the PbGl godfather review on April 29, ’96 at BNL.

=====beginning of questionaire==========

1. Mechanical

1) mechanical structure
2) installation procedure
3) cooling
4) positioning and survey
5) crate space and position
6) cabliing etc...

2. Electorical

1) FEM for PbGl
2) triggering scheme
3) LED calibration system + calibration transfer from electron beam
4) HV system
5) monitoring temperature, HV etc...
6) power consumption

3, performance

1) performance of PbGl especially relative to PbSc calorimeter
2) effect of TOF to the PbGl measurement
3) etc...

4, personnel, schedule and budget

1) who is responsible for what
including who is going to do the PISA simulation for PbGl performance
2) schedule for each responsible people
3) decision making mechanism (communication method)
4) Budget especially who is paying for what

note: Since PbGl exists and is working, I do not worry about the technical issues except FEM which I do not have enough knowledge of. I would rather like to know the responsibility as you mentioned and the structure of decision making( I am talking about the internal decision among PbGl people).

========== End of questionaire ==========

The following is the summary of what I learned in the meeting and several other PbGl meetings I attended before. I will itemize the action items later.

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[1] General outlook

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PbGl is a working detector in WA98 and the basic philosophy is to keep the current configuration as much as possible. Thus we have much less concern for the existing part of the detector compared to others. On the other hand, the readout electronics development is delayed and may come close to a critical path. Since RICH also relys on ORNL electronics which are supposed to be delivered after calorimeter electronics, it could be a major concern in the near future.

Away from the technical issues, there is still non trivial amount of work left for redesigning monitoring electronics, cutting super module ends and recabling. Unallocated cost of about $70k for those modifications have to be secured soon.

Another kind of concern I got in the course of setting up the meeting was the communication among the responsible institutions. Sebastian had a hard time organizing this godfather review and he ended up having one during the PbGl test beam at BNL. I hope it will be a non-issue when real work has to be done.

[2] meeting summary

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Now I will go through each sections I asked for in the meeting.

1, Mechanical design and integration

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No major problem was addressed for the mechanical design in the meeting. Cooling and monitoring systems are also taken care and the installation procedure is investigated in detail. Positioning and survery of the detector(1mm tolerance) is done relative to the outer case and it seems to be achievable. Certainly there is no interference with TOF rails which come face to face contact with the PbGl.

Exsisting Cockroft-Walton HV bases and the LED based dome monitoring system stay. Super module ends have to be cut off upon arrival at BNL and

recabling has to be done. Manpower allocation and budget issues should be clarified well ahead of time. Estimated labor are 124 man*day for cutting ends and ~300man*day for recabling. LEMO connectors may be recycled from WA98 for recabling.

2, Electorical design and progress
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Oak Ridge has steady progress over the FEE development. Decision was made to take variable gain amplifier to reduce the noise. Study shows the noise is reduced from 3ch to 1.5ch.

The same FEE card is used for PbSc and with the current schedule it is 4-5 months behind the sector test schedule. Unless one iteration is skipped it might be hard to test the system in sector test, though it should be in time for PbGl day one physics measurement.

3, Performance of PbGl relative to Pb-Schinti. calorimeter
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Performance table of PbGl was shown in comparison with PbSc and BaF2. However, the effect of the TOF which sits in front of the PbGl is not thoroughly studied by PISA. The virtue of having PbGl is to get better resolution in spite of the fact that it covers only two sectors. The concern is whether we still have good enough energy resolution with the TOF in front.

Intuitive answer from WA98 experts was if the material is very close to PbGl, the effect is very small. Still its performance in fully installed PHENIX should be investigated with PISA.

4, personnel and budget
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Kurchatov can supply up to 2 man*years in 97. On the budget sheet shown in the meeting, $66k is expected from Preops which is not realistic. Munster is supposed to pay for redesigning the monitoring system but they have not confirmed the source of $20k for it.

[3] Action items
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In general, PbGl has made sound progress and a timely delivery of the detector is expected. There is still potential danger which might delay the development of the PbGl subsystem. To avoid any delay, the following action items are listed below.

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# Action items #
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1, Every effort should be made to speed up the FEE development not only for the calorimeter subsystem but also for the PHENIX physics measurement capability.

2, Man power and budget necessary for the system modifications should be secured as soon as possible and the real work should be started without any delay.

3, Communication among the institutions and the commitment to PHENIX tasks should be strengthened to keep up the schedule under DC's leadership.

4, It is recommended to keep updating the WEB pages so that more PbGl activities are visible for all other PHENIX collaborators.


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