

MANAGEMENT OF TRANSITION BETWEEN SHUT DOWN AND DECOMMISSIONING OF RESEARCH REACTOR CIRUS

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Cirus, a vertical tank type 40 MW thermal research reactor, natural uranium fueled, heavy water moderated and light water cooled; is located in Bhabha atomic research centre, Mumbai, India. It achieved first criticality in July 1960 and was operated successfully for 50 years till permanent shut down in December, 2010. The core has been completely unloaded, heavy water has been removed and reactor systems have been brought to a safe state in preservation mode with minimum surveillance requirement to conserve manpower and save energy and effort.

A deferred dismantling (safe enclosure) has been chosen as the decommissioning strategy for the reactor. A detailed plan has been prepared for managing the transition between permanent shut down and deferred decommissioning and executed. Some of the jobs in progress include radiation mapping of reactor structure, estimation of radioactivity content and decay pattern; introduction of technical specifications and surveillance methodology, estimation of waste generation and its characterization; categorization of components for reuse in other facilities, release for unrestricted use and or scrap; Sampling for data generation on irradiation and corrosion damage suffered by materials, development of decontamination techniques, etc. A preliminary decommissioning plan has been prepared.

The presentation will cover all aspects of managing the transition and highlight experience gained in post permanent shut down management of Cirus.

Organization

Bhabha Atomic Research Centre

Country

India

Author: Mr SHARMA, Ram (BARC)

Presenter: Mr SHARMA, Ram (BARC)

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