BARC
CHINTAN BAITHAK
brainstorming science & technology for cutting edge in-house R&D

@High Flux Research Reactor

Salient Features

Reactor type and Power: Open Pool Type, 40 MW (Th)

Maximum In-Core Thermal Flux: 1×10^{15} n/cm^2/s

Maximum Thermal Flux in Reflector Vessel: 5×10^{14} n/cm^2/s

Maximum Fast Flux: 2.5×10^{14} n/cm^2/s

Bhabha Atomic Research Centre (BARC) has been the front-runner in the Indian Nuclear Research Reactor Programme, having built and operated a number of research reactors of various types and capabilities. In order to further enhance the Indian Nuclear programme, High Flux Research Reactor (HFRR) is proposed to be constructed at BARC Campus, Vizag for providing advanced capabilities in the field of basic and applied research. A brief update of major design philosophy, salient features, reactor core components, process systems, main I&C systems, including safety classification, various development activities and utilisation facilities having state of art features is presented here.

Reactor Core

Fuel: LEU, Plate type geometry

Moderator and Coolant: Light Water

Reflector: Heavy Water in annular reflector vessel

Control Devices: Hafnium Absorber assemblies, Heavy water reflector dumping

Major Reactor Utilization

- Beam Tube Research including Cold Neutron Source

- Fuel irradiation studies

- Material irradiation studies

- Radiochemistry programmes including neutron activation analysis

- Fission Moly production

- Production of NTD silicon

- Isotope production

Speakers
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