

Magnet Discussion Meeting

EVO

Thursday 24th January 2008

1 Attendance

Participating:- Andrea Bersani (Genova), Evie Downie (Glasgow), Evgeny Koshurnikov (Dubna), Inti Lehmann (Glasgow), Berndt Lewandowski (GSI), Yuri Lobanov (Dubna), Jost Lühning (GSI), Renzo Parodi (Genova), Lars Schmitt (GSI), Alexander Vodopianov (Dubna)

2 Minutes

The Magnet Group met via EVO on the 24th January. The meeting began with a presentation by Lars Schmitt (<http://panda-wiki.gsi.de/pub/Magnet/Magnet080124/space.pdf>), during which he expressed the wish to reduce the cryostat z_{max} value as established in the Magnet Volumes at the last Technical Board Meeting, and to restore the former values for the downstream door position. He required the extra space in the forward region to allow for larger gaps between the current detector volumes. The current free space between the detectors, of only 5 mm, is insufficient to allow for mounting misalignments, movement when the magnet is switched on, and detector emergencies, where it might be discovered by some detector group that there is no way to have a functioning detector while remaining within the currently prescribed detector volume. He said that this was especially crucial for maintaining the integrity of the vacuum seal on the FE EMC thermal insulation and in the case of the focusing DISC DIRC, which has to fit inside a very tight 55 mm envelope. He wished to extend these tolerances to around 10 mm per detector. He stated that, due to the request of a shorter cryostat and thus, likely, a shorter coil, a 5% decrease in bending power was acceptable, but all other criteria remain as they were. He mentioned that a slight increase in the B_r integral may be allowable (e.g. 2.1 mm), but that the TPC group then would then need to perform a final verification when given the field map.

There was some discussion as to the exact nature of these tolerances and how they should be described within the Interface Document. It was queried whether all tolerances should be entirely specified and contained detector by detector within each, consequently enlarged, detector envelope, or whether the detector envelopes (as they do now) should allow only for manufacturing and mechanical tolerances within the detector construction, and tolerances should then be allowed around the detector envelopes for movement when

the magnet is switched on and mounting and alignment issues. It was decided to continue this discussion at another time and focus on the main issues under discussion.

It was then unanimously agreed that the cryostat z_{max} would be changed to 1900 mm as requested and that the yoke forward door would be moved back to its original position, running between 2465 and 2905 mm. Andrea Bersani showed some figures of two designs that he had made (available at <http://www.ge.infn.it/~bersani/panda/design.html>) that complied with all magnetic field requirements and conformed to the new cryostat z_{max} and the new yoke door position. These changes required a higher current density and produced an increased unbalanced axial force of 60 tonnes. He suggested that the cryostat volume be lengthened in the upstream direction by 10 mm to allow more flexibility in the coil design. It was then agreed by all that z_{min} could be changed to -1190 mm for the cryostat.

It was decided that Lars Schmitt and Inti Lehmann will report that the Magnet Group is happy to adopt the suggestions on cryostat dimensions and the yoke forward door at the next Technical Board Meeting on February 13th 2008. It was suggested that it would be useful for as many of the Magnet Group as possible to attend this Technical Board meeting as, alongside the newly agreed dimensions, the Interface Document would be a matter for discussion. The Technical Coordinator intends to press each of the detector groups to give an indication of their required cable volume and in which direction their cables are to be routed. It was emphasised that this information is very important and urgently required to allow the magnet design to progress.

The next meeting of the Magnet Group was then decided to be a two hour meeting on the morning of Tuesday 4th of March at GSI, during the next collaboration meeting. All groups agreed to attend.

3 Required Actions

Individual / Group Responsible Agreed responsibility.

I. Lehmann & L. Schmitt Report agreed dimensions to Technical Board.

Magnet Group Attend the Technical Board Meeting on February 13th (if possible) to participate in discussions relevant to the Interface Document.