

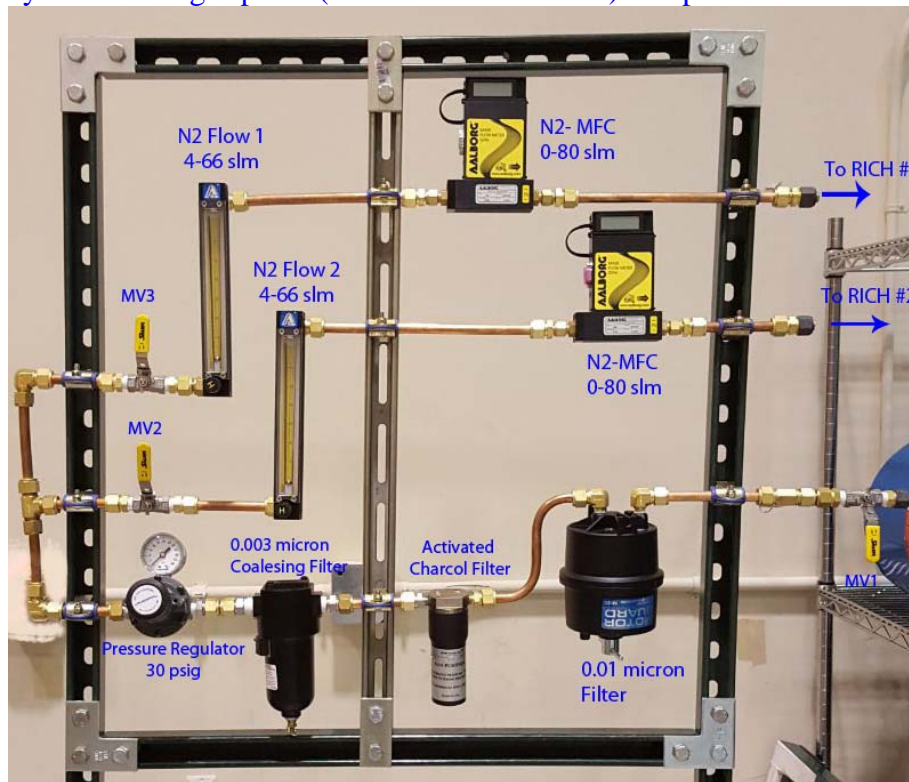
Summary

Hall B Magnets

- Fast DAQ data evaluated to determine what caused the Solenoid fast dump on 02/19/2018.
 - * QD 1 generated fast dump,
 - * Data from voltage taps (VT18, VT17, and VT19) indicates that the increase in voltages in these taps does not increase the SUM value to cause QD 1 trip.
 - * Solenoid and Torus were ramped up to positive full current after Cryogenics recovered (5 hrs.).
- Liquid helium lost.
 - * Pressure decreased and caused Torus controlled ramp down.
 - * Relief valve EV8677 did not close; EV8677 had to be warmed up to close it.

RICH

- Scaler performance investigated.
 - * High scaler counts localized, scalars that shown frequency of 0 [hz] with and without beam being analyzed to determinate issues with freeze values.
- Assembly of new N2 gas panel (for increased N2 flow) completed.



N₂ RICH panel assembled at EEL 125 room

- Two differential pressure transducers assembled for:
 - * N2 volume to atmosphere.
 - * E-panel volume to N2 volume.



Detector Support Group

Weekly Report, 2018-02-21

- EEL-124 clean room cleaned.
 - * Aerogel assembly tent disassembled.
 - * All assembly carts moved to one location at assembly structure.
- Keithley 6517B electrometer LabVIEW GPIB drivers updated to VISA drivers for reflectivity test station.
 - * Debugging issues with conversion to VISA drivers caused by Prologix GPIB-to-USB converter.
- Program to recreate RICH scaler map EPICS screen developed.
 - * Screen recreated to be used as visual reference to describe issues seen on EPICS screen.
 - * Program that colors PMTs according to scalar value debugged.

SVT

- Rust program re-written to monitor/log eight modules' test stand currents.
- Coolant leak sensor debugged.
 - * Wire connections moved at Panasonic SQ4 leak sensor controller.
 - Wire from pulse output (Y1) moved to analog output signal Aux 1.
 - Output signal measured using scope to determinate voltage output and pulse signals from the controller.
 - * Aux1 analog signal measure did not work as expected; output signal did not change when sensor detected liquid (output voltage always ~0 [V]), even when the LED indicator in the controller indicated correct status.
 - Possible channel Aux 1 damaged.
 - Unsolved problem and disabled interlock.
- New leak controller and sensor ordered.
- Exposed RTD sensor tested for N2 temperature measurements
- Work on 1st and 2nd patch panel board continuing.
- Latest version (under development) SVT Hardware interlock program tested.
 - * Debugged leak sensor control logic, interlock did not work, unable to set point thresholds from UI to RT.

HDice

- Cables for third RF box fabricated.
- Current shunt test initialization subroutines are being integrated into main NMR program.
 - * Developing queued data initialization and acquisition subroutines to handle the current shunt measurements during a NMR scan.
 - * Program must accept and store raw data from CT-box at the acquisition rate during a scan.
- Debugging current read-back noise performance during asynchronous current shunt data acquisition.

LTCC

- Flow set point increased for Sector 5 from 0.065 [lpm] to 0.1 [lpm].
 - * The increase in flow will shorten the fill cycle for the detector when the pressure drops below 1.9 [iwc]



Detector Support Group

Weekly Report, 2018-02-21

FT

- Developmental cRIO system debugged. System is used to simulate FT Hardware Interlock system.
 - * CSS program downloaded.
 - * CSS program had issues to run.
 - Error messages given upon startup and close application.
 - JAVA updated to its 64 bit version to solve error message issues.
 - * Interlocks screen recreated in CSS.

cRIO Test Station

- LabVIEW program for cRIO test station modified to implement ADC input test.
 - * Automatic and manual mode to test accuracy of 9207 module completed.
 - * Shared variables set up to transfer results from Real Time to User Interface.

PLC Test Station

- PR submitted for basic PLC control system:
 - * 10 slot chassis, controller, Ethernet, and ADC modules.



Detector Support Group

Weekly Report, 2018-02-21

Antonioli, Mary Ann

- Drew Hall B magnets cryo system in AutoCAD.
- In cRIO test stand, automatic mode for module 9207 and two 9207 manual tests completed.
 - * Data now shows on computer, status box working, and data clears from user interface before next test.
 - * Still need to get results into Excel.
- Changed website photo.

Bonneau, Peter

HDice

- Integrating current shunt test initialization subroutines into main NMR program.
 - * Developing queued data initialization and acquisition subroutines to handle the current shunt measurements during a NMR scan.
 - * Program must accept and store raw data from CT-box at the acquisition rate during a scan.
- Debugging of current read-back noise performance during asynchronous current shunt data acquisition is underway.

SVT

- Worked with Brian & Pablo on the debug of the SVT Hardware Interlock leak detector.
 - * During testing, the leak LED on the sensor correctly indicated a leak, however it was not detected by the hardware monitoring system
 - During a leak, the AUX1 LED on the controller is correctly turned on. However, the AUX1 controller monitor output voltage always ~0V.
 - The lack of an AUX1 Vout during a trip is the cause of the leak detection failure.
 - Attempted to use controller output Y1 for detection. This is a pulsed output that cannot be used without tripping the interlock.
 - Ordered a replacement leak controller.
- Worked with Pablo on the SVT Hardware Interlock System upgrades.
 - * Debugging coolant trip delay in interlock control.

RICH

- Investigation of RICH scaler performance with Amanda, Pablo, and Tyler.
 - * Localized and intermittent high scaler counts that have been observed with and without beam is being studied.

Campero, Pablo

Magnets

- Monitored Solenoid and Torus magnet on a daily bases through EPICS screens, Mya Archiver and posted logbooks.
 - * Discussed with Tyler about Solenoid fast dump event occurred on 02/19/2018.



Detector Support Group

Weekly Report, 2018-02-21

- Analyzed voltage tap behavior, noticed QD 1 generated fast dump, Voltage tap for coils 1 and 3 (VT 18, VT17)
- Liquid helium lost, relief valve EV8677 did not close, had to be warmer up. Pressure decreased and caused Torus controlled ramp down.
- Cryogenics recovered after 5 [hr] and Solenoid and Torus were ramped up to positive full current.

SVT

- With Brian debugged leak sensor.
 - * Moved wire connections at Panasonic SQ4 leak sensor controller
 - Moved wire from pulse output Y1 to analog output (0-10 V) signal Aux 1.
 - Measured output signal using scope to determinate voltage output and pulse signals from the controller.
 - * Aux1 analog signal measure did not work as expected; output signal did not change when sensor detected liquid, even when the LED indicator in the controller did.
 - Possible channel Aux 1 damaged. Unsolved problem and disabled interlock.
 - Controller and sensor spare ordered.
- Tested SVT Hardware interlock program.
 - * Debugged leak sensor control logic, interlock did not work, unable to set point thresholds from UI to RT.
 - Leak sensor #2 removed from Interlock Hardware program. Only Leak sensor #1 implemented as part of interlock system.
 - Found transfer data issues with “NI variant” programming commands.
- With MaryAnn worked in the development of a user interface (UI) for the cRIO Test Station.
 - * Debugged LabVIEW code to ensure proper communication to receive and send commands between user interface and real time
 - Re-arrange and created new control loops to send commands from UI to RT
 - Tested 9207 ADC Accuracy test.
 - Used shared variables to transfer results from RT to UI.
- Forward information and quotations to Amanda for the PLC Test Station.
 - * Sent PR to request basic PLC control system that includes:
 - 10 slot chassis, controller, Ethernet, and ADC modules.
- Edited DSG weekly report for the week of 2/14/2018.

Eng, Brian

SVT

- Re-wrote Rust program to monitor/log 8 module test stand currents.
- With Pablo tried debugging coolant leak sensor, still disabled after observing voltage spikes: <https://logbooks.jlab.org/entry/3532447>
- Tested exposed RTD for gas measurements planned to use for chilled N2 measurements (but it leaks around metal tube crimp)



Detector Support Group

Weekly Report, 2018-02-21

Magnets

- Solenoid fast dumped again: <https://logbooks.jlab.org/entry/3534668>
- Evaluating fast DAQ data to see if anything obvious caused the dump
- Upgraded two MAC computers from version macOS 10.11/12 to macOS 10.13.

Hoebel, Amanda

ET

- Downloaded CSS software.
- Troubleshoot problem with running CSS program.
 - * Program would give error upon startup and close application.
 - * Solution was that JAVA needed to be 64 bit version.
- Created Interlocks screen in CSS.
- Loaded PV names to corresponding controls and indicators.
- Created procurement request (PR) for PLC test station hardware.

Jacobs, George

RICH

- Completed assembly of new RICH N2 gas panel, waiting on DA.
 - * Received final components for RICH N2 panel.
 - * Assembled Differential Pressure Transducers for RICH to atmosphere and RICH air to RICH N2

Gas Systems

- Discussions with Mac M about DC Gas flow rates and pressures.
- Ordered mineral oil for use in bubblers, Crystal Plus 70FG
- Ordered CO2, three dewars for DC and HTCC.

Leffel, Mindy

RICH

- Worked with George on new N2 gas panel, support structure.

HDICE

- Fabricated cables for third RF box.
 - * Five N – SMA.
 - * Four SMA – SMA
- Submitted work request to repair clean room floor.
 - * The status is approved.
- Worked with Tyler organizing and cleaning the clean room.
- Submitted work request to repair clean room floor.
 - * The status is approved.



Detector Support Group

Weekly Report, 2018-02-21

Lemon, Tyler

RICH

- Cleaned EEL 124 with Mindy.
 - * Disassembled aerogel assembly tent.
 - * Moved all assembly carts to one location at assembly structure.
 - * Started removing unneeded items from cleanroom left after detector assembly.
- Updated Keithley 6517B electrometer LabVIEW GPIB drivers to VISA drivers for reflectivity test station.
 - * Debugging issues with conversion to VISA drivers caused by Prologix GPIB-to-USB converter.
 - Prologix converter required as laptop used to run test cannot have GPIB PCI card installed in it.
 - Some commands are not working because with Prologix controller, the PC sees the interface to electrometer as a serial connection, while the electrometer sees the interface to the PC as a GPIB connection.
- Developed program to recreate RICH scaler map EPICS screen using MYA archived data.
 - * Recreated screen would be used as visual reference to describe issues seen on EPICS screen.
 - * Debugging part of program that colors PMTs according to scalar value.

McMullen, Marc

MVT

- Received 20 bottles of premix. Updated the group of the gas status.

SVT

- Continued work on 1st patch panel board.
 - * The board multiplexes up to four HFCB temperature signal pairs and environmental temperature boards to a single 25 pin D connector.
- Started work on 2nd patch panel board.
 - * The board multiplexes up to four environmental humidity boards and two environmental temperature boards to a single 25 pin D connector.
 - * Board will also supply power to the humidity sensors.

LTCC

- Increased the flow set-point for Sector 5 from 0.065 [lpm] to 0.1 [lpm].
 - * The increase in flow will shorten the fill cycle for the detector when the pressure drops below 1.9 [iwc]