

DSG Weekly Report – June 10, 2015

Summary of Projects

Hall D

Magnet: Request received from Hall D to update PXI system. Dave Butler is convening a meeting with Ben Zillman, Hall D staff. Dave Butler, Brian Eng, and Peter Bonneau will be working on the project, which is anticipated to take 6 — 8 weeks at the least and is expected to start in July of 2015.

Hall B

LTCC: *Still waiting* to hear from Maurizio Ungaro regarding Volker Burkert's approval about Mindy Leffel charging 120 hours to BOPS for LTCC PMT work. No work has been done from 6/1/15. Tina Mann has finished testing all the Winston cones here. There are still 21 Winston cones at ECI

HDICE: *Still waiting* for Mathematica data files from the HDICE group; *still waiting* for test results on the RF cable tests from Xiandong Wei. First RF Attenuator/Switching chassis has been completed by Mary Ann Antonioli and Robert Teachey; testing of the chassis is being done by Mary Ann Antonioli and Robert Teachey. Test equipment is being set up in the DSG control room/clean room by Robert Teachey. LabVIEW programming of rotation of target polarization is being done by Peter Bonneau and Mary Ann Antonioli. *Still waiting* for input on the ramp rates of the power supply (to avoid eddy currents) from the HDICE group.

Gas Sytem: All components for software development have been received. Dave Butler is working on the LabVIEW programming. Chassis panels have been designed and sent for manufacturing by Marc McMullen. First chassis of the three needed for the system is expected to be completed 07/22/15. DC pressure PID system is scheduled to be tested between (07/29/15 — 08/29/15). *Still waiting* for a decision on whether gas lines are to be in cable trays.

Drift Chambers: Sahin Arslan, Mindy Leffel, Tina Mann, and Anatoly Sitnikov have been sorting DC signal cables; sorting is almost done; will be completed by 07/08/15. More than 1,500 cables have been untangled and sorted by length. Next step would be to identify the lengths needed by Hall B engineering, check cable condition, repair them as needed, and label them. George Jacobs feels that DSG group might be routing the cables; do-able, proviso approval from Patrizia. Final resting place for DC racks on the hall floor has been decided, as per George Jacob's recommendation.

SVT: Work on SVT Hardware Interlocks under way. Components received and LabVIEW programming started by Peter Bonneau. Chassis and cables are being fabricated by Marc McMullen, Mindy Leffel, and Mary Ann Antonioli. A duplicate program to run the system in the lab is being coded by Robert Teachey. Brian Eng is supporting the SVT testing endeavor. The Director's Assessment of the detector on 06/04/15 went well. At the review there was a request for 22 weeks of Brian Eng's time. As usual, the author of this report, much as he is speechless at this request—still can write and expresses that *the work that has to be done should be requested, not the personnel*. Given the fact that the DSG has had to discuss this issue over and over again: with the Hall B magnet group, HDICE group, LTCC group, and the SVT group (regarding production at Fermilab), the author finds this request not just bordering on the ludicrous and concludes with a quote from Georg Wilhelm Friedrich Hegel: "We learn from history that we do not learn from history."

Antonioli, Mary Ann:

Hall B

LTCC

- Coordinating and overseeing project activities:
 - Component preparation, divider board fabrication, PMT base assembly, and Winston cone's reflectance tests.
- QC-ed fabrication and assembly of 23 reworked PMT bases.
 - Updated spreadsheet.

HDICE

- Tested RF/switching chassis at 30 and 40 MHz.
- Attended the daily program development meeting.
- Programming in LabVIEW rotation of target polarization.

Hall D

Meeting

- Attended DSG group's daily meeting on magnet and detector performance.

Arslan, Sahin:

Hall B

DC

- Sorted 43 bundles of signal cables.
- Measured and re-organized signal cables by length.

Bonneau, Peter:

Hall B

HDICE:

- Conducted bi-weekly slow controls status meeting.
- Still waiting for data files to proceed with Mathematica programming.
- DSG had a video conference with Craig Thorn at BNL last week. The needed files were requested from Craig, who only works on Tuesday and Wednesday and is retiring in January 2016.
- At the request of the HDICE group, DSG contacted the cable company regarding selling the components and the tooling necessary to make the NMR cable assemblies at Jlab. No response has been received from the latest request.
- Testing of the short NMR cables ordered by DSG is being done by the HDICE group.
- The test results from the updated RF Attenuator/Switching chassis were reviewed. The test points of: -1, -2, -4, -16, -32, -48, -55, -60 dB were said to be sufficient for the needs of the HDICE group. The testing frequencies are from 10 to 80 MHz in 10 MHz steps.
- From the HDICE group, a 3 foot length of magnet power supply cable was requested for the test station being assembled.
- The progress on the rotation of target polarization program was discussed. A table of magnet ramp rates is needed from the HDICE group for the programming effort. DSG has written a complete procedure for the rotation of HDICE target polarizations and has sent it to the HDICE group for comments.
Items reviewed this week in the daily status and programming group meeting include the

HDICE test station being set up in the DSG control room, the polarization program, and updated NMR code requested by the HDice group.

SVT

- Defined SVT Hardware Interlock System trip threshold signals and thresholds.
 - There are 47 user settable threshold values used in the system. When installed in the Hall B, these values can be remotely adjusted via network communication.
- Defined enable/disable signals for the SVT Hardware Interlock System.
 - These signals allow the user to remotely determine which sensors (temperature and humidity) are used in the interlock logic in the case of a sensor failure. There are 25 user settable values used in the system. When installed in the Hall B, these values can be remotely adjusted via network communication.

Hall D

Meeting

- Attended daily status and instructional meeting on Hall D systems. This week we examined the solenoid vacuum levels during outgassing as the magnet warmed to 80K.

Butler, Dave:

Hall B

Gas System

- Continued to work on gas system code and PID tuning. Removed PID simulation code and used hardware input and output to test system in anticipation of testing in Hall B.
- Checked Marc's gas system chassis drawings.

SVT

- Attended the SVT weekly status meeting.

Hall D

Magnet

- Changed helium system alarm threshold settings for PLC solenoid controls to stop unwanted on-call pages while magnet is warm. The threshold changes are considered interlock bypasses so they are being tracked via the ABIL 5.0 interlock bypass database.
 - The following parameters were changed: Liquid Helium Level Low from 35% to 0%, Coil to Helium Supply Temperature Delta from 50K to 150K and Vapor Cooled Lead Flow at 0 Current from 31 sccm to 0 sccm.

Meeting

- Attended DSG group's daily meeting on magnet and detector performance.

Eng, Brian:

Hall B

SVT

- The initial trial at a test for internal pulser based gain scan is too slow (10 hours for a single chip). Instead performed threshold scans @ 1 second per threshold (minutes per chip). After all modules being tested were moved to metal boxes the low gain have similar performance as normal gain modules.
- Made MyaViewer configurations that are archive charts instead of strip charts. Always will pull up past X seconds worth of data (initial ones are X=2 days = 172800 s), has better performance with multiple channels than strip charts which will eventually crash if left open..

HDICE

- Met with Xiandong to go over notebook priorities, i.e. which ones are needed first, since *so many are missing input files*. Also to discuss which, if any, of the input files could be regenerated.
- Continued working on converting notebooks to Mathematica version 9, in doing so found *some more missing input files* as well as some undefined functions.

Jacobs, George:

Hall B

Gas System

- Reviewed plans for the three Hall B gas system chassis and sent feedback to Marc M.
- Re-labeled gas piping runs on L1 space for those that were missing tags.
- Discussion with Bob Miller about DCGAS manifolds and bubbler locations.
- Meeting with Bert M. and Robert Sperlazza, FM, about gas cylinder rack installation on EEL exterior gas pad.
- Developed a scope of work for proposed gas cylinder rack installation on EEL exterior gas pad.

DC

- Reviewed final rack layout and cable routing for DC crates under the subway and gave feedback.
- Searched for missing DCHV connector pins.
- Searched for missing DC signal cables.
- Removed cables and decommissioned laser enclosure used for drift speed measurement of DC gas mixture.
- Meeting with Bob M, Sergey B, Eugene P, Chris C, Mac M, and Mark T, on "final" DC electronics rack layout.
- Excessed old electronics and equipment which will not be used for CLAS12 gas systems in gas shed.

Meeting

- Attended TDG meeting, discussed HTCC status, LTCC, gas system upgrades.
 - Bob Miller, Steve Christo, Yuri Sharabian, Saptarshi Mandal, and I were present.

Hall D

Meeting

- Attended DSG group's daily meeting on magnet and detector performance.

Leffel, Mindy:

Hall B

LTCC

- Reworked 12 PMT bases.

DC

- Worked in ESB, sorting drift chamber signal cables.

Mann, Tina:

Hall B

LTCC

- Separated Winston cones by sector for storage and stacked above cabinets outside of room 108.
- Soldered wires to 11 amplifier boards and installed boards onto PMTs.

DC

- Separated signal cables at the ESB.

McMullen, Marc:

Hall B

Gas System

- Submitted final drawings to chassis manufacturer.
 - Three chassis will be constructed for the locations of the Hall B Gas System cRIO locations (Space Frame Level 1, Forward Carriage, and the Hall B Gas Shed). Delivery is expected in 2 weeks.

SVT

- Attended weekly status meeting.
- Attended SVT Assessment Review.
 - Provided information from meeting to DSG. The discussion was focused on the path forward concerning the remaining work to be done on SVT construction and installation, as well as discussion on manpower.
- Assembling Hardware Interlock cRIO chassis.
 - Mounted power supplies, circuit protection and distribution.
- Researched dimensions for the Allen Bradley 800T-H33B key switches.
- Prepared AutoCad model of the chassis and components to provide spacing guidance.

Sitnikov, Anatoly:

Hall B

DC

- Unbundled, measured, sorted and re-bundled 43 bundles of signal cables.

Teachey, Robert Werth

Hall B

HDICE

- Completed initial input vs output voltage measurements of the RF Attenuation/Switching chassis @ 0dB.
- Completed data analysis of the RF Attenuation/Switching chassis @ 30 & 40MHz.
- Started power up procedure for the NMR/Polarization Flip Test Stand.
- Continued Physics Support List for the NMR/Polarization Flip Test Stand.
- Completed prototype safety cover for the bus bars on the Oxford Magnet Power Supply. Lexan ordered to complete final cover.
- Attended daily DSG/HDICE meeting.

SVT

- Collected all CRio modules to build SVT Interlock Test Stand.