

Hall A - SoLID Magnet Control Systems – Meeting Minutes

Date: February 12, 2020

Time: 10:00 – 11:20

Attendees: Aaron Brown, Peter Bonneau, Pablo Campero, Mike Fowler, George Jacobs, Steven Lassiter, Tyler Lemon, and Marc McMullen

1. *Constant Current Source (CCS) board design and assembly status*

- 1.1. Confirmed that there are a breaker and fuse used to for protection of the 24 V supply circuit to feed CCS boards
- 1.2. Same Hall C SHMS, SOLA SDN 10-24 VDC power supply will be used to supply CCS
- 1.3. Marc McMullen presented modifications made in the PCB
 - 1.3.1. Re-designed schematic to operate using a single 24 V input source
 - 1.3.2. Modified the remote/local header circuit
 - 1.3.3. Adding portable fuse (mounted in a socket) to 24 V input power
- 1.4. Changes on CCS board were accepted and are under revision

2. *PLC programming status*

- 2.1. Confirmed redundancy option for SoLID solenoid PLC systems
- 2.2. In preparation to the addition of the (Cryo Can Reservoir) CCR instrumentation control and monitoring, the following was done:
 - 2.2.1. Agreed on the addition *Remote #2* PLC chassis to allocate the instrumentation signals from the CCR
 - 2.2.1.1. So far, added an ADC module and a relay PLC modules
- 2.3. Temperature sensors readout- PLC routines status
 - 2.3.1. Defined the PLC channels to add four temperature sensors (located at the Neck)
 - 2.3.2. To add remote control (24 V enable/disable to temperature sensors), decided to use a 1756-OW16 PLC relay module' channels located at *Remote #2* PLC chassis
 - 2.3.3. One PLC relay channel will control a CCS board (with 8 channels)
- 2.4. Reviewed discrepancies of PLC channels assignment found in I&C spreadsheet

3. *HMI programming status*

- 3.1. Completed *Neck Temperatures* and *Radiation Screen and Coil Shell Temperature* HMI screen, however it was requested some modifications and additions:
 - 3.1.1. Trends for each temperature sensor
 - 3.1.2. Change color of background when the alarms are present
 - 3.1.3. Remove reflection effect from the pictures shown in the screens
- 3.2. Developing radial and axial load cell HMI screens
 - 3.2.1. 3-D and 2-D views for vacuum vessel and axial supports completed
 - 3.2.2. Agreed on the generation of new expert screen to control and monitor thresholds for axial and radial forces.
 - 3.2.3. Suggestions to modify/add to the HMI screen as follows:
 - 3.2.3.1. Add trend for each radial strain gauge and axial load cell sensor
 - 3.2.3.2. Change color of background when the alarms are present
 - 3.2.3.3. Try to fit all radials and axial forces readouts in a single screen

4. Instrumentation status

- 4.1. Re-location of the control rack is pending, need to contact Test Lab building coordinator
- 4.2. For the vacuum instrumentation signals, so far there is only one vacuum gauge that will require to be monitored by the PLC
- 4.3. Steve Lassiter will provide the drawing with the CCR instrumentation' signal names
- 4.4. There will not be external current lead heater controlled by the PLC
 - 4.4.1. Heater will be control and monitored only locally
 - 4.4.2. Potentially, it will be added two temperature sensors to be monitored by PLC and ensure that heaters are working

5. Electrical drawings status

- 5.1. Developing *SoLID Cable Diagram* drawings
 - 5.1.1. DSG requested clarification on I&C spreadsheet
 - 5.1.1.1. Missed/repeated terminal strip and feedthrough labels
 - 5.1.1.2. Missed wire color for strain gauges/voltage taps cables
 - 5.1.2. Since at this time there is no access to the chimney/turret's feedthroughs, all missed feedthrough pin labels can't be assigned
 - 5.1.3. Corrections and checks for the repeated labels will be done
 - 5.1.4. Suggested to put these drawings on hold and start the other ones
- 5.2. Completed first draft for the *SoLID Interconnect System Diagram* drawing