

## DSG-SoLID R&D Meeting Minutes

**Date:** January 28, 2022

**Time:** 11:00 – 12:00

*Attendees: Mary Ann Antoniol, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen, and Amrit Yegneswaran*

### 1. Cable fabrication

*Pablo Campero and Mindy Leffel*

1. Fabricated a total of 152 of 216 cables
  - Updated *Cable Information* spreadsheet with information for all cables that need to be fabricated
  - Completed fabrication of intra-rack cables
  - Remaining cables are 100', connecting instrumentation located on magnet and cryo control reservoir (CCR) to the racks
2. Fabrication of 100' cables
  - Cutting cables, terminating ends that connect to rack, and labeling
  - Requested information to complete termination of ends that connect with magnet and CCR connectors; cables for load cell and strain gauge load sensors will have to be soldered to old cable that is still attached to sensors
    - Most old cable labels are blurry since painter tape was used
    - Will need to check continuity between connector and wires of cut end to re-label cables and connect to rack
    - Checking old drawings to make sense of the few legible labels



Fig.1. Strain gauge load sensor old cables (left picture) and connector already installed on magnet (right picture)

## 2. Rack wiring

*Pablo Campero and Mindy Leffel*

1. Wiring of rack A front 100% completed
2. Wiring of rack A rear 75% completed
3. Wiring of rack B front 99% completed
  - Need to ground signal conditioning modules' breakout boards
4. Wiring of rack B rear 100% completed

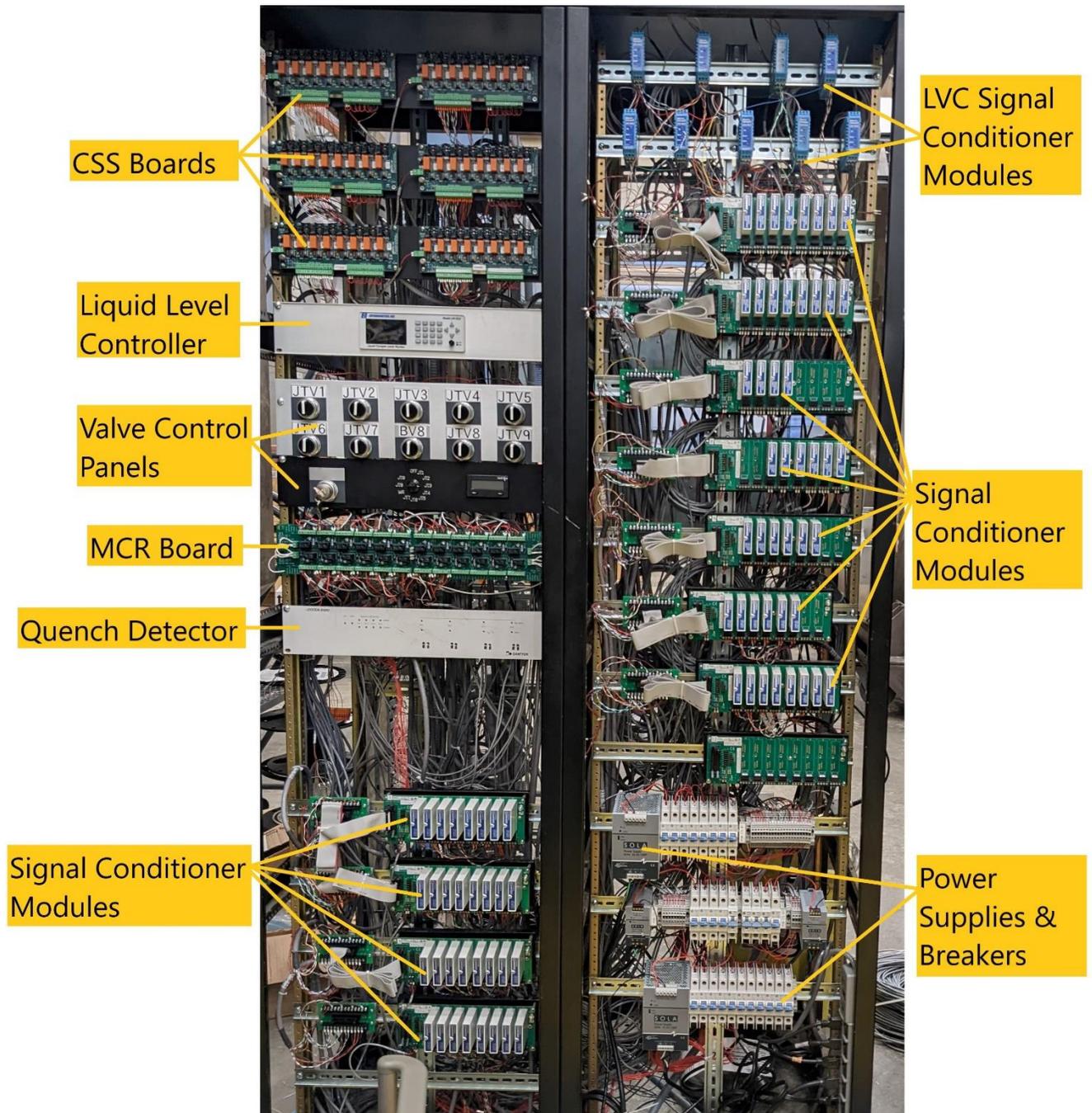


Fig.2. Rack A and Rack B front sides

### 3. Received instrumentation

*Pablo Campero and Mindy Leffel*

1. Ethernet cable (75')
2. 2 A breaker spares

### 4. Rack energization

*Pablo Campero, Mindy Leffel and Steven Lassiter*

1. Powered up Rack A and Rack B
2. Tested 120 V supply to the PLC power supply chassis (x3) and to the communication module power supply located in Rack B
3. Tested 24 and 5 V supply to instrumentation
4. After troubleshooting issues, following items were completed
  - Tightened loose wires on the MCR board and signal conditioning breakout boards
  - Corrected wiring from 10 A breaker to 2 A breaker
  - Added missing wire to 24 VDC power supply
  - Added two cables to power mass flow controllers
  - Fabricated and connected longer jumper wires on the MCR board
  - Added double ferrules for some MCR board connections
  - Tightened two wires on CCS board #2
  - Connected three ribbon cables between signal conditioning backplanes and breakout boards (Still need to connect one more once it is provided)
  - Corrected wiring in valve key switch
  - Connected ControlNet cables between PLC chassis
  - Added ferules for PLC chassis power supplies
5. Re-tested power and worked as expected

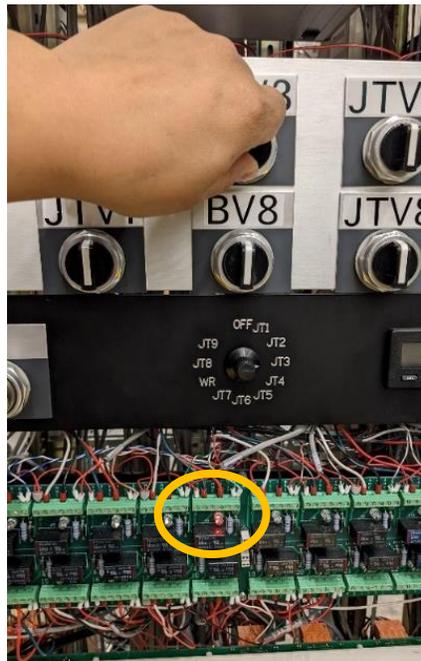


Fig.3. Red LED on the MCR board indicates proper operation of JTV3 in local control mode

6. Resistors connected to mimic temperature sensors
  - Plot of two PT-102 temperature sensors had noise in readout signal; adding filter and grounding to the signal conditioning modules would clean signal



Fig.4. Initial temperature readout

## 5. Rack utilities

*Pablo Campero*

1. Configured Ethernet port located close to the racks to connect PLC to the Hall A dev subnet

## 6. Other topics

1. Request made to DSG that EPICS code be written to archive data of magnet test
2. Magnet will be moved 2 feet closer to the cryo lines
  - Ensured that new location will not affect cables path