Meeting of the restricted Machine Protection Panel

August 18th, 2023, via Zoom

Participants:
R. Alemany Fernandez (BE-ABP), C. Bracco (SY-ABT), Y. Dutheil (SY-ABT), C. Hernalsteens (TE-MPE), F. Moortgat (EP-CMG), D. Nisbet (SY-EPC), B. Salvachua (SY-BI), J. Uythoven (TE-MPE), A. Verweij (TE-MPE), C. Wiesner (TE-MPE), D. Wollmann (TE-MPE).

The slides of all presentations can be found on the website of the Machine Protection Panel and on Indico.

Beam intensity ramp-up for the p-p reference run (C. Wiesner)

Christoph recalled that the VdM and high-beta runs will be performed at low beam intensity and do not require a dedicated intensity ramp-up.

The p-p reference run at 2.68 TeV, will use a different cycle and optics compared to the low-beta physics cycle. There will be no beta* levelling. The aim is to reach ~2400b.

The ramp-up proposal had to be adapted from the initial planning, due to the RQX.L8 incident, as the pp reference run will not take place after a period of high-intensity proton physics.

Christoph then presented the proposed steps for the beam intensity ramp-up to be performed for the p-p reference run at 2.68 TeV. The steps are:

1. 3b into SB
2. 75b (>2h in SB)
3. 400b (>5h in SB, checklist before advancing to 900b)
4. 900b (>5h in SB)
5. 1200b (>5h in SB)
6. 1800b (>5h in SB)
7. 2400b (checklist after 1st fill)

A combined checklist will be prepared after the 400b fill. That checklist will need to be validated before proceeding to the 900b fill. Another combined checklist will be prepared after the first 2400b fill (the next 2400b fill can take place during the checklist validation by experts).

It is most likely most efficient to perform the intensity ramp-up with bunch intensities around 1.4e11 ppb. From a machine protection point of view, it is deemed acceptable to slowly increase bunch intensities to 1.6e11 ppb in later fills..

Following some discussion, the proposal was accepted.

Discussion of required beam revalidation and ramp-up

Cédric briefly highlighted important revalidation steps. The golden orbit must be re-established due to the triplet movement in IR8 and aperture measurements are required (globally and locally in IR8). The usual lossmaps validations must be performed for the VdM cycle and for the p-p reference run.

Yann confirmed that no specific injection revalidation must be performed in IR8 as long as we inject back on the same reference orbit.

It was agreed to test the triggering of the IR8 BLM crates with beam. Belen explained that the BLM system has been operation during the intervention period and that no BLM was disconnected nor that any firmware change was performed. Some BLMs and BLM cables of the triplet region left of IR8 have been moved during the repair. Belen commented that the test will be done with Beam 2.