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## FCC Machine Protection Challenges and Architecture

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As the energy stored in the FCC superconducting magnet circuits and the energy of the beams will be more than an order of magnitude larger than in the present day accelerators, there are new challenges concerning FCC Machine Protection. An overview of the different magnet circuits and their criticality, taking into account their time constants and effect on the orbit, are presented. The results of energy deposition calculations for the given beam energy and beam intensities are given. The possible strategy for FCC machine protection will be presented together with specific challenges: acceptable delay between failure detection and the beam dump action, the challenges of UFO detection and superconducting magnet quench levels and the importance of the presence and absence of a beam halo.

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