

**RERTR 2018 – 39TH International Meeting on
Reduced Enrichment for Research and Test Reactors**

**November 4-7, 2018
Sheraton Grand Hotel and Spa
Edinburgh, Scotland**

Non-destructive PIE of irradiated KJRR-LTA of U-Mo Dispersion Fuel

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ABSTRACT

The irradiation test of lead test assembly (LTA) of U-7Mo dispersion fuel (uranium density of 8 g-U/cm³) for Kijang Research Reactor (KJRR) was performed successfully in ATR of INL. The post-irradiation examination (PIE) on the irradiated KJRR-LTA has been commenced in HFEF of INL in Feb. 2018.

This paper summarizes major accomplishments on the Non-Destructive (NDE) PIE as follows. Through visual examination of KJRR-LTA, no significant abnormalities were found. In the dimensional measurement for bow and twist of LTA, slight twist or bow was observed. Neutron radiography images of KJRR-LTA were taken and image analysis has been performed to measure distance between fuel plate center lines in the assembly. After completed qualification of disassembly and handling equipment, the 21 fuel plates of the LTA were disassembled safely. Gamma scanning and profilometry measurement of fuel plates are on-going.