

First Suggested improvements for SM18 test operation

Software

1. Commissioning of TEMA for the cluster C should be finalized as soon as possible. There are still problems with some test sequences, and with communications
2. A general magnet name template should be implemented in all the applications, leaving only minimum magnet name introduction.
3. Magnet temperature acquisition should be available at all times, not only when LF is running.
4. A Surveillance program is urgently needed in the control room , showing magnet and anticryostat temperatures, magnet current, Rotary Switch status & Cryo OK status.
5. HV tests should be able to be executed from the Control Room.
6. HV tests:User needs to keep & see errors if they occur but a pop-up window appears and asks for recovery & all data or curves disappear & one cannot get back. Some false errors occur in HV tests: Error if a signal saturates (a good result!) or when there is a communication problem at the end of the test.
7. MMP must gain in reliability. At the moment it is too unstable, giving many false error messages (GPIB, MXI etc.). [A reduced version for the tests in SM18 could be studied.](#)
8. AQA should be modified to acquire all the quench information required, and to give the possibility to correct any false results by hand. Automatic Quench Table creation could then be implemented.
9. Preset configuration files for the Keithley channels for RRR, Joint and Inductance measurements should be created to simplify these measurements.
- 10.MMP could be modified to integrate Shaft position calculation.
- 11.MMP thinks that a test is finished normally when there is a fault (eg. PC trip) and displays its termination window. Can it not detect an abnormal end in the cycle? (a surveillance program would be the right approach in any such application .e.g., like in accelerator control systems)

12. MMP should switch off the Power Supply at the end of its cycle, instead of leaving it ON.
13. Eighteen screens in the control room (3 per cluster) are not necessary. One should attempt to start with 4 “generic” stations of 3 screens, using an “Exceed” type system, giving the possibility to connect any station to any cluster and increase if essential later on.
14. An application could be created on the PCs, with a screen showing the status of the different tests. Buttons on the screen could launch data transfer, analysis and result file creation for each test, thus validating the results.
15. Access to parameters of the SM18 system should be made available. This way, operators with software experience could write applications to streamline the operations.

Hardware:

1. Automatic voltage setting for the Minimum Energy Quench Heater power supplies should be implemented.
2. Push-buttons (to replace 4 & 9 shorting) for disabling Quench Valve cards should be installed (if still considered necessary).
3. Connection boxes for AC Transfer Function tests should be constructed, to avoid confusion in cabling the apparatus. Control of AC Transfer Function tests by PLC would be a better alternative.
4. A signal generator, as used on cluster C for Potaim Card compensation adjustment, should be supplied for cluster A.
5. Question – when Potaim cards are adjusted on cluster C for a particular magnet, what tests, if any, can still be done on the other magnet?