



Detector Support Group

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

Weekly Report, 2023-07-05

Hall A - ECal

Mindy Leffel

- Fabricated two high voltage cables with Fischer connectors on each end; 3 of 23 completed

Hall A – Møller

Brian Eng

- Connected 4–20 mA flow and temperature outputs of Dwyer flowmeter to Siemens PLC
 - ★ Using loaned equipment from distributor, which does not have a digital input module
 - ★ Error with STEP 7 licensing software so unable to make code changes, but able to change channel configuration of analog input module without any errors
 - Support ticket filed with Siemens

Hall B - Central Calorimeter

Mindy Leffel

- Terminated 10 coax cables with LEMO connectors; 10 of 24 completed

Hall B – Gas System

Brian Eng

- Unable to get generic username/password from Computer Center for WiFi access for microcontroller; can be unstable during beam
 - ★ Will look for similar microcontroller but with built-in Ethernet
- Added logging to compare Dwyer absolute pressure transmitter versus Bosch barometer integrated circuit

Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng,

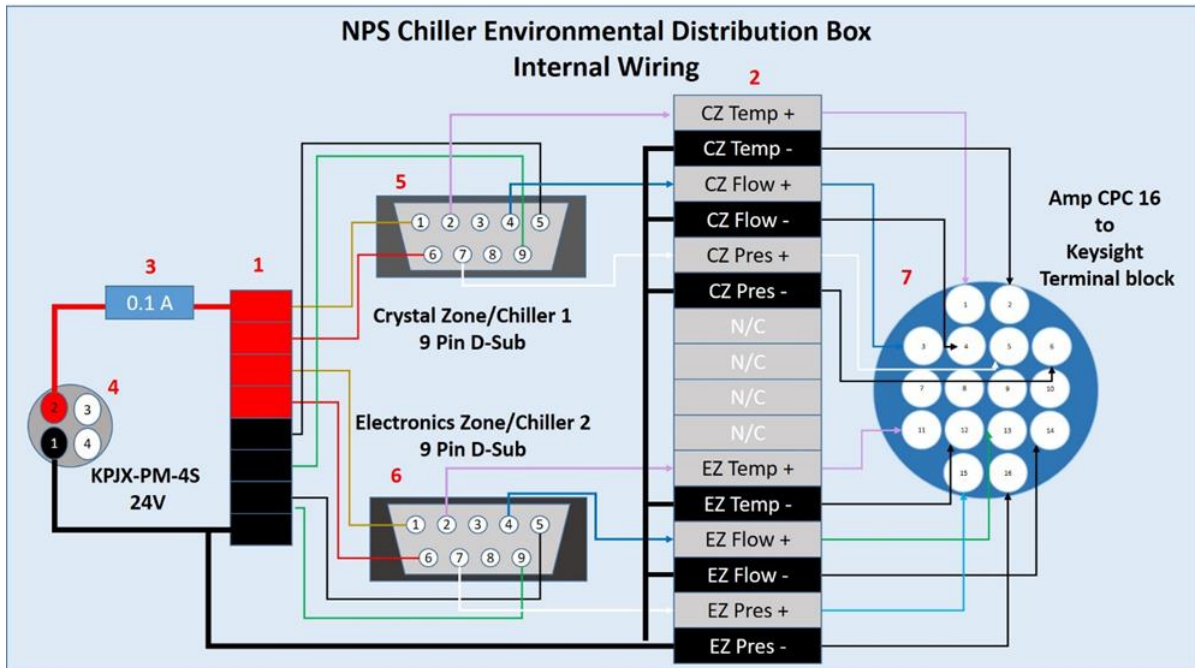
Mindy Leffel, and Marc McMullen

- Connected crystal zone and electronics zone chillers to cRIO in Hall C
 - ★ Communicated remotely with both chillers
 - ★ Tested remote power controllers and relay modules to remotely shut off chillers for a hardware interlock
- Continued cleaning up LabVIEW code
 - ★ Replacing local variables with shared variables in break-out loops so that can then make subVIs to further reduce visible size of code on block diagram
- Drew wiring diagram for distribution box for the chiller sensors; routes flow, temperature, and pressure signals from the sensors to the Keysight terminal block

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1. Power distribution block, 2. signal distribution block, 3. fuse, 4. power supply connector, 5. crystal zone sensor connector, 6. electronics zone sensor connector, and 7. Keysight terminal block connector

- Developing an alarm system server configuration file for detector frame and the crystal zone cooling circuit process variables, which when the Phoebus alarm server is first initialized, will load the alarm parameter settings for each process variable

Hall D – JEF

Mindy Leffel

- Populated 10 PMT bases; 405 of 1200 completed

EIC - DIRC

Peter Bonneau, Tyler Lemon, and Marc McMullen

- Interlock PCB
 - ★ Completed design review
 - ★ Produced gerber files
 - ★ Checked pad pitch and size for all components
 - ★ Added 14 and 16-pin chip sockets to bill of materials
 - ★ Started researching PCB manufacturers
- Developing backend of linear stage controls for Python user interface program
 - ★ Added function to check whether stages are connected to PC and what is their homing status
 - *Homing a stage* is when the stage is moved to its lowest position and its position readback set to zero, allowing the stage to be properly referenced for accurate positioning

EIC – RICH

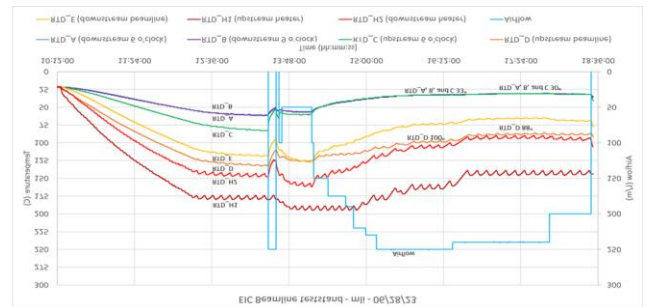
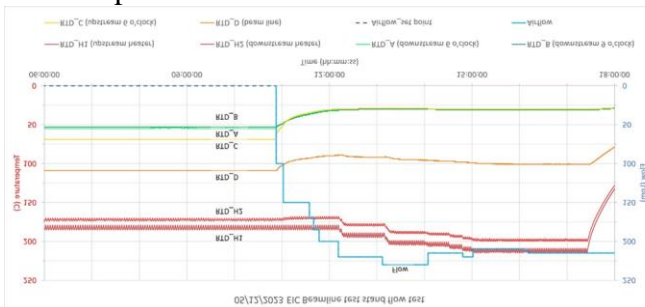
Tyler Lemon

- Setting up reflectivity test station components that are on hand for preliminary mirror tests
 - ★ UV lamp was set up for free-space transmission of the light
 - ★ To get light to properly transmit into the fiber optic cable, light should be focused down to a point on the fiber input
 - ★ Attempting to set up optical components in attempt to make a focusing lens assembly to properly transmit light into the fiber optic cable

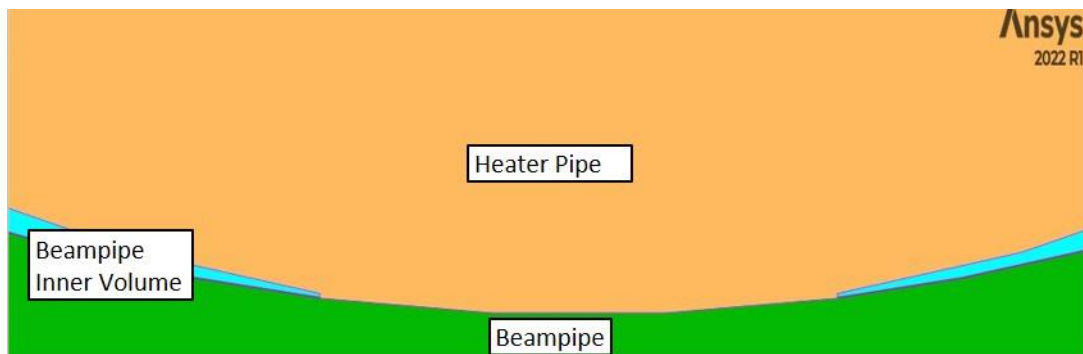
EIC - Thermal Test Stand

Pablo Campero, Brian Eng, George Jacobs, and Marc McMullen

- Compared the 06/28 test results with 05/12 test results



- Thermal analysis
 - ★ Modified model
 - Reduced the contact surface between outer face of heater pipe and inner face of beampipe
 - Modified heater pipe and inner volume of beampipe
 - Verified that there were no geometry issues with the modifications
 - Applied shared topology



Close-up of model

- ★ Meshed model
 - Had issues with thin surfaces; reduced element mesh size and improved surface mesh quality to solve issues