC and NRC
  - Working with Bechtel, Hitachi, electrical generation utilities
  - Inputs to ESP; cooperation with NEI
- UK
  - Completed in-depth feasibility study with British Energy

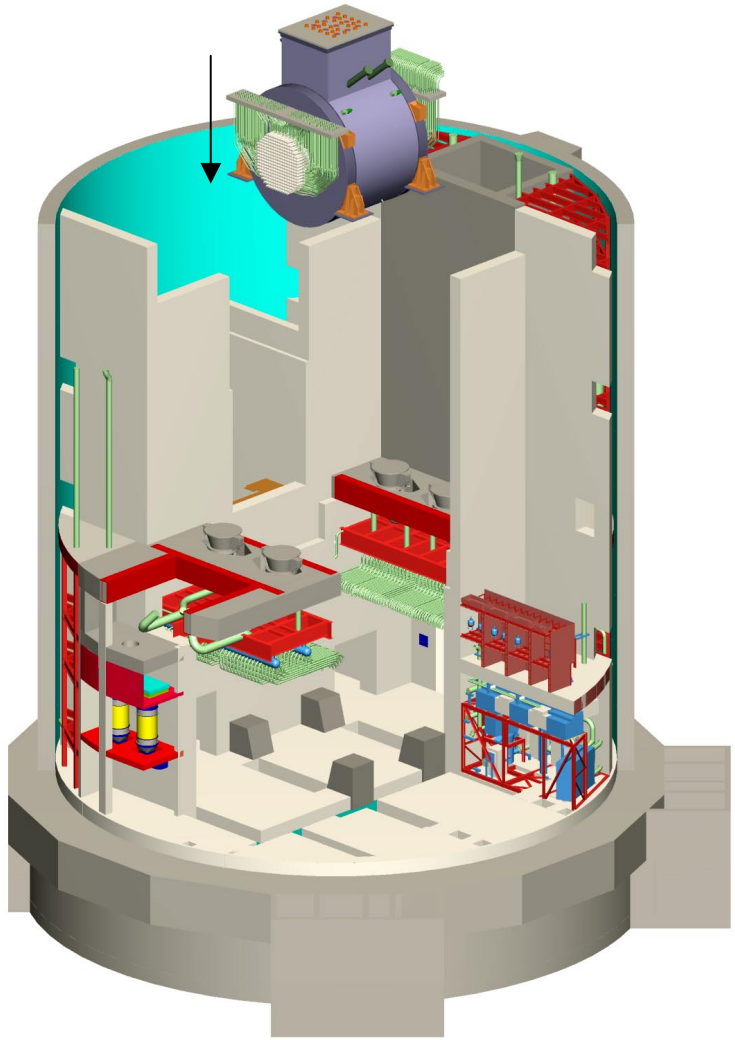
Implementation – CANDU 6

Qinshan success:

- On time, on budget
- First Chinese CANDU 6 built to shortest construction schedule of any NPP in China
- TQNPC – owner, BOP construction manager
- AECL overall project manager, design & supply NSP, manage NSP construction
- Consortium of Hitachi/Bechtel for BOP design and supply
- Chinese construction contractors

Implementation - ACR

- Based on success of Qinshan
- Fully modularized open-top construction
- Full 3D-CADDS design
- Deployment team for China (Bechtel/Hitachi/ AECL) will lead deployment of ACR



Implementation in the US

- Many of the competitive choices available for near-term deployment of nuclear power in the US are from non-US vendors
- US regulatory practice should accommodate designs which have a mature technology & have been licensed elsewhere
- Use of Canadian experience via joint regulatory review allows efficient and effective licensing in both countries & will help meet near-term deployment needs
- Proposed framework & details in subsequent presentations

Summary

- ACR-700 is an evolutionary advance on a successful technology
- Large design & deployment team – 240 people
- Ready for operation in 2011 in Canada & 2012 in the US
- Success in short construction schedule demonstrated at Qinshan
- AECL believes that an effective and co-operative interaction between CNSC and NRC is a major ingredient for successful deployment in North America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