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CONCEPTUAL DESIGN OF TRANSPORTATION CONTAINER FOR RADIOACTIVE WASTE FISSION PRODUCT MOLYBDENUM CAPSULE

It is a necessity that the use of nuclear technology will generate radioactive waste that has a low to high radioactivity range. Molybdenum radioisotope production by fission process in the reactor carried out by PT INUKI produces stainless steel capsule waste with a dose rate of about 1 Sv/hour. To ensure the safe operation of facilities at PT INUKI, the waste must be managed by sending it to the radioactive waste management facility belonging to the Directorate of Nuclear Facility Management (DPFK). Adequate transport containers are needed to contain radiation and ease of handling of the waste in order to ensure safety in its transportation. The transport container was designed using MicroShield software with input data derived from a survey that had been carried out on stainless steel capsule waste inside the PT INUKI hotcell. In this modeling, several choices of shielding materials are used to achieve optimization in terms of cost and technicality in the field. The combination of iron-lead-iron material is considered more optimal with a smaller thickness, namely 0.4cm-10cm-0.5cm respectively. With the choice of material and thickness, the modeling results have met the requirements for the dose rate for transport, which is a maximum of 2 mSv/hour.

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