

Report on alarming of the atmosphere monitor for α -particles at the Plutonium Fuel Fabrication Facility, PFFF.

1. Date and Time

At around 14:24 on Wednesday, January 30, 2019

2. Location

Powder Conditioning Room (A-103) (Controlled Area) at the PFFF.

3. Brief description of events (Brief Overview of the Event)

During periodic replacement of vinyl bags enclosing containers holding nuclear materials by workers with half-face masks at the Powder Conditioning Room (A-103), the atmosphere monitors for α -particles were alarming. The moment when monitors alarmed, mine workers existed in the room in total and all of them were wearing half-face masks. They evacuated to the next room (A-102) from the room (A-103). They took body surface contamination check in the evacuated room. In accordance with the safety regulations for PFFF, the room (A-103) was designated as access control area.

4. Major Event List

At around 14:24 During periodic replacement of vinyl bags enclosing containers holding nuclear materials by workers with half-face masks at the Powder Conditioning Room (A-103), the atmosphere monitors for α -particles were alarming. The moment when monitors alarmed, mine workers existed in the A-103 in total and all of them were wearing half-face masks. They evacuated to the next room (A-102) where any elevations of concentration radioactive particles in the air was not detected from the room (A-103).

At around 14:27 An atmosphere monitor for α -particles at A-103 (Monitor Number: α -10) were alarming.

At around 14:50 Converted α -particles concentration in the air from the value indicated by the α -monitor (α -8) in A-103 was 9.1×10^{-7} Bq/cm³.
Because this value was greater than the value of 7.0×10^{-7} Bq/cm³) established by the safety regulations for PFFF to control the access.

At around 15:29 Installation of a Green House for contamination control at the corridor neighboring the A-101 (next room to A-102) was directed.

16:00 Surveillance tests of surface contamination for nine workers have been underway.

5. Cause

Under investigation

6. Impact on the involved workers

Surveillance test of body contamination for nine workers have been underway.

7. Environmental impact

As no change has been detected on the results of monitors in monitoring posts and stations on the boundary of laboratories, we consider that there is no impact on environment.

Outline of the Plutonium Fuel Fabrication Facility, PFFF (Pu-2)

The PFFF was constructed in 1972.

Completing the last task of its original purpose, which was to fabricate MOX Fuel for the Advanced Thermal Reactor, 'Fugen' in November 2001, it is now utilized for the sorting and management of the effective use of the remaining nuclear materials generated along with fuel fabrication and research and development works, research on the decommissioning of the non-operating facilities such as remote dismantling and size reduction of the radioactive waste generating. As a technical cooperation with the Japan Nuclear Fuel Limited, JNFL, small-scale tests have been conducted as a research on MOX fuel fabrication.

The building is located on a flat land on a small hill, 25-27meters above sea level and 400meters from the seashore. The building has two-story fire-resistant ferroconcrete structure.

It is equipped with glove boxes and hooded area for the treatment of non-sealed nuclear fuel materials in the controlled area. Instruments for handling non-sealed nuclear fuel materials are installed inside the glove boxes and hooded area.

Facility ventilating system manages the atmosphere of the controlled area and glove boxes at a negative pressure against atmosphere to enclose nuclear fuel material.

It also has a storage for solid wastes which has a capacity to accommodate 1560 of 200litter drum cans.