



Detector Support Group

Weekly Report, 2017-02-22

State of Play

Magnets

Solenoid

- PLC system drawing updated.
- Instrumentation test plan developed.

Torus

- Investigation of 325 K error continuing.

Gas System (KPP)

- DC gas solenoid valve panel moved from L3 space frame to EEL 125.
 - * Valve panel is being modified to be compliant with pressure system requirements.
- Pipefittings for DC relief valve installation have been ordered.

HDice

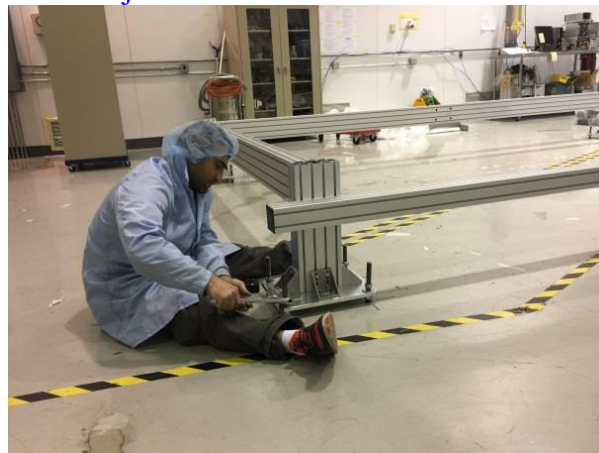
- Debugging DAq code for setup and acquisition of current measurements from CAENels CT-Box.
- NMR and FRS flowcharts developed.

SVT

- Moved SVT's VXS and cRIO back to EEL subnet. Still waiting on more water for chiller before power-up and testing.

RICH

- Correct location of drilled holes in cleanroom verified.
- Template measured and adjusted.



Sahin Arslan adjusting the RICH assembly structure template

FT

- Sixteen LabVIEW subroutines for initialization of calorimeter and hodoscope interlock-trip-thresholds developed and tested.
- N₂ gas flow and interlock monitoring subroutine completed and implemented.
- Interlock control for temperature and humidity sensors tested and debugged.

Detector Support Group

Weekly Report, 2017-02-22

Antonioli, Mary Ann

- Revised **Solenoid** PLC system Visio drawing.
- Wrote, tested, and documented 14 LabVIEW subVIs for **RICH** interlocks program.
 - ★ Convert read voltages to correct units and then compares readings to set upper and lower limits.
 - ★ SubVIs for signal types: N₂ flow, airflow, air pressure, temperature, and 10 of 16 humidity VIs.

- Compiled, edited, and formatted weekly report.

Arslan, Sahin

Gas System

With Mindy, clockwise from top left:

- Replaced DC R1-2-3 corrugated metal flex line from supply lines with 1" nylon tubing, and labeled.
- Ran DC R3 and R1-2 N₂ ½" nylon tubing purge lines from L1 space frame to Torus, and labeled.
- Removed DC gas solenoid valve panel from L3 space frame.
 - ★ Disconnected lines from panel assembly, craned to floor, had Radcon survey panel, and moved to EEL 125.





Detector Support Group

Weekly Report, 2017-02-22

RICH

- Assisted with drilling of anchor holes for assembly structure and application of 8” threaded rods, leveling nuts, and washer and locking nuts to assembly base plates. Inspected eyebolts, which can only be used for straight lift.

Bonneau, Peter

- Reviewed with Mary Ann and Tyler LabVIEW design for temperature and humidity signal monitoring and interlock control for RICH hardware interlock system.

Forward Tagger

- Worked on interlock system.
 - * Developed and tested 16 LabVIEW subroutines for initialization of calorimeter and hodoscope interlock trip thresholds.
 - * Completed and implemented N₂ gas flow and interlock monitoring subroutine.
 - * Tested and debugged interlock control for temperature and humidity sensors.
 - * Started development of CAEN HV interlock control and monitoring.

HDice

- Debugging DAq code for setup and acquisition of current measurements from CAENels CT-Box. Due to lack of internal storage memory for current measurements, data from CT-Box must be read at acquisition rate.
- Reviewed programming and instrumentation with Amanda.

Magnet Systems

- Working with Pablo and Tyler on programming and instrumentation.
 - * Torus intermittent Cerenox sensor read error was investigated. Latching of V1/V2 text data during fault confirmed serial communications are incorrect.
 - * PLC instrumentation test procedure is being developed.
- Held daily meeting on Hall D status and EPICS controls monitoring.
 - * Alarm on Solenoid N₂ liquid level was caused by vendor filling the dewar.
 - * Power supply transistor fault is intermittent and does not trigger a run-down.

Campero, Pablo

Magnet- Solenoid

- Analyzed interlocks.
 - * Updated Interlocks Threshold spreadsheet, adding PLC tag names that will be used for EPICS screen and interlocks missing from spreadsheet.
 - * Revised Interlocks PLC routine, adding and modifying logic.
- Worked with Peter on instrumentation test plan.
 - * Generated spreadsheet with main tasks to perform during instrumentation test of SST.
 - * Analyzed relevant sensors and instrumentation on SST and vacuum system, which can be tested now.

HDice

- Began to review NMR program.



Detector Support Group

Weekly Report, 2017-02-22

- * Discussed flow chart with Amanda.
- * Identified main components and instrumentation that are controlled and monitored.

RICH

- Assisted Tyler with measuring of assembly structure; found 1/2" variance between CAD design and assembled structure.
- Verified correct location of drilled holes in cleanroom.
- Monitored and analyzed logbook entries and EPICs screens for Hall D, daily.
 - * Solenoid power supply trip was solved.

Eng. Brian

- Moved SVT's VXS and cRIO back to EEL subnet. Still waiting on more water for chiller before power-up and testing.
- Measured and adjusted RICH template with Marc.
- Continued debugging cRIO and EPICS issues with gas system
 - * Not working with real-time executable and sending large arrays
 - * Both have escalated to higher levels, but no resolution.

Hoebel, Amanda

- Swapped out Torus LV cRIO module with Tyler and Pablo.
- Measured RICH assembly frame with Tyler.

HDice

- Created NMR flowchart.
- Created FRS flowchart.
- Discussed NMR program with Pablo.

DSG

- Installed Rockwell Studio 5000 on desk computer.

Jacobs, George

Gas Systems

- Ordered pipefittings for DC relief valve installation.
- Discussed pressure systems with Dave Kashy.
- Redesigning DC solenoid valve panel.

Leffel, Mindy

- Worked with Sahin on gas system in hall.
 - * Disconnected cables and gas lines from solenoid valve panel.
 - * Replaced DC R1 – R3 metal flex supply lines with nylon tubing.
 - * Ran two N₂ purge lines from SF L1 to Torus.
- Worked with Brian re-connecting SVT LV, HV, D-sub, and network cables.



Detector Support Group

Weekly Report, 2017-02-22

Lemon, Tyler

Torus

- Debugging 325 K error.
 - * Only running start-up algorithm for Cerenox at 325 K did not cause sensor to recover; stopping and restarting entire LV cRIO still resolves error.
 - * Swapped LV cRIO module NI-9870 for spare to eliminate possibility that bad cRIO module is causing error. All 325 K errors for sensors read by cRIO since December 2016 have been through module replaced.
- Monitored logbook and EPICS on a daily basis.
 - * High humidity on daily basis for BCAL - up stream - module 25 (~12%) and BCAL - up stream - module 1 (~8%).
- Writing NI-9870 module test program in LabVIEW, prompted by swap of NI-9870 module for Torus.
 - * Test program will be able to tell whether cRIO module had actually gone bad.

McMullen, Marc

- Worked with Brian and Tyler to level and square RICH assembly structure.

Gas System

- Wrote three LabVIEW VIs that will access shared variables directory on each cRIO. Software has been broken into three projects, one for each system cRIO, and will use new VIs to read or write to shared variable, instead of accessing them within same project file.
- DC
 - * Disconnected and reconnected gas lines to Argon bottle rack.
 - * Removed cRIO from DC KPP setup. Gas is being run on MKS 647c controller, with monitoring and supply changes done locally.
- Created dsg-mvt@jlab.org.