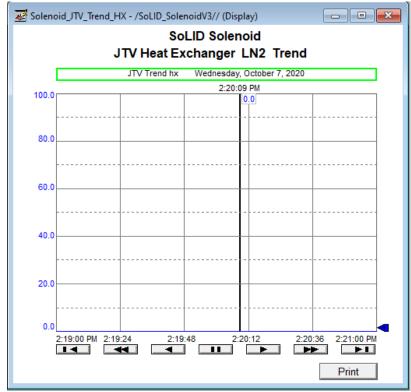# Summary

Hall A – SoLID Magnet Controls
Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng,
Tyler Lemon, Marc McMullen
- Completed modifications of Constant Current Source wiring diagram
  (drawing # A00000-16-03-0211)
- Developed Solenoid JT valve page for heat exchanger screen and Solenoid Electic Ball
  Valve (EBV) page for Warm Return (WR) in CS-Studio.
- Developed three HMI screens for plotting live data for Solenoid EBV WR, Heat
  Exchanger (HX), and JT Valve

Solenoid JTV Trend HX HMI screen showing a live plot of data for the heat exchanger's
liquid nitrogen JT valve. Value shown in plot is zero since LVDT is not currently connected
to the PLC

Hall A – GEM Gas System
Peter Bonneau, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen
- Replaced chip on I^2C multiplexer board
- Updated gas flow chassis fabrication drawings in NX12 to correct the cutout size for
  RJ11 feedthroughs
- Started assembly of flow sensor chassis
- Started development of Python code to read data from flow sensors

Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, George Jacobs, Mindy Leffel, Tyler Lemon

- Completed 14 PMT screens and added them to NPS screen
  - ✶ 194 of 1080 PMT screens completed
- Continued development of NPS Overview CSS-BOY screen
  - ✶ Added new color rule to LED indicators to indicate that the module has crossed the temperature threshold
- Developed test to automate performance and analysis of CAEN channel trip tests
  - ✶ Test will use data logger to record data and then plot/analyze data using Python
- Researched hardware interface needed for the UPS-600 humidity sensor from Ohmic Instruments
  - ✶ Sensor's radiation tolerance: 2 Mrad
  - ✶ Accuracy: +/-2.5% RH
  - ✶ Range: 10% RH – 95% RH
  - ✶ Sensor requires radiation tolerant (or shielded) support circuitry to be close to the sensor
    - ▪ Support circuitry includes a sine wave oscillator, AC to DC converter, and temperature compensation
- Analyzed CAEN voltage and current stability data in Excel
  - ✶ All 32 modules complete for voltage stability data
  - ✶ 20 complete, 12 remaining for current stability data
- Fabricated 40 divider cables
  - ✶ Total of 870 completed so far

HDice

Peter Bonneau, Tyler Lemon

- Attended demonstration of Zurich Instruments Lock-in amplifier boxcar averager
  - ✶ The boxcar averager helps to recover periodic signals that occur at a known frequency that is obscured by noise
  - ✶ The Zurich boxcar averager option is a software option that does not add any extra hardware capabilities to the lock-in amplifier
- Debugged HDF5 file uploading to lock-in amplifier
  - ✶ Used HDFView program to edit a data file created by the lock-in amplifier and was able to upload it to the lock-in amplifier without any issues
  - ✶ Found that if a new data file was created from scratch, Zurich lock-in amplifier could not read the file
    - ▪ Error received stating that there were file permission issues.
  - ✶ It appears that the lock-in amplifier adds some metadata to the data file that is required for it to be able to be uploaded back to the lock-in amplifier