Detector Support Group
Weekly Report, 2017-01-11

State of Play

Magnets

Torus
- Debugged updated LV cRIO LabVIEW to fix incorrect Load Cell data.
- Investigated LabVIEW digital filters for Fast-Daq cRIOs to solve voltage-tap noise issue.

Gas System
- Dave Kashy approved hook up of SVT, LTCC, HTCC, and DC in Hall B.

DC
- Two bottles of CO_2 and ten bottles of Ar gas received.
- Plan to monitor and change gas e-mailed to Hall B.

RICH
- System can be turned on only after system owner has been identified.
- TOSP waiting signatures.

HDice
- Review conducted.
  - ★ New requests will be e-mailed to dsg-hdice.
- Debugged FRS program.
- Fixed T_{down}, T_{up}, T_{bottom}, and T_{wait} times in NMR program.
  - ★ Addition of T_{wait} caused incorrect read times.
  - ★ All times are independent from each other and are set from table.
- Fixed NMR program field reading error for Oxford PS.

RICH
- Waiting for approval for insurance of mirrors before shipment.

Antonioli, Mary Ann

- Continued updates on **HDice** NMR LabVIEW program.
  - ✦ Debugged subVI "read module name"; now functioning correctly in NMR program.
  - ✦ Debugged and re-tested subVIs "Read Attn A" and Read Attn B"; now functioning correctly.
  - ✦ Debugged subVI "LCD screen"; now functioning correctly.
  - ✦ Debugged RF box indicators on VI front panel; now functioning properly.
  - ✦ Worked with Amanda on FRS software DIO module subVI problem.
- Made Visio drawing of **Magnet** IP addresses.

Arslan, Şahin

- With Mindy, worked on **SVT** cable management and lacing, and ran N_2 line for R4.
- Ran R1-2-3 **DC** gas supply, exhaust line, and pressure transducer lines from SFL3 solenoid panel to manifold, with Mindy.
- Adjusting oil levels of **LTCC** bubblers for correct pressure, with Mindy.

HDice

- Continued tracing cable routing and hardware in pump cart, with Mindy, and transferring info into AutoCAD wiring diagram.
- Adjusted equipment in HDice controls rack, with Mindy, making room for bigger monitoring screen.
- Modified two more regulators by adding orifice and pressure relief valve; these regulators will be used on various detectors.

Regulator before modification.   Regulator after modification

Bonneau, Peter
No report

Campero, Pablo
No report

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Eng, Brian
SVT
- Ran gain scans (both parallel and elog version).
- Re-attached gas bottle for N_2 purge (approved by Dave).
- Fixed bad connector on R4 M23: https://logbooks.jlab.org/entry/3450067.

- Beni Zhilman complained that during QD trip on 12/13, PXI time was incorrect; discovered analysis program had wrong offset: https://logbooks.jlab.org/entry/3449599

Hoebel, Amanda
HDice
- Debugged FRS program with Mary Ann.
  - DIO module would not read correct power level for RF Attenuation box.
  - Error found to be incorrect bit number readback.
- Fixed NMR program T_{down}, T_{up}, T_{bottom}, and T_{wait} times.
  - Addition of T_{wait} caused incorrect read times.
    - Corrected by including varying Twait in buffer calculation VI.
  - All times are independent from each other and are set from table.
- Fixed NMR program field reading error for Oxford PS.
  - Field would read 5 G off from what value should be.
  - Error still exists for CT-box.
- Created presentation slides for HDice review scheduled for 1-11-17.

Jacobs, George
DC
- Continued gas piping modifications in gas shed.
- Discussions with Mac Mestayer about status for testing.
  - HV is not ready—needs DC-to-HV distribution panel connections and first level distribution-to-panel cables and connections.
- Completed running lines from valve panel to TORUS manifolds.
- Planning started on gas solenoid valve panel modifications, due to pressure system requirements. Will require a larger unistrut frame.
RICH
- Continued replacing valve panel components to comply with DA's requirements.
Gas Systems
- Discussions and meetings with Dave Kashy on pressure system requirements for the KPP DC, HTCC, LTCC gas supply setups.
  - DCGAS P&I diagram in progress for pressure systems compliance.
  - KPP gas supply P&I diagrams for DC gas and HTCC now complete.
- Discussions and meetings with Volker Burkert, Mac Mestayer, Stepan Stepanyan, and Dave Kashy on KPP gas system progress.
- Ordered and received 10 HP Argon and 2 HP CO_2 gas cylinders via ecommerce.
- Ordered and received pressure regulators for KPP DCGAS argon and CO_2 supply
- Ordered relief valve and CO_2 pressure regulator for KPP HTCC gas supply.

Leffel, Mindy

- Adjusting oil levels of **LTCC** bubblers for correct pressure, with Sahin.
- Worked with Sahin running **DC** gas lines in Hall.
  - ★ R1/R2 and R3 exhaust lines and pressure transducer lines.
  - ★ Dressing completed.

DC gas lines

- Worked with Amanda and Sahin reconfiguring components in **HDice** controls rack.
- Worked with Sahin to complete the first of two stages of **SVT** R4 cable lacing..
- Modified the last three of eight, first generation **FT** preamplifier boards.
  - ★ Replaced two resistors on each cathode, eight cathodes per board.
  - ★ R23-R93, swapped 3.9 KΩ with 2.2 KΩ.
  - ★ R31-R101, swapped 51 Ω with 560 Ω.

Lemon, Tyler
Magnets

- Investigated LabVIEW digital filters for Fast-Daq cRIOs to solve voltage tap noise issue.
  - ★ Iso-amps unable to filter noise in scaled voltage taps that is causing false threshold trips.
  - ★ Wrote test program in LabVIEW to learn how to implement digital filters.
    - ▪ LabVIEW has pre-made VIs for filters that can be used in Real-Time or FPGA program.
  - ★ Added pre-made filter VI to Torus and Solenoid Fast-Daq cRIO FPGA programs.
  - ★ Changes need to be tested.
- Created Excel sheet to log Magnet cRIO CPU Usage and cRIO Uptime.
Torus
- Debugged updated LV cRIO LabVIEW to fix incorrect Load Cell data.

* ✦ Nonsense Load Cell data read after upgrade of cRIO and LabVIEW by Brian Eng in November 2016; changes to LabVIEW rolled back to previous working version (HBTORUS Logbook entry #3438123).
* ✦ Tested debugged LabVIEW; nonsense Load Cell data not seen after correcting configuration table for sensors.
* ✦ Deployed program to cRIO as start-up app, committed changes to GitHub, and generated a new GitHub release.

McMullen, Marc

Gas System

* Met with Youri Sharabian to discuss gas supply and controls differences between TEDF setup and KPP.
    * ✦ Gas supply should be assembled as per drawing and design authority approval.
* Continued coordination of **RICH** assembly TOSP.
    * ✦ Met with Bobby Thomas, materials handling SME, and Bert Manzlak, Physics safety liaison to discuss assembly location, equipment and timing.
* Completed **DC** MKS 647 controls GUI.
    * ✦ Fabricated MFC controls cables.
* Contacted representative from Axetris and requested a mass flow controller for evaluation.