Detector Support Group
Weekly Report, 2017-11-29

<u>Status</u>

<u>Magnets</u>
- Sequence of Events data investigated and monitored to determine Torus fast dump that occurred on 11/22/17.
  - ★ Quench detector 3 tripped first.
  - ★ Effect on voltage taps when the ramp rate set remotely is not as expected.
    - At ramp rate of 1.5 A/s the voltage expected across whole magnet expected is 2.7 V; voltage measured was ~ 0.65 V.
    - The above situation occurs when ramp rate is set on MPS remotely.

<u>RICH</u>
- Humidity sensor data from November 25, 2017 at 14:00 to 18:00 analyzed in Python.
  - ★ Difference between maximum and minimum humidity observed at a given time using MYA archived data.

Maximum Difference	1.22 %
Minimum Difference	0.38 %

- Nitrogen dewar cylinders swapped to supply nitrogen to the RICH.
  - ★ Swapped 2 gas cylinders on 11/22/17.
  - ★ Swapped 2 gas cylinder on 11/28/17.

<u>FT</u>
- Condensation sensor installed in hardware interlocks cRIO.

<u>SVT</u>
- Thirty foot cable extensions soldered on outlet flow meter.

<u>MVT</u>
- Gas system control tested with Argon.

<u>Gas Systems</u>
- Fittings and valves ordered for RICH N_2 supply changes.
- Rough plan and cost estimate created for monitoring differential pressure between RICH N_2 and air cooling volumes.
- Hazardous Location line voltage thermostat and heat trace cable ordered for MVT mixing system.
- HTCC stand-alone gas controls transferred to Hall B gas controls.

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Weekly Report, 2017-11-29

Antonioli, Mary Ann
Absent

Bonneau, Peter
No report

Campero, Pablo
Magnets
- Stated correction for Hall B Solenoid Pre-Power-Up checkout procedure.
- Supported with the investigation of the sequence of events that occurred during the Torus Fast Dump on 11/22/17
  - Investigated and monitored data to determinate the Fast Dump event.
    - Quench detector 3 tripped first.
  - Analyzed how the voltage taps across the whole magnet is affected when the ramp rate set remotely is not the expected.
    - At ramp rate of 1.5 A/s the voltage expected is 2.7 V; voltage measured was ~ 0.65 V.
    - It was found problem to set the ramp rate on the MPS remotely.

RICH
- Collaborated to swap Nitrogen Dewar cylinders to supply nitrogen to the RICH.
  - Swapped 2 gas cylinders on 11/22/17.
  - Swapped 2 gas cylinder on 11/28/17.

FT
- With Amanda installed condensation sensor for the FT Calorimeter.
  - Run cables through the cRIO controls chassis.
  - Connected sensor cable to the TTL and ADC cRIO modules.
    - Re-did terminal of the cables due to ferrules did not fit in the cRIO ADC module.
  - Tested proper sensor response by wetting sensor in water
    - Monitor change voltage from 0 V to + 5V dc when sensor was wet.

Worked on cRIO Test Station
  - Created a new version of the Test Station LabVIEW program to test changes added to write sensor data readout into excel files.

Eng, Brian
Gas System
- Updated GUI to use new MFCs and new controls (current version on GitHub and O drive).
MVT
- Tested MVT controls functionality with Ar, seems to work fine. Automatic mode still needs to be tested (requires MVT to request gas via PLC).
HTCC
- Moved sensors to Space Frame cRIO with Marc.

Hoebel, Amanda
DC
- Obtained TCU 2 data from 10/25 to 11/08.

FT
- Installed condensation sensor in interlocks cRIO chassis.

- Created and edited weekly report.
- Read Tyler's note on RICH spherical mirror tests and wrote questions.

Jacobs, George
GAS Systems
- Ordered additional fittings and valves for RICH N2 supply changes.
- Created rough plan and cost estimate for monitoring the differential pressure between RICH N2 and air cooling volumes.
- Ordered Hazardous Location line voltage thermostat and heat trace cable for MVT mixing system.

HALLB
- Ordered CO_2 for Hall B DC and HTCC
- Contacted AirGas vendor about status of LAr delivery driver training (SOTR).

- Completed ANNUAL STANDARDS OF CONDUCT TRAINING - GEN101.
- Completed **Annual Supervisor Substance Abuse Refresher - MGT110kd.**

Leffel, Mindy
RICH
- Continued work on cRIO chassis for measuring humidity and temperature.

HTCC
- Created cable labels.
- Spoke with Youri about cables to be fabricated in the near future.

MVT
- Used manlift to run signal cable in the hall with Mark Taylor.

SVT
- Soldered 30' cable extension on outlet flow meter in the hall.

Lemon, Tyler
RICH
- Updated RICH hardware interlock LabVIEW program.
  - Modifed how program accesses humidity calibrations.
    - Previously used individual subVIs for each individual sensor.
    - Changed to one subVI with a look-up table.

- Advantages of look-up table subVI is that it is easier to view and change calibration values if needed.
  - ★ Debugged Threshold Control mode indicator and control.
    - Control that allows user to set program to be changed via EPICS or changed via LabVIEW UI was not working.
    - Boolean variable that determines control mode was set to allow EPICS control when program first starts and was not in logic that allows user to toggle variable to set control mode.
  - ★ Verified that keyed override switch indicators on LabVIEW UI operate correctly and reflects override status.
    - Code previously commented out in LabVIEW program since hardware switch was not installed in cRIO chassis.
    - Re-enabling code allowed status to be correctly displayed.
- Updated hardware interlock CS-Studio screen.
  - ★ Rearranged controls and indicators at collaborators request.
- Analyzed humidity sensor data from November 25, 2017 at 14:00 to 18:00 in Python.
  - ★ All humidity sensors were placed in dry box during time interval so all readings should be the same.
  - ★ INFN collaborators not happy with spread of humidity sensors and believe it is caused by issues with calibration.
  - ★ Python script finds difference between maximum and minimum humidity observed at a given time using MYA archived data.
  - ★ Results in table below.

Average Difference	0.75 ± 0.22 %
Maximum Difference	1.22 %
Minimum Difference	0.38 %

FT

- Installed and tested water detection sensor with Amanda and Pablo.

McMullen, Marc

Gas System

- Transferred HTCC gas controls from stand alone to Hall B gas controls with Brian.
  - ★ Terminated HTCC gas controls cables.
- Performed trouble shooting on space frame gas controls chassis.
  - ★ Swapped out bad 15V supply.

RICH

- Ordered 2 more dewars.
- Wrote ODH document for the new twin dewar setup for the EEL.