

EXPERIENCE ON MOX FUEL FABRICATION FOR FAST REACTOR AT PFPF

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Track 5. Fast Reactor Materials (Fuels and Structures) and Technology

ABSTRACT

Japan Atomic Energy Agency has developed mixed plutonium-uranium oxide (MOX) fuel fabrication technologies in large-scale and fabricated MOX fuel assemblies for experimental fast reactor “JOYO” and prototype fast reactor “MONJU” at Plutonium Fuel Production Facility (PFPF) since 1988. Low density pellet is adopted as MONJU fuel. For the low density pellet fabrication in large-scale, various challenges were encountered. Typical examples of the challenges are as shown below;

1. Thermal degradation of organic compound used as pore former
2. Large standard deviation of pellet density due to inhomogeneous dispersion of pore former in granulated MOX powder

In order to resolve these challenges, countermeasures such as new pore former with high softening temperature and improved granulation method for MOX powder were considered.

In this presentation, accumulated MOX fuel fabrication technologies as mentioned above and recent R&D activity for low-decontaminated TRU fuel fabrication such as new pelletizing method, or die wall lubrication pelletizing, will be discussed.

Session: Poster Session 1