

## **Ad hoc (r)MPP meeting: MPS commissioning status to go for 3 nominals**

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These are the notes of an ad hoc rMPP meeting which took place on 12/05/2017 to agree on the readiness of the machine and MPS systems to proceed with the next commissioning step with up to 3 nominal bunches up to collisions.

The following MP issues were identified for follow-up, impacting on the decision to go to 3 nominal bunches:

- Interlocked BPMS not working reliably. Rolling back from 64 bits to 32 bits and FESA3 to FESA2 has not solved the unreliability of the BPMS, resulting in frequent interlocks as interlock parameters get overwritten by an unknown process. However it seems the issue can be circumvented by neglecting fast accesses to the VME bus. A fixed version is presently in operation, but BY prefers to maintain the BPMS input to the BIS masked for further observation until the desired stability can be guaranteed. It was decided to keep the BPMS masked over the weekend and possibly re-activate it after the weekend if performance is as expected. The aim is to move back asap to the intended 2017 version which is again based on FESA3 and 64 bits. As a temporary mitigation measure it will be assured that the dump aperture is qualified as sufficiently large and protected by the TCDQ (currently at 2016 settings), and the TCSP which is at +/- 3 mm settings. The TCDQ has the BETS active, guaranteeing the correct position. Functional test of the BPMS, together with the ABT team, are still outstanding and will be done as soon as possible (early next week).
- FMCM RD34.LR7: issue with signal below threshold at injection (FMCM triggers correctly but generation of interlock is inhibited by design below 5% voltage range). The device was tested at full energy on 11/05/2017 and as expected found OK. Intervention on Monday to optimising voltage divider, guaranteeing correct behaviour also at injection. Until then no unsafe beams at injection (>5e11 protons) allowed in the machine.
- XPOC: problems with time-out mainly in inject and dump mode (outstanding problem) where it was noticed that after a crash due to time-out it is possible that a reset is made by everybody, independent of the RBAC rights. A correction in the logic is foreseen for the day of the meeting. In addition, in case of serious kicker problems, the IPOC will prevent further operation.
- Dump aperture measurements are to be performed right after the meeting. They need to be satisfactory to continue with 3 nominal bunches.
- The missing BPM B2 PM data issue has been solved.
- The intermediate energy dump at 5 TeV was made on 11/05/2017. The other missing dumps at intermediate energies are to be completed at latest during the next week.
- Kicker waveform measurement are to be completed at latest during next week.

Conclusion: assuming that the aperture measurements of the beam dump region are satisfactory and that particular attention is paid to having the TCDQ and TCSP in IP6 at the correct positions, a limited number of fills with up to 3 nominals (total < 3e11 p+) can be used for machine

commissioning over the weekend.

The FMCM of RD34.LR7 and the XPOC logic will have to be modified/corrected before allowing for more than  $5e11$  p+ at injection. The repair is foreseen for Monday 15/5/2017.

Reported by J.Uythoven and M.Zerlauth