

JAEA Discusses Future of JMTR

On November 10, the Japan Atomic Energy Agency (JAEA) held a meeting of its committee to study the use of the JMTR (Japan Material Testing Reactor). At the meeting, the reactor's future was discussed, along with that of material irradiation testing facilities in general. The committee is headed by Vice-chairman Masao Takuma of the Japan Atomic Industrial Forum (JAIF).

JMTR features a tank reactor that is both moderated and cooled with light water, and has a 50-MW thermal output. Since its first criticality way back in March 1968, the JMTR has operated as a "reactor for making nuclear reactors." It takes neutrons to irradiate and materials for nuclear power reactors, in order to test their durability and appropriateness. JMTR is currently operated six times a year, on a 30-day, 50-MW cycle. In addition to material testing, the reactor has been used for several other purposes, including the production of radioisotopes and irradiation tests of materials for nuclear fusion reactors.

At a May 2003 meeting of the preparatory council on the JAERI-JNC merger, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) announced its intention to abolish the JMTR, partly because of its deterioration, as part of efforts to reorganize research facilities. Some members of the council, however, objected to that idea, and the Japan Atomic Energy Research Institute (JAERI), later merged with the JNC to become the JAEA, established a committee to consider a future program for the reactor. In April 2004, the committee issued a report saying that modifying the JMTR over a three- or four-year period, starting around 2006, would enable it to be operated until 2025 or so, giving it an additional 15 years of service. The modifications, it said, would cost about ¥9 billion.

At present, according to the first stage of JAEA's medium-term plan, JMTR's operation is to be suspended during the upcoming fiscal year, which begins on April 1, 2006. Thereafter, preparations for decommissioning are to be made during the duration of the medium-term plan, which covers the period through 2010.

Experts in a variety of fields have voiced the opinion that irradiation facilities will be necessary in Japan to back up LWR technology, in case the country needs to rely on LWRs for some time

to come as its key reactor type for nuclear power generation.

In response to that situation, the new committee – made up mainly of representatives from the Federation of Electric Power Companies (FEPC), the Japan Electrical Manufacturers' Association (JEMA), the Japan Nuclear Energy Safety Organization (JNES), radioisotope producers, and universities – will study the use of JMTR, addressing specific uses for material irradiation testing, etc. Based on its deliberations, it will also recommend an efficient way



JMTR

to use JMTR until it is decommissioned.

The committee will meet twice before the year is out and once early next year, with a report to be prepared by the end of January.

JMTR may also be used for other purposes than material irradiation, including silicon doping and production of technetium generators. In the case of silicon doping, in particular, JMTR could meet half of the domestic demand and about 30% of global demand.

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