

Solenoid –Review of Cooldown PID spreadsheet and Interlocks

Date: June 2, 2017

Time: 13:30 – 15:00

Attendees: Pablo Campero, Ruben Fair, Dave Kashy, and Wesley Moore,

1. Revised *Solenoid and DBX PID's 5_8_2017a* spreadsheet

- 1.1. Noticed that some signals calculation were added in this spreadsheet version
 - 1.1.1. Calculation for signal HE_CP_CD_DT will be added in the PLC code by Pablo Campero.
- 1.2. Verified and deleted Interlock actions that are not used in this spreadsheet.
- 1.3. Pablo Campero will verify that all PID and Cascading PID control loops presented on the spreadsheet mentioned above matches with the PID loops that already were implemented on the Solenoid PLC program.
 - 1.3.1. Missed PID or Cascading PID loops will be added to the PLC code.
- 1.4. Based on the spreadsheet mentioned above, Wesley Moore will modify the *Cooldown Interlocks* and *Cooldown Parameters* EPICS screens.

2. Discussed *Interlock Thresholds_Solenoid_May_31_2017_v8* spreadsheet.

- 2.1. Dave Kashy noticed that delay time for the VCL flows interlock is low (500 ms).
 - 2.1.1. The delay time threshold needs to be increased to at least 4 [s]
 - 2.1.2. Pablo Campero will investigate this delay time threshold which will be based on the operation of the valve SV8622 described on the *Solenoid Cooldown and Operation Procedure*.
- 2.2. Verified that spreadsheet matches with the updates on the *Solenoid Interlock Status* EPICS screen.
- 2.3. Pablo Campero confirmed that *EPICS Watch Dog Fail* signal is not generating a Controlled Ramp Down in Torus.
 - 2.3.1. Signal is disabled at this moment for Torus and Solenoid magnets.
 - 2.3.2. Agreed that the signal for Solenoid will appear just as warning indicator.
 - 2.3.3. Wesley Moore will change the location of the indicator in the Solenoid and Torus EPICS screens.
 - 2.3.4. To make this signal useful and available; EPICS requires modifications, which includes that EPICS will send heartbeat signal to the PLC.
 - 2.3.5. Implementation of this feature requires further discussion.
- 2.4. Pablo Campero will update the mentioned spreadsheet by adding a new column with the EPICS signal names.

3. Ruben Fair will organize all the spreadsheet related to the Solenoid Interlocks.

- 3.1. Agreed that there will be a single spreadsheet with all interlocks related with the Solenoid Cooldown and Magnet Energization.
- 3.2. The spreadsheet will be storage on the following link:
M:\hallb_eng\CLAS12\Magnets\Solenoid\Controls and Wiring.