

Background

In the past five decades, Canada has been well positioned internationally in the field of advanced materials research—for the Canadian nuclear industry, for other industrial applications and for university research. This was, in a large part, due to the ingenuity and foresight of the nuclear research community and the Canadian government in designing and building the world-renowned NRX and NRU research reactors at AECL's laboratories at Chalk River.

However, the NRX research reactor is now permanently shut down and the NRU reactor—Canada's pre-eminent research reactor since 1957—will be shut down before the end of the year 2005. The closure of NRU will coincide with an increasing demand for knowledge of the structure and dynamics of materials. It will also coincide with a projected shortage of neutron beam sources worldwide.

NRU, the primary neutron irradiation facility in Canada, will come to the end of its life by 2005.

All industrialized, and some newly industrialized countries, have access to neutron beams from research reactors. However, because of the growing international awareness of the critical importance of neutrons for advanced materials development, the global demand is now exceeding supply.

Australia, China, Germany, Holland, Japan, Egypt and Thailand have identified the requirement for advanced materials research facilities in the 21st century and are already constructing, or planning to construct, new research reactors. In addition, all nuclear vendor countries have access to government-supported research reactors to augment their commercial programs.

