Solenoid – Final Review of Interlocks, PID Control Spreadsheet and PLC Program

Date: June 12, 2017
Time: 09:00 – 10:00
Attendees: Pablo Campero, Ruben Fair, Wesley Moore, and Nicholas Sandoval

1. Revised *Solenoid_DBX_PIDs_Interlock Thresholds_EM Forces 06_08_2017*spreadsheet.
    - 1.1. Revised updates on *SST Interlocks* sheet.
        - 1.1.1. Verified change made in the delay threshold for the VCL Flow from 500 ms to 4 s.
        - 1.1.2. Agreed that delay threshold for the VCL Temperatures and Splice Temperature will be increased if required depending on the sample rate used to read back these temperatures.
        - 1.1.3. Columns used to the EPICS indicator Names on the spreadsheet need to be changed to the actual PV EPICS name. Actual columns contain the indicators description.
            - 1.1.3.1. Wesley Moore will do these modifications on the sheet.
    - 1.2. Revised *Var_Calcs and Intloc TH* sheet.
        - 1.2.1. Discussed about the discrepancies pointed out by Pablo Campero on the sheet.
            - 1.2.1.1. Agreed remove 'S' of the signals names that appears on column B row 44, 45 and 46 to match as the PV names agreed to PLC and EPICS.
            - 1.2.1.2. Agreed that names on column B at rows 47, 48 and 48 have to be changed to SHLD4K_DT_MAXSET, SHLD4K_DT_MAXPCT and DT_MAX_PCT respectively.
            - 1.2.1.3. Remaining comments pointed on the sheet, are waiting to be clarified by Dave Kashy.
        - 1.2.2. Verified that position elements for the Cryogenics signals on the PV_Array were added by Pablo Campero.
        - 1.2.3. Verified that all calculation showed in this current sheet matches with the Solenoid and DBX PLC codes.
    - 1.3. Revised *PID Setup and Check off* sheet.
        - 1.3.1. Ruben Fair marked in red all the inconsistencies presented in the names showed in column A of the sheet.
            - 1.3.1.1. Agreed that names have to be consistent; for example use PV8611CD_Max rather than PV8611CD.MAX. So that will match with the header EPICS screens used for the PID loops.
            - 1.3.1.2. Sheet is showing valves 'PV8653' and 'PV86566S', which do not exist. Dave Kashy has to confirm if they just have a typo error.
        - 1.3.2. Checked that all related PID and Cascading PID control loops presented on the sheet mentioned above matches the PID loops implemented on the Solenoid PLC program.
            - 1.3.2.1. Missed Cascading PID loops were added to the Solenoid PLC code.
    - 1.4. Based on the spreadsheet mentioned above, Wesley Moore will modify the *Cooldown Cooldown Parameters* EPICS screens.

2. Agreed modification on for the Solenoid and Torus Interlock Cooldown screens
    - 2.1. Nicholas Sandoval will modified Torus logic in the DBX PLC to have an individual cooldown interlock indicator to display in Torus and Solenoid EPICS screen.
        - 2.1.1. The idea is to be aware of which of the magnets generates the *Cooldown Interlock* when it trips. Since both magnets Open/Close the same supply helium valves PV8563W and PV8563C.

2.2. Agreed the tag names that will be used for individual interlock indicators for Solenoid and Torus will be *PV8563_Permit_Sol* and *PV8563_Permit_Tor* respectively.
2.3. Wesley Moore will add the indicators on the Solenoid and Torus *Interlock Cooldown* screens.