

BEAM LOSS MANAGEMENT AND MACHINE PROTECTION IN BEAM COMMISSIONING

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Abstract

Machine Protection Systems during commissioning have to be very reliable and flexible. The consequence of not disabling the beam could be catastrophic in terms of the superconducting cavities or High Power mercury targets. On the other hand, as the machine is commissioned the beam parameters are being measured which in turn causes beam loss so losses are unavoidable. One commissioning activity involves fault studies where worst case beam loss scenarios are investigated and radiation in occupied area's is measured and verified to be with the safety limits when extracted to full power. The beam loss monitor system also gets calibrated during these studies. These activities require flexibility in the system to be able to bypass MPS inputs while maintaining strict configuration control over the MPS hardware and software systems.

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