

BEAM CONTAINMENT SYSTEM FOR NSLS-II

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Abstract

The shielding design for the NSLS-II will provide adequate protection for the full injected beam loss in two periods of the ring around the injection point, but the remainder of the ring is shielded for lower losses of <10% full beam loss. This will require a system to insure that beam losses don't exceed these levels for a period of time that could cause levels outside the shield walls. This beam containment system will measure, provide a level of control and alarm indication of the beam power losses along the beam path from the source (e-gun, linac) thru the injection system and the storage ring. This system will consist of collimators that will provide limits to (an potentially measure) the beam miss-steering and control the loss points of the charge and monitors that will measure the average beam current losses along the beam path and alarm when this beam power loss exceeds the level set by the shielding specifications. This will require some new ideas in beam loss detection capability and collimation. The initial planning and R&D program will be presented.

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