HALL C PLC TASKS REPORT (11/01/2018 – 11/07/2018)

- Quadrupole current regulation loop PLC code modified
  - ✶ Added function to hold current (Last current read = new set current in the MPS) when operator stops regulation loop.
  - ✶ Modified to PLC routine to ramp down the quadrupoles when interlock is enabled (PSU_Sum_Interlock bit =1).
  - ✶ Added pulse-timer that waits for 100 ms and then transmits trigger pulse to enable the sending of 0 A current value.
    - ▪ This timer ensures that proper value of 0 A will be sent to the MPS only once, if and when an interlock occurs.
  - ✶ Moved "send values" PLC tags to a separate sheet to make sure that values are sent at the end of the routine.
  - ✶ Program tested by using Python code to simulate Danfysik power supply, simulated different scenarios to satisfy the conditions required for this PLC program.
- Writing Python code to keep checking for lock if the NMR PT2026 unit loses its present lock.
  - ✶ Tested code by looking at the HMS Dipole current changes
    - ▪ NMR PT2026 locked when its current was ~1000A, and got a lock back once the current was raised again.
- Five-page Visio flowchart made to show Python code logic for the MPS Danfysik simulator.