



Detector Support Group

Weekly Report, 2017-04-19

Status

Torus

- To address the 325 K issue, LV cRIO program modified to use excitations from last correct temperature reading.

Gas System

LTCC

- EPICS dead-bands for sector gas flow and gas pressure updated.
- MYA archiver data of gas flow and pressure matches cRIO data.
- C₄F₁₀ tank from gas shed, weighed. Contains ~340 lbs (~155 kG) of gas.

DC

- Test connection to piping for pressure testing installed.
- Procedure for pressure testing piping modified, as requested by DA.

SVT

- EPICS alarm values for LV current updated.

RICH

- Rotation of structure analyzed, when using gantry crane.

Hall D

- Logbook entries and EPICs screens monitored and analyzed daily.
 - * Liquid level on Solenoid N₂ tank was dropping even though it was open to maximum set point. Contamination at valve that reduced flow was suspected. Manually manipulating valve restored N₂ level to nominal.
 - * On 2017-04-14, FDC main gas system showed discrepancies in pressure packages 1 and 3. Input and output pressures (~70 and 40 Pa, respectively) were different with pressure packages 2 and 4.
 - * On 2017-04-14, four channels in BCAL showed drift in LED gains.
 - * Noted on 2017-04-18 that welding in Hall D caused false alarm on Target VESDA system.
 - * On 2017-04-18, LN₂ level in Solenoid magnet was ~44%.



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Antonioli, Mary Ann

Absent

Arslan, Sahin

Absent

Bonneau, Peter

- Completed initial EPICS interface code for **Forward Tagger** interlock system.
 - * Wrote code for threshold control and monitoring and interlocking of Calorimeter and Hodoscope signals.
 - * Overall, wrote, tested, and debugged 25 LabVIEW subroutines and developed library of 109 EPICS process variables.
 - * Tested and debugged with MEDM control and monitoring GUI.

RICH

- Discussed with Mary Ann real-time messaging subroutines for communication to user interface and testing of configuration file subroutines.
- Worked with Amanda on hardware connection design and interfaces to CAEN HV/LV system.
- Held daily meeting on Hall D status and EPICS controls monitoring.
 - * Liquid level on Solenoid N₂ tank was dropping even though it was open to maximum set point. Contamination at valve that reduced flow was suspected. Manually manipulating valve restored N₂ level to nominal.
- Researched and wrote procurements for DSG computers and components for test stations.

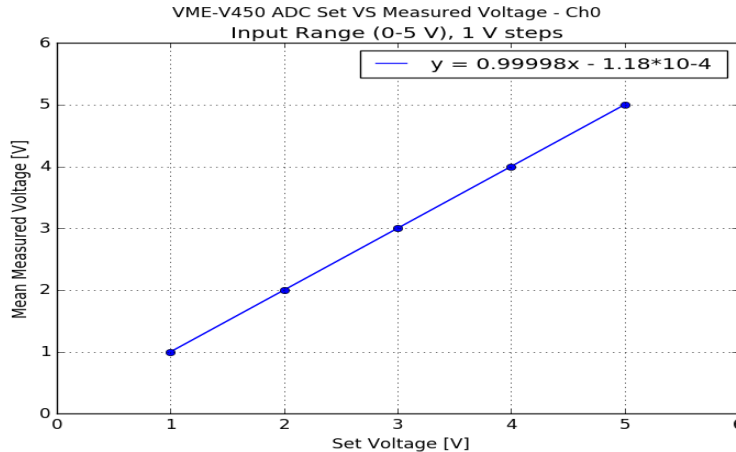
Campero, Pablo

- Analyzed rotation of **RICH** structure, when using gantry crane.
 - * Using Python, plotted relation between gantry angle and angle of rotation of RICH structure, considering initial RICH structure portion at 16° with respect to pivot support.
- Monitored and analyzed logbook entries and EPICs screens daily for Hall D.
 - * On 04/18, LN₂ level in Solenoid magnet was ~44%.
 - * On 04/14, FDC main gas system showed discrepancies in pressure package 1 and 3. Input and output pressures (~70 and 40 Pa, respectively) were different with pressure packages 2 and 4.
- Tested VME-V450 nalog ADC input module.
 - * Used *Krohn-Hite DC Source Calibrator* to inject voltage into VME-V450 module.
 - * Programmed loop in LabVIEW to automatically take 1000 data samples 0–5 V, at 1 V steps.
 - * Calculated mean, error and standard deviation of input data by using python.



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Result of measured voltage with V450 analog input module used in VME test station. Test used 0–5 V input range at 1 V steps

Eng. Brian

- Updated SVT EPICS alarm values for LV current:
<https://logbooks.jlab.org/entry/3470330>
- Planning for Solenoid MPS testing, waiting for Onish & Mark to finish testing before testing; Krister has already started pre-planning work and HBLists are in place .

Gas System

- Deployed new GUI that can be run from any Hall B LabVIEW computer (or cRIO) on Gas Shed cRIO. O:\DSG_02 Hall B\Gas System\GUI\Gas System GUI.vi
- Switched Space Frame cRIO to real-time executable, so far no unexpected issues.
- Requested lower dead-band for Hall B ambient pressure (from 1 inH₂O to 0.1).

LTCC

- Set oil level on over-pressure bubblers on all sectors to ~2" with Marc:
<https://logbooks.jlab.org/entry/3470124>
- Updated EPICS dead-bands for sector flow and pressure. Verified that archiver matches cRIO data that Marc captured (at least from 4/17-4/18).
- Upgraded LabVIEW laptop with more memory and new SSD; performance is much improved.

Hoebel, Amanda

- Discussed information on RICH interlock cables with Pete and Marc.

HDICE

- Wrote note on NMR program.
- Wrote note on CT-Box noise test.
- Wrote report on FDC.
- Monitored EPICS and logbook.
 - * On 04/14/2017, four channels in BCAL showed drift in LED gains.



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Jacobs, George

GAS Systems

- Installed test connection to DC piping for pressure testing.
- Modified procedure for pressure testing DC piping, as requested by DA.
- Updated components in DC P&I diagram.
- Ordered additional components for DC pressure systems compliance and testing.
- Modifying DC solenoid panel and pressure control buffer.
- Requested and received quote on C₄F₈O gas from Praxair.
- Met with RICH DA and DC DA.
- Placed PR369724 to fill 1500 gal liquid Ar dewar.
- Reviewed TGT-202-0000-0000 drawing of RICH gas system by DA.

Leffel, Mindy

- Finished inserting pins in 7/8 connectors on RICH HTSBs.
 - ★ Need to replace temperature sensors on one board; vendor sent wrong part.
- Using forklift, removed LTCC C₄F₁₀ tank from gas shed, weighed, and moved to pad outside of gas shed.

Lemon, Tyler

- Wrote DSG note detailing RICH rotation calculations and analysis results.

Torus

- Reverted LV cRIO code to previous version to remove delay and VISA Clear.
 - ★ Delay and VISA Clear added to LabVIEW program on 2017-04-11 in attempt to fix 325 K Error for LV Chassis Cerenoxes.
 - ★ Delay and VISA Clear had no effect on incorrect 325 K temperature.
- Modified LV cRIO program to use excitations from last correct temperature reading.
 - ★ Removed subVI that runs start-up algorithm for a Cerenox at 325 K.
 - ★ Added code that uses excitations from last correct temperature reading instead of excitation values calculated for 325 K.
 - ★ Added indicators to latch raw data for DAQ loop prior to 325 K Error.
 - ★ Changes will be deployed after next 325 K Error.
- Monitored logbook and EPICS on a daily basis.
 - ★ Noted on 2017-04-18 that welding in Hall D caused false alarm on Target VESDA system.
- Wrote CDC overview talk for DSG weekly meeting.
- Installed MEDM and CSS on Windows PC.
 - ★ MEDM and CSS allows DSG to independently check if a cRIO EPICS server is working correctly.
- Wrote test program in LabVIEW with PVs for a counter and RTD temperature to be read in MEDM and EPICS.



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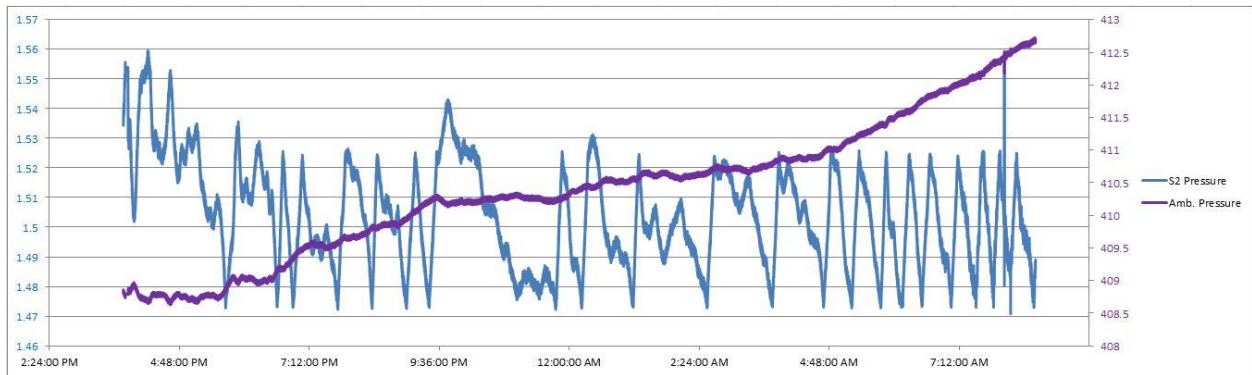
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McMullen, Marc

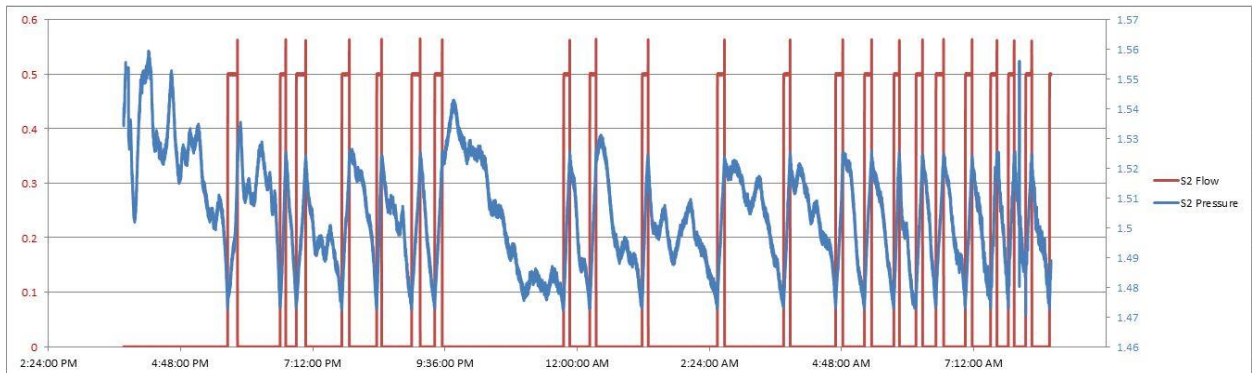
- Continued work on **RICH** gas interface chassis.
 - ★ Assigned channels to analog output connectors with Amanda.
- Repositioned **HTCC** ambient pressure transducer.

LTCC

- Wrote LabVIEW data logger for flows and pressures.
- Increased over-pressure bubblers to 2 IWC with Brian.
- Plotted sector flows and pressures using output from datalogger.



LTCC Sector 2 Differential Pressure vs. Hall B Pressure (IWC) 04/17/2017 to 04/18/2017



LTCC Sector 2 Flow (LPM) vs. Differential Pressure (IWC) on 04/17/2017 to 04/18/2017