



**Injectors Re-commissioning Working Group
Minutes**

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1 LAST MEETING MINUTES

The last meeting minutes have been approved and are available at <https://indico.cern.ch/event/382770/>

2 PSB FEEDBACK

B. Mikulec is presenting the PSB feedback.

As an introduction, B. Mikulec says that the change that has affected almost everybody was the new access system.

There were many renovations at the booster (power supply, converters...) during LS1. All these modifications and the fact that the control piquet has been stopped had a clear impact on the start-up of the machine.

According to the schedule, the HW test took 5 weeks, the cold checkout 3.5 weeks and the setup with beam 3 weeks.

One PSB operator was available in the CCC from 6h to 21h to ensure support for the hardware tests (under equipment responsibility) and dry-runs (organised by BE-CO).

During the *HW test* period, the main issues were:

- CO configuration tools missing (CCDB to LSA)
- Responsibility changes after controls philosophy change

During the *cold check-out* period there were 3 shifts per day including the week-end. OP organized the cold check-out (using check-lists) and there was daily evening meeting mainly with CO to sum up progress/issues.

During the *setup with beam* period all beams could be delivered in time, but 2.5 month afterwards, several beams were still not at nominal performance.

The main issues that could have been avoided were:

- Wrong mechanical alignment due to mistakes made by the survey team, the very late publication of the data in GEODE (no possibility for OP to check the results in time) and to inaccessible alignment screws.
- Certain software not ready or buggy.
- Some specific issues.

B. Mikulec ends with the following general remarks:



- Systematic check by operators of each OASIS channel with test signal during HW commissioning proved extremely beneficial
- Hardware commissioning should be improved for certain systems; operations team has not much information of what gets checked by equipment specialists
- Magnet polarity measurements should be done in the future
- More rigorous application checks needed
- Interlock checks (BIS, SIS, EC) have to be added to procedures
- After long shutdown many equipment experts took their well- deserved vacation, but this sometimes led to problems during restart (many single-expert systems!); also avoid restart during holiday periods if possible

V. Kain asks about the BTY line multi-ppm power converter tests, J. L. Sanchez Alvarez answers that the tests were really limited due to the unavailability of cooling water.

3 MACHINE TESTS

V. Kain proposes that OP should coordinate the ‘machine preparation tests’ that should cover the periods of the HW and cold-checkout tests. The HW tests and shutdown installation shall continue to be coordinated by MEF.

Before “cold check-out”, close collaboration for planning between MEF experts and OP machine responsables will be required.

V. Kain is presenting a draft of the template for the check-list for machine preparation after long stop. This document lists the different tests without beam to be carried out to ensure the correct functioning of the accelerator after a long stop. It will be refined and then sent around to all working group members for comments.

4 AOB

M. Tavlet would like to attend the IRWG meetings and has to be added to the IRWG list.

V. Kain says that for next meeting MEF shall be present. The idea would be to present to MEF the proposal of having OP working in parallel.

Question to the machine’s supervisor: What would be the most important improvement for the next long stop for their machine?