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## **Radiation Responses for a Stainless Steel Composite as a Neutral Beam Injector Guard Wall of ITER**

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Assessing the amount, type and energy of radiation encountered requires knowledge of radiation source and the shielding effect of the type of material between the radiation source and the area of interest. The choice of elements in structural materials such as stainless-steel can reduce the radiation levels due to particle activation. The dose rate to workers and electrical components are managed from the material used for radiation shielding. This work analyses concrete-steel composites as a radiation material for the ITER neutral beam duct. Quantitative analysis of radiation effects in the vicinity of the Neutral Beam Injection (NBI) was carried out using MCNP5 simulation. The MCNP5 simulation is used to determine the gamma photon flux at a reference position outside the shield. The flux is then used to calculate the dose rate for a reference position outside the composite shield.

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