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Induced radioactivity and energy deposition studies for a H⁰/H⁻ dump at 160 MeV

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A new injector linac (Linac4) for the Proton Synchrotron Booster (PSB) is under construction at CERN. H⁻ ions will be accelerated to 160 MeV and stripped to protons at injection into the PSB. A dump will be installed in the injection region to stop unstripped or partially stripped ions. In order to select the best material for the core and optimize the design of the dump, Monte Carlo simulations with the FLUKA code have been performed to investigate energy depositions, total activities and residual dose rates in the various materials of the dump. This paper will compare the results for three materials chosen for the core.

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