



Detector Support Group

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

Weekly Report, 2024-05-08

Hall A – ECAL

Marc McMullen

- Started discussion on changing location of the controls from the planned location to the larger DAQ shielded bunker, which is further upstream, due to disconnection on 5/3 of all readback signals
- Continued model of the controls rack with four cRIO expansion chassis and thermocouple terminal blocks
 - ★ Redesigned thermocouple din rail mount to improve space utilization
 - ★ Added a mounting panel for the Omega process controllers
- Requested a third quote for thermocouple extension cables
- Submitted PR to have the power supply interface chassis parts fabricated
- Ordered 48" rack

Hall A – LAPPD

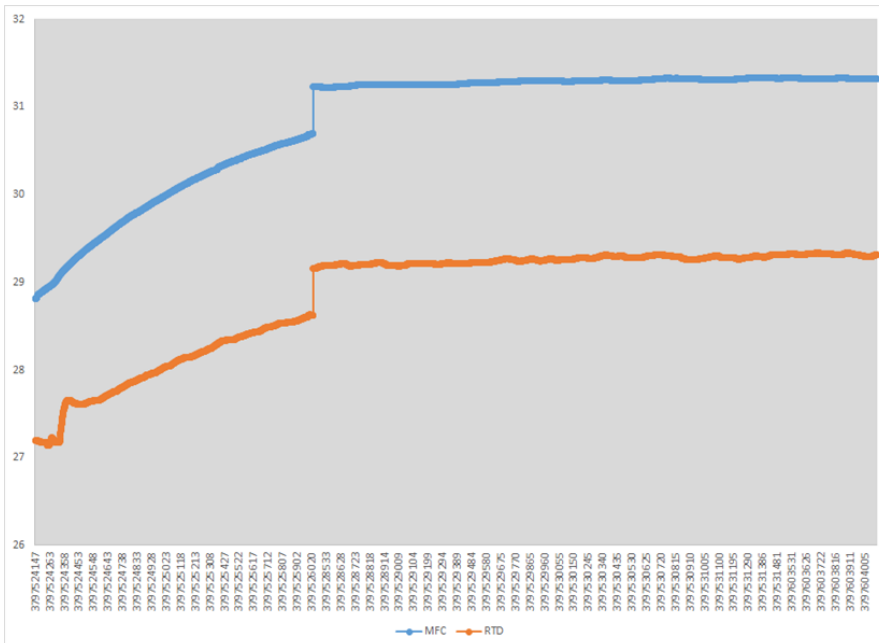
Pablo Campero

- Reviewing recommended procedure to relocate the gantry home sensors so the travel range is limited to the LAPPD window dimensions

Hall B – ALERT

Brian Eng

- Monitoring mass flow controller temperature compared to external RTD
 - ★ Computer and/or network will not stay online for extended periods (vertical line in plot)
 - ★ Initial results show rise then plateau of temperature at fixed flows



Degrees C vs time of mass flow controller (blue) and external RTD (orange)

Hall B - Torus Magnet

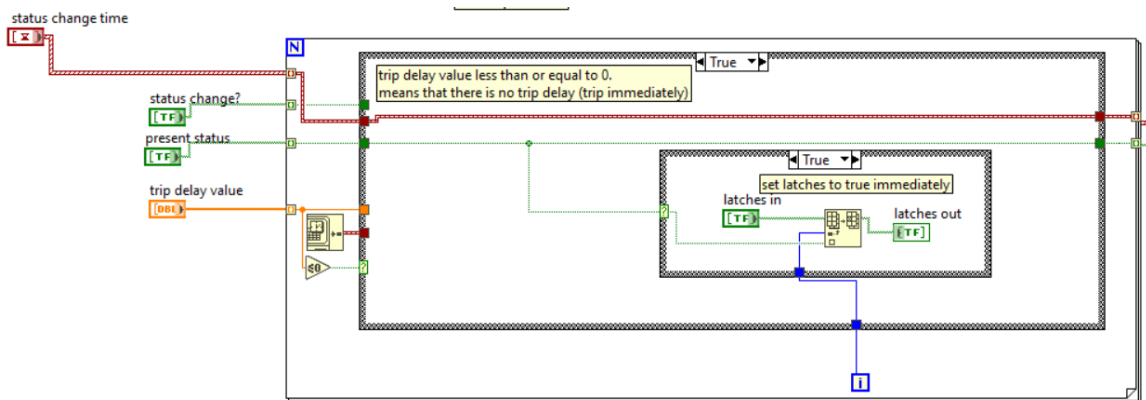
Pablo Campero

- Provided support during controlled ramp down event caused by temperature at section 6 going above the set limit
 - ★ Noted bad contact after connection and reconnection of the feedthrough at the magnet end; <https://logbooks.jlab.org/entry/4294488>

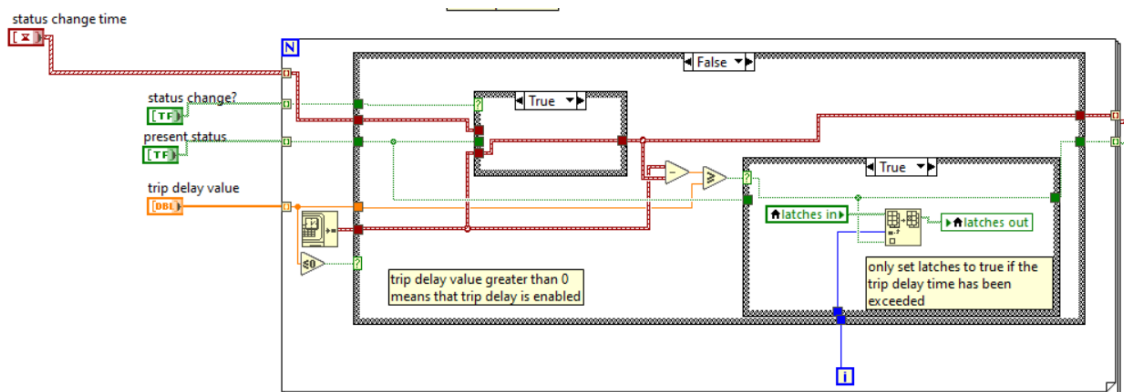
Hall C – NPS

Aaron Brown and Mary Ann Antonioli

- Generated plots of front and back crystal sensor temperatures for various conditions
 - ★ Increasing ambient temperature
 - ★ Decreasing ambient temperature
 - ★ Steady ambient temperature
 - ★ Front and back crystal sensor temperatures with beam current
 - ★ Average front and back crystal temperatures
- Developing version 3 of the control and monitoring LabVIEW program
 - ★ Made break-out array of all sensor values
 - ★ Made new version of subVI to check if trip should occur, based on present status



Code that sets latches immediately



Code that sets latches if the trip delay time has been exceeded



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Hall D – FCAL2

George Jacobs

- Tested 19 PMT bases; 987 good bases tested

Hall D – Solenoid

Brian Eng

- EPICS PV arrays not working properly with NI Linux
 - ★ Installed Windows 10 IoT Enterprise LTSC 2021 on PXIe-8861 controller
 - ★ Installed LabVIEW 2024 Q1 and various required modules
 - ★ Modules and RT functionality aren't detected in LabVIEW, so unclear how to deploy and run project

EIC – DIRC

Tyler Lemon

- Photodiode DAQ PCB
 - ★ Began testing current-to-voltage conversion of the PCB
 - ★ Changing Arduino software of PCB that reads the ADCs, to improve timing, increase DAQ rate, and improve serial interface reliability
 - ★ Developing testing and calibration program for PCB that will control a Krohn-Hite DC source to provide 0–5-mA current to PCB and read voltages measured by ADCs on PCB via serial communication to its Arduino

DSG R&D – Phoebus Test Station

Peter Bonneau and Mindy Leffel

- Building Linux-based SSD Phoebus development computer for test system
 - ★ Installing and configuring EPICS base and development tools
- Documenting hardware and software design
- Populated, tested, and labeled six of 10 humidity temperature sensor board (HTSB) cables



HTSB with humidity and temperature sensors and cables