

State of Play

Magnets

Solenoid

- First draft of Pre-Cooldown Instrument Checkout Procedure, B000000901-P011 Hall B Cryogenics, completed.

Torus

- Pre-Power-Up Interlock Checklist, P027, for KKP completed.
- Testing low pass filters to reduce noise on the voltage tap outputs.

Gas System (KPP)

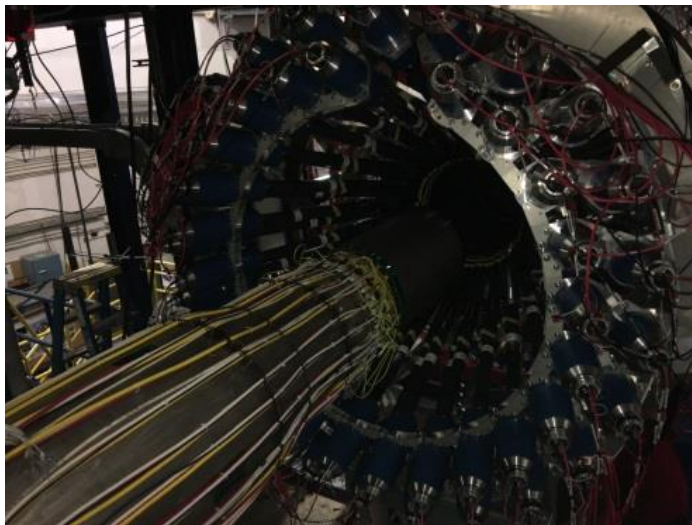
- LTCC: Continuous N₂ purge, @ 500 sccm, currently underway to each sector.
- DC: Ready for purging.
- HTCC: CO₂ purge started.
- SVT: Ready for purging.

HDice

- CAENels CT-Box firmware upgraded V1.040.
- Calibrated CT-Box in NMR program.
- Added -63 dB default setting to FRS program.

SVT

- Detector moved and installed in hall.



RICH

- Mirrors packed for shipment.
- Four crates with structural and assembly equipment received

Detector Support Group Weekly Report, 2017-01-25



Left: Box 1 and Box 2 stored in ESB.



Right: Box 2 and Box 3 stored in EEL125.

- cRio module signal and channels assignments for interlock system reviewed.
- Detector assembly TOSP was returned and will not be signed until winch is load-tested to 125% of working load (RICH detector) and the shoulder bolts have been reviewed by a Master Rigger.
- Anchoring of assembly structure will require completion of a Penetration Permit and must be evaluated by silica controls SME.

Forward Tagger

- Developed LabVIEW subroutines for individual calorimeter and for hodoscope sensor interlock enable/disable.



Detector Support Group

Weekly Report, 2017-01-25

Antonioli, Mary Ann

RICH

- Working with Tyler, packed mirrors for shipment.
- Began Note concerning proposal for interlocks.
- Attempted to connect cRIO to computer (first step of interlock programming).
 - * Computer cannot find cRIO; investigating problem.
- Served on promotions committee for TDs.

Arslan, Sahin

- Assisted with loading and transferring RICH shipment to EEL Bldg.

SVT

- De-cabled and reorganized SVT cabling issues with Mindy.
- Transferred hardware and equipment to insertion cart.
- Helped with moving, rigging, and loading insertion cart and transportation cart.
- Assisted with transfer of monitors and computers to counting house and connections.
- Cabled insertion cart ,SVT patch panel, chiller, and gas lines.

Bonneau, Peter

- Reviewed cRio module signal and channels assignments for RICH interlock system.

HDice

- Upgraded CAENels CT-Box to prototype firmware V1.040.
 - * Solved system reset issues with CT-Box initialization.
 - * Verified base command set on new firmware version.
 - * Started rewriting device drivers to add external triggering option while running in oscilloscope mode.
 - * Need current transducer head from HDice lab for acquisition mode testing.
- Worked with Amanda on debug, test, and documentation of NMR LabVIEW programm.

Magnet Systems

- Worked with Tyler on Torus FPGA-based digital filtering of voltage taps. Bandpass filtering did not significantly improve noise.
- Monitored and analyzed data from Torus cryogenic system status and instrumentation via EPICS, while being re-cooled down in preparation for KPP run.

Forward Tagger

- Hardware Interlock System.
 - * Developed LabVIEW subroutines for individual calorimeter and hodoscope sensor interlock enable/disable.
 - * Start development of remote interface user displays and error checking logic.
 - * Integrated module test program into Hardware Interlock Program.
- Held daily meeting on Hall D status and EPICS controls monitoring.
 - * CDC detector was isolated from gas panel to check system for leaks. No leaks were detected.



Detector Support Group

Weekly Report, 2017-01-25

Campero, Pablo

Solenoid

- Proposed to use short signal names for some PV tags.
 - ★ Wesley Moore modified some proposed PV signals.
 - ★ Dave Kashy will review.
- Troubleshooting I/O minor failures in PLC program.
 - ★ Corrected logic for *Consumed_Tags* routine.
 - ★ Assigned correct tag names in routine to solve issues with communications and sharing variables with Torus PLC.
 - Changed tag names from *TorusConsumed* to *TorusProduced*.
 - Changed tag names from *DBoxConsumed* to *DBoxProduced*.
 - Verified configurations for consumed tags.
- Researched instrumentation for vacuum system.
 - ★ Verified that location for vacuum control panel has been changed to Solenoid Local Rack (sections 3 and 4).
 - ★ Drawings will be modified with last updates.
 - ★ Verified model for vacuum gauges that will be used.
- Wrote B000000901-P011 *Hall B Cryogenics, Pre-Cooldown Instrument Checkout Procedure*.
 - ★ Using magnet documentation write this document, modified and corrected *Distribution Box* instrumentation list.

Torus

- Worked with Tyler to complete 17 needed tasks on P027 Pre-Power-Up Interlock Checklist for KKP.
 - ★ During test *Controlled RampDown* for Cryo, interlock tripped due to low VCL flow and nitrogen overpressure.
 - ★ Uploaded checklist to logbook, entry 3452270.
- Monitored and used EPICs screen during cooldown.
 - ★ Cooldown was carried out in approximately three days.
 - ★ Temperature in coils is ~4.7 K.
- Monitored and analyzed daily logbook entries and EPICs screens for Hall D.
 - ★ Some temperatures in coils 2, 1 and 3 are higher than rest, at TP2 = 90 K, TP5 = 87 K and TP2 = 132 K, respectively.

Eng, Brian

- Verified that gas selection for HTCC works properly after cRIO was moved to 160 subnet and that functionality was added to VI by Marc.

SVT

- Completed de-cabling.
- Installed electronics in insertion cart.
- Prepped cart for move to Hall B.
- Moved computers (ACC for slow controls and Windows machine for cRIO) to Hall B counting house.
- Re-cabled SVT; completed in 1 day!



Detector Support Group

Weekly Report, 2017-01-25

Hoebel, Amanda

HDice

- Calibrated CT-Box in NMR program.
- Added -63 dB default setting to FRS program.
 - * Program automatically sets scan value to -63 dB after scan completion.
- Debugged Oxford Mercury iPS driver.
 - * Activity Controls driver not setting activity correctly.
 - * Problem was incorrect string commands.

RICH

- Transported RICH equipment crates with Tyler and Pablo.
- Updated website photos.

Jacobs, George

GAS Systems

- Completed N₂ supply component spreadsheet for pressure systems folder.
- Completed N₂ supply diagram for pressure systems folder.
- Set up DC gas mixing and supply, performed leak checks, repairs, etc. for KPP.
- Hooked up CO₂ dewar to HTCC gas panel and began purge flow.
- Commenced DC gas purge flow for KPP.
- Started RICH gas system components spreadsheet for pressure systems folder.
- Participated in quarterly safety walk of 96B and target area.

Leffel, Mindy

HDICE

- Returned pump cart to original state.
 - * Removed LTT tags and locks.
 - * Connected plugs.
 - * Installed UPS batteries.

SVT

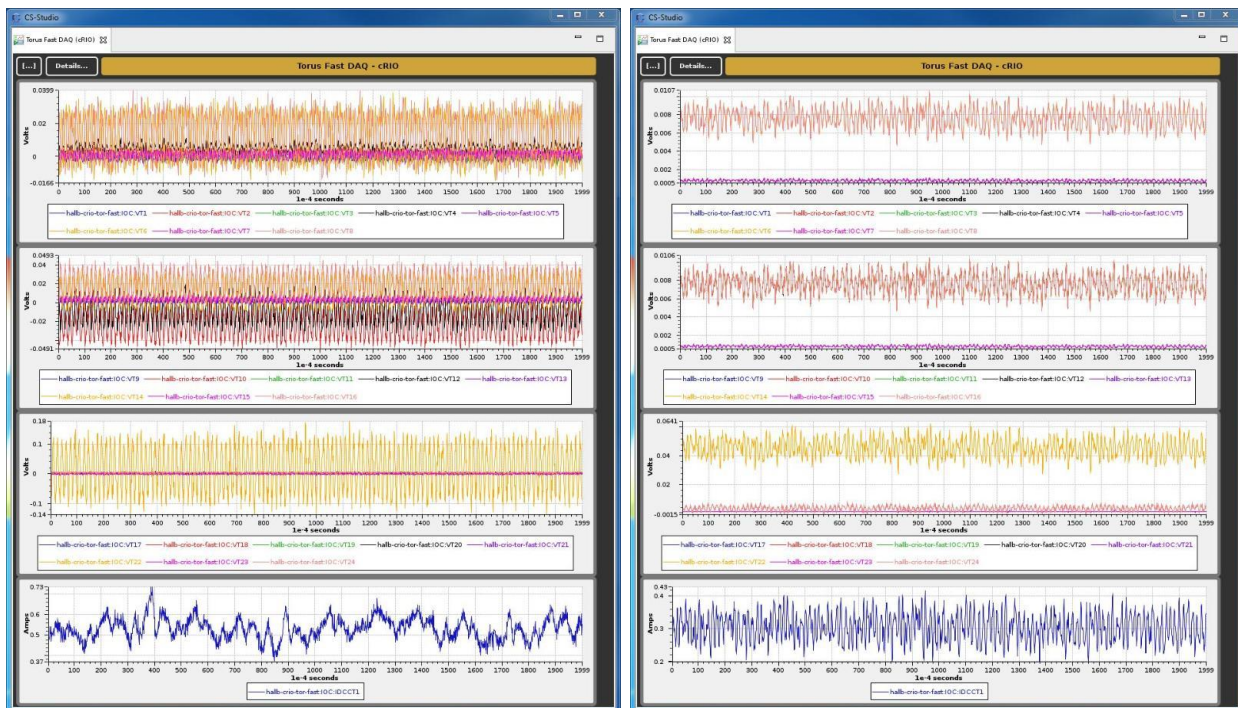
- Contributed to moving SVT and components to hall.
 - * Untangled, labeled, and bundled cables.
 - * Secured components to insertion cart.
 - * Labeled MPod power supplies.
 - * Attached protective panels to SVT transportation box.
 - * Moved computers and hardware to counting house and set up.
 - * Unbundled cables and hooked up to patch panel and MPod power supplies.

Lemon, Tyler

Hall B

Torus

- Completed 17 tasks required for KPP from P027 Pre-power-up Interlock Checklist, with Pablo Campero.
- Tested lowpass filter for Fast-Daq data.
 - ★ Lowpass filter with cutoff frequency at 50 Hz added to Fast-Daq cRIO FPGA code to filter high frequency noise.
 - ★ Successfully filtered noise.
 - Scaled voltage taps showed offset of unknown origin in filtered data (seen in picture below).
 - ★ Filters removed during P027 Interlock Checklist.
 - During comparator checks, voltage taps were not responding to any injected voltage.
 - After redeployment of Fast-Daq program without filtering, voltage taps behaved as expected.



Screen shots of EPICS Live Fast-Daq screen showing before and after addition of lowpass filter. Left: Unfiltered Fast-Daq data. Right: Filtered Fast-Daq data.

RICH

- Packaged mirrors with Mary Ann for shipping to manufacturer.
 - ★ Manufacturer will add support structure to mount mirrors in detector.
 - ★ Waiting on insurance quote to ship mirrors.
- Received assembly structure and detector shell and stored in EEL125 and ESB.
 - ★ Parts arrived in four large crates (Boxes 1–4).



Detector Support Group

Weekly Report, 2017-01-25

- * Box 1 and Box 4 are stored in ESB, Box 2 and Box 3 in EEL125.
- * Repaired top of Box 1 after breakage during relocation in ESB.

Detectors

- Monitored Logbook on daily basis.
 - * Noted CDC and FDC powered on 2017-01-23 and 2017-01-24, respectively.

McMullen, Marc

Gas System

- HTCC
 - * Flowing CO₂ @ 4.5 Lpm during purge.
 - * Completed code modifications for gas selection of either N₂ or CO₂.
- DC
 - * Flowing Ar/CO₂ @ 4.45 Lpm on sector 2 for all regions.
 - * Updated all EPICS PVs in project with Eng. Added KPP mix flows to EPICS.
 - * Started modifying code to calculate CO₂ set points based on Ar flow rates versus Ar flow set points.
 - * Completed operating instructions and posted in Gas Shed.
- LTCC
 - * Flowing N₂ @ 0.5 Lpm per sector.

RICH

- Detector assembly TOSP was returned and will not be signed until winch is load-tested to 125% of working load (RICH detector) and shoulder bolts have been reviewed by a Master Rigger.
- Anchoring of assembly structure will require completion of a Penetration Permit and must be evaluated by silica controls SME.