

MPP meeting 24 February 2012

Original agenda:

- A Failure Catalogue for the LHC – (S.Wagner)
- BLM (Threshold) changes for the 2012 run (UFO, direct dump, injection,...) (E.Nebot)
- RP settings during special runs (as short AOB) – (S.Redaeli)
- AOB

Present:

B.Todd (TE/MPE), A.Apollonio (TE/MPE), S.Wenig (PH/ADO), M.Deile (PH/TOT), J.Uythoven (TE/ABT), M.Gunthott (PH/CMX), E.Nebot (BE/BI), J.Wenninger (BE/OP), R.Schmidt (TE/MPE), M.Zerlauth (TE/MPE), S.Wagner (TE/MPE), M.Sapinski (BE/BI), B.Holzer (BE/BI), T.Baer (BE/OP), W.Bartman (TE/ABT), R.Jacobsson (PH/LHCB), S.Radaelli (BE/ABP), B.Dehning (BE/BI) and J. Blanco Sancho (TE/MPE).

Minutes:

A Failure Catalogue for the LHC (S. Wagner)

Sigrid presented the ideas and motivation behind the failure catalog. She introduced the international standard IEC 61508 that covers the complete safety life cycle. Sigrid remarked that in order to compile the hazard chain/failure catalog deep and accurate information is required. Sigrid introduced a new website, in test, that will ease to compile all the information. PIC is being used as a test for the site.

Andrea Apollonio is working on the LINAC4 as a proof of concept for the risk assessment approach. LINAC4 project will allow to collect from the beginning all documents and studies.

Sigrid explained that the hazard chain could give hints on whether a system is overprotected and therefore the availability decreases.

It is foreseen that tools will read from DB and will automatically fill some of the information of each case. A guess account will be created so everybody could play with the web BD.

RP settings during special runs (as short AOB) (S. Radaelli)

Stefano presented a draft version of the roman pot settings for the 2012 operations. It is important to prepare a good strategy for 2012 as the priority will be the Higgs.

For the standard physics fills at high intensity a beam base alignment is required early on (meaning June). Rudiger pointed that it can be done on 2 days during commissioning or after June. Richard pointed that the RP don't contribute to the Luminosity calibration, so for the experiments is to do BB after June.

The pots act as secondary collimators on the special fills. This year there are twice as many pots as last year. Stefano calculated around 10-12 hours, more than 1 fill, for the alignment of the pots.

The special fast alignment of the collimators might not be extremely fast.

Stefano proposed 5 points for discussion.

1. Respect full hierarchy. Last year 14 and 18 sigma. Last year there were collimators at 12 sigma.
2. Very relaxed SBF. Ruediger commented that on the Horizontal plane we are more relaxed than on the Vertical.
3. No bottleneck at triplets -> no TCTs.
Mix bunching should be avoided. Mario commented that they consider $3E7$ intensity per bunch (no more than 4 bunches). Although this value is in the middle of the BCT sensitivity it was worked before.
4. Markus commented that this was the reason for the SBF.
5. This method could leave some pots far out. Joerg commented that this method is very conservative as only 1 pot will be very in. Not really a solid method.

For Alpha, it only applies point 2 and for this one it is assumed that it is on the shadow of TOTEM.

Stefano commented that this year the loss maps will be less regular than last year. (>4 weeks).

Markus asked if there is a new strategy for the loss maps. Doing them after a TS or during intensity ramps? Stefano explained that after each TS should be done and that it should not pass more than 4 weeks between one and another.

BLM (Threshold) changes for the 2012 run (UFO, direct dump, injection,...) (E. Nebot)

Eduardo presented the BLM threshold changes for the 2012 run. Concerning the direct dump BLM, a new threshold value is proposed. Previous value was too conservative. This threshold is calculated based on a previous dump on the 02-07-2011 during a MD. The formula takes into account the difference between the IC position and the RC filter. The final value is factor of 3 times bigger to give some margin during the MD where higher losses could appear. Rudiger commented that the formula is consistent with the signals seen.

Seven LIC monitors have been installed at point with high losses, with low S/T ratio and at elements protected by other IC. Due to the sensitivity reduction of the LIC compared to the IC a noise/threshold study was done during 2 weeks during the shutdown. Eduardo explained that the thresholds are kept the same (just adapted to the new sensitivity) but the operational margin increased by a factor of 5. Wolfgang commented that this factor comes from the shot to shot stability. This will be enough for 288 bunches. Markus explained that with more confident more LICs will be installed. Barbara remarked that the thresholds are kept but the thresholds are adapted to the new detector sensitivity.

Eduardo showed the UFO study from Tobias. 81 beam dumps are expected for 7 TeV. Ruediger commented that the scaling from 3.5 TeV to 7 TeV is more that proportional; he was expecting a value less that proportional. Tobias commented that the values come from FLUKA simulations, from the wire scanner experiment, showers... The goal is to probe the quench level on the ms. New thresholds will only be applied on "good" sectors.

Ruediger commented that for ions the UFO like quenches are on the same time scale as the ones for the transverse resonance.

Concerning TCT thresholds, Stefano commented that a 50%-60% luminosity increase could be expected. Markus suggested to be prepared for a potential luminosity scale. Barbara commented that the Master Threshold could be changed during the ramp down.