

## DSG Weekly Report – June 17, 2015

### Antonioli, Mary Ann:

#### Hall B

##### HDICE

- Tested RF/switching chassis at 60, 70, and 80 MHz, completing the testing of the first chassis.
- Attended the daily program development meeting.
- Programming rotation of target polarization in LabVIEW.

##### SVT

- Fabricated ten 10-ft cables—2-conductor, ferrules on ends—for hardware interlock system.

##### DC

- Edited Sahin's procedure for changing a DC gas cylinder.

#### Hall D

##### Meeting

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

### Arslan, Sahin:

#### Hall B

##### DC

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

##### SVT

- Showed Mindy how to replace N2 cylinder for SVT

### Bonneau, Peter:

#### Hall B

##### HDICE:

Conducted daily HDice slow controls status meeting with DSG members working on the project.  
Issues discussed included:

- A wait time progress indicator function was added to all automatic sections of the Rotation of Target Polarization program. Wait times in the program gives the system time to stabilize before ramping the Axial or Transverse magnet to its next set point the rotation procedure. This indicator will alert the operator of the specific wait time (T1, T2, T3, T4) that is in progress and the percentage of completion. Since the wait times can be up to 120 seconds long, an indicator is required for the operator to show that the program is running as designed.
- The final test results of the RF splitter / Attenuator unit were reviewed. The unit was verified at the test point increments of -1, -2, -4, -16, -32, -48, -55, -60 dB at frequencies are from 10 to 80 MHz in 10 MHz steps.
- The setup of the HDice test station is nearing completion. The output cable loop and protective shield has been completed. The test setup has the revised RF Attenuator box, RF generator, Oxford magnet power supply, and locking amplifier. This test setup will be used to test all of the hardware and software work that is being done for HDice. The test station will also be used to commission and test the new CAEN CT-Box current shunt which is due to arrive in July.

- Next controls meeting with Xiangdong Wei from the HDice group will take place Tuesday June 23<sup>rd</sup> at 11:00 AM in the DSG Control Room (EEL R121C).

### SVT

➤ Developing sub-VI's (programming subroutines) for the SVT Hardware Interlock System user interface. The user interface VI communicates between with the Hardware Interlock CompactRIO and a remote user. The interface is used to adjust trip threshold setpoints, enable and disable individual temperature /humidity/water sensors, displays current readback data. The user interface will be able to disconnect from the cRio and reconnect at any time without affecting the control loops.

## **Hall D**

### Meeting

- Conducted daily status and instructional meeting on Hall D systems. We reviewed issues this week associated with the power outage / UPS test. The CDC inlet/output gas pressure alarms this week was caused by the lack of power to the network switch servicing the PLC's. Reviewed the status of each of the Hall D control systems during the test. In addition, we reviewed the CSS alarm handler.
- ∅ Examined the status of the Hall D slow control systems on a daily basis.

## **Butler, Dave:**

### **Hall B**

#### Gas System

Added code to the gas system to write data to a SDHC memory card. Also wrote an configuration file for recording PID setting information that can be written or read from during tuning.

Sent detector id information to Bob Miller and Phil Keesler for equipment ordered for the Hall B gas system.

## **Hall D**

Prepared controls systems for planned power outages. The magnet and FDC/CDC gas controls are to remain on during the power out. The gas controls stopped working Friday night and the on-call tech for Hall D called me in and we discovered the network switch that feeds the gas shed had been powered off. We restored power to the switch and the gas system continued to function as normal.

On Tuesday the IOC for the magnet controls crashed. I got a call from Cryo asking me to check to see if the PLC was still running, which it was. Also Jonathan Creel requested slope and offset information for cryo signals read in the cyro can.

## **Eng. Brian:**

### **Hall B**

#### SVT

Gain scans on all modules in R1-4.

Continued testing P40 for lower gain (low 70s), noise values from threshold scans (no

injected pulse) are similar to module with normal/good gain (mid 80s).  
Debugging trigger synchronization when taking data on R1-R3 VXS crates, data has hits from tracks that don't go through enough regions. Was due to incorrect setting on NIM logic unit (was OR instead of AND).

### HDICE

Continued work on converting Mathematica notebooks to v9 until got to a point where needed more data files to continue.

Hall D

Starting going over solenoid PLC code, also went over alarm handler in CSS.

### Jacobs, George:

#### Hall B

Performed HV troubleshooting with Mark T. and Sahin A. on the R1 test chamber in EEL rm 125 and found a bad HV distro panel.

Wrote up procedures and the critical path for DCGAS PID loop development and testing, see attachment.

Wrote up Procedures and critical path for R1S3 DC HV cable replacement and testing, see attachment.

Ordered gas for TORUS welding.

Created AutoCAD diagram for DCGAS Controls PID Testing Setup, see attachment.

Attended TDG meeting, topics included CTOF magnetic shields, HTCC mirror alignment, LTCC first sector status, 2 new term tech positions, attendees were, Bob M, Volker B, Glenn Y, Eugene P, Yuri S, Dan C, Saptarshi M, Steve C, and Doug T.

#### Hall D

##### Meeting

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

### Leffel, Mindy:

#### Hall B

##### SVT

Started prepping Hall B SVT HFCB test board, 2-P4, for FSSR2 chip replacement: removed bonds and remaining excess bonding material; removed defective chip and excess conductive epoxy; used defective chip to test adhesion and conductivity of conductive epoxy; affixed new chip and allowed to cure; and made a series of wire bonder adjustments and test bonds, until the correct settings were achieved.

Made first wire bond, then the zoom knob on the microscope of the wire bonder became disengaged, contacted Kulicke & Soffa's service office for our region, E. L. Associates (no answer, left a voice message)

### DSG

Continued studying for Rad Worker I test and took test

### Mann, Tina:

#### Hall B

##### DC

Worked with Sahin and Anatoly separating signal cables at the ESB.

**McMullen, Marc:**

**Hall B**

**Gas System**

- Received and inventoried internal components for chassis. The chassis have been ordered and will arrive next week with machine work completed.

**SVT**

- Completed machining of rear and side panels for the SVT Hardware Interlock chassis. Installed power supplies, circuit protection and power distribution, in addition to the cRIO and moisture detection module. Wired all installed components for 24V and 5V power distribution..

**Sitnikov, Anatoly:**

**Hall B**

**DC**

- Unbundled, measured, sorted and re-bundled 57 bundles of signal cables, with Sahin and Tina.

**Teachey, Robert Werth**

**Hall B**

**HDICE**

- Completed Data Analysis for the RFAS attenuation testing.
- Completed B-List for the NMR / Polarization Flip Test Stand.
- Completed Safety Cover for the magnet power supply for the NMR / Polarization Flip Test Stand.