



Detector Support Group

Weekly Report – September 30, 2015

Antonioli, Mary Ann

Hall B

DC

- Reviewing 2004 LabVIEW code for testing CAEN HV cards.
 - * Identified and replaced VIs that are no longer supported by NI, for the voltage variation and channel isolation tests.
- Documented test data of 13 signal cable bundles.
 - * R2S1 and R2S2SL3 are completed. Three connectors replaced in these areas.

DSG

- Laid out text and figures for note on Hall B gas system PID loop test. Made first edits.
- Serving on the hiring committee for the two technician positions.

Arslan, Sahin

Hall B

DC

- Transferred labeled R1 signal cables to ESB.
 - * Total of 6 baskets, 84 bundles.
- Transferred CAEN1527 from control room to workshop for Mary Ann to test.
- Transferred R2 signal cables from ESB to EEL for cleaning, testing, repairing, and labeling
 - * So far 21 bundles are labeled.
- Received HDice computer from Computer Center.
 - * Reconfigured test set up.

DSG

- Re-configured mezzanine lab area, EEL room 231.

Bonneau, Peter

Hall B

HDICE

- For the CAENels Current Transducer-box:
 - * Developed data processing sub-Vi's for the binary CT-Box data.
 - * Added data file storage capabilities to the "Oscilloscope" mode DAQ Program.
 - * Programmed calibration offset mode into to the DAQ program.
 - * Developed decoder code for current measurement, sequence number, and status output.
- The OFFSET: ZERO command is working in the Daq program.
 - * This command is used to calibrate the DC Current Transducer head at zero current.
- Testing of the driver support VI's for the program revealed instabilities in the current measurement and status read-back. These instabilities will be investigated.
- Updates to support the sweep hold function under way on the Oxford Power Supply.

DSG

- Serving on the hiring committee for the two technician openings in the DSG.



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SVT

- Monitored hardware interlock system on a daily basis.

Hall D

- Reviewed issues with the FCAL Cockcroft-Walton phototube HV bases.
 - ★ These bases are controlled by a CAN (Controller Area Network) bus. A loss of communication or unstable output voltages is a re-occurring problem with the bases. During the past week, 10 bases have been removed and sent back to Indiana University (designers of the base) for troubleshooting and repair.
- Examined the status of the Hall D slow control systems on a daily basis.

Butler, Dave

Hall B

- Implementing a temporary gas monitoring system for the HTCC in the TEDF.
 - ★ System will monitor flow, humidity and pressure on the current purging operation.
 - ★ All equipment with the exception of fittings for the mass flow controller in house to implement system.
 - ★ Marc McMullen and I have already provided a stand alone humidity sensor and readout that is currently being installed.
 - ★ Generated, as requested by Youri Sharabian and Nick Markov, a spreadsheet converter that converts the humidity in parts per million to percent relative humidity.
 - ★ Working on a requirements document for the system.
- Configuring and testing MKS mass flow sensors for gas system.
- Updated diagram for the PID test document to include interface chassis.

Hall D

- Monitored the serial communication with the FDC/CDC gas system flow controllers.
 - ★ Had another incident where data was offset. Though this is happening less frequently have started programming the solution that requires the custom data type for the NBX module. This solution will need to be implemented off-line.

Eng, Brian

Hall B

SVT

- Meeting to go over software progress:
 - ★ Issues comparing MC and cosmic data.
- Started work on displaying current CODA run information on externally accessible website: <http://clasweb.jlab.org/SVT/monitoring/daq/coda.php>
 - ★ Will need Sergey to add more fields to database.



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HDICE

- Contacted several vendors about availability of Type N connectors (Pasternack doesn't make one, Molex is investigating, no reply from Amphenol yet).

Hall D

Solenoid PXI System

- Enabled the 10 new voltage tap signals.
- Worked with Hovanes on testing different data rates for the PXI to pass to EPICS (5, 10, 20, 40 kHz).
 - ★ Still needs to parse the ROOT file since that requires changes to the analysis program.

Jacobs, George

Hall B

Gas System

- Ordered NPT and tubing fittings for DCGAS pressure control tank connections.
- C₄F₁₀ gas discussions with Volker B, Glenn Y, Maurizio U, Howard F about cost and usage.
- Requested and received quote for 2,000 [kg] of C₄F₁₀ gas from F2 Chemicals, 270 [K\$]
- Researched options for DCGAS exhaust manifold materials.
- DCGAS Manifolds Meeting with Paul H. on TORUS DCGAS manifolds, nylon 6 corrugated tubing, individual supply and exhaust connections, locations, sizes, supply rotometers, and bubbler connections.
- Possible new location for solenoid valve panel and pressure control tanks level 3 space frame.
 - ★ Requires removal of racks, air handlers, and floor cable ways.

HTCC

- Discussions with Nick M, David B, and Marc M on HTCC H₂O sensor.

Hall B Engineering

- Ordered industrial argon for torus welding.
- TDG meeting with Bob M, Volker B, Glenn Y, Eugene P, Steve C, Saptarshi M, Dan C.
 - ★ Solenoid and associated detectors commissioning, March-April 2017.
 - ★ DC GAS pressure control tanks (the new 240 [gal] tank) and valve panel move to L3 end of October 2015.
 - ★ L3 South will be cleared of racks, enclosure, cable ways, share space with solenoid vacuum pumps.
 - ★ CLAS12 torus gets legs Dec 2015 - Jan 2016, DC signal cable progress.

Leffel, Mindy

Hall B

DC

- Repaired DC signal cables: three cables with transposed wires (replaced four connectors), five cables with damaged connectors (replaced five connectors), and one cable with a broken conductor (one connector).
- Worked with Sahin transporting the R1 DC signal cables to the ESB and R2 signal cables to EEL.



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SVT

- Wire bonded the last FSSR2 chip to U2 on HFCB 2-P4.

DSG

- Reconfigured with Mary Ann and Sahin mezzanine lab space.
- Started practical training on gas powered forklift.
 - ★ Still need training on electric forklift.

McMullen, Marc

Hall B

Gas System

- Attended gas system meeting with Hall B staff and Jacobs.
 - ★ Meeting discussed location of Hall B DC mix-tanks and valve-panel, and flow path of gas lines and support cables for subsystem.
 - ★ Two locations under consideration are SFL2_south (Saclay target controls area) and SFL3_south.
 - ★ Hall B engineering will make a decision based on availability of manpower and cost needed to make modifications, especially on level 3, where major demolition of the area will be required.
- Testing chassis 2 and the cRIO/touchscreen programming development.
 - ★ PID test program (using a MKS 223 to control the output of a fan-inflated bag to create a pressure differential) was run from the desktop.
 - ★ Program was built into a realtime executable and loaded to the cRIO.

HTCC

- Fabricated and assembled a box for an Easidew moisture display and a sensor extension to be used to measure humidity in the HTCC during testing in the TEDF/Testlab.
- Evaluated the HTCC and test area for implementation of a LabView based monitoring system with Butler and Eng.
 - ★ System will monitor humidity readings from the Easidew moisture display, and the flow and pressure of compressed air being supplied to the detector.

DSG

- Conducted monthly inspection of building 90 (EEL).

Sitnikov, Anatoly

Hall B

DC

- Tested 30 cable bundles.
- Cleaned 180 connectors.