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SITE STUDY FOR LONGTERM STORAGE AND INTEGRATED DISPOSAL FACILITY IN THE JAWA ISLAND INDONESIA

Radioactive waste from industrial activities, hospitals, research and decommissioning of nuclear/radiation facilities needs to be managed completely until it is stored and disposed of so that it is safe, sustainable and does not pollute the environment. In line with these waste management principles, Indonesia will prepare a long-term storage system and final storage (disposal), as part of the back end of the radioactive waste management stage, which aims to isolate waste so that there is no radiation exposure to humans and the environment. The required level of isolation can be obtained by implementing various storage and disposal methods, including the long-term storage (LTS), near-surface disposal (NSD) and borehole disposal (BHD). BHD is devoted to the disused sealed radioactive source (DSRS) waste from industries and hospitals. Research on the LTS site and integrated disposal of radioactive waste is carried out to determine the selected potential area and optimize them to meet safety criteria. It is necessary to study geology and environmental aspects, especially in areas where nuclear activity is already present. For the initial stage, a study was carried out in the Jawa Island. The steps taken are: 1) determining site criteria based on legislation, IAEA recommendations and expert opinions, 2) acquisition and evaluation of secondary data, 3) field surveys, 4) laboratory analysis, 5) data analysis and evaluation of geology and environment for the LTS, NSD and BHD sites. Based on the evaluation results, several potential areas for LTS, NSD and BHD facility sites were found. The potential areas sequentially from west to east of Jawa Island include 1) Serang Banten (andesite rock), 2) Serpong Banten Nuclear Area (claystone of Bojongmanik Formation), 3) Subang West Java (claystone of Subang Formation), 4) Sumedang West Java (claystone of the Subang Formation), 5) Rembang, Central Java (sandstone of the Wonocolo Formation) and 6) Tuban, East Java (claystone of the Kujung Formation and siltstone of the Tuban Formation).

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