

Reactor refurbishment from 1991 to 1994

On 5 April 1991, during a periodic internal examination of the reactor vessel, uncommon traces were observed on the central part of the upper anti-turbulence grid.

Subsequent examinations showed that these traces were in fact cracks and it was decided that their presence was incompatible with normal reactor operations.

To prepare for the refurbishment of the reactor (finally decided in May 1992 by the Steering Committee) initial dismantling work was carried out during the second half of 1991 allowing access to the reactor vessel. This included :

- removal of all the heavy water and drying of the reactor vessel which was then filled with light water,
- dismantling of the experimental instruments allowing access to the beam tube thimbles,
- dismantling of the internal elements of the reactor vessel.

After the removal of the beam tubes and the separation of the various connecting tubes, the reactor block was then transferred to the storage pool on the 24th November 1992, and placed on the cutting machine platform.

Various studies were carried out during this time : calculations in accordance with ASME codes, seismic studies, metrological analysis, vibration behaviour... leading to the delivery of the new reactor block early in 1994.

After its arrival, refurbishment work focused on the new reactor vessel ; the key operations were its installation in the main pool and the connection of auxiliary equipments. Another important phase was the insertion of the beam tubes. All the main internal components were new with the exception of the cold sources and the hot source.

Tests showed that hydraulic operation conditions of the new reactor ensemble were similar to those of the previous reactor.

Finally, the reactor restarted without difficulties on the 6th January 1995.

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