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Experience on the Clearance Process for Decommissioning Materials from Phosphate Acid Purification Plant

The Phosphate Acid Purification Plant of PT. Petrochemical Gresik was decommissioned in 2008. In the decommissioning process, radioactive waste produced by contaminated material in the form of sludge and metal scrap. The radioactive waste is brought for further processing at Center for Radioactive Waste Technology (CRWT) of National Nuclear Energy Agency of Indonesia (BATAN). For radioactive waste in the form of sludge, immobilization is carried out by cementation. As for radioactive waste in the form of metal scrap, decontamination is carried out using chemical treatment. The radioactive waste is stored in the Interim Storage for radioactive Waste at CRWT. In 2016, repeated measurements of radiation exposure and the level of surface contamination of decontaminated metal scrap were carried out. The results of the measurement of the level of surface contamination of most of the metal scrap are below the limiting value set by the BAPETEN (regulatory body). Complemented by radiological safety assessment, in 2019 a proposal for clearance was submitted for metal scrap radioactive waste to BAPETEN. In the radiological safety assessment, the scrap metal is designed to be recycled and used as building material. From the results of the study, the critical group that uses building materials from recycled metal scrap received a dose not exceeding 100 μSv in 1 year. And finally the clearance proposal was approved by BAPETEN at the end of 2019.

Primary authors: ROMLI, Moch (BATAN); Mr SUHARTONO, Suhartono (BATAN); ISKANDAR, Dadong (Center for Radioactive Waste Technology, National Nuclear Energy Agency (BATAN))

Presenter: ROMLI, Moch (BATAN)

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