



Detector Support Group

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

Weekly Report, 2020-09-09

Summary

Hall A – SoLID Magnet Controls

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

- Adding PLC code to control interlocks based on radial support's load sensor readouts
 - ★ Added code to handle negative readings
- Modifying, using AutoCAD, *Instrumentation Rack* layout
- Started populating Constant Current Source PCBs

Hall A – GEM Detector Gas System

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

- Started writing, using LabVIEW, readout code for multiple gas flow sensors
- Developing layout for gas exhaust flow sensor project boxes

HDice – fsNMR Program

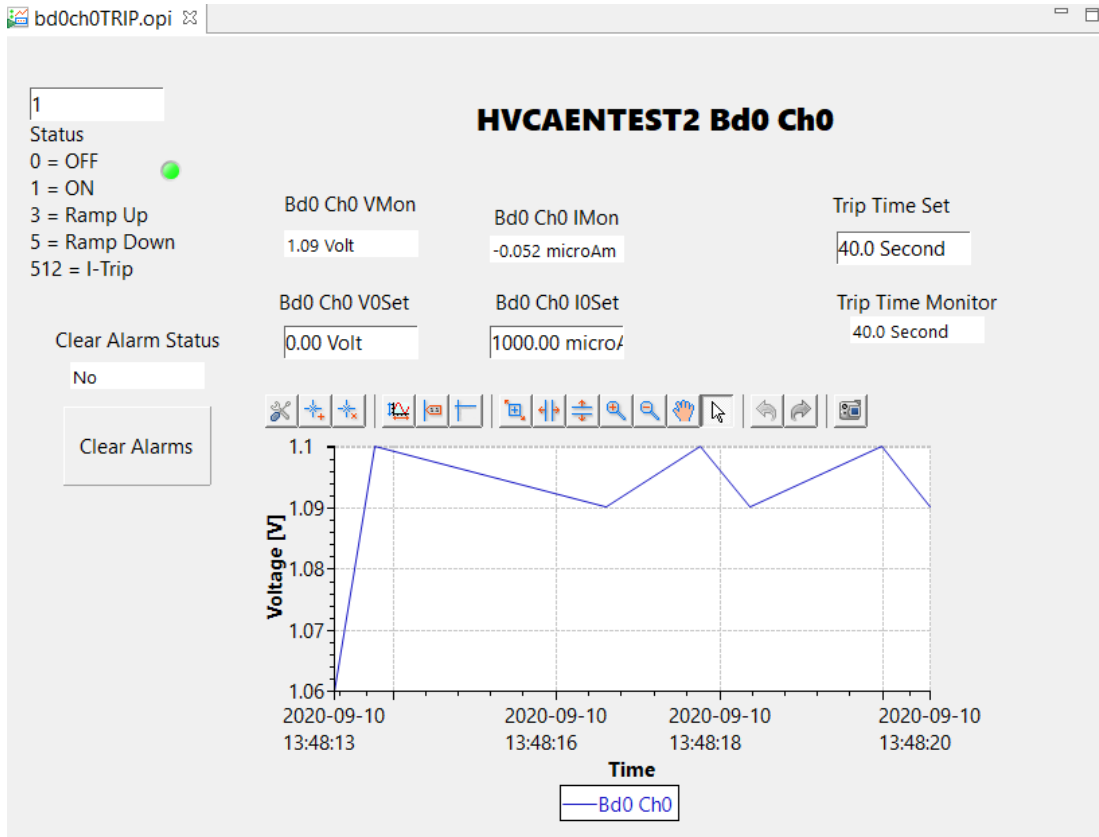
Peter Bonneau, Tyler Lemon

- Added remote control program for Oxford IPS-120 power supply
 - ★ Remote control of power supplies is required during UITS runs since the PC is in accelerator enclosure
 - ★ Included remote control of power supply voltage and heater switch
- Developed Python program to create Hierarchical Data Format v5 HDF5 files that can be read by Zurich lock-in amplifier
 - ★ Offline averaging results saved in CSV file, but lock-in amplifier can only read in HDF5 files
 - ★ Program converts CSV files into HDF5 format for use by the lock-in amplifier
 - ★ User interface for program developed using Python's Tk interface package
 - Allows user to select a file to convert and receive status messages without having to interact with the Python code or environment

Hall C - NPS

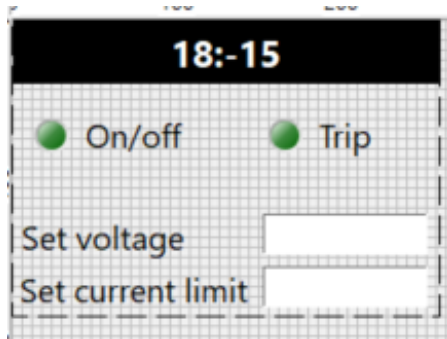
Mary Ann Antonioli, Peter Bonneau, Aaron Brown, George Jacobs, Mindy Leffel, Tyler Lemon

- Seven hundred and forty of 1100 high voltage divider cables fabricated
- Analyzing HV (with load) stability test current and voltage data; 21 of 32 modules' voltage data analyzed
- Completed voltage stability testing (with load) using EPICS
- Developing, in EPICS, CAEN HV trip test



CSS-BOY screen of CAEN HV trip test. Values for voltage, current, and time over threshold can be set using provided input boxes. Graph shows a small voltage readback of 1.09 V. Even though the voltage is set to 0 V, since the module is on, there is a subtle, small readback.

- Completed 67 of 1080 PMT voltage and current limit settings screens



Screenshot of PMT settings CSS-BOY screen.

- Researching and evaluating methods of implementing the readout of ~140 temperature sensors

DSG – Website Design

Mary Ann Antonioli, Peter Bonneau, Aaron Brown

- Continued updating all DSG technical documentation sections