



Detector Support Group

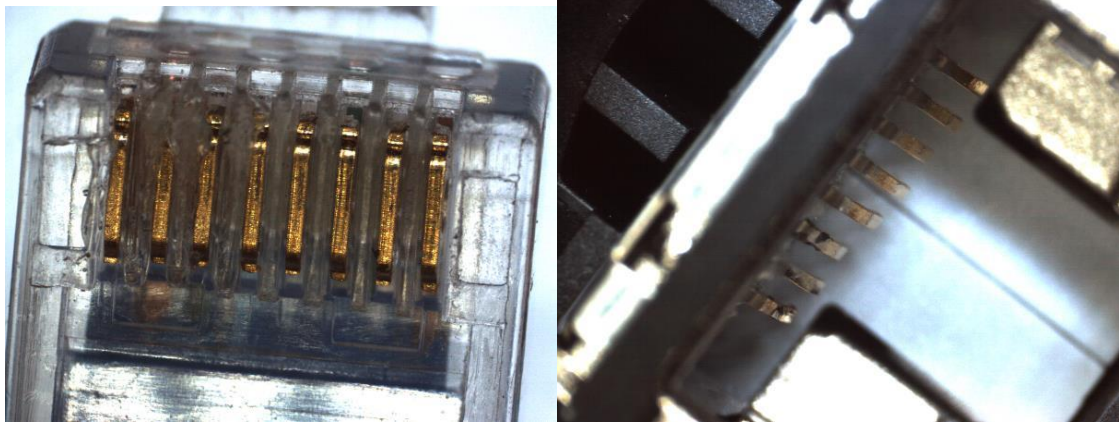
We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2023-09-13

Hall A - ECal

Brian Eng, Mindy Leffel, and Marc McMullen

- Fabricated one high voltage cable with two Fischer connectors; 21 of 24 completed
- Fabricated ten 12' power extension cables with round lugs
- Troubleshooting current readback on aluminum zones
 - ★ Power supply has output when there should be none; left on, right off, but reading current on right
 - ★ Found burned/melted control cable between cRIO and power supply; replaced cable connector and box bulkhead; did not solve issue
 - ★ Network connectors are rated for this level voltage/current (10 V/16 mA max)



- Continued relocating controls equipment to Hall
 - ★ Installed and tested power kill switch
 - ★ Installed and tested Omega
 - ★ Installed the cRIO into the radiation bunker
 - ★ Started installing the heater power cable extension, which will allow the relay box to be installed in the radiation bunker

Hall B – Magnets

Brian Eng

- All communications went bad on 9/11 to cryo-con units (solenoid had been bad since 7/13)
 - ★ No networking issues
 - ★ Reset communication via EPICS screen

Hall B – MVT

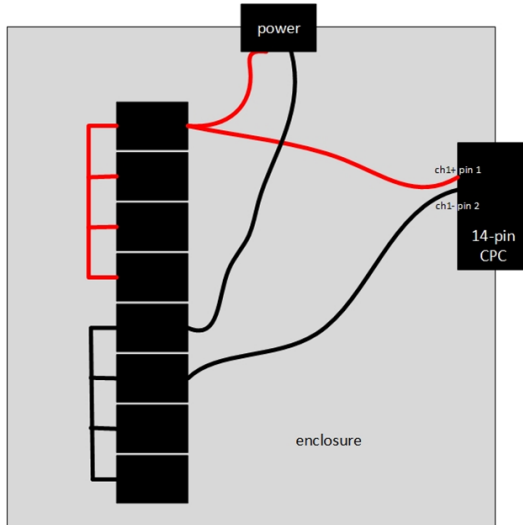
Brian Eng

- Returned low multiplier for mix 1 back to 0.5 (was temporarily lowered to 0)
 - ★ Mix tank pressure is better, but not losing pressure as fast as it should
 - ★ <https://logbooks.jlab.org/entry/4177297> (along with backlinks to other entries)
 - ★ <https://logbooks.jlab.org/entry/4177665>

Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Mindy Leffel, and Marc McMullen

- NPS divider cables
 - ★ Fabricated 10 with Fischer, SMA, and Samtec connectors
 - ★ Modified nine by replacing the SMA portion of the cable with cables that were previously made with a different SMA connector
- Debugging thermal readback LabVIEW program
 - ★ When a sensor is disabled, the averaging and the interlocking are not automatically disabled
 - ★ Instructions have been added to the manual for the user to disable all three items in a specific order (disable interlock, disable averaging, and finally, disable sensor)
 - ★ Working on code to automatically disable all three items; code will be added to the next version of the thermal readback program
- Debugged missing back crystal zone temperatures
 - ★ Keysight extension cables were replaced with spares
- Installed power distribution unit in detector hut; waiting for network switch port assignment
- Installed remote controlled power strip in the hall to support remote reset of the cRIO
- Installed humidity sensor power box; wiring diagram drawn in Visio



NPS Humidity Sensor Power Supply Box
Mary Ann Antonioli
9/6/2023

- Attempted to redo the meshing on existing NPS model
 - ★ Found over 2000 overlapping parts that need to be resolved before meshing can be redone
 - ★ Unable to get a SpaceClaim or DesignModeler license to work on problems with the model's geometry

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- Ansys Fluent thermal analysis
 - ★ Set up heat source at rear wall of each crystal, using 0.3 W of power and heat flux for each crystal front face of 750 W/m²
 - ★ Set up Shell Conduction options for each crystal wall, which are in contact with the dividers
 - ★ Started steady thermal simulation

Hall D – FCAL 2

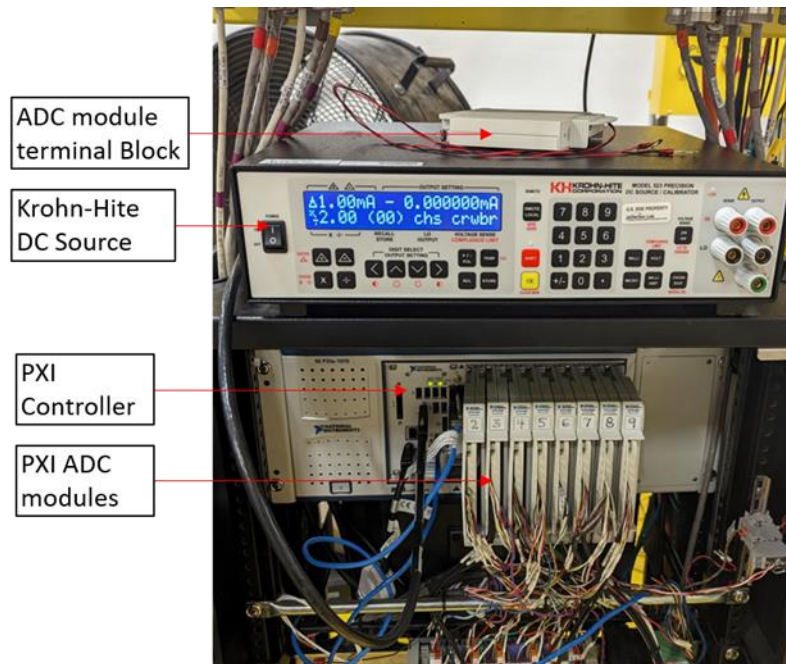
Mindy Leffel

- Wrapped five Crytur crystals with 3M foil and Tedlar; 833 completed
- Populated 10 PMT bases; 585 of 1750 completed

Hall D – Magnet

Pablo Campero and Brian Eng

- Tested and calibrated eight PXI ADC modules (setup shown below); all passed

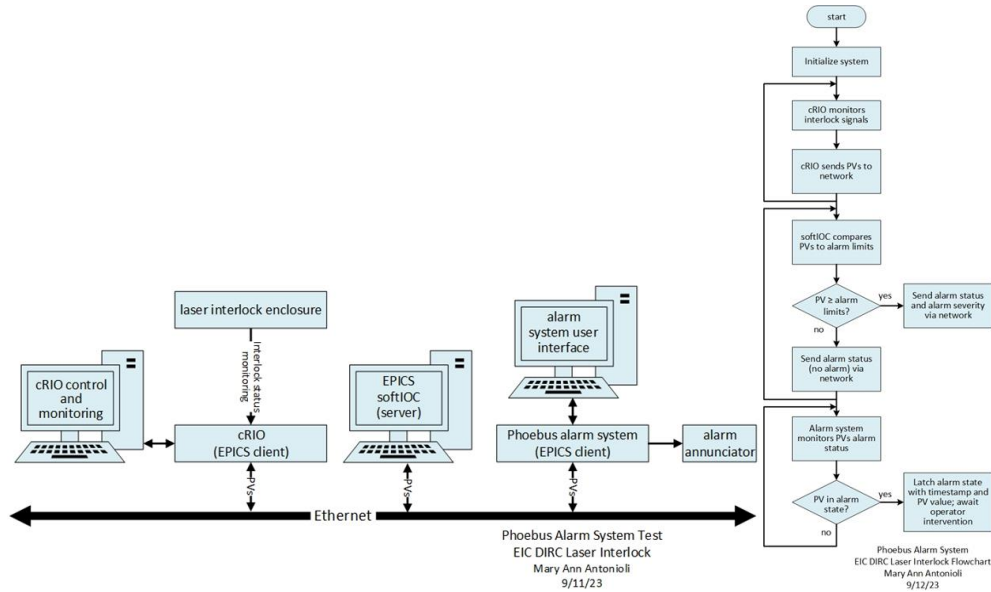


- After ADC calibrations were completed, noticed PXI issue
 - ★ First power cycle the USER1 LED wasn't blinking, which indicates a running startup RT (Real-Time) App
 - ★ Deployed RT App from project and ran as startup (did several reboots as well) USER1 LED worked as expected
 - ★ When verifying via EPICS screens in the counting house that everything was running, saw that no PVs were being updated
 - Found the Shared Variable Engine (SVE) wasn't running; manually starting it allowed PVs to update
 - Performed another reboot and all PVs came online as expected

EIC - DIRC

Peter Bonneau, Mindy Leffel, George Jacobs, Tyler Lemon, and Marc McMullen

- Drew Phoebus alarm system flowchart and diagram in Visio



- Cloning Phoebus V 4.6.10 development system onto development computer and adapting Linux and Phoebus core programs for second laptop

EIC - Thermal Test Stand

Pablo Campero, Brian Eng, George Jacobs, and Marc McMullen

- Additional reflector material added
 - ★ Heater drained and element removed
 - ★ Beampipe removed and three additional layers of reflector added for total thickness of 0.078"



- ★ Test stand re-assembled and re-filled with oil; heater is ready to operate



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DSG

Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Marc McMullen, and Tyler Lemon

- Verified all channels of a cRIO NI 9264 module (+/-10 V analog output) are still functioning; was thought to be damaged
 - ★ Tested at 1 V, 5 V, 10 V, -10 V, -5 V, -1 V, 0 V
- Installed eight 64-GB memory RAM into EXPCAMPERO computer
- Debugged dsg-halla-1 computer
 - ★ Computer crashed while attempting LabVIEW 19 installation
 - ★ Stopped installation and forced restart; did not boot and windows restore was unsuccessful
 - ★ Took computer to help desk
- Updated all mailing lists on website