Provisional Translation

On the Medium-Term Implementation Plan for Spent Nuclear Fuel Reprocessing by the Nuclear Reprocessing Organization of Japan (Views)

March 24, 2021
Japan Atomic Energy Commission
Cabinet Office, Government of Japan

In response to the request by the Minister of Economy, Trade and Industry as of March 12, 2021 (ref., 20210310, Document No.30)[1], the Japan Atomic Energy Commission hereby submits the following opinions on the current Medium-Term Implementation Plan for Spent Nuclear Fuel Reprocessing (hereinafter referred to as "the current Medium-Term Implementation Plan") by the Nuclear Reprocessing Organization of Japan (hereinafter referred to as "NuRO").

The current Medium-Term Implementation Plan specifies the locations, timing and quantity of reprocessing of spent fuel and fabrication of MOX fuel during the three-year period, FY2021 to FY2023.

The locations indicated are the Rokkasho Reprocessing Plant and the MOX Fuel Fabrication Plant, both owned by Japan Nuclear Fuel Ltd. (hereinafter referred to as "JNFL"). These and other related facilities are subject to International Atomic Energy Agency (IAEA) safeguards.

With regard to the timing and the quantity, only reprocessing is planned in FY2023, and 70 tons of spent fuel will be reprocessed and therefore 0.6 tons of plutonium will be recovered, based on the operating schedule of the Rokkasho Reprocessing Plant and the MOX Fuel Fabrication Plant. This plan is consistent with the plutonium utilization plan announced by the Japanese electric power companies in February this year. Furthermore, it is assumed that all 0.6 tons of plutonium recovered at the Rokkasho Reprocessing Plant will be consumed in pluthermal[2] reactors after FY2026, taking into account the time required for fuel-fabrication, transportation, and so on. Even if the number of pluthermal reactors in operation at that point of time was the same as the current four, this amount could be consumed completely. Meanwhile, the amounts of plutonium for MOX fuel fabrication, etc. will be reflected appropriately in the Medium-Term Implementation Plan if the details become clear.

At the same time, taking into account the status of plutonium stored by entities other than electric power companies during the three-year period up to FY2023, Japan's plutonium stockpile during this period is expected to be on the decrease.

In light of the above, the Commission believes that the current Medium-Term Implementation Plan is appropriate on the whole from the perspective of ensuring the peaceful use of nuclear energy and the supply-and-demand balance for plutonium.

However, as the amount of plutonium to be recovered in Japan is expected to increase after FY2023, based on the "Basic Principles on Japan's Utilization of Plutonium" (determined by the Japan Atomic Energy Commission on July 31, 2008), the Commission requests the Ministry of Economy, Trade and Industry to provide the necessary guidance

[1] Minister of Economy, Trade and Industry requested an opinion of the Japan Atomic Energy Commission as per the resolutions accompanying the Act for Partial Revision of the Spent Nuclear Fuel Reprocessing Fund Act.
[2] The term "pluthermal" stands for the use of MOX fuel assemblies containing plutonium in thermal reactors.

to NuRO and other entities concerned to ensure the reprocessing of an adequate amount of spent fuel for the steady implementation of pluthermal power generation, to ensure the timely and reliable consumption of fabricated MOX fuel, and to maintain a balance between supply and demand of plutonium.

In addition, the Commission recognizes the importance of appropriate governance structure to be put in place on both NuRO and its contracted operator in order for them to properly execute the Medium-Term Implementation Plan, and hence expects that the plan will be efficiently and effectively executed under an established organization and division of roles.

Furthermore, the continuing safe and stable operation of the Rokkasho Reprocessing Plant and MOX Fuel Fabrication Plant is critical to successful development of the nuclear fuel cycle in Japan. Accordingly, it is necessary for JNFL to conduct appropriate process management with safety assurance as the top priority, and to work on the accumulation and succession of technical expertise. However, JNFL alone may not always be able to secure a sufficient number of personnel with necessary technical knowledge by itself. Therefore, it is anticipated that electric power companies will provide the required technical and human support.

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