

Quarterly Report FY09 Q2

Project Name: STAR-TOF

Date: April 16, 2009

Contract Project Manager: Geary Eppley

Summary of milestones covered during review period:

1.3.19 100 trays complete. 94 trays were completed and delivered to BNL in November 2008. An additional 17 trays were fully complete as of March 6. They have not been delivered to BNL since the tray storage area is not accessible during RHIC running.

Summary of expenditures:

(The *Baseline* column includes contingency. *To completion* and *Estimated cost* do not.)

The first spread sheet is the original baseline project budget. The baseline cost is \$4.8M in actual-year dollars including contingency.

WBS	Baseline (amounts in k\$)	To date	To completion	Estimated cost	Contingency	%
1.3.1 Tray	534		445	445	89	20
1.3.2 Gas system	70		61	61	9	15
1.3.3 High voltage system	142		121	121	21	17
1.3.4 Start detector	31		28	28	3	11
1.3.5 Infrastructure	84		65	65	19	29
1.4.1 Board purchase and testing	2683		2111	2111	572	27
1.4.2 System testing and integration	296		228	228	68	30
1.4.3 Electronics installation	253		202	202	51	25
1.4.5 Low voltage system	259		233	233	26	11
1.4.6 Electronics design	171		134	134	37	28
1.1.1 Project management	261		249	249	12	5
1.2.1 China Coordination	16		15	15	1	7
1 Project Total	4800		3892	3892	908	23

The following spread sheet reflects the project status at the end of FY09 Q2.

WBS	Baseline (amounts in k\$)	To date	To completion	Estimated cost	Est. Contin.	%
1.3.1 Tray	534	447	64	511		
1.3.2 Gas system	70	57	9	66		
1.3.3 High voltage system	142	165	5	170		
1.3.4 Start detector	31	6	3	9		
1.3.5 Infrastructure	84	41	24	65		
1.4.1 Board purchase and testing	2683	2188	184	2372		
1.4.2 System testing and integration	296	226	108	334		
1.4.3 Electronics installation	253	154	52	206		
1.4.5 Low voltage system	259	188	5	193		
1.4.6 Electronics design	171	229	0	229		
1.1.1 Project management	261	387	36	423		
1.2.1 China Coordination	16	23	0	23		
1 Project Total	4800	4111	490	4601	199	41

There are no issues that have occurred in the project since the cost was re-estimated in July and a Baseline Change Proposal was approved in August that indicate a need to increase the estimated cost to complete the project. None of the contingency of \$199 thousand approved in the Baseline Change Proposal has been used and this amount remains adequate at this stage of the project.

- Summary of expenditures (in k\$):

Note: The table below shows cumulative amounts from the inception of the project, by fiscal year.

	FY 2007	FY 2008	FY 2009
A) Funds allocated:	4800	4800	4800
B) Costs accrued:	2274	3735	4111
C) Commitments less accrued costs:			470
D) Remaining contingency:			199
E) Uncommitted funds (e=a-b-c)			219

- Summary of schedule: (Note actual vs. forecast date)

	Baseline Start Date mo/year (a)	Actual/Forecast Start Date mo/year (b)	Baseline Completion Date mo/year (c)	Actual/Forecast Complete Date mo/year (d)	% Compl. Actual (e)
Design	02/06	05/06	10/06	09/07	100
Procurement	03/06	04/06	02/08	12/08	100
Construction	08/06	05/07	12/08	09/09	75
Operation					

Brief summary of project issues, concerns, successes:

MRPC status: The China project was completed on time. The quality of the detectors received has been outstanding. There are more than 100 spare MRPC detectors remaining in China, but no expected need to use them.

Electronics production: All electronics production, including spares, is complete. A few boards have been returned to Blue Sky Electronics and Blue Sky will either repair or replace these boards. Blue Sky delivered 16 additional TDIG boards and 5 TCPU boards from their existing inventory.

We are building additional electronics to increase the number of spares for all components to ~15%.

Tray production: A cumulative total of 94 TOF trays were delivered to BNL by mid-November and installed for Run 9. An additional 23 trays are now fully tested and ready for shipment from UT. UT expects to complete assembly and testing of 120 trays and 6 spares by the end of April.

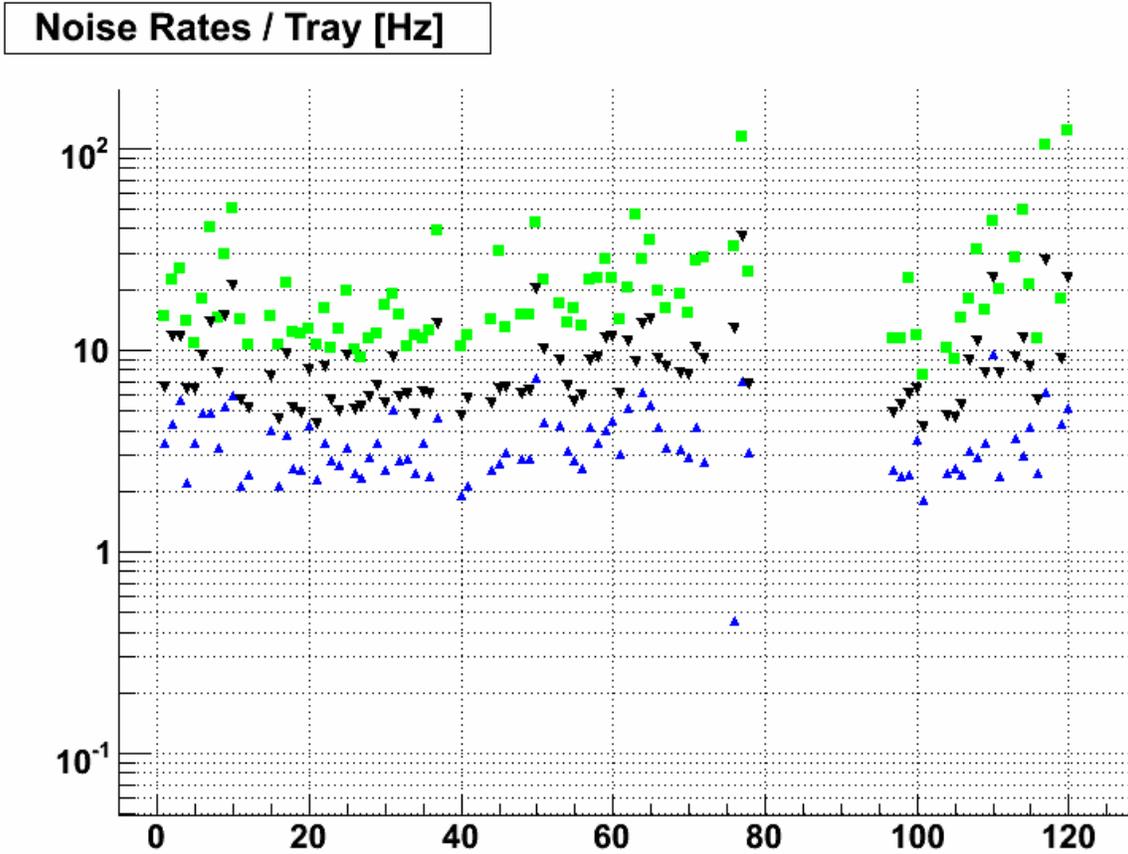
Installation: Ninety four trays are installed for Run 9. Four of the installed trays are not read out: two apparently lost the low-voltage connection when the west pole-tip was closed; the TCPU card on one tray was determined to have a bad component after the tray was installed; one tray apparently lacks any high-voltage connection. Of the 90 trays read out, 4 had only a partial high-voltage connection. At least two of these trays were generating large high-voltage current spikes, perhaps an indication of a damaged cable or connector. The high-voltage is now fully disconnected for these 4 trays but they are configured and read-out as a check for electronics noise. The 86 fully-functioning trays have a total of 5 dead channels out of 16,512 channels.

Physics running at STAR began in the last week of March. Tens of millions of triggered events including the TOF detector have been recorded. Event reconstruction for almost 4

million TOF events is nearly complete. We will use this event sample to do a preliminary calibration of the detector.

Gas system: The TOF re-circulating gas system was designed by PNPI in Russia. The expert from PNPI was at BNL for 16 days beginning March 31. The gas system has been in re-circulating mode since April 1 and has been operating stably.

Noise rates: The following chart shows the noise rates for 86 TOF trays installed at BNL. The x-axis is tray number. The green squares are rates for the highest-rate channel in each tray. The blue triangles are rates for the lowest. The black triangles are the tray average noise rate per channel. As can be seen, only 3 trays have any channel above the project specification of <50 Hz, and the average rate per channel is quite low.



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