LHC Machine Protection Review



Contribution ID: 13

Type: not specified

Failures in magnet and powering systems

Tuesday 12 April 2005 11:10 (20 minutes)

The most likely reason for the loss of the circulating beam is an incorrect magnetic field in one or more magnets. In this presentation a catalogue of failures in the magnet powering system will be presented, and the time constant for beam loss will be discussed. Most likely are quenches in the superconducting magnets, in particular at 7 TeV. Other failures are the discharge of magnets with a resistance in the circuit (after a quench, or due to a failure), a trip of magnet power converter, failure in the power converter controls system. An electric short in the coil of a normal conducting magnet has also been considered.

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Track Classification: Events leading to beam losses