g2p/GEp Beam Transport Meeting Minutes

Attendees: T. Michalski, P. Kjeldsen, R. Lauzé, A. Camsonne, D. Williams, JP Chen, Z. (Vick) Chen, L. Dillon-Townes, P. Degtiarenko, K. Allada, C. Curtis, A. Gavalya

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

- We continue to sort out the details regarding the FZ magnet PSs
  - Vick has the action to see if the AI magnet will fit in the proposed, existing stand. Decided that a separate meeting would be set up to review this. It was held on Thursday AM with the following results:
    - Attendees: Tim, Ed, Butch, Vick (Ron concurs with the results)
    - The work associated with using the existing magnet stand is great. It will not roll out of the BSY and would require disassembly on-site to get it out. It would require design and fabrication time to mount the much larger and much heavier AI magnet. There is still concern about the high CG. It will have to be returned to its original configuration after the experiment.
    - Ed has a 4'x4' base that can be used to set the AI magnet on (no design or additional mounting fabrication required – may require blocks) – cost $0
    - Ed has a rotating beacon that will activate via the magnetic field – no special wiring required – plugs into the wall – cost $0
    - Since it will be located right next to the PS, it was felt that the PS emergency off button is adequate – cost $0
    - Vick will take responsibility for getting it wired to the PS – additional cost $0
    - Ed will take responsibility for protecting the leads from inadvertent contact – minimal cost of material on hand
    - Neil's crew will plumb in the LCW – additional cost $0
    - Can use cones and rope to keep people away from and alert them to the presence of the magnet.
    - Need to orchestrate getting the AI from the Test Lab and the base from the physics storage building.
  - Some spare parts have been identified for the PSs. More to come when they get their hands on the actual units.
  - We talked about moving the PS directly to Hall A to avoid moving them twice. Vick stated that the current ATLis has them being moved to their lab for testing. Need to finalize this plan.
- It was agreed at the 2nd half of last week's meeting that we will be moving the target up 9cm for the 1.1, 1.7, and 2.2 GeV runs when the target is in the 87cm upstream location. For the 1.1 and 1.7 GeV runs, the target magnet will be at 2.5 T, versus the 5 T for all other runs. Separate meeting set up for Wednesday to clarify all details between CASA and MEG and Physics. Result – all runs will have beam horizontal at target (this was the main open question).
- BCM testing – no update.
- BPM testing – awaiting results of beam studies.

STATUS:

OPTICS:

- Rerunning all orbits for revised plan with 1.1 GeV run at pivot (FZ magnets in same location as 2.2 GeV run) and 9cm target elevation.

MAGNETS:

- Nothing new to report

BEAM TRANSPORT:

- Region 1 – nothing new to report
- Region 2 – nothing new to report
- Region 3 – FZ1 stand – final inspection and painting – expect it within a week. FZ2 stand – finalizing drawings (Thurs) and SOW – expect to get to procurement beginning of next week. It is a critical schedule item for 6MSD, therefore, get revised date to Tim for scheduling with 6MSD. Still finalizing the support arms and positioning mechanism. Setting up a meeting with alignment, installation, vacuum, Ed to review installation plans.
- Material – 4 bellows passed leak check. Next focus is PS shielding box – modify existing assembly.
- Harps – flag due this week. Wire stringing fixture nearly done. Fabricating harp assembly with a local supplier.
- BPMs – should be complete this week. Then to vacuum for leak check. Then to test.
- Not all parts are procured yet. Need to extend some designer (eng?) time to complete. Need to get parts procured! Tim and Butch to work this issue and communicate impact.

RAD CON:

- Looking at logistics of handling dump cartridge.

SOFTWARE:

- Nothing new to report

VACUUM:

- No status update

INSTALLATION:

- No status update

ALIGNMENT:

- Nothing new to report

EES – I&C:

- Working details on calorimeter controller and PC104. The Temp card is almost complete. Good progress.
- Harp control – layout with Chad Seaton – FA in a couple weeks. BPM receiver 2nd prototype in manufacturing.

EES – DCP:

- Have some spares. Will further check with Simon. Will have to wait until we get the PSs in order to confirm all spares.

EES – SSG:

- No status update

TARGET/DUMP DESIGN ACTIVITIES:

- Implementing details of 9cm target elevation.
- Target magnet – on its way to the states.

PHYSICS

- Collaboration meeting yesterday. See separate minutes on Wiki site.
- Readiness review set for May 6. Input to be submitted by 4/28 for distribution to the review team.

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 5/6	
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	
35	1/4/11	BCM testing at low current, w/ helicity, in ~~January~~ April.	J. Musson / A. Camsonne	4/?/11	
36	1/11/11	BPM testing with new electronics in North Linac – ½ done	J. Musson / D. Willaims	4/5/11	
37	2/1/11	Resolve open question on FZ magnet power supplies.	V. Chen	Ongoing	
41	3/14/11	Verify jacket for upside down girder BCM fits.	B. Dillon-Townes	3/22/11	
43	3/14/11	What is the required hysteresis required for the FZ1 and FZ2 magnets? What is the range of required current?	Y. Roblin	5/15/11	4/11/11
44	3/22/11	Verify that the AI magnet can fit in the proposed magnet stand. Decision to go a different way.	V. Chen	4/5/11	4/21/11
47	4/5/11	Verify ability to run 1.1 GeV through 2.2 GeV setup, while target is at the pivot.	Y. Roblin / T. Michalski / JP Chen	5/1/11	4/19/11
48	4/12/11	Determine the vertical position change for the target at the 87 cm upstream position – for 1.157, 1.706, and 2.257 GeV runs – will be 9cm	JP Chen/K. Allada	4/19/11	4/19/11
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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!
12/6/10	JP committed to a 2 cm raster, if need be, to accommodate threading the beam through the articulating arm.
1/11/11	Decision to use harps in tune mode rather than low current.
4/5/11	We will not accommodate a special 1.1 GeV run with the target at the pivot. There will be no change to the FZ2 stand design and no need to reposition the chicane. Evaluation of 1.1 GeV beam through 2.2 GeV chicane position to be performed.
4/18/11	It was agreed that we will be moving the target up 9cm for the 1.1, 1.7, and 2.2 GeV runs when the target is in the 87cm upstream location. For the 1.1 and 1.7 GeV runs, the target magnet will be at 2.5 T, versus the 5 T for all other runs.