Radiation Monitor Minutes, Meeting 1, 7/10/13

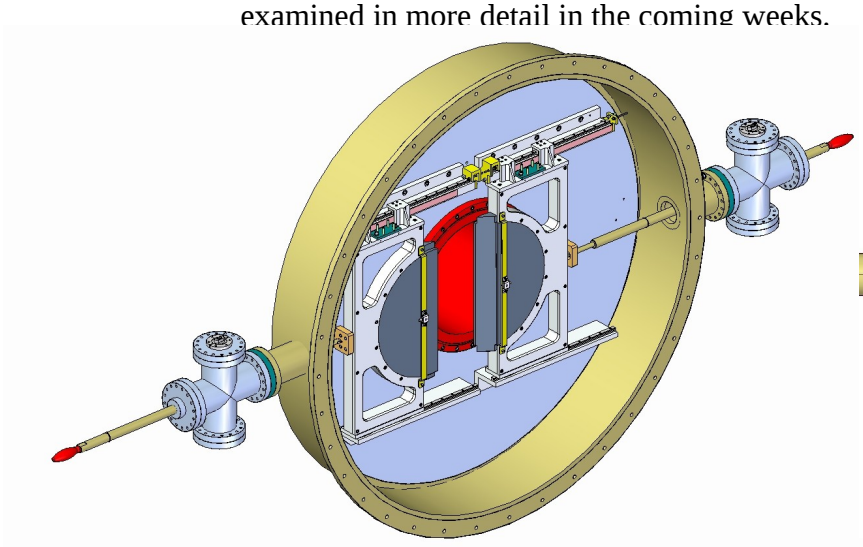
Present: Melissa Uchida, Norbert Collomb, Chris Hunt, Graham Stokes.

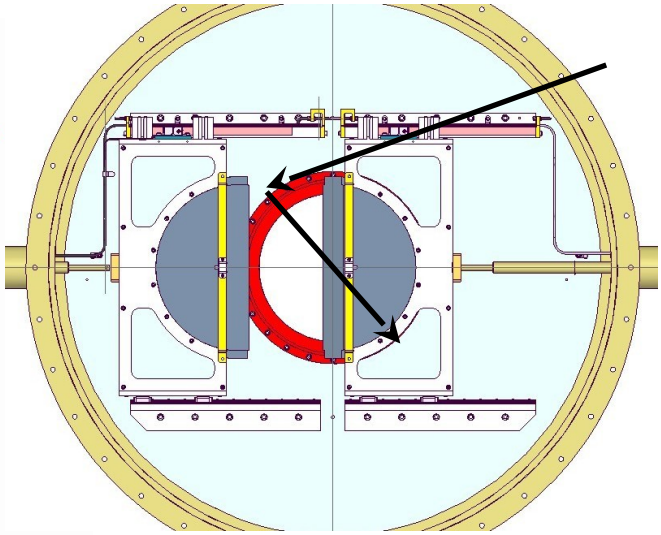
Agenda:
1. Slides and discussion – Norbert.
2. Discussion of document – Melissa
3. Plan for work going forward, partly from section 5. - All
4. Future meetings
5. AOB

Minutes:

1.

- Shield designed, items procured and tested and is ready to be installed.
- Cabling will definitely be coaxial, back of the envelope calculations have been done to allow maximum cable length which is now considered to be 18m. Originally it could only have been 10m meaning it would have to sit in an area of too greater field.
- Cabling will be fixed using stainless steel P clips at end of frame towards outside of vessel.
- Whole system should be plug and play, so that faults can easily be fixed and the system replaced easily.
- Aluminium frame can be used to attach detectors to shield using P clips.
- Pre-amp still need to be designed and understood.
- 2 possible designs (both with two positioning options have been suggested and will be examined in more detail in the coming weeks.





- Option 1 is the most flexible but cables have direct radiation
- Option 2 is limited by window flange size and bracket mounting but has cable protection
- Both can have 4 sets of 2, 4 sets of individual, or 2 sets of 2 detectors.

2.

- Shane will still help us out if we ask it seems.
- Time Hayler no longer part of main work effort as the work has moved on, but will still be in an advisory capacity on things he can help with.
- Overall style and structure of document will continue for the foreseeable future, it will be updated with new info and work outcomes and will eventually lead to a paper.
- Went through document and determined many action items
- Amendments to the document were discussed and will begin to be implemented in versions 6 and later.

3.

- Calculate optimum distance of detector from beam centre.
- Is the beam symmetric in all possible cases (including dangerous ones)?
- Determine width of beam and beam cross section.
- Do we need 4 sets of 2, 4 sets of individual, or 2 sets of 2 detectors? Which is best?
- Do we need thick detectors?
- MAUS software has a few key elements that need work before calculations will be easy. Chris is working with the SW group on these.
- Chris is looking at the system and planning the way forward, work has begun and will be ongoing.
- Chris is developing a method to add detectors to beam simulation in SW.

4.

- Meetings will be bi-weekly in the telephone.
- 1 in ¾ meetings will be face to face, and when deemed useful.
- STFC contingent will rarely be called upon to travel for these face to faces.
- Wednesdays at 4pm
  NEXT MEETING OCTOBER 23rd.

Action Items:

1. Ask Tim Hayler if we are using the most up to date design of the window and if we can have some pictures of it, perhaps with a couple of figures. **– Norbert**
2. Get some electronics experts on board, Ian? **– Norbert**
3. Do we need thicker detectors or only thin ones. **– Melissa and Chris**
4. What is our deadline, do we retrofit or are we needed at the start of step IV? Alan Grant **– Norbert**
5. Determine timeline for work based on answer to action item 4. **– Melissa**
6. collect information on vacuum feedthroughs, preamps, connectors etc. **– Norbert**
7. Add item 6 to document **– Melissa**
8. Determine field at 18m from shield and outside PRY (Holger W. and Paul S.) **– Melissa**
9. Do the ORTEC pre-amps have an understood sensitivity to magnetic field? What is it? Error? **– Norbert**
10. Detailed description of Pre-Amplifiers and how they work. **– Melissa**
11. What signals come from PreAmp and amplifier and how could they be read out (options)? **– Melissa**
12. Start thinking about possible interlock triggers, radiation levels monitoring etc. Elaborate on bullet but no need for a real plan yet. **– Melissa**
13. Collate cabling info from 'backs of envelopes', Send to Melissa **– Norbert**
14. Add item 13 to doc. **– Melissa**
15. Calculate optimum distance of detector from beam centre. **– Chris**
16. Is the beam symmetric in all possible cases (including dangerous ones)? **– Chris**
17. Determine width of beam and beam cross section. **– Chris**
18. Do we need thick detectors? **– Chris / Melissa**
19. Begin thinking about the possibility of a shield closing radiation monitor, can we use part of the existing system or a logical extension? **– Melissa**
20. Can we do next meeting at RAL? **– Norbert**