# DSG Weekly Report – April 1, 2015

## Antonioli, Mary Ann:

### Hall B
- Continued working on flowchart of **HDICE** NMR LabVIEW program.
- Began adding, in Illustrator, control system's wiring for **HDICE** RF chassis.
- Testing **SVT** EPICS interlock software.
    - R1 HFCB temperatures and HV, and R2 HFCB temperatures.
    - The interlocks for the above variables work.

## Arslan, Sahin:

### Hall B
- Delaminating (worked with Anatoly) aluminized coating from **LTCC** Winston Cones.
    - Updated daily LTCC Winston Cone delamination spreadsheet.
    - Working on LTCC mirror alignment and testing Winston Cone with Tina
- Made a complete list of **LTCC** Winston Cones in hand on a excel spread sheet
    - In hand 140, delaminated 50 (shipped to ECI), to be received from ECI 76.
- Preparing test set up for **DC** R1 HV board.

## Bonneau, Peter:

### Hall B
- Conducted bi-weekly **HDICE** Slow Controls status meeting.
    - DSG reviewed each HDICE work request and the status of that request.
        - Out of the three hardware requests, two are waiting for specifications from the HDICE group. The third has parts on order which were researched by DSG.
    - The Mathematica programming requests are on hold until a data file is found by the HDICE group.
    - Regarding the LabVIEW programming requests, four out of seven requests need input from the HDICE team in order to proceed.
        - The modification of the RF box is work in progress by DSG.
        - The current measurement system is on order. The system is needed to start programming for this device.
- Added troubleshooting sequence to **HDICE** NMR program to run without the initialization sequence for the instruments.
- After upgrading the development computer to the Jlab site version of LabVIEW 2014, the Xilinx based FPGA tools needed for **HDICE** LabVIEW based NMR code programming stopped working.
    - Obtained install disk for FPGA tools from the computer center. To install the software, a serial number is required. The computer center is contacting National Instruments on how to install the tools via the Jlab site license. *I guess I'm the only one at the lab who actually uses these features.*
- Worked with Sue Weatherspoon regarding **SVT** Slow Control problems including soft IOC failures and ongoing Slow Controls development.
- Coordinated activities on the assembly and troubleshooting of **SVT** instrumentation.

- – Revising final design for the SVT Safety System
- Contacted Andreas Ruben at Weiner regarding multiple crate disables for the **SVT** safety system to see if it is possible to tie the CRATE_ENABLE signal from multiple crates together to a single relay or do they need to be separated from each other.
- Conducted bench tests, for the **SVT** interlock system, on the crate disable to the Mpod controller.
  - – Once programmed via the USB port, a crate requires 5V @ ~ 5mA to enable the voltage outputs. Additionally, the bench tests revealed that the SVT LV & HV modules do not respond identically to a crate disable event. Both modules respond correctly by ramping down at their programmed rate at the removal of the CRATE_ENABLE signal, However, after the crate disable event, the LV modules automatically reset upon the return of the CRATE_ENABLE signal. The HV module ***do not automatically reset*** and require a hard reset or power cycle to recover. Hard reset from EPICS is needed in order to remote recover the Mpod crate from the counting house.
- Troubleshooting problems encountered while testing along with Mary Ann **SVT** interlocks.
  - – Problems included automatic passive alarm handler. By the startup script, only the cleanroom computer can run an active EPICS alarm handler to avoid multiple active handlers. In addition, soft IOC servers for R2 & R3 were left accidentally in a disabled state by the Accelerator Controls Group.

### Hall D
- Examined the status of the PLC based **Slow Control Systems**.
  - – Problems encountered during the last week included a power outage that lasted ~ 1.5 hours, which affected many systems. After power was restored the alarm handler had ***1,242 active alarms***. Informed Dave about the outage when he came in on Friday. The solenoid came back without problems and was test ramped to 300 A.

## Butler, Dave:

### Hall B
- Worked on PID code for the **Gas System**.

### Hall D
- Worked with Hovanes to improve the **FDC** Chiller Interlock interface between EPICS and the PLC.
- Designed a circuit that will work as a manual override for the **FDC** interlock during chiller start up after a power loss.
- Attended the **FDC** and beam readiness meetings.

## Eng, Brian:

### Hall B
- While debugging low gain issue with the **SVT** modules found :
  - – After removing R2 M14 pulser cable from bundle in EEL/124 and testing in EEL/231 gain was found to be normal, i.e. the cable itself is fine. R2 M05 has a similar issue with lower gain. After removing cable from bundle and reconnecting (but not in the bundle) gain returned to previous value.

- – Current hypothesis as to the lower gain is either the ==*cable ties were overly tight*== compressing the dielectric or the ==*cable was bent to much*== when other modules were installed and cable bundles were moved around.
- Updated **SVT** database (survey of fiducials) for R1 data. *https://www.jlab.org/Hall-B/svt/detector/*
- Tested emergency power off (EPO) functionality on **SVT** UPSs currently installed in EEL/124, as this removes power output outlets this could be used for a crash button.
- Set all **SVT** LV modules in EEL/124 to use the same ramp rate (rise & fall, 1 V/s) and to use internal sense via SNMP commands.
- Started testing **SVT** interlocks for R1-2 software.
  - – Managed to test warning level interlocks on ambient temperature before running into major issues with alarm handler. When testing alarm level interlocks the software performed ==*inconsistently*== and could leave the voltages in a bad state, i.e. it would ramp down LV before HV finished or worse turn back on only HV after turning both voltages off.
- Attended **HDICE** meeting

### Hall D
- Monitored **EPICS** screens

## Jacobs, George:

### Hall B
- Meeting with Marc and David on **DC** gas PID pressure control connections and patch panel for DC gas and HTCC.
- Conducted first **Gas System** training session, Intro to the Hall B GAS Systems, to the Hall B on call crew, attendees - Steve Christo, Doug Tilles, Saptarshi Mandal, Morgan Cook, Todd Ewing, Calvin Mealer, Bob Miller, Denny Insley, and David Anderson.
- **Gas Systems** manpower requirements meeting with Amrit.
  - – Discussed man weeks, skill and physical requirements.
- Decommissioned (dismantled) the regenerative **Gas Systems** gas dryer system in 96B and submitted a facilities work request to excess it.
- Ordered nylon tubing for **LTCC** pressure transducers, HTCC supply, and calorimeter purge lines.

## Leffel, Mindy:

### Hall B
- Completed repair of drain wires on the last 12 **SVT** cable bundles.
  - – 24 cables: 12 Slow Controls and 12 HV.
- Terminated one **SVT** Slow Controls test cable.
- Started gathering supplies for the **SVT** MPOD crate hardware interlock cables.

## Mann, Tina:

### Hall B
- Inventoried **LTCC** Winston Cone.

- Pulled **LTCC** Winston Cones for delamination.
- Training Sahin to calibrate and test **LTCC** Winston Cones.
- Meeting with Amrit on **LTCC** inventory and excel spreadsheets.
- Prepping one SVT Slow Controls test cable.

# McMullen, Marc:

### Hall B
- Worked on modifying the probe station dark box interlock to work in conjunction with the **DC** HV test set up.
  - Added a separate connector, and wired it to one of the poles of the relay which is controlled by the magnetic contacts of the dark box door. Opening the dark box door will affect a controllable AC outlet. This will allow unattended operation of the test station which uses a Class2 supply.
- Researched cost for **DC** gas solenoid connectors.
- Worked on design for **Gas System** PID loop panel in Autocad.
  - The panel will be the central connection point for the instrumentation used to control the gas flow and gas pressure in the DC and the HTCC.
- Completed QA of the final batch of bare **SVT** HFCBs.
  - Shipperd 13 HFCBs for population.
  - Coordinated final payment to HFCB manufacturer.
- Attended **SVT** weekly status meeting.
- Performed safety walk through in the TEDF building with Sahin to verify safe operations during DSG work on the **LTCC** laser alignment testing.

### Hall D
- Attended the **Beam Readiness** meeting.

# Sitnikov, Anatoly:

### Hall B
Delaminated and cleaned 11 **LTCC** Winston Cones.
Delaminated, polished, and cleaned 6 **LTCC** Winston Cones.
Packed 9 **LTCC** cones for shipping.

# Teachey, Robert Werth:

### Hall B
- Completed the first hand drawn draft of the **HDICE** NMR RF Attenuation / Switching Chassis' controls schematic.
- Started the first hand drawn draft of the power schematic.
- Specified and ordered the pins and connectors to complete the **HDICE** NMR RF Attenuation / Switching Chassis, for the production dewar's RF cable identification keys and wiring.
- Specified and ordered the USB to RS-232 / 485 converters for the **HDICE** NMR system. These are required since the NMR Control PC's are being upgraded from Windows XP (not supported by the Computer Center any longer) to Windows 7.

- Specified and ordered Micro-controllers, Oscillators, and RS-232 Drivers for the **HDICE** NMR RF Attenuation / Switching Chassis' LCD Display control.
- Tested **HDICE** NMR RF Attenuation / Switching Chassis' LCD Display characters using the RS-232 port and LabVIEW.
- Started writing drivers for the **HDICE** NMR RF Attenuation / Switching Chassis' LCD Display in LabVIEW.
- Started reorganizing the file structure of the **HDICE** NMR Control program so that all files are located in a common file.
- Located and compiled both **HDICE** NMR Control Program versions (NMR Control 2011 w/o sensors and NMR Control 2011) with the new file structure.