



Detector Support Group

Weekly Report, 2019-10-09

Summary

Hall A – Super BigBite HCAL

- Ninety percent of 1888 cables fabricated.

Hall B – Gas System

- Moved gas system controls rack from Space Frame – Level 3 to Space Frame – Level 1.
 - ★ Rack relocated to area closer to detectors it services (drift chambers and RTPC target)

Hall B – HPS

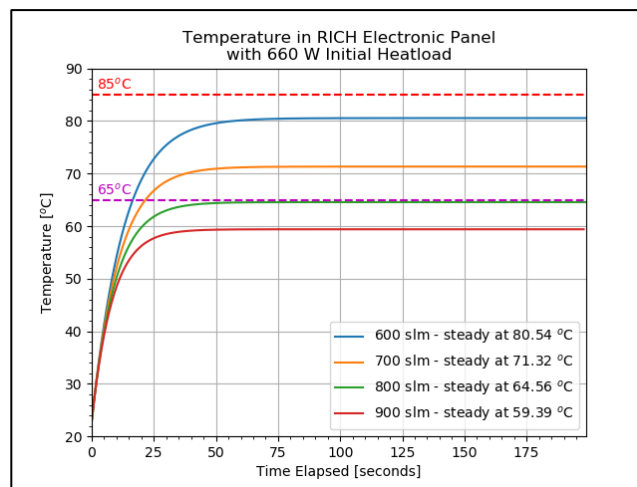
- Connected Convectron vacuum gauge to PLC and verified gauge has same readout on PLC as display on gauge’s controller

Hall B – Magnets

- Upgraded firmware on Solenoid Cryo-con #1 to test new firmware.
 - ★ If no communication problems are observed in upcoming week, all other Cryo-con units’ firmware will be upgraded.

Hall B – RICH

- Investigated Atlas Copco ZT45-7.5 compressor for use in cooling system.
 - ★ ZT45-7.5 is a 100% duty-cycle compressor that can deliver 6,900 slm of airflow.
 - ★ Current Atlas Copco SF11 compressors are 50% duty-cycle and can provide 1,200 slm of airflow.
- Calculated theoretical “steady state” temperature for RICH electronics with various cooling airflows.
 - ★ From calculation, with 900 slm of cooling airflow, steady state temperatures should be ~60 °C.
 - ★ From archived data during normal RICH operations, average FPGA temperature is 58.277 ± 3.76 °C.



Steady state temperatures over time for various airflows. For reference, FPGA temperature goal (65 °C; pink dashed line) and maximum operational FPGA temperature (85 °C; red dashed line) are included on plot.



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Hall C – EPICS

- Continued work on conversion of Hall C's magnets HMIs to CSS-BOY screens

Hall C – CAEN HV Test Station

- Ran further stability test for A7030TN boards S/N:297
 - * Repeated previous stability test with all channels off and then tested board with all channels on and ramped to 1500 V.
 - * Tests each set to run for 24 hours, but was again interrupted after ~12 hours by loss of network connection between CAEN crate and PC running GECO.
 - * During 12 hours for each test, no changes in the seven set parameter values were observed, as expected to do.

DSG R&D – EPICS

- Wrote script to monitor and store data for a single PV
- Investigating methods for monitoring and storing data for multiple PVs

DSG R&D – RICH

- Developing digital high-accuracy temperature and humidity monitoring system for the next RICH sector based on the Sensirion SHT85 sensors.
 - * Five subVIs developed so far.

DSG R&D – Hall B Magnets' LV Chassis

- Found that ADCs in LV Chassis work as expected with DE0-Nano-SoC FPGA board.
 - * Problems preventing FPGA program from running correctly on board appear to be in code for DACs.
- Resolved communication issues between host PC and DE0-Nano-SoC FPGA board by reinstalling USB communication drivers.