Detector Support Group

Summary

Hall A – SoLID Magnet Controls

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, Tyler Lemon, Marc McMullen

- Researched liquid level monitor controller, sensor models, and specifications
- Started programming *Solenoid JTV-Setup* HMI screen
- Developed *Cryo Control Reservoir Expert* CSS-BOY screen
- Modified *Instrumentation Rack #1* and *PLC Rack Layout* drawings

Hall A – GEM Gas System

Peter Bonneau, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen

- Debugging flow sensor readout code
  - ✶ Multiplexers freeze when automatically sensing multiplexers and flow sensors
  - ✶ Multiplexers freezing is due to a single channel on a single multiplexer; skipping this channel allows code to work
  - ✶ Investigating if the multiplexer freezing problem is caused by the multiplexer circuitry or by the channel itself
- Adjusted internal gas line lengths to gas flow sensor chassis to allow connection without deformation of the gas line

View of the DSG designed gas flow sensor chassis

- Installing EPICS base software to Raspberry Pi to allow Raspberry Pi to be used as a process variable server or client

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- Fabricated twenty RJ11 gas flow sensor internal chassis cables
- Populated two I^{2}C multiplexer PCBs
- Tested rev. 1 of I^{2}C multiplexer board; works as expected

Hall C – NPS
Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, George Jacobs, Mindy Leffel, Tyler Lemon

- Developed equation for mapping HV slot and channel numbers to crystal numbers or PMT position
  - ✶ PMT pos # $\vee$ Crystal # = n x 36 + m; n $\in$ [0,29] $\wedge$ m$\in$[0,35]
  - ✶ Started revising main NPS screen with new numbering scheme
- Revised rules for LEDs across all CSS-BOY screens; all LEDs will have same color and label rules
- Investigated programming applications for interfacing temperature scanning systems to the Hardware Interlock System
  - ✶ Application would be used for monitoring the K-type thermocouple temperature sensors in the crystal array and electronics zone
- Researched hardware readout systems for the NPS Keysight model 34980A temperature scanning system
- Repaired the Radiall connector and internal soldering connections on the DSG designed Radiall 52 to SHV adapter
- Repaired the interlock connector pins on six CAEN HV modules
- Nine hundred and thirty HV divider cables fabricated
- CAEN HV trip testing with CSS; 16 modules tested in *hvcaentest2*
- Analyzing, with Excel, HV (with load) stability test current data
  - ✶ Twenty-six of 32 modules' current data analyzed

HDice
Peter Bonneau, Tyler Lemon

- Started process diagram for the Zurich UHFLI Lock-in amplifier based fsNMR program

EIC
Brian Eng

- Continued working on Tracking Detectors' Costs (6.10.3 in WBS)