

Estimation of Radiation Shielding for a Cyclotron Vault

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A 13 MeV cyclotron facility for radiopharmaceutical production and nuclear experiment will be constructed as Pusan National University (PNU) in Korea. Due to the proton-induced reactions between thresholds and the maximum energy of 13 MeV, the working area in the vault will be restricted from a health physics point of view during operation and after shutdown. Identification of neutron production radionuclides and a evaluation of the dose rate in the vault are required as guiding principles of radiation protection. In the present study, A absorbed dose rate by secondary gamma radiation from the 1.5 m thick concrete will be calculated using MCNP code and an inventory code, FISPACT.

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