Hall C Magnets Information and Work Request Meeting

Date: April 30, 2018
Time: 1:30PM – 2:30PM

Attendees: Peter Bonneau, Brian Eng, Pablo Campero, Mike Fowler, Amanda Hoebel, Steve Lassiter, Tyler Lemon, Jack Segal

1. Meeting overview and goal
    a. Hall C is requesting assistance with the magnets for their High Momentum Spectrometer (HMS) and Super High Momentum Spectrometer (SHMS).
    b. Main goal would be to increase number of system experts able to support SHMS/HMS.

2. Steve, Mike and Jack will create list of tasks requiring DSG's assistance and a time line for their completion. Some tasks discussed that may be on list include:
    a. Support during upgrade to Windows 10.
        i. End-of-life for Windows 7 scheduled for ~2 years.
        ii. Upgrading to Windows 10 will require a new version of RSLogix.
        iii. Firmware of PLC will also need to be updated to be able to work with new version of RSLogix.
    b. Addition of alarm handler that automatically notifies experts.
        i. Current system relies on shift-workers noticing alarm on HMI and then calling system expert.

3. Hall C magnets system overview
    a. SHMS and HMS run using identical control systems.
    b. Danfysik power supplies.
    c. Control Logix PLCs.
    d. PLCs programmed using RSLogix version 16.
        i. Comments in code serve as program's documentation.
    e. PLC monitors temperatures, strain gauges, pressure transducers, vacuum gauges, and magnetic field.
    f. PLC controls power supply settings and spectrometer carriage rotation.
    g. Factory Talk HMIs
        i. Only available from Hall C, counting house, and TEDF work station.
        ii. Only one user allowed to access HMIs at a time.
            1. If screen is opened when it is already open by someone else, other user is kicked off.
        iii. Expert version with unique licenses accessible to only system experts.
            1. Expert version has additonal magnet controls.
    h. EPICS used for only archiving, no controls.
        i. Do not want expert controls available to regular users.
    i. Programs in form of ladder logic and function blocks.
    j. PLCs communicate to magnet power supplies via RS-232 with ASCII commands.
    k. Primary quench detection done by hardware quench detection units.
    l. Redundant PLCs used for both HMS and SHMS.
        i. If primary PLC fails, secondary, redundant PLC goes online and takes over.
    m. Test station for development in TEDF.
        i. All hardware and simulation set up in TEDF workspace for development.