



Meyrin, 18.01.2016

# Minutes of Meeting on the 11T Dipole Protection Circuit held on 18 January 2016

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## 1. Attendees

B. Auchmann, L. Bortot, H. Thiesen and S.Yammine

## 2. Agenda

The purpose of the meeting was to introduce the new fellow S. Yammine to the TE-MPE members responsible for the 11 T project's security and to present the new advancements in for the circuit security.

## 3. Discussion

The meeting started by the introduction of the attendees and their roles at CERN and the 11 T project in particular.

Afterwards, Bernhard explained the current circuit configuration for the QPS (Quench Protection System) which relies on heating up the magnet in order to distribute the quench as uniformly as possible. He added that this system cannot respect the delay constraints in some cases and another configuration is being studied. This other configuration (CLIQ) relies on the introduction of a capacitor in parallel to the magnet inductances in order to create a resonance when a quench occurs.

Lorenzo then explained the current method of the simulation of the whole RB circuit with the 11 T magnets. The simulation is based on semi-analytical models implemented in Simulink. A current work is aimed to link COMSOLE and PSCPICE in order to use Finite Elements Method (FEM) simulations to increase the model precision.

The two teams (from TE-MPE and TE-EPC) will coordinate in order to share simulation parameters and to be able to integrate the TRIM power converter's model in the whole circuit for security analysis.