

India's oldest reactor Apsara to get a second life

License extension is one thing but this is complete refurbishment and a new core for isotope production.

New Kerala
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India's oldest nuclear reactor Apsara will get a second life with a new fuel core soon, the Bhabha Atomic Research Centre (BARC) announced here Monday.

"Apsara's old core will be replaced with a brand-new, indigenously made core and the reactor will then be used to produce highly specialised isotopes," said Srikumar Banerjee, BARC director and member of the Atomic Energy Commission.

He was speaking at the inauguration of year-long celebrations to mark 50 years of the BARC.

Apsara is not open to the International Atomic Energy Agency (IAEA) inspection. This 1 MWt pool-type reactor, using highly enriched uranium fuel, has been in operation at the BARC's Trombay facility near Mumbai since 1956.

Imported from France, Apsara was so named by then prime minister Jawaharlal Nehru when he likened the blue Cerenkov-radiation to the beauty of the apsaras – celestial dancers in the court of mythical lord Indra.

The BARC has now begun extensive refurbishment of the reactor "with a view to extending its useful life". Repudiating media reports that Apsara was being decommissioned, Banerjee made clear that the entire infrastructure of the reactor will be reused.

The old French core "will be taken out and sent to a reprocessing unit where it will be stored as spent fuel", Banerjee said.

The reactor shell will then be given a new core consisting of India-made fuel rods. Plans are on to modify the design of the reactor wherein the core will be surrounded by a heavy water reflector tank to obtain a good thermal neutron flux over a large radial distance from the core.

The newly equipped reactor will be a high-flash reactor, and will then produce specific short-life isotopes that are likely to have medical and research applications, Banerjee said.

In a special address on the occasion, noted scientist M.S. Swaminathan recalled that BARC was primarily set up as a research facility. "Nothing can be done without synergy between technology and public policy," he said.

He said the BARC-led isotope technology (commercially called Poton) had helped the country grow mutant varieties of onion and potatoes, and give pulses long shelf life. The technology also made possible the use of irradiation and elimination of weevil from mango and other fruits so that they could be exported, Swaminathan said.

The BARC announced plans for a barge-borne mobile desalination plant that could provide potable water in remote or disaster-hit areas.

As part of golden jubilee celebrations, the BARC facilities in Kalpakkam, 80 km south of Chennai, are organising plant visits and quiz programmes for schoolchildren and science exhibitions for schools and engineering colleges. A few selected schools in both rural and urban areas will receive special assistance from the BARC for upgrading their science laboratories.