DSG Weekly Report – August 19, 2015

Antonioli, Mary Ann:

No report / on holidays

Arslan, Sahin:

Hall B

DC

- Transferred signal cables (65' bundles) from ESB to EEL bldg.
  - Measured transit time and delay skew.
  - Cleaning signal cables with alcohol and testing signal cables with scope and signal generator.
- Trained Tina, Mindy, and Anatoly on how to operate test equipment.

SVT

- Changed N_2 gas cylinder.

Gas System

- Installed LTCC gas lines for sag-test of the windows.

DSG

- Helped Peter with DSG Control set up

Bonneau, Peter:

Hall B

HDICE

- Tested Oxford superconducting power supply system.
  - Using the current shorting loop connection, successfully ramped power supply to the maximum saddle current of 60 A.
  - Used the power supply front panel controls for test.
- Started development of LabVIEW hardware drivers for CAEN CT-Box.

SVT

- Connected, with Brian, Hardware Interlock System to:
  - Cooling system,
    - Flow and temperatures for R1—R4.
  - HFCBs of module 1 of R1—R4.
  - MPOD crate controller enables/disables.
  - Chiller interlock unit in the large cleanroom.
    - On/off capability
- Installing and testing Hardware Interlock System.
  - All temperature, humidity, and flow sensors.
- Added an *isolated ADC* for cooling system to isolate the cooling system grounds from internal chassis ground.
  - Updated interlock control system program to accommodate this change.

Hall D

- Examined status of slow control systems on a daily basis.
- Reviewed the BCAL pedestal noise study.

DSG

- Researched and ordered equipment and computers for DSG.

Butler, Dave:

Hall B

Gas system

PID loop test: control panel

- Worked on PID loop test.

- Determined that there is noise from the MKS 223 transducer
- Noise looks like sine wave at about 12.5KHz and an amplitude of 70mV.
- Trying to filter out noise by changing cRIO from a Scan Mode (limits data acquisition to 1KHz) to Hybrid mode (this will utilize the FPGA in the cRIO for the data acquisition at 40 MHz).
- FPGA has plenty of *horsepower* to sample at 50 KHz (double the Nyquist rate required for alias free sampling).
- Plan to use either a Notch or Butterworth low pass filter.

- Ordered another sensor, MKS 226, better suited for the control range of the PID loop.
  - Explore using the current 0.535 " (1 Torr) H_2O sensor and the new 0.1 "H_2O sensor in conjunction to build a two-tiered PID scheme that would be less aggressive as pressure reaches set-point.

Hall D

- Hall D is changing the solenoid magnet voltage tap configuration to ensure quench detection coverage for all parts of the super conductor. This entails a lot of work by the DSG group. Our deals with PXI upgrades with several added channels for additional voltage tap readings and accelerometers for "listening" for a quench through the vacuum shield system. Brian is taking the lead on PXI issues. I am working on determining changes that will be implemented in PLC software Quench Detector.
- Attend the FDC/CDC meeting and further discussed the possible sagging of several of the straws in the CDC.
  - Simon Taylor analyzing data, tube sags ~ 1mm

Eng. Brian:

Hall B

SVT

- Connected:
  - cRIO system to patch panel for HFCB temperatures and chiller flow, and temperature.
  - MPOD controllers (but not yet enabled remote shutdown on the controllers).
  - R4 HTSB sensors and ran R4 N_2 purge line.
- Acquired over 3M triggers worth of data and additional calibration runs prior to starting R4 integration.

Gas system

- Measured noise of chassis power supply and MKS 223 pressure sensor with oscilloscope during troubleshooting of PID loop test.

HDICE

- Sent Craig Thorn (BNL) list of missing data files; not found on USB drive.

Hall D

- Ordered additional ADC modules and terminal blocks for PXI system.
- Updated PXI signal list spreadsheet to show possible usable channels for expansion.

Jacobs, George:

Hall B

Gas system

PID loop test: hardware setup

- Working on DCGAS PID controls development
  - ✶ Trouble shooting cables, connections, and the power chassis.

- Meeting on Hall B DCGAS system PID controls development, Amrit, David, Peter, Brian, Marc, and Tina.
- Ran gas lines for the LTCC window deformation test using C_4F_{10} gas.
- Performed detailed walk through, explanations, and basis of all steps required for the LTCC window deformation test for Maurizio U.
    - LTCC window deflection test started.
        - N_2 purge completed, C_4F_{10} fill initiated and in progress.
- Meeting on LTCC window sag-test with Bob Miller, Maurizio Ungaro, David Anderson, and Doug Tilles.

DC

- Reviewed and commented on the preliminary design for the R2 DC downstream attached cable carrier tray.
- Meeting about the R2 DC cable tray, Bob Miller, Mac Mestayer, Steve Christo.

Safety

- Submitted work request to facilities management to re-lamp Bldg 96B
- Submitted property excess request for old manual 5 ton chain fall in Hall B.
- Participated in quarterly safety inspection of Bldg 96B conducted by Tina Menefee and Jennifer Williams.
    - This is the scheduled safety inspection.
- Safety walk through of 96B gas shed with Bert Manzlak and Steve Nielsen.
    - This was for compressed gases due to the accident by the graduate student.
- Participated in the Monthly Hall B Engineering meeting.
    - Topics: PID loop test, R2 DC tray design to be isolated to facilitate repairs, solenoid bobbin received

Leffel, Mindy:

DC

- Repaired signal cables:
    - Re-laminated and replaced both connectors on cable R3S1 ST 23.1, bad channel.
    - Re-laminated and replaced one connector on R3S3 ST 20.2, transposed wires.
- Attached all four FSSR2 chips to SVT HFCB S/N 2-P4, using conductive epoxy.
- Researched label maker and labels to be used for labeling cables.
- Researched crimp tool for RG174 coax cable and ordered it.
- Trained on how to set up and run signal cable test.

Mann, Tina:

Hall B

DC

- Trained on testing signal cables.

Gas system

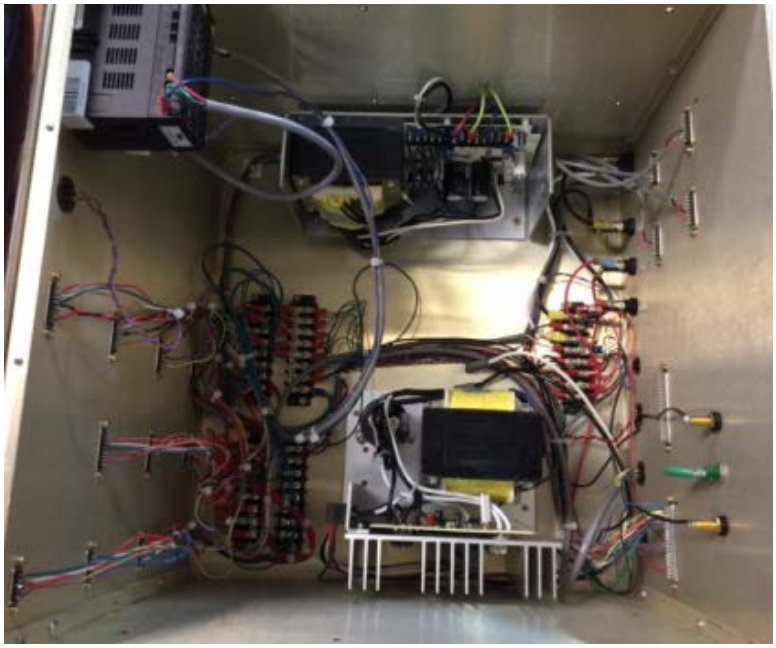
- Prepped two 25' foot cables for Chassis #3

McMullen, Marc:

Hall B

Gas System

Chassis: front panel



Chassis: inside

Chassis: rear panel

- Troubleshooting PID test stand for pressure control.
  - Tested MKS 223 (capacitance manometer) output using external and chassis supply. Found no difference.
  - Removed chassis from hall, and tested for voltage offset; recorded findings of less than 0.2 mVAC when all returns, commons, and grounds are tied together.
- Set up test stand for measuring MKS 223 on the bench with Dave and Brian using the same supply and the chassis and double shielded cable.
- Started assembly of the LTCC/RICH detector gas system chassis (#3).

SVT

- Pulser cables were delivered; all procurements are complete.
- Conducted tour of SVT for the power supply vendor and the project manager of the HFCB from Compunetics with Amrit, Dave, and Sahin.

Sitnikov, Anatoly:

Hall B

DC

- Tested 26 cables(442 channels).
  - Cable 50'-2 R1S4 AX3.1 has broken contacts (1 channel).
  - Cable 50'-1 R1S4 ST4.4 has broken connector (17 channels).
- Helped Sahin with propagation and delay skew measurements.