DSG-SoLID PLC Programming Meeting Minutes

Date: March 3, 2021
Time: 10:30 – 12:00

Attendees: Peter Bonneau, Pablo Campero, Brian Eng, George Jacobs, Steven Lassiter, Tyler Lemon, Marc McMullen, and Whit Seay

1. Work on *Cleo* routine (Pablo Campero, Steven Lassiter and Whit Seay)
    1.1. Sheets 9 and 10: Radial support upstream and downstream warnings
        - Radial supports' readings are individually compared to the limits
        - If radial support readout absolute value is greater than the set limit, a warning signal will be generated and displayed on the HMI screen
        - To simplify code in CLEO routine, wrote logic to compare readings with the limits in an Add On Instruction
        - Will add code to check strain gauges and torque on the magnet
    1.2. Sheet 40: Mass flow set calculation
        - Implemented equation to relate helium flow to current in the leads
    1.3. Sheet 41: Current lead valve voltage set
        - Reviewed and changed limit parameters for PID instructions used for current leads, since the limit parameters were for the HMS magnet
        - Removed old comments (HMS code) from current code
        - Wrote comment: *still need to verify specs for mass flow meter*

2. Reviewed HMI screens related to monitoring and control of radial and axial support load sensors (Pablo Campero, Steven Lassiter, and Whit Seay)
    2.1. Modifications requested for *Radial and Axial Support Upstream* and *Radial Support Downstream* screens
        - Remove table showing axial and radial support max, min, and average values
        - Add displays to indicate magnet's total weight, torque, and total stress/strain in the supports
        - Defined alarm color codes for fault conditions for all radial and axial indicators
            - Yellow: sensor interlock disabled
            - Orange : sensor fault (instrumentation fault)
            - Red: sensor readout out of set limits
        - Add text (*disable)* for each radial and axial indicator when its interlock is disabled in the expert screen
    2.2. Reviewed changes made to *Radial and Axial Support – Expert* screen
        - Added warning status indicators
        - Relocated units used for radial indicators
        - Changed labels for headers
        - Verified PLC tags used are correct for the indicators