

- Interviews of all the Group Leaders loosely or tightly concerned by hardware commissioning proposing them
 1. to review how the recommendations concerning them had been followed and
 2. interrogating them on difficulties they think would encountered during the exercise.

AB: F.Bordry, P.Collier, R.Garoby, J.Letry, T.Linnecar, V.Mertens, H.Schmickler

AT: K.H.Meß, A.Poncet, L.Rossi, P.Strubin, L.Tavian

TS: P.Ciriani, C.Hauviller, J.Íñigo.Golfín, Th.Petterson, JP.Quesnel, E.Tsesmelis

SC: R.Trant

decision

taken during the review and all necessary technical and administrative measures must have been taken

done

pending

work has started but not completed

not addressed

or no news

2, 6 **documentation** a lot of progress but much missing

- no news from : vacuum
- many promises from: cryo (2x), elqa , collimators, bdi
- others being prepared: beam dump

9, 10, 38 **as-installed reference database & visibility of non-conformities in MTF**

- was discussed, was said to be OK, at last Chamonix it appears that it needs some follow-up

19, 21 **tunnel ventilation modes compatible with survey & leak tests**

20 **time slot for the smoothing of the alignment**

25 **swift tuning of cryogenic loop families**

- 7 revisit leak test scenario
- 32, 36, 37 more automated test procedures for qps, more parallelism
- 23 assess cost & benefit vacuum piquet
- 29 assess risk & benefit of non-nominal tests for the DFBs
- 41 safety responsibility for injection test

4, 26	ES on access conditions during ISTs and HC
8	effects and consequences of power cuts
11,12	fieldbus related
13, 14, 16	application deployment (schedule & priorities)
15, 31	software infrastructure (analysis, post-mortem)
17	computer network safety
18	electricity contract
30	ES on safety of connection & disconnection of cables on superconducting circuits
33, 35	sensitivity of quench detection, voltage signal across 60 and 120 A circuits

- 1 location of the control room
- 2 field staff for HCC: redeployment, complements,
national institutes
- 5 the Crisis Team
- 22 ownership of global pressure test
- 24, 27 cryogenic operation staff
- 28 functional tests of DFBs
- 34 12 kA for main magnets
- 39 commissioned sectors float to 80 K
- 40 Main Rings Group

Recommendations

- Where documentation had been identified as missing during the review last year all those who have still to produce documentation agreed this recommendation should be followed. This concerns the Beam Dumping System, Controls, Cryogenic Instrumentation, Cryogenics (failure scenarios), Electrical Quality Assurance and Vacuum (cold and warm, tests and failure scenarios). Many have already started working on the missing documents: will they ever finish?

As-installed reference database, deviations and non-conformities

Recommendations

The need for a **tool** for operation which would reflect the machine as it was installed and would contain the equipment non-conformities as discovered during the tests and during the commissioning was clearly expressed during the review last year. Very little, close to nothing, was done during the past year. It was recognized that it is **not additional data** which is required, but rather a tool which synthesizes the information already present in the MTF, the reference database and other databases. Thomas recognized that his Group, probably together with AB/CO, has to start working on this.

Recommendations

Presently the ventilation of the sectors passes 18.000 m³/h everywhere except in sector 34 where the value is 36.000 m³/h. On request, the ventilation of sectors can be adapted to the needs of the ongoing activity (e.g. reduced to 9.000 or 0 m³/h). This has been done for survey. It is manual and no automatic surveillance of the system is available. Is there a safety issue?

Recommendations

A study which revisits it in the light of the final installation scenario is under preparation by P.Cruikshank. A piquet service is foreseen during normal operation: during commissioning experts are called in. However a piquet must be there during the leak and pressure tests (PStr). Teams from the interconnects (CRI) must be secured so that they are ready for an intervention when a leak is localized.

The assessment was negative (LTavian, KHMeß). These tests will not be carried-out. Type tests of the first DFBs should take of the order of 3-4 weeks.

Recommendations

Maintaining all the sectors below 80 K to avoid repeating electrical quality assurance require appropriate manning of the controls and operation section of ACR. This will be achieved either with the Indian collaborators or with ALLS (LT). With the present schedule however it is more likely that – if no corrections/repairs are required to a commissioned sector – the sector will be left floating. There is a request (FBor) –for at least sector 78 – that it is kept cold at nominal temperature for fine tuning and experimenting with systems/operation.

Recommendations

LRossi pointed out that during one year and a half the magnets on the test bench were not taken beyond nominal current. This decision can be confirmed only after experience with the commissioning of the first sector.

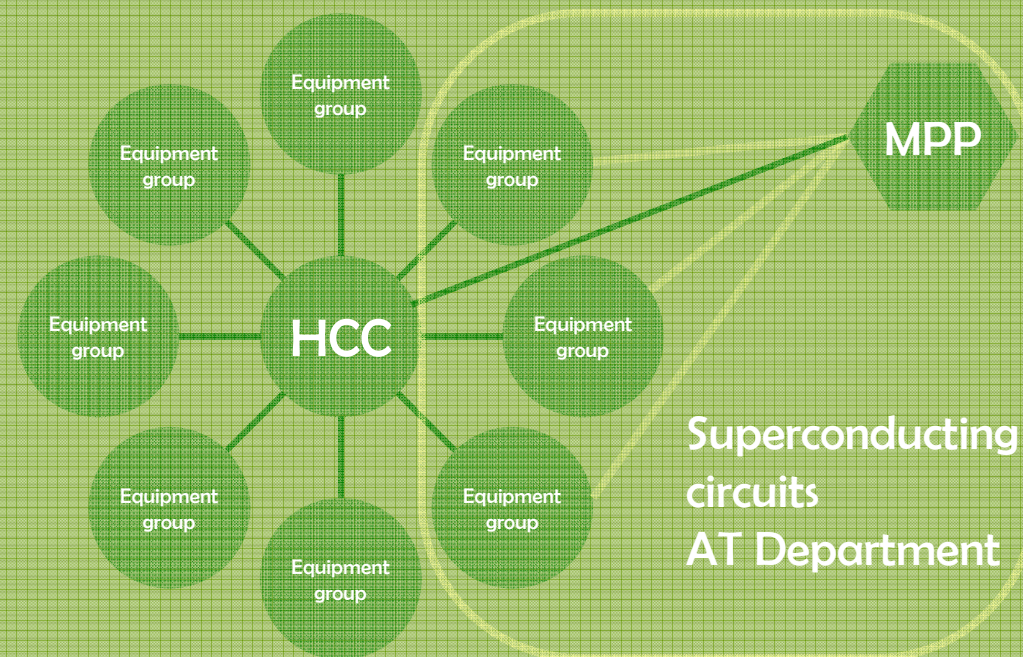
Negotiate and establish with the SC the detailed cryogenic conditions of forbidden, restricted and free access to the tunnels being cooled down

Recommendations

An ES on SAFETY DURING INDIVIDUAL SYSTEM TESTS AND HARDWARE COMMISSIONING was prepared and approved; it mainly deals with access conditions and training. However, the transport of heavy (e.g. magnets in sector 78) and not so heavy loads in the presence of a cold string of magnets must be revisited. Does it present a danger for the equipment, for the personnel?

Recommendations

The Crisis Team has been complemented by a task force (MPP) in the AT Department, led by A.Siemko, which takes over from Mr.Circuit the responsibility for the analysis of the quench/commissioning data for the superconducting circuits and assists the HCC in the decision to continue the tests.



Documentation

A tool to consult the as-installed reference database

What do we do with sector 78

Transport along a cold string of magnets