"A" holes with higher neutron flux. The fuels with various Mo contents will be loaded to find the optimum U-Mo composition. In order to better understand the effects on micro-structure of fuel material, Three kinds of fuels with different micro-structure controls will be included. In order to increase uranium density using the third alloying elements of transition metals, which are known to be gamma phase stabilizer, three kinds of ternary alloys will be loaded.

In this test, KAERI is considered to have a leading position in a viewpoint of the largest number of 22 fuel-plates supplied by KAERI. In comparing the in-reactor performance among three kinds of fuels fabricated by ANL, CERCA, and KAERI, the atomization fuel is assumed possibly to be better that the others from the previous results. In the next irradiation test of full size fuel, KAERI is expected to act as an important role in supplying fuel powder.

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Stable In-reactor Behaviors of Centrifugally Atomized U-10wt.%Mo Dispersion Fuel at Low Irradiation Temperature

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Abstract

In order to examine the in-reactor performance of very-high-density dispersion fuels, U-10wt.%Mo microplates with centrifugally atomized powder have been irradiated at low temperature. The U-10wt.%Mo fuels do not show breakaway swelling, but stable in-reactor irradiation behaviors, like U3Si2. Moreover, centrifugally atomized U-10wt.%Mo microplates have finer and more uniform bubble size distribution than mechanically ground microplates. It seems to originate from the onset of gas bubble formation in the atomized powder at higher burnup, due to no deformation damage during the powder preparation process.