

<u>Hall A – ECAL</u>

Brian Eng, Tyler Lemon, and Marc McMullen

- Modified controls program to control the voltage to the heaters based on the temperature of the flange
- Installed an Omega process controller that will cut off voltage to the controls relay at 350° C to monitor the heater temperature on the test stand
- Updated the DSG-List with the new heater and controls information
- Started test to achieve 220° C at the crystal face
- Created model of new heater test in SpaceClaim
 - * New heater under test has two cartridge heaters inside an aluminum block
- Working through process of creating a Fluent model for just the new heater

<u>Hall A – GEp</u>

<u>Mindy Leffel</u>

- Cut all wires to length and crimped all pins for two Fischer, 27-pin connectors
- Cut 42 ground jumper wires and crimped with pins

<u>Hall A – Møller</u>

Mary Ann Antonioli and Brian Eng

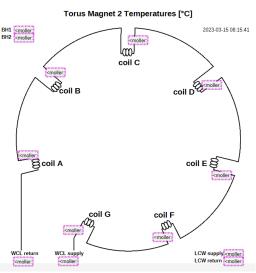
- Read RTDs with demo Siemens PLC
 - ★ An analog input module loses half its channel count (four of eight channels are disabled) when channels are set to RTD

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- Approved RTD drawings put on document control by Kaiyi
- Generated PVs for voltage taps
- Completed Illustrator diagram to be used for Phoebus screens for magnets 1, 2, and 3
- Completed screens for magnets 1, 2 (shown below), and 3 temperature displays



Detector Support Group We choose to do these things "not because they are easy, but because they are hard". Weekly Report, 2023-03-15



• Completed Illustrator diagram for magnet 4 Phoebus screen

Hall A – SoLID

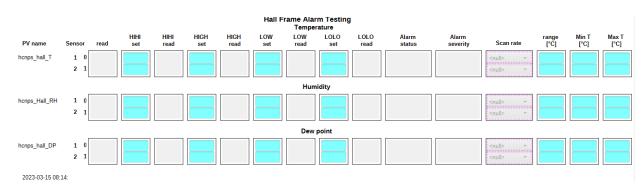
Pablo Campero

- Modified PLC and HMI code to allow control of JTV1, helium cold return valve, from EPICS
- Debugged warnings in FactoryTalk View data logger system of failure to reconnect automatically to the database file
 - * Database reached file size of 2 GB; new file path being used for database

<u>Hall C – NPS</u>

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

- Upgraded Phoebus from version 4.6.10 to 4.7.1 from source code, including core and alarm system applications
 - ★ Updating and testing the Phoebus system configuration files written for the NPS alarm test system
 - ★ Updating Apache Kafka and Apache Maven on development computer
- Made Phoebus alarm testing screens for detector frame, electronics zone, hall (shown below), and chiller coolant



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<u>Hall D – JEF</u>

<u>Mindy Leffel</u>

• Populated 70 PMT bases

EIC

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

• Added aerogel to the test stand beampipe

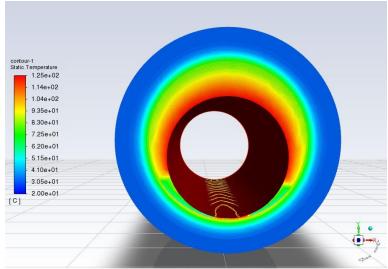


- Completed Ansys Fluent setup to perform thermal simulations of the beampipe used in test stand
 - ★ Set temperature of 125°C at the outer face of the volume used to represent the heater and a temperature of 20°C at the annulus space
 - ★ Used coupled method (pressure-velocity scheme)
 - * preliminary results below

Air flow velocity [m/s]	Si sensor max. T [°C]	Si sensor min. T [°C]
1E-07	119.43	118.92
0.1	89.54	86.11
0.2	70.13	66.08
0.5	46.88	43.17
1	37.60	34.63
1.6	33.23	30.71
2.1	31.36	29.12



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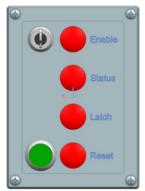


Front (inlet) view of temperature contour results for model with air flow velocity of 1.6 m/s at 20 °C

EIC-DIRC

Tyler Lemon and Marc McMullen

- Started PCB layout of the laser interlock board
- Investigating circuit options for photodiode readout
 - ★ Option 1: passive current-to-voltage converter
 - Read voltage drop over a known resistance
 - o Value of resistor used to read voltage drop sets circuit gain
 - ★ Option 2: active transimpedance amplifier
 - o Uses an operational amplifier to convert current to voltage
 - o Feedback resistor in inverting amplifier configuration sets circuit gain
- Researching how to model a photodiode in simulation to test options
- Designed exterior control unit for laser control area with LED indicators, keyed enable switch, and a reset button (all on hand)
 - * Enclosure will be procured and drilled with holes



Screenshot of exterior control unit model. Red circles are LEDs, green circle a pushbutton, and grey circle the keyed enable switch



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DSG Website

Peter Bonneau

• Revised and added additional content to the Talks, Weekly Reports, Monthly Memos, Meeting Minutes, Technical Documentation, Mailing Lists, and Publications webpages