



Detector Support Group

Weekly Report, 2020-05-06

Summary

Hall A – SoLID Magnet Controls

Mary Ann Antonioli, Aaron Brown, Pablo Campero, Brian Eng, Tyler Lemon

- Developing database to store electrical drawings for SoLID
- Developing PLC code to control JT valves for heat exchanger
- Completed magnetic field readout PLC code
 - ★ Implementation of the hall probes to measure magnetic field by using SoLID control system is uncertain
- Reviewed modification made for PLC layout
 - ★ Evaluated changes required for the documentation, PLC programming, HMI screens and electrical drawings
- Modified Cryo Control Reservoir (CCR) HMI screen
 - ★ Added temperature average
 - ★ Verified that JT valve on the screen follows CCR P&I diagram sequence and labels
- Completed Solenoid Coil Radiation Shield Temperatures CSS-BOY screen
- Began Solenoid-Neck-Temperature CSS-BOY screen
 - ★ Updated database spreadsheet with PLC tags and proposed EPICS PVs for Solenoid-Neck-temperature HMI screen
- Reviewed JT valve Controls and Monitoring diagram
- Conducted meeting with Hall A staff to discuss changes and progress of:
 - ★ PLC programming
 - ★ HMI screen development
 - ★ CSS-BOY screens development
 - ★ Instrumentation
 - ★ Electrical drawings
- To test SoLID magnet CSS-BOY screens, developed and added feature to Test OPI Creator program to include Boolean controls on control screen for PVs that trigger rules.
 - ★ New controls allow rules that change appearance of indicators/controls to be tested
- Completed initial schematic for the 24 channel motor controller relay board
- Started parts list for the 24 channel motor controller relay board.

Hall A – SBS GEM

Brian Eng, Mindy Leffel, Marc McMullen

- For the gas flow sensor boards, inventoried parts and populated four boards.
 - ★ Two boards with each type of sensor, 400 sccm and 750 sccm

Hall B – SVT Hardware Interlock System

Peter Bonneau

- Researched possible alternatives to the SVT coolant temperature and pressure monitoring sensor assembly
 - ★ A lower temperature range is needed because the SVT operating temperature has been lowered



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Hall C – CSS-BOY Screen Development for Checklist

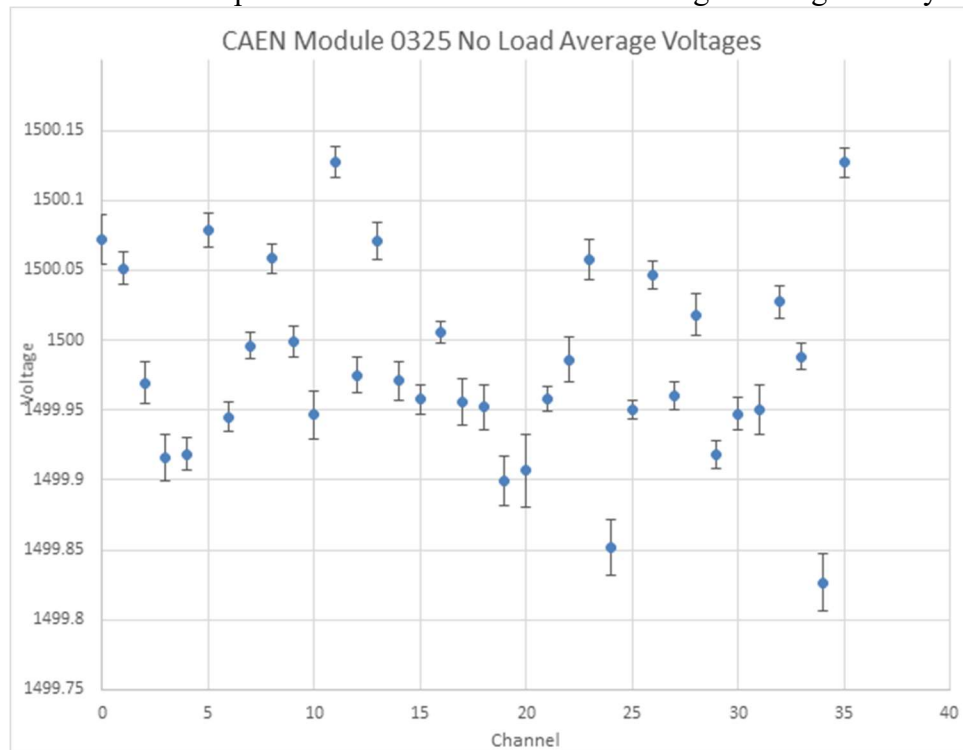
Peter Bonneau, Tyler Lemon, Aaron Brown

- Developing a CSS-based system which will generate the checklist data needed for Hall C shift workers.
 - ★ Researched the operation of the MIS checklist program and possible implementations of the proposed system
 - ★ Investigated items on shift checklist for development of new CSS screen to make it easier to perform checks
- Developed documentation on the network security infrastructure of controls systems

Hall C – CAEN Testing

Aaron Brown, George Jacobs

- Continued analysis of stability test data in Excel for module 0325.
 - ★ Error bars on plots are standard deviation of voltages during stability test



Average channel voltage of module 0325 during stability test with load

Hall C – NPS

Mindy Leffel

- Received and inventoried parts for HV diverter cable
 - ★ Picked up remaining parts, inventoried parts, created inventory spreadsheet, researched connector assemblies and strip lengths, terminated a practice cable and started terminating nine more.



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DSG R&D – MSELV Chassis

Tyler Lemon, Marc McMullen

- Investigated using Serial Peripheral Interface (SPI) library for Raspberry Pi in chassis.
 - ★ Default of library shifts data on the rising edge of serial clock, while DAC and ADC require shifting data to it on the falling clock edge.
 - ★ Individual GPIO pins for each devices “chip enable” signals will be used rather than library’s default pin to act as a multiplexer
- Setup Raspberry Pi single board computer
 - ★ Installed software, and started the tutorial for Thonny Python editor
- Start document on MSELV RMC pcb document.
 - ★ The document will give details on the board design and general purpose

DSG R&D – EPICS Data Logger

Aaron Brown

- Investigating the use of R language to plot data directly from MySQL database
 - ★ Researched on how to generate a graphical user interface (GUI) using R