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The KJRR, the First Research Reactor Using High Density U-Mo Fuel

J.K. Kim, J. Y. Kim, H.T. Chae, C. Park, and K.H. Lee

KAERI, 989-111 Daedeok-daero Yuseong-gu, Daejeon, 305-353 – Republic of Korea

ABSTRACT

The Kijang Research Reactor (KJRR) Project has been launched in 2014 mainly for the production of medical, industrial, and research-oriented radioisotopes. Tc-99m or its mother nucleus, Mo-99 is most demanding isotope in radiation diagnostics. There are several research reactors that are producing Mo-99 worldwide but those are much aged and under the possibility of shutdown or long-term refurbishment. The KJRR will be the first research reactor which is using LEU U-Mo fuel with high uranium density, which means it will be possible to substitute the use of HEU fuel without compromising the neutron flux. The mini-plate fuel irradiation tests are being performed at HANARO and the fuel assembly irradiation test will be started at ATR, Idaho National Lab, USA in November 2015.

The reactor site has been prepared and the environment data are being collected. The basic design of the reactor and auxiliary facility has been completed and the preliminary safety analysis report was submitted for construction permit. When the construction starts early 2017, the reactor full power will be reached late 2019.