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## Radiation safety design of Super KEKB factory

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The super KEKB factory, which will start at early 2015, is a electron-positron collider that is designed to derive  $80 \times 10^{34} \text{ 1/cm}^2/\text{s}$  luminosity, 40 times greater than former one, KEKB factory, for investigation of CP violation and new physics beyond the Standard Model. The facility consists of 7 GeV electron / 3.5 GeV positron LINAC, 1.1 GeV positron damping ring, beam transport, and 7 GeV electron / 4 GeV positron collider. To fulfill the luminosity, the collider will be operated with small beam-size with a large crossing angle at the interaction point. According to particle tracking simulation, beam losses under this condition will reach to 35 times more than previous. Leakage radiation and induced activity are emsimated through empherical equations and detailed Monte-Carlo simulation MARS15 for interaction region, halo collimeters, emergency pathways, ducts, forward direction tunnels and positron production target, to optimize shielding design. Examples of shielding strategy are discussed to reduce both leakage dose and induced activity for several parts of the facility.

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