Detector Support Group

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

Weekly Report, 2022-08-24

Summary

Hall A – ECal

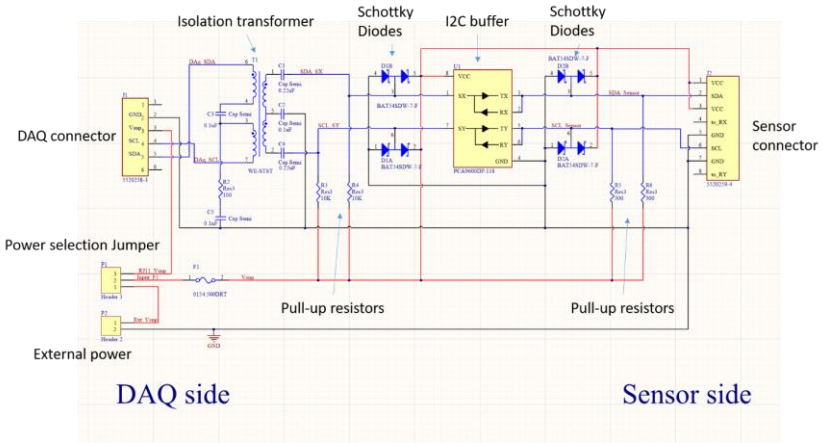
George Jacobs, Mindy Leffel, Tyler Lemon, and Marc McMullen

- Debugging Ansys 2022 R1 and NX12 integration
  - ✶ Model for thermal analysis created in NX12 using the .prt file extension
  - ✶ Since updating Ansys to 2022 R1, Ansys gives an error when .prt files are set as the geometry to use

Hall A – GEM

Brian Eng, George Jacobs, and Marc McMullen

- Installed Raspberry Pi (dsg-dev-sbc4) to acquire SBS input pressure data
  - ✶ Completed preliminary schematic for I^2C driver circuit



I^2C driver circuit schematic

Hall A – GEn-II

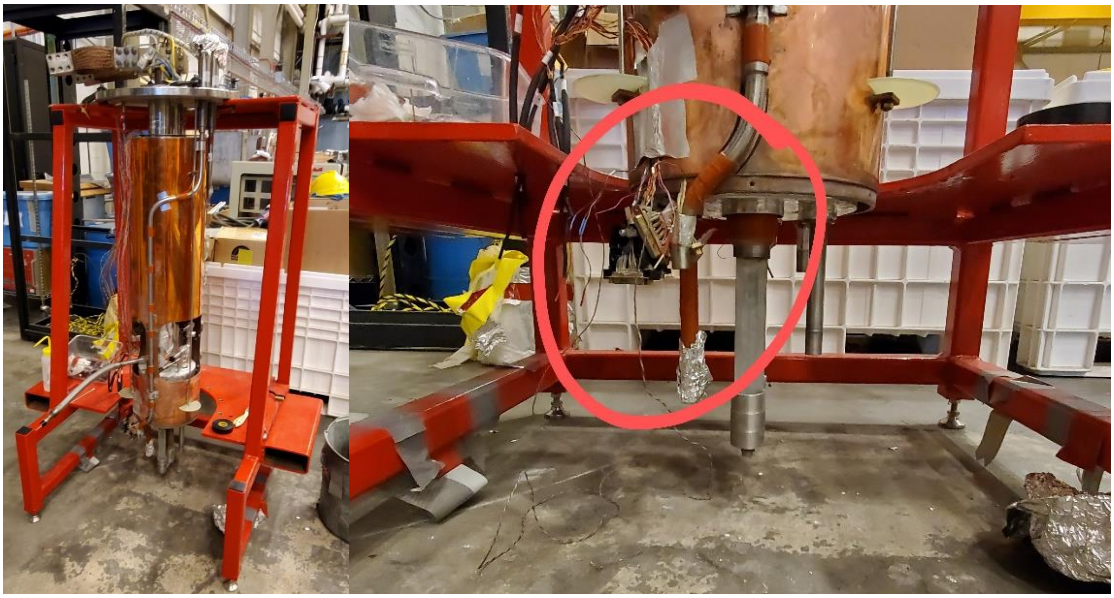
Mindy Leffel

- Fabricated six twisted pair RTD cables; 32 of 42 complete
- Stripped and tinned four feedthrough cables; three of six complete

Hall A – SoLID

Pablo Campero, Brian Eng, Mindy Leffel, and Marc McMullen

- Investigating cabling and connectors at top of turret
  - ✶ Most are thermocouples (TC), but also voltage taps (VT) and heaters – TC types have been identified, but need connectors and wiring diagrams, VT are already in wiring diagrams with connectors
- Determined turret needs to be raised two to three feet to do cable repairs



Turret with cover removed (left), connectors to be repaired (right)

Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, and Marc McMullen

- Completed chiller Phoebus screens
- Investigating VLD test stand – obtained VME driver code
  - ✶ Resolved issues with firmware upgrade section of code
- Updating process variable spreadsheet with LabVIEW variable name, data type, number of elements in arrays, and Phoebus screen name
- Made Visio drawing of NPS controls

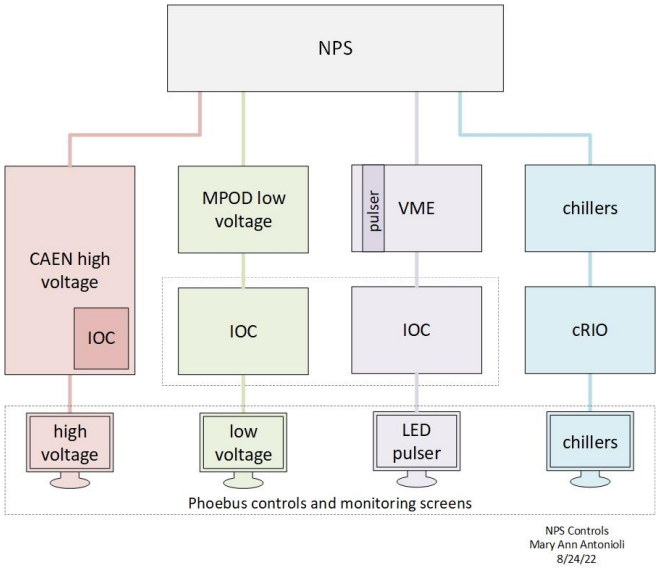
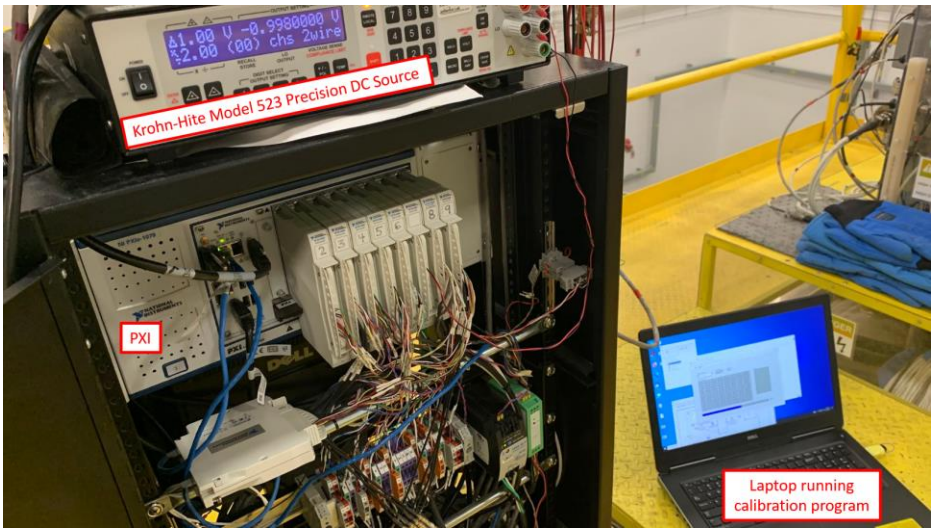


Diagram of NPS controls

Hall D – Solenoid

Brian Eng and Tyler Lemon

- Calibrated Krohn-Hite Model 523 precision DC source using program from Krohn-Hite
- Calibrated PXI ADC modules
  - ✶ Used Krohn-Hite to inject voltages into PXI ADC module
  - ✶ ADC module measurement compared to specifications from NI
  - ✶ All channels on all module passed calibration tests

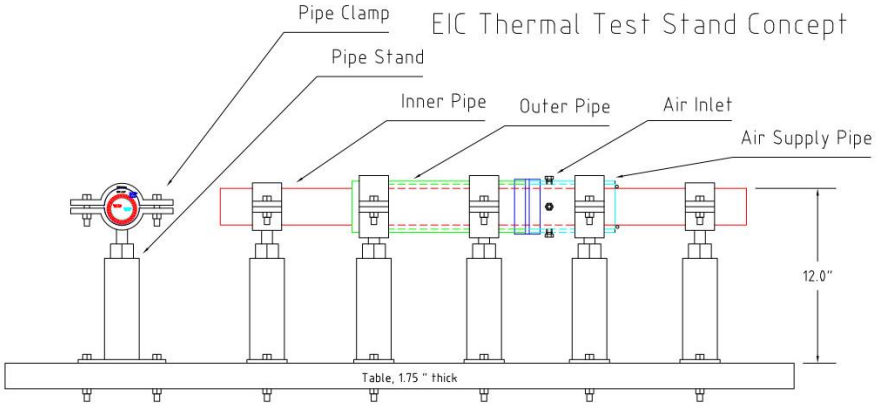


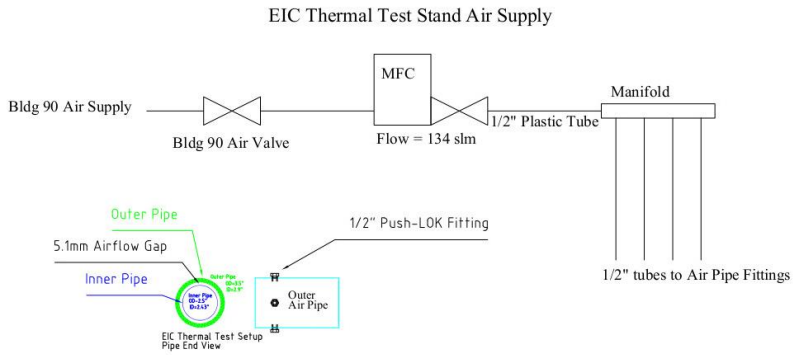
Hall D PXI calibration setup

EIC

Pablo Campero, Brian Eng

- Designing beam pipe test setup
  - ✶ Determining safety issues; electronic components need to have NRTL (Nationally Recognized Testing Lab) certification
- Developing, using AutoCAD, thermal test concept – table mounted test stand setup and air supply diagram





- Contacted JLab pressure systems group to review the air flow setup
- Completed task hazard analysis
- Completed initial start-up and shut-down procedure

DSG R&D – EPICS Alarm System

Peter Bonneau

- Conducted PV alarm delay testing using the Phoebus alarm test system
  - ✶ The alarm system PV configuration menu was used to set an alarm delay for a simulated NPS Crystal Zone chiller temperature value
  - ✶ The Phoebus alarm test system EPICS softIOC was used to generate an alarm on the simulated PV
  - ✶ The alarm system correctly latched when the PV was in the alarm state in excess of the alarm delay time, no alarm was latched if the PV was not in the alarm state in excess of the delay time

Phoebus PV Alarm Delay Configuration