

HALL C PLC TASKS REPORT (06/14/2018 – 06/20/2018)

- **HMS and SHMS Dipole field regulation investigated for use of NMR PT2026 in PLC routine.**
 - ★ Found Flex I/O module for HMS in the detector, under the rack on the floor.
 - ★ Specs for Flex I/O adapters and Profibus modules revised.
 - Profibus modules are used to transfer data from serial RS232 to ControlNet in SHMS PLC systems.
 - ★ Commands that are sent to regulation-module RG2024 checked.
 - Commands are used to send and receive data from the NMR and PSU to the PLC.
 - PLC Dipole code sends separate commands to the RG2024 module to perform the field regulation.
 - ★ The implementation of the new routine to perform the Dipole field regulation and NMR PT2026 unit will require modifications in several existent PLC programs and HMI screens.
- **SBC card set up and configured to communicate with NMR PT2026 unit.**
 - ★ Debian Linux installed on SBC.
 - ★ IP address assigned (129.57.195.33) for the Hall C- DEV subnet.
 - ★ VXI implementation was corrupt on NMR unit- bypassed with Python VXI11 driver.
 - NMR can now communicate with SBC.
- **Factory Talk View Studio v10 installed on DSGPLC1 and dsg-hallc-2 PCs to run HMI (.sed) files used for SHMS and HMS.**
 - ★ Incorrect software version used to open HMI files caused error.
 - Error showed “unnamed displays”.
 - ★ SHMS and HMS projects had to be opened in “grace period”, since there is no available license to run more than 25 displays in FactoryTalk View SE.
 - ★ Mike Fowler informed on 6/21/18 the correct version of Factory Talk, version 8.
- **Shutter controls and monitoring discussed with Joe Beaufait.**
 - ★ For SHMS shutter:
 - Fully opened status gives 24V read-back.
 - Installed and fully closed, or uninstalled gives 0V read-back.
 - No way to distinguish between shutter “uninstalled” and shutter “installed and fully closed”.
 - Current wiring only allows remote monitoring/controls via PLC to open shutter or see if shutter is open.
 - ★ Local controls in place for HMS shutter.
 - ★ No actual wiring diagram exists for either shutter.
 - Wiring diagram is “in Joe’s head”.
 - ★ Implementation of shutter installation monitoring would require a wire loop.
 - Existing wire to shutter most likely does not have enough pins to support this wire-loop connection.
- **Hall C 1756-IB16D diagnostic digital input module implemented in DSG’s PLC test station for development of UPS monitoring.**
 - ★ Relay card for small UPS will send a 24V signal to HMS I/O chassis digital input.
 - ★ There are several spare diagnostic digital inputs for relay card output in the SHMS and HMS PLC systems.
 - ★ Also investigating how to use diagnostic input to sense a broken signal wire to potentially use relay as a short between input terminals without 24 V supply.