



## Detector Support Group

### Weekly Report – September 2, 2015

#### Antonioli, Mary Ann:

##### Hall B

##### DC

- Examined test data and completed spreadsheet for 66 signal cables (11 bundles).
  - ★ Seven 50 ft bundles and twelve 65 ft bundles (**19/252** bundles) have been tested.
  - ★ @ 9 bundles/wk, estimated time for completion ~ 26 wks (end-of-March 2016).

##### HDICE

- Completed flowchart for target rotation software.
- Fabricated 15-pin D-sub I/O cable to be used with current transducer box.

#### Arslan, Sahin:

##### Hall B

##### DC

- Working, with Anatoly, on signal cables testing.
  - ★ Measuring rise time and amplitude of output signal for each channel.
  - ★ Measuring propagation delay and delay skew for some cables.
- Trained Tina and Mindy on how to clean and measure signal cables.
- As of today:
  - ★ 22/252 bundles have been cleaned.
  - ★ 19/252 bundles have been tested.
  - ★ 14/3024 connectors have been replaced.

##### **DSG**

- Re-organized control room.
  - ★ Re-routed cables and set up HDICE test stand.
- Moved George's miscellaneous items from gas shed to EEL.
- Demonstrated to Mary Joe Bailey and Tina Minafee basic steps to prevent injury when lifting loads <40lbs, as well as for loads >40lbs.
  - ★ Demonstration was recorded for the purpose of staff training.
  - ★ Rule of thumb: if you can't push it, don't lift it.

#### Bonneau, Peter:

##### Hall B

##### HDICE

- Received first replacement computer.
  - ★ Second computer due on 9/11/15.
- Started reassembly of test station in DSG control room.
- Regarding CAENs' current transducer box:
  - ★ Received updated manual from with error code appendix.
  - ★ Manual has some updated commands and descriptions.
  - ★ Received: triggering commands, I/O connector pinout, and logic levels.
- Developed LabVIEW device driver files for:



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- ★ Setting and read back of CT-BOX device status for firmware commands and mode commands.
- ★ Started development of DAq commands.
- Tested developed device driver files on the prototype CT-box.
- Outstanding issues:
  - ★ CT box doesn't work in "Oscilloscope" mode.
  - ★ When issued an "OFFSET" command, unit gives an error read back "NOT ACCEPTED".
  - ★ Issuing the OFFSET: ZERO command freezes DAq.
  - ★ Internal buffer commands not available in command set.
  - ★ Error "CT-box Not Ready" is always on. "Reset" has no effect on error.
  - ★ Detailed trigger timing not in the manual.

#### SVT

- Enabled all MPOD crate controllers to accept front panel enable/disable signal from the Hardware Interlock System.
- Tested, with Brian, reset of the MPOD controller, after an interlock trip.
- Tested temperature trip of the system without the Operator Interface running.
  - ★ EPICS reset command did not work. Accelerator Controls Group will revise their reset command.
- Completed commissioning and system stability testing of the Hardware Interlock System using all temperature, humidity, and flow sensors.
- Monitor system on a daily basis.

#### **Hall D**

- Reviewed problems with cold cathode gauges of the solenoid.
- Examined status of solenoid magnet warmup, performed in preparation for chimney modifications.
- Examined status of slow control systems on a daily basis.

#### **DSG**

- Received new DSG test station computer.
- Started setup and configuration, prior to sending the computer to the computer center so that it can be added to the CUE.

#### **Butler, Dave:**

#### **Hall D**

- Participated in the meeting about the voltage tap reconfiguration of the solenoid.
- Proposed Revision D of the Instrumentation and Controls Voltage Taps Test Diagram to move physical position of positive lead of VTT13 to SC-VT14, which does not include positive splice of coil #3.
  - ★ Revision has three goals:
    - Eliminates straddle at VTT12 and VTT13, which sees the same voltage.



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- Eliminates blind region of the PLC Quench Detector channel 3—allows channel 3 Quench Detector to see a symmetrical quench at the center tap.
- Allows quench detector code of the PLC to remain unchanged.
- Worked with Cryo group to reset interlocks for EV9 and EV8 on solenoid heat exchanger to allow for a more efficient warm up of the magnet.
- Attended FDC/CDC meeting and discussed:
  - \* CDC grounding results.
    - Grounding thought to be not as good as FDC's. However, tests by Fernando indicate noise level of both detectors close.
  - \* CDC straw deformation.
    - Simon Taylor determined sag of some tubes in ring 7 is greater than 1 mm. Not all tubes have the same sag. Sag needs to be determined for each tube.
  - \* FDC spring/fall run results differ; resolutions 200  $\mu\text{m}$  and 250  $\mu\text{m}$ , respectively.
  - \* FDC spare package, avalanche position studies, with  $^{55}\text{Fe}$  source.
  - \* Minutes at <https://halldweb.jlab.org/wiki/index.php/Minutes-8-27-2015>.

### **Eng, Brian:**

#### **Hall B**

##### **SVT**

- Fixed trigger generated from 3 VXS crates used to self-trigger CODA.
  - \* Previously, trigger was set to OR the crates' signal distribution trigger out, is now set to AND.
- Found SNMP command to duplicate reset function of iseg Windows program to allow HV modules to be turned on after the inhibit on MPOD controller is raised.
- Testing  $\text{N}_2$  flow rates to verify that when a larger supply (not bottles) is available in the Hall, the humidity would be sufficiently low. Currently, humidity in the barrels is 35-43%; with increased flow it will be <30%, most areas will be closer to 20%.

#### **Hall D**

- Solenoid meeting to discuss changes to the PXI system, there will be 10 new signals (voltage taps) added and up to 4 accelerometer signals.
- Installed first PXI ADC module received (2 more in transit).
- Updated configuration to use channels, but set them to inactive until channel names are decided.

### **Jacobs, George:**

#### **Hall B**

##### **Gas System**

- Completed  $\text{C}_4\text{F}_{10}$  recovery of LTCC test box.
- Began and completed distillation unit operations to recover  $\text{C}_4\text{F}_{10}$  used for the window test; transferred recovered  $\text{C}_4\text{F}_{10}$  liquid to supply tank.
- Discussions with Bob Miller and Doug Tilles on new location of LTCC gas system



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components on forward carriage.

- Updating LTCC gas system's operator's manual with feedback from Maurizio Ungaro.
- Updating LTCC gas system's piping and controls diagram.
- Reviewed and commented on the designer's preliminary concept for DCGAS system manifolds on the TORUS.
- Generated an example of the individual gas supply lines for each DC region, includes manifold tee, lines, and rotometer

### **Leffel, Mindy:**

#### **Hall B**

##### **DC**

- Repaired signal cables:
  - ★ Repaired transposed wires and replaced both connectors for cable R2S1 ST 9.6.
  - ★ Replaced broken connectors (damaged during removal from the hall):
    - R2S4 AX 12.1, R2S4 ST 12.1, R2S6 ST 10.4, R2S1 AX 12.4, R2S4 AX 11.1, R3S5 AX 17.1, R2S4 ST 11.4, and R2S3 AX 9.3.
- Worked with Tina cleaning and testing signal cables.
- Made a spare 100 Ohm test connector for signal cable test setup.

#### **DSG**

- Learning procedures and options of new label maker.

### **Mann, Tina:**

#### **Hall B**

##### **Gas System**

- Went to the hall with Marc to measure space required for rack to install chassis 3.
- Searched ESB and Hall D for a half-rack for installation of chassis 3 and components.

##### **DC**

- Cleaned 5 bundles of cables with Sahain.
- Cleaned 5 bundles of cables with Mindy.
- Trained with Sahin on the calibration of the oscilloscope for testing cables.
- Tested DC cables.

### **McMullen, Marc:**

#### **Hall B**

##### **Gas System**

- Measured space for new location of rack for LTCC gas system and component with George and Tina.
  - ★ Area has height limitation of ~72" and depth limitation of 27". A small rack 60 to 72" will fit, but it will have to be less than the standard depth. Hall C has a rack in EEL 126 that may work.
- Started planning a PID loop test set up for use in EEL.



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- ★ Test stand will require: pump, MKS 223b, cRIO, a mass flow controller, and a solenoid valve. Test will help with the development of the LTCC PID loop.

#### DSG

- Completed quarterly safety walkthrough with the Jlab Accelerator Safety Warden's team.
  - ★ **No actionable items found.**
  - ★ They will add some labels to air lines; they have delivered the latest safety postings.

#### Sitnikov, Anatoly:

##### Hall B

##### DC

- Tested cable bundles:
  - ★ #65'-11, #65'-12, #65'-13, #65'-9 R2S1 ST9.6 (1 cable), #65'-14R3S3 AX18.3,ST18.1,ST18.2,ST18.3 (4 cables), #65'-15 R3S5 ST17.1, ST17.2, ST17.3, AX17.2, Ax17.3 (5cables), #65'-16 (6 cables), #65'-17 R3S3, ST19.1, ST19.3, AX12.2,AX19.3 (4cables), #65'-18 R3S5 AX18.1,Ax18.2,AX18.3,ST18.1,ST18.2 (5 cables).
- Retested bundles:
  - ★ #50'-1,50'-4 (5 channels), #50'-6 (23 channels), #50'-7 (5 cannels).
- Found damaged cables:
  - ★ #65'-13 R3S2 AX17.3 (channel #0), #65'-15 R3S5 AX17.1 (crossed channels 16 and 22 determined using CTS-64 tester).
- Tested in all 43 cables=731 channels.