

CURRENT STATUS OF JMTR

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The Japan Materials Testing Reactor (JMTR) is a light water cooled tank type reactor with 50MW thermal power. From its first criticality in March 1968, the JMTR has been utilized for fuel/material irradiation examinations of LWRs, HTGR and nuclear fusion research as well as for RI productions.

The JMTR operation was once stopped in order to have a check & review in August 2006, and the refurbishment and restart of JMTR was finally determined by the national discussion. The refurbishment was started from JFY 2007, and was finished in March 2011. However, at the end of the JFY 2010, the Great-Eastern-Japan-Earthquake occurred, and functional tests before the JMTR restart were delayed. On the other hand, based on the safety assessments considering the 2011 earthquake new regulatory requirements for research and test reactors have established on Dec.18, 2013 by the NRA(Nuclear Regulation Authority).

The new regulatory requirements include the consideration of natural phenomena, the provision of manuals for full evacuation, and the management of consideration in the Beyond Design Base Accidents to protect fuel damage and to mitigate impact of the accidents. Above analyses will intensively be performed timely, and an application to the NRA will be submitted in this year. After completion of all assessments within a year, we hope that reoperation of JMTR start as soon as possible. As additional hardware to the reactor facility, a reinforcement such as covering the building with the protection wire-nets to mitigate the collision of an object flying by the tornado, etc. for the canal building are under consideration.

After taking measures for safety requirements and the permission by the NRA, the renewed JMTR will be operated for a safety research of LWRs, basic research for nuclear engineering such as HTGR and nuclear fusion research, industrial use such as high burn-up experiment of the current fuel element and production of Mo-99, and education & training of nuclear scientists and engineers.