



# Detector Support Group

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

Weekly Report, 2020-08-26

## Summary

### Hall A – SoLID Magnet Controls

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

- Revising motor controller relay board design; added fuses
- Added PLC code to control and monitor strain gauge load sensors’ interlocks
  - ★ PLC code reads strain gauge load sensors’ values and then compares these values with high/low limits provided by the expert user
- Completed *Instrumentation Rack* drawings
- Completed Parts List
  - ★ Tables shows detailed information for all components to be installed in the PLC and Instrumentations racks
  - ★ Verified number of components required
  - ★ Reviewed and verified part numbers for each component
  - ★ Verified component availability from vendors/manufacturers

### Hall A – GEM Detector Gas System

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

- Tested 5 V gas flow sensor boards with Raspberry Pi using level translator: no issues
- I<sup>2</sup>C multiplexer board received at JLab
- Developing AutoCAD drawing of a fixture to test gas flow tubing lengths
- Developed, using NX12, annotated drafting versions of regulator panel, rotameter panel, and SBS manifold panel for panel fabrication

### HDice – fsNMR Program

Peter Bonneau, Tyler Lemon

- Researched Zurich Lock-in Amplifier capabilities for development of fsNMR program using just the Zurich Lock-in Amplifier
- Added ability to monitor, log, and send email alerts for production dewar liquid helium temperature and level
- Modified fsNMR program’s scaling equations for variables X and Y
  - ★ Goal of changes is to better extract true NMR signal from acquired signal that includes background noise and effects on experimental setup

### Hall C - NPS

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

- Seven hundred of 1100 high voltage divider cables fabricated
- Continued voltage stability testing (with load) using EPICS
- Analyzing HV (with load) stability test current and voltage data
- Researched and reviewed the cable assemblies, connectors, and patch panel design of the HV distribution system
- Completed *Hall C ComCal* CSS-BOY screen

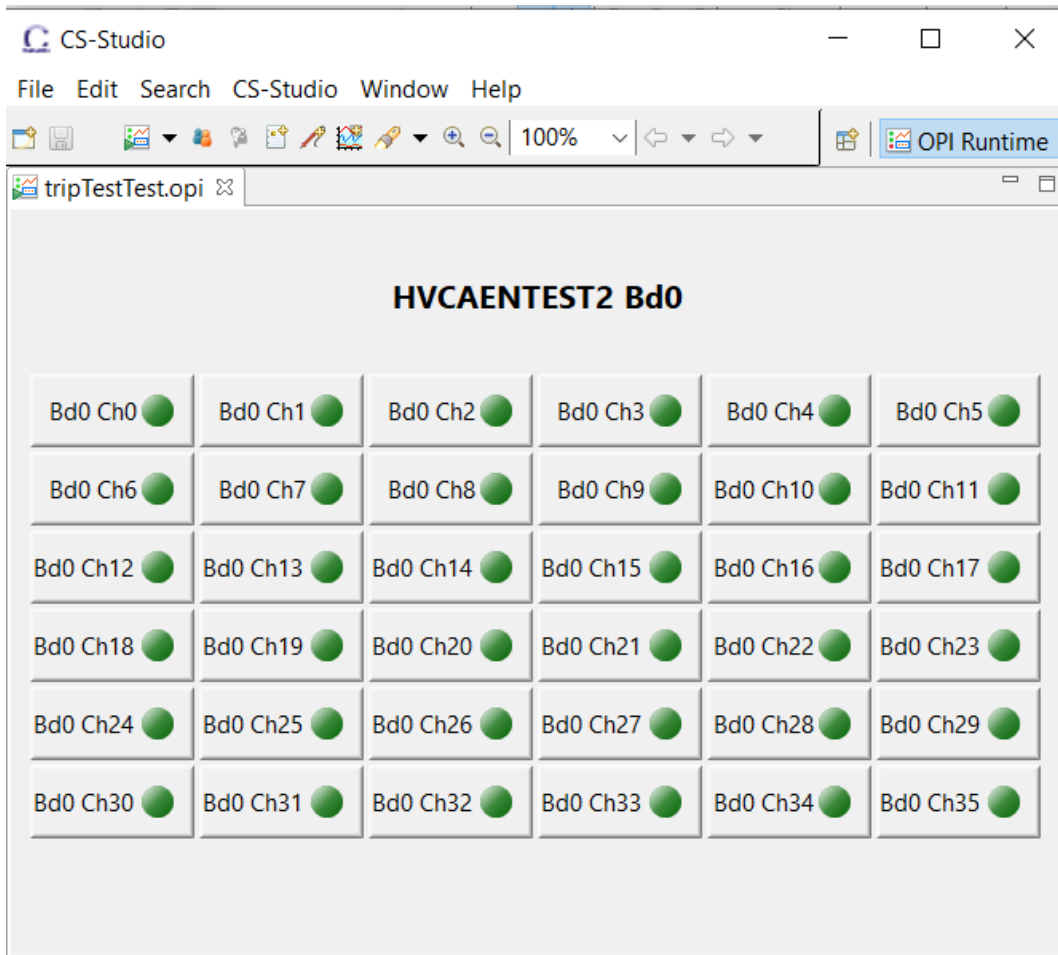


# Detector Support Group

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

## Weekly Report, 2020-08-26

- \* Screen shows voltage and current readback for each PMT in a 36x30 grid
- Generated HV schematic to show HV path and all components for detector system
  - \* Includes part numbers and voltage ratings for all components
- Developing trip test for CAEN HV system
  - \* Test uses EPICS and is conducted through a CSS-BOY screen



Screenshot of CSS-BOY screen under development for CAEN HV trip test.

### Hall C- HMS/SHMS Magnets' CSS Screen Development

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

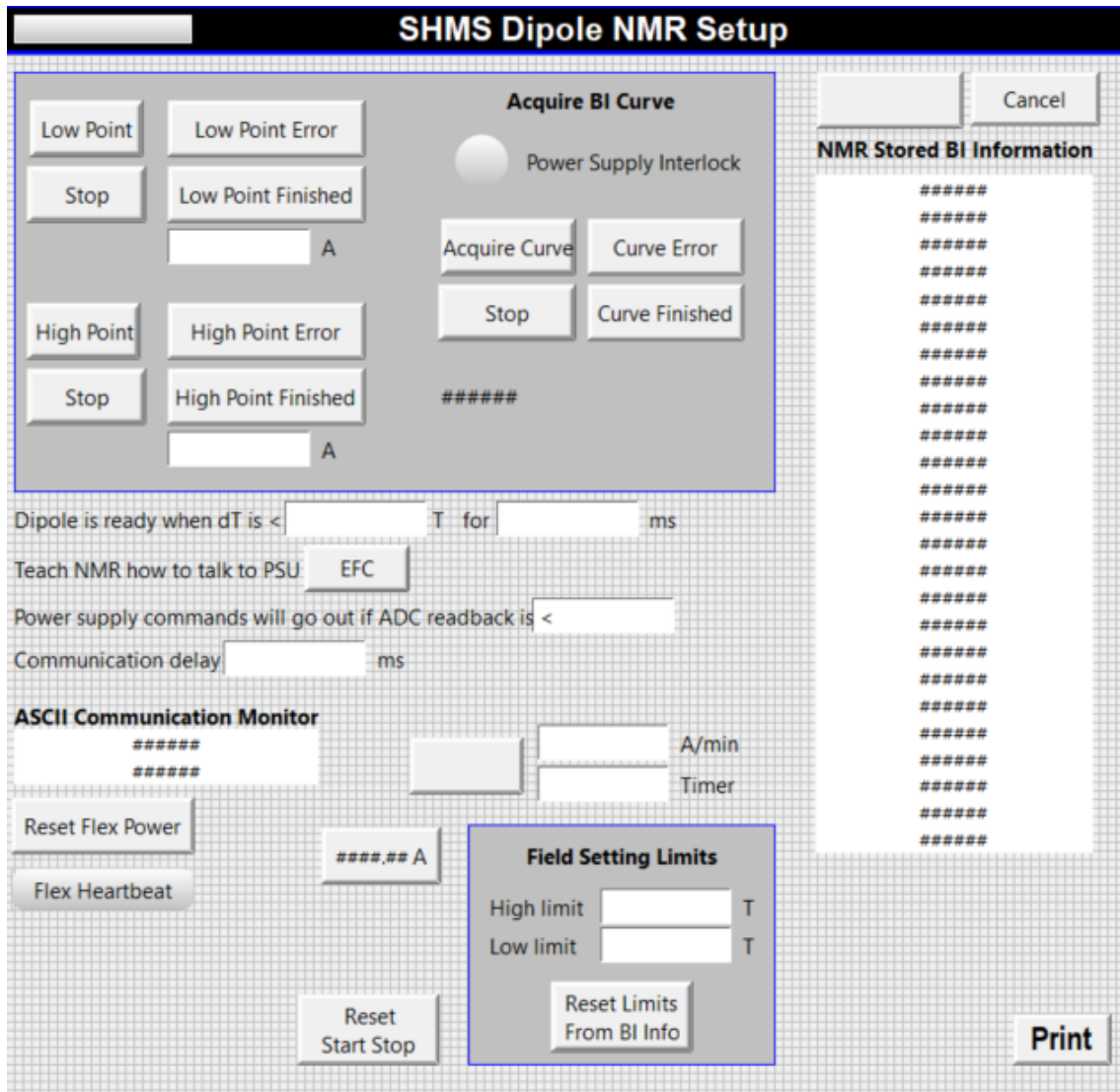
- Completed *SHMS Dipole NMR Setup* and *SHMS Dipole PSU* screens



# Detector Support Group

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

**Weekly Report, 2020-08-26**



Screenshot of the *SHMS Dipole NMR Setup* CSS-BOY screen

## **DSG – Website Design**

*Mary Ann Antonioli, Peter Bonneau, Aaron Brown*

- Continued updating all DSG technical documentation sections