

Beam Commissioning Working Group

Minutes for 10 January 2020

Present: **A. Huschauer**, A. Akroh, S. Albright, R. Alemany Fernandez, H. Bartosik, F. Chapuis, D. Cotte, H. Damerau, M. Delrieux, A. Funken, B. Goddard, M. Gourber-Pace, K. Hanke, O. Hans, D. Jacquet L. Jensen, A. Lasheen, K. Li, M. Meddahi, B. Mikulec, G. Papotti, F. Pedrosa, J. Ridewood, F. Roncarlo, M. Tavlet F. Tecker F. Velotti, C. Wetton

Meeting objectives

This meeting will discuss the DSO tests required for the PS and PSB along with an update from EPC on POPS(-B) and Switchyard access requirements, the YETS at the end of 2020 and the tracking of dry runs.

Approval of Minutes and Matters Arising - V. Kain

The minutes of the 13th of December are approved without comment.

PS(B) DSO Tests and EPC Updates on POPS(-B) Tests and Switchyard - *F. Pedrosa* **J. Coupard** **D. Cotte**

Presentation and discussion broken into two parts. The first part covers the DSO tests, and the second the updates from EPC.

Presentation

Part 1 —

- For DSO tests there is a table identifying necessary information, such as access mode and equipment lockouts in each zone.
- The objective for the tests is to use the tables to identify how to minimise the required impact during the test for each zone, dates for the tests have been identified accordingly.

Part 2 —

- The master schedule has been changed as POPS will not become available until July, with POPS-B and MPS therefore to be tested before June.
- Originally all tests requiring access in the PSB have been moved to the start of the hardware tests period, with POPS-B and MPS tests afterwards, but this may not be possible. Three alternative schedules have been proposed and are under discussion:
 1. All tests at the start of the PSB HWC period, with POPS-B stopped on request if required. No impact on LBE run.
 2. POPS-B + MPS tests first, with tests requiring access afterwards. This would require the LBE line run to be stopped for PSB access occasionally.

3. As original, but with POPS-B and MPS tests as late as possible during PSB HWC, but before POPS testing in PS (most transparent, but requires confirmation with EPC if possible).
- POPS commissioning will fall at the start of the PS HWC period, with a possible requirement to stop the LBE run in case of access (at least in the order of 9 days to put back covers).
 - There is a warning from EPC that some specialists may not be available for POPS commissioning as it overlaps with the SPS IST period.

Discussion

Part 1 —

- R. Alemany Fernandez says LEIR has two DSO tests, one this year and one next year, and asks if the tables shown will apply to both tests, because this year's will require a special permit for the TL test. F. Pedrosa says this should be discussed.
- V. Kain asks if in cases like Linac4, where there will be a Hardware DSO test, followed by a beam permit DSO test shortly after, they can be done at the same time. M. Tavlet says that will depend on the accelerator as there are different requirements, e.g. with impacts on the switchyard.
- D. Cotte points out that before the DSO tests all areas will need to be patrolled, and the current schedule allows only 1 day for this. It will need to be confirmed if there is enough personnel available in OP to cover all the requirements for patrolling.
- B. Mikulec says that in previous years there was still material in the machine and the DSO tests had to be delayed by a day, so this may be a problem with such close scheduling. F. Pedrosa says the machines should already have been closed and cleaned by then, but it should be confirmed.
- F. Pedrosa points out that any equipment related to the EIS BEAM permit should not be touched after the DSO tests, otherwise the test will need repeating.
- V. Kain says that for certain equipment like the POPS it will not become operational until after the DSO tests, and asks if meaningful tests can still be performed. M. Tavlet says yes.

Part 2 —

- V. Kain says under normal HWC the machine is put in operational mode and it is assumed that there will not be regular access, but for the PSB this will not be the case. F. Chapuis says this is for EPC, who have to do two sets of tests, one of which must fall during the HWC period, but they will not be long accesses.
- O. Hans asks if Alternative 3 will be viable, as it will require the power specialists to immediately start POPS after POPS-B has finished, with no break in between. M. Meddahi says that is why this option needs to be discussed with EPC.
- V. Kain asks if the EPC tests with magnets during April have a risk analysis foreseen, as the access zone may still be open. F. Pedrosa says yes, this was to be the case originally so there is no change to this apart from schedule.

- M. Meddahi asks for confirmation of the next steps for the scheduling. F. Pedrosa says next week there will be a meeting with EPC to discuss resource availability and which schedule will be used.
- V. Kain says the safety details will need to be confirmed in case there are any safety changes with the modified schedule.
- F. Pedrosa says the SPS will need to be involved in the schedule discussions, because of the overlap between SPS ISTs and POPS commissioning.

YETS 20/21 Considerations - F. Tecker

Presentation

- From the previous meeting it has been determined that the Arrêt d'Urgence tests will not be required during the YETS, as they will have occurred earlier.
- It has been confirmed that the cooling circuits must be kept running, which requires a CV piquet. Therefore, an EPC piquet and TI supervision will also be required to ensure some power supplies can keep running safely. This was also done during YETS 12/13.
- Stopping some of the CV cooling circuits may be required for maintenance, and a corresponding ITS planning is required. It is proposed to put an injector technical stop (ITS) in the first week of January 2021, but this would take a week out of PS commissioning schedule.
- Extending the PS commissioning a week would reduce time for the SPS as the North Area start cannot be moved anymore. The PS commissioning can be reduced to 5 weeks (to allow an ITS for CV), and the first SPS beams are expected to be available, but there will then be a higher risk of delay in case of problems.

Discussion

- M. Meddahi says the North Area should not be delayed, the LHC delay should not make a difference to the injector's schedule.
- K. Li says the North Area physics will start on week 13.
- V. Kain asks if there is any problem foreseen for Linac4, as the source and other devices could have been a problem if they were stopped over the YETS. F. Tecker says that he is waiting for confirmation on the fine details. B. Mikulec says the source will be kept running, but the need for piquets has not yet been discussed in detail, which will be done as an outcome of the modified YETS schedule.
- M. Gourber-Pace says CO will require 4 days, so it should not be assumed that a fully operational control system will be available from Wednesday morning. F. Tecker says that is understood, but if a partial system is available it will be used.

Dry Run Tracking and Planning - V. Kain

Presentation

- The lists are available for each machine, and will be added to MS Project, some further details are to be confirmed.

- The HWC and ISTs are all in the check list tool, with dry runs tracked in an Ad-Hoc way, which is not ideal.
- There are two categories of dry runs:
 1. Universal tests to be performed after any YETS
 2. Special tests expected to be run only once
- If the second category of tests is included in the checklist tool, they will be there for all future restarts, which may not be desirable. Instead, these special tests could be tracked separately.

Discussion

- B. Mikulec asks why category 2 tests would be seen every year, when they can be deleted. V. Kain says they can be deleted, but then the effort would be required to put it there, and after deleting it the result of the tests would also be lost. B. Mikulec asks if it is not possible to store a history category, and if not if this can be a requested feature to add to the tool. V. Kain says this may be possible but would require extra effort from BE-ICS where they already at the limit to deliver what had been agreed already.
- M. Gourber-Pace says that equipment groups will need to be notified of all tests, and the distinction between category 1 and 2 is not significant for them. V. Kain agrees, and says the planning won't change and equipment groups will be aware of everything, it's purely a matter of how the tests are tracked.
- K. Li agrees that the category 1 and 2 should be separated for tracking, but not planning. D. Cotte says for simple category 2 tests incorporating them in to the the HWC may not be an issue, but for complicated ones such as with new beam dumps they should be tracked more carefully, so the check list tool may still be a better option.
- V. Kain proposes that each machine handles the distinction between category 1 and 2 in the most suitable way for them. A special request to BE-ICS to handle the category 2 tests at the moment may not be a good idea, as there is already a significant workload.
- M. Gourber-Pace asks what the next step is. V. Kain says to fill in the lists, and for each group to decide how the category 2 tests will be handled. M. Gourber-Pace asks for confirmation that all tests will be in the planning to ensure equipment groups have all information, V. Kain says yes.
- L. Jensen asks if BE-ICS remain responsible for the check list tool, V. Kain says yes with development shared between ICS and OP.

AOB - V. Kain

- J. Coupard distributed the request for each equipment group to check the resource loading for the IST planning, but has not yet heard back from all groups. Therefore, it is being assumed that there are no significant problems, but this will be double checked.
- IST procedures are being compared with what is expected to ensure all information is available, a request has been made to each commissioning group to fill in any missing information. For LEIR there is an open question on powering RF, C. Wetton confirms that it will fall during the IST period and is not safety critical.

- M. Meddahi asks if the deadline for publication of IST documentation is the end of January, V. Kain says yes.

The next meeting will follow the LIU workshop, and the subjects are to be confirmed.