

JNFL Manufactures First Powdered MOX Product

On November 16, Japan Nuclear Fuel Ltd. (JNFL) announced the first recovery and packing of powdered uranium-plutonium mixed-oxide (MOX) fuel product at its Rokkasho Reprocessing Plant, in Aomori Prefecture. The processes took place during the second stage of active testing.

The powdered MOX fuel produced during the active tests will be fabricated into actual fuel assemblies at the MOX fuel fabrication plant – to be built adjacent to the reprocessing plant – and used in light water reactors (LWRs) in Japan.

To prevent any powdered plutonium from existing alone – a necessary consideration from a nonproliferation point of view – the uranium and plutonium are first extracted from their respective solutions, and then purified. After that, the plutonium is reblended with uranium in equal amounts, and then denitrated and pulverized into powder.

Powdered uranium was earlier produced during uranium tests at the plant, prior to the current active tests.

From now on, the focus of the active tests will be to vitrify high-level liquid radioactive waste (HLW), containing, for example, fission products after reprocessing using actual spent fuel.

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