

# **Review of the commissioning of Sector 45**

## **Report of Contributions**

Contribution ID: 0

Type: **not specified**

## Identification of main issues appearing during the commissioning Sector 45

*Thursday 28 February 2008 08:30 (20 minutes)*

- Event driven by view from operation - invitation to an open discussion
- Scenarios: commissioning to 450 GeV, 2 TeV and 4 .. 6 TeV
- Key dates in preparation for the next sector and outlook to planning
- Discussions on improvements: what can be done in the next 3-4 weeks?
- 2 shifts during 5 days versus 3 shifts during 7 days, , MPP analysis, what can be done in a nightshift –WE? Bottlenecks in manpower
- Organisation: HC coordinator on a weekly basis? For coordination between sectors etc.
- (written) guidelines for operators (coordination tools, conditions for powering)
- Commissioning meetings efficient? How continue activities during meetings?
- Follow-up by mini teams on: Automatic commissioning and controls issues, Tools required to optimize commissioning, Organisation, System upgrades and improvements

**Author:** SABAN, Roberto (CERN)

**Presenter:** SABAN, Roberto (CERN)

Contribution ID: 1

Type: **not specified**

## Powering Test Overview

*Thursday 28 February 2008 09:00 (20 minutes)*

- What happens before powering tests after cooldown
- Main issues that slowed us down
- ELQA: Continue as for sector 45? Further optimisation of the strategy?
- What has been done during the powering tests? During what time? By whom? Efficiency?
- How to ensure minimization of re-commissioning 45 and to secure what has been achieved?
- How to avoid that changes during the “shutdown” require re-commissioning?

**Author:** BELLESIA, Boris (Politecnico di Torino)

**Presenter:** BELLESIA, Boris (Politecnico di Torino)

Contribution ID: 2

Type: **not specified**

## Safety and access I

*Thursday 28 February 2008 09:30 (20 minutes)*

- Electrical safety during interventions, “consignation”
- Electrical safety subsectors

**Author:** FUNKEN, Anne (CERN)

**Presenter:** FUNKEN, Anne (CERN)

Contribution ID: 3

Type: **not specified**

## Safety and access II

*Thursday 28 February 2008 10:00 (20 minutes)*

- Hardware commissioning using the access system
- Set the rules for access, different modes

**Author:** GRUWE, Magali (CERN)

**Presenter:** GRUWE, Magali (CERN)

Contribution ID: 4

Type: **not specified**

## Safety and access III

*Thursday 28 February 2008 10:30 (20 minutes)*

- Tunnel access during powering –what can access during powering as a function of current in the different circuits? Clear and transparent rules.

**Authors:** Mr THIESEN, Hugues; Dr MESS, Karl Hubert (CERN AT-MEL)

**Presenters:** Mr THIESEN, Hugues; Dr MESS, Karl Hubert (CERN AT-MEL)

Contribution ID: 5

Type: **not specified**

## Cryo Performance & Operation

*Thursday 28 February 2008 11:10 (20 minutes)*

- Availability for cryogenic system
- Recovery time after quenches: what can we expect?
- Operation overnight and over the weekend: is it possible?
- Operation with several sectors in parallel, what will change?
- Presence in the CCC
- Level measurements
- How to ensure a correct Helium level for operation?

**Author:** Mr CLAUDET, Serge (CERN AT ACR)

**Presenter:** Mr CLAUDET, Serge (CERN AT ACR)

Contribution ID: 6

Type: **not specified**

## Cryogenic conditions for powering tests

*Thursday 28 February 2008 11:40 (20 minutes)*

- What can be done at what temperature? (e.g. below 2.8 K low current tests), and when can we start the tests?
- Relaxed operation at reduced current (e.g. can we operate without cold compressors a magnet currents corresponding to 2 TeV)?
- Table for all steps and all circuits?
- Orbit correctors 60 / 120 A –what conditions? What needs to be watched by operators?
- Procedure: masking of interlocks to provide CryoStart and CryoMaintain

**Author:** Dr SIEMKO, Andrzej (CERN AT-MTM)

**Presenter:** Dr SIEMKO, Andrzej (CERN AT-MTM)

Contribution ID: 7

Type: **not specified**

## Power Converters

*Thursday 28 February 2008 12:10 (20 minutes)*

- 600 A spikes during 0 V crossing and QPS system
- Spikes and how to avoid them (IERROR and IEARTH)
- RB power converter performance, is there an issue?

**Authors:** NISBET, David (CERN); THUREL, Yves (CERN)

**Presenters:** NISBET, David (CERN); THUREL, Yves (CERN)

Contribution ID: 8

Type: **not specified**

## Quench Protection and Energy Extraction System

*Thursday 28 February 2008 14:00 (20 minutes)*

- Partial heater firing if switches do not open –yes/no?
- Access to the tunnel for 600 A extraction switches, can be optimised?
- Firing heaters without current in the magnet circuit –Why? EMC due to other tests?
- Closing switches for many circuits

**Authors:** DAHLERUP-PETERSEN, Knud (CERN); DENZ, Reiner (CERN AT-MEL-PM)

**Presenters:** DAHLERUP-PETERSEN, Knud (CERN); DENZ, Reiner (CERN AT-MEL-PM)

Contribution ID: 9

Type: **not specified**

## Time for commissioning versus objectives

*Thursday 28 February 2008 14:30 (20 minutes)*

- 450 GeV, 2 TeV and 5 .. 6 TeV: what circuits at what current? What can be left for later? (remember: it is always possible to bring in other circuits on the fly)
- How much time is required to commission for injection, for ~2 TeV, 4-6 TeV and 7 TeV? What could be gained? What circuits could be left out?
- When is tunnel access required? By whom? How to optimise it? What can be done without access to the tunnel?

**Author:** VERGARA FERNANDEZ, Antonio (Cent.de Investigac.Energeticas Medioambientales y Tecnol. (CIEMA))

**Presenter:** VERGARA FERNANDEZ, Antonio (Cent.de Investigac.Energeticas Medioambientales y Tecnol. (CIEMA))

Contribution ID: **10**

Type: **not specified**

## Procedures

*Thursday 28 February 2008 15:00 (20 minutes)*

- Procedures and their realisation in sequences: can they be lighter?
- EDMS approval of procedures and their changes
- Analysis and approval of test steps in CCC –can it be improved?

**Authors:** Dr CATALAN LASHERAS, Nuria (CERN); VENTURINI DELSOLARO, Walter (CERN)

**Presenters:** Dr CATALAN LASHERAS, Nuria (CERN); VENTURINI DELSOLARO, Walter (CERN)

Contribution ID: 11

Type: **not specified**

## What quenches did we observe? What is expected?

*Thursday 28 February 2008 15:30 (20 minutes)*

- What circuits?
- What quenches?
- Why did it quench?

**Authors:** VERWEIJ, Arjan (CERN); FLORA, Robert Henry (Fermi National Accelerator Lab. (Fermilab))

**Presenters:** VERWEIJ, Arjan (CERN); FLORA, Robert Henry (Fermi National Accelerator Lab. (Fermilab))

Contribution ID: 12

Type: **not specified**

## Tools provided by CO

*Thursday 28 February 2008 16:10 (20 minutes)*

- Status of PM system? Data gets sometimes stuck?
- PM event builder
- Can we become more efficient with more automatic analysis?
- Coherence MTF –LSA etc.
- Long tests: can one reduce the time of the test online, for example due to a long plateau? PASS TO THE NEXT STEP button.
- Managing powering: better SOC names to avoid confusion? SOCs per day?
- Tools for powering groups of circuits ((based on SOCs?))

**Author:** Dr ZERLAUTH, Markus (CERN)

**Presenter:** Dr ZERLAUTH, Markus (CERN)

Contribution ID: 13

Type: **not specified**

## Tools for coordination

*Thursday 28 February 2008 16:40 (20 minutes)*

- How to improve the Powering Test Visualisation tool, etc.
- How to improve the planning tool (EXCEL?) Can both be merged?

**Author:** MARQUETA BARBERO, Alvaro (Cent. Invest. Energ. Medioamb. Tec. (CIEMAT) - Consejo Sup. de I)

**Presenter:** MARQUETA BARBERO, Alvaro (Cent. Invest. Energ. Medioamb. Tec. (CIEMAT) - Consejo Sup. de I)

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## Feed Back

*Thursday 28 February 2008 17:10 (20 minutes)*

**Authors:** MACPHERSON, Alick; , LHC HWC Operators

**Presenters:** MACPHERSON, Alick; , LHC HWC Operators

Contribution ID: 15

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## Summary and Discussions

*Thursday 28 February 2008 17:40 (20 minutes)*

**Author:** Mr SCHMIDT, Rüdiger (CERN)

**Presenter:** Mr SCHMIDT, Rüdiger (CERN)