Detector Support Group

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

Weekly Report, 2022-01-19

Summary

Hall A – ECal

George Jacobs, Mindy Leffel, Marc McMullen

- Assembled Supermodule #9 – four of 57 completed
- Cut 40 foils, wrapped 32 light guides, and glued 18 springs

Hall A – GEM

Brian Eng, George Jacobs, Marc McMullen

- Developing, using NX12, a gas system model
  - ✶ Completed panels for gas flow sensor chassis
  - ✶ Completed gas flow sensor PCB
  - ✶ Adding mounting holes for multiplexer PCB

Hall A – SoLID

Mary Ann Antonioli, Pablo Campero, Brian Eng, Mindy Leffel, and Marc McMullen

- Cut 12, 100' cables and crimped ferrules on one end of each cable
- Updated *Cable Information* spreadsheet
  - ✶ Added pinout for voltage cable #0401

Hall B – RICH-II

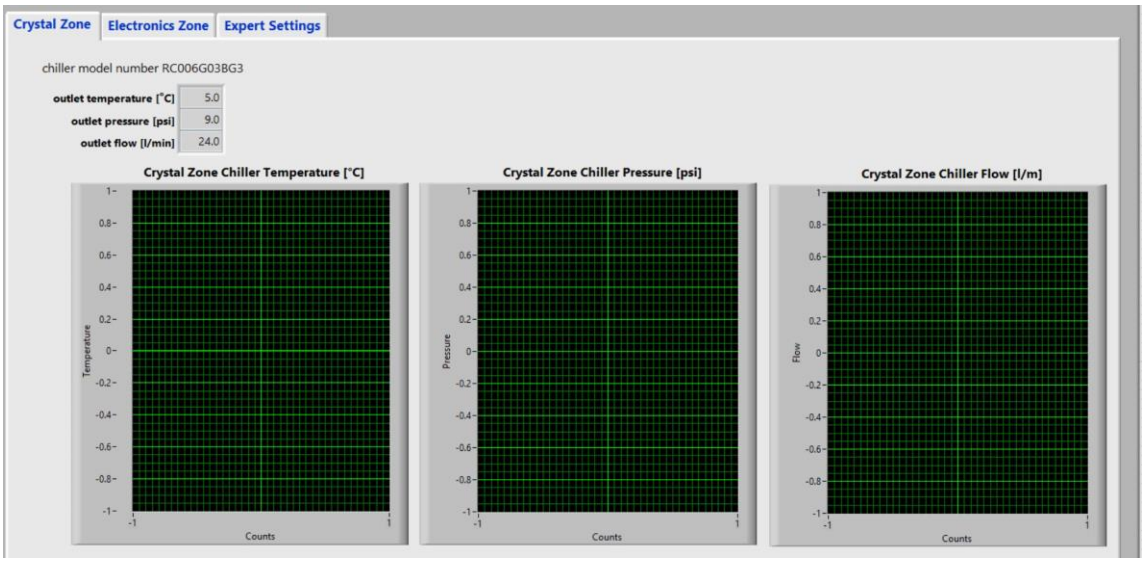
Mary Ann Antonioli, Peter Bonneau, Pablo Campero, Brian Eng, George Jacobs, Tyler Lemon, and Marc McMullen

- Investigating a way to programmatically add network shared variables and EPICS PVs to hardware interlock system's LabVIEW project
  - ✶ Most straightforward way is to manually type variable and PV settings into LabVIEW
    - ▪ The large number of PVs makes the manual process tedious and error-prone
  - ✶ Researching how to make a text file with all information that can be imported into LabVIEW to easily set all shared variable properties and EPICS PV properties
- Detector shell assembly
  - ✶ Organized cleanroom and prepared assembly structure for assembly
  - ✶ Unpacked materials from shipping crates and moved them into cleanroom
- Forwarded the winch load calculation and stiffening tool drawings to materials handling SME
  - ✶ This documentation is needed so the lift plan can be modified by JLab materials handling and added to the assembly OSP for submission

Hall C – NPS

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

- Added temperature probes to all crystal faces in Ansys crystal array model
- Wrote IronPython script to export temperature probe values from Ansys simulation to a text file
  - ✶ Developing Python program to remove extraneous information from text file
- Added crystal zone chiller tab code and user interface to hardware monitoring LabVIEW program



Screenshot of crystal zone chiller tab in hardware monitoring LabVIEW program

- Generated voltage stability and current stability plots for all channels of all CAEN high voltage modules
- Completed high voltage supply cable voltage drop testing for 140' cable (36 channels)
- Worked on ESR film pre-shaping: 595 of 602 completed

EIC

Pablo Campero, Brian Eng

- Debugged SpaceClaim 2021 R1 software license issues
  - ✶ Prior to 2022, Ansys allowed access to any of the included SpaceClaim licenses; now you have to tell Ansys which license you want to pull your SpaceClaim
  - ✶ Issue resolved by installing a patch to enable selection of license

DSG R&D – EPICS Phoebus Alarm System

Peter Bonneau

- Attempted to start the alarm server; received error: *Failed to determine user credentials: No such process*
- Installing and configuring *procServ* – an interactive command wrapper which allows telnet access to the alarm system command console (also used by EPICS)

DSG R&D – PID Controls Simulation

Pablo Campero and Brian Eng

- Developing PLC programming to simulate PID control of valves
  - ✶ Added analog input and output relay modules to the PLC project
  - ✶ Tested run and program modes for emulated controller
- Started HMI programming
  - ✶ Created and configured HMI server and client
  - ✶ Added a new Rockwell Automation Device Server to set up communication between HMI server and RSLogix5000 emulator (PLC controller being emulated)
  - ✶ Created test PLC tags to test communication between emulated PLC and HMI
  - ✶ Creating HMI display required for variable tests