INTERLOCK SYSTEM FOR FAST DISCHARGE UNITS of ITER PF and CS MAGNETIC COILS [[1]](#footnote-1)\*)

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In the event of abnormal and emergency events, the main function of the Fast Discharge Units (FDU) of the poloidal field (PF) and central solenoid (CS) coils is to protect the PF and CS superconducting coils by the local Interlock control system.

The functions of the local Interlock system are as follows:

* detection of Interlock events;
* execution of Interlock actions;
* information of the central blocking system PIS about events and actions;
* interface with CODAC for monitoring of data.

The Interlock system is intended for fast energy output by opening the coil power circuits and including the discharge resistors in the circuit to absorb energy.

During fast energy discharge, the unit is controlled in real time by logical control signals generated by two Boolean Siemens Simatic Fm 352-5 processors. The paper considers the control system and time diagrams of the Boolean processors and Interlock system.

The paper presents the architecture of the Interlock control system, which collects all signals and transmits them to the central Interlock system using the Plant Interlock controller.

The paper also describes the CODAC interface allowing the operator to monitor the status of the Interlock system. Through the interface, the operator monitors the function, receives data on all control signals and the detailed information on the diagnostic signals of the fast discharge unit system.

1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/L/E/ru/JC-Medvedev.docx) [↑](#footnote-ref-1)