

g2p/GEp Beam Transport Meeting Minutes

Attendees: E. Folts, K. Allada, T. Michalski, A. Gavalya, P. Kjeldsen, Y. Wang, J.P. Chen, P. Degtiarenko, H. Smith, R. Lauzé, C. Curtis, B. Dillon-Townes, S. Higgins

The following is a summary of issues discussed during the g2p/GEp Beam Transport Meeting:

- Review of open action items:
 - The beam will be centered in the beam tube as it exits the FZ2 magnet. Therefore, use of the 5.5" M15s is a go.
 - All information has been sent to Chris Cuevas. Need to follow up on getting him the SR from storage and schedule of tasks to verify and test system.
 - Polarity switch on 1 FZ PS has been verified and we have a spare if the other needs to be modified. Item closed.
 - Walter Kellner stated that it will be early January before they start moving items out of the Physics Storage Building. They are awaiting completion of another area. This should not impact getting the FZ magnets updated with the new vacuum chambers. Also need to add the Slow Raster to the items to be removed. This goes to Chris Cuevas.
 - It was stated that the helicity signal is already distributed to Hall A. Item closed.
 - While work is ongoing with calculations and analysis on the BPM electronics, John Musson has been buried with demand from Accelerator Ops to keep the machine running. Still need to push on BPM, BCM, and Harp clarification/resolution. A meeting focusing on Instrumentation will be scheduled for January.
- In addition to what is in the regions called out in the Experimental Definition Drawing, we need to look at the instrumentation upstream as well. These affect locks and beam stability.
- Low current BPM may not work well with Fast Feedback due to the integration time. Scott Higgins stated that the Fast Feedback is running at 1800 Hz. BPM bandwidth will probably be down in the 10s of Hz.
- JP stated that due to the risk of timing on the "new electronics" for the BPM, we need a backup plan. Currently, there are two types of RF modules which support the SEE electronics – Linac and Transport. The Linac module does not support current measurement below 1 μ A. The Transport module should support measurement down to 70 nA. In a post meeting discussion with Pete Francis, it was learned that there are 22 BPMs in the Hall A beamline from the BSY to the target. They impact 3 IOC. If you are going to have Transport modules, you need all the ones feeding an IOC to be the same (each IOC can take 8 channels). Therefore, if we want to do the 2-4 in Hall A, you need to install 6 Transport modules to feed the last IOC. Pete does not have a full cadre of these modules to support Hall A, so we would need to procure these in order to satisfy a backup plan.
- Regarding the harps, it was stated that we need clarification on secondary emission versus PMT detectors. A documented statement on wire size and sweep rate is need too.
- The BCM needs to integrate within 1 helicity state.

STATUS:

OPTICS:

- No status update

MAGNETS:

- No status update

g2p/GEp Beam Transport Meeting Minutes

BEAM TRANSPORT:

- Horizontal harp memorandum sent – will be the same as the French harp.
- Region 1 support being fabricated.
- Region 1 and 2 assembly drawings will be finished this year.
- The viewer has been ordered.
- The upside down girder is ordered and should be in by the end of January.
- Large bellows should be in by the end of January.
- We still need a list of items to send to collaborators!
- We still need a schedule!

RAD CON:

- No status update.

SOFTWARE:

- Desires a separate meeting(s) to address topics of Fast Feedback, BPM, and BCM.
- Need to scope work and define resources. Get SPR.
- The Calorimeter SW will be reviewed by Arne and then turned over to Pam and team to update and implement. She expects to get the SW from Arne in mid to late January.

VACUUM:

- No status update

INSTALLATION:

- No status update

ALIGNMENT:

- No status update

EES – I&C:

- No status update

EES – OPS:

- No status update

EES – SSG:

- No status update

TARGET/DUMP DESIGN ACTIVITIES:

g2p/GEp Beam Transport Meeting Minutes

- No status update

PHYSICS

- We will not use the FEL to irradiate targets.
- They will be scattering off the viewer.

g2p/GEp Beam Transport Meeting Minutes

Action Items:

Action Item #	Date Added	Action Item	Responsible Individual	Due Date	Date Closed
11	9/28/10	Define the settings for chicane magnet current monitoring.	Y. Roblin	By 3/11	
12	9/28/10	Define if instrumentation is required for the low current dump. If so, what should be monitored?	TBD	TRACK to close	
16	10/5/10	Understand why there is a hole in the center of the rastered beam that comes from the faster raster/slow raster combination. Stated to be a waveform generator issue. Clarify this. If not HW, then probably SW?	C. Cuevas B. Gunning	TBD	
23	11/16/10	Verify polarity switch for FZ magnets. We have one spare in house if needed.	R. Lauzé	12/30/10	
24	11/23/10	Get FZ magnets from Physics Storage	T. Michalski	1/15/11	
26	12/6/10	Need to make sure that helicity signal is distributed to Hall A	D. Williams	TBD	
27	12/6/10	Determine wire size for harps.	D. Williams/O. Garza	TBD	
28	12/6/10	Get Arun Saha involved in BCM electronics and monitoring.	D. Williams/J. Musson	TBD	
29	12/6/10	Set up a topic specific meeting on BPM w/ new electronics – for SW	T. Michalski	TBD	
30	12/6/10	Update analysis/calculations on BPM and new electronics to insure we can meet the requirements.	J. Musson/D. Williams	TBD	

Design Decisions:

Date	Decision Item
8/31/10	The transport line exiting the FZ2 will have no vacuum connection to the target chamber. A beryllium window will terminate that line.
8/31/10	M20 BPM's were decided to be used on the transport line exiting the FZ2.
9/14/10	The Target will only be set at 80° and 90°, not 70°, per Al Gavalya.
9/14/10	The gap between the beam tube end and the target window was discussed. It should be minimized – consider 1 cm as a maximum gap. Re-opened during 9/21/10 meeting – look at using helium bag. Will use helium bag – issue closed.
9/30/10	The requirement for BPM accuracy is 0.1mm – per discussion at BPM requirements meeting and subsequent analysis/e-mail from K. Allada.
12/6/10	Use 5.5" M15 antenna style BPMs in articulating arm!

g2p/GEp Beam Transport Meeting Minutes

12/6/10	JP committed to a 2 cm raster, if need be, to accommodate threading the beam through the articulating arm.
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