

DSG-NPS R&D Meeting

Date: November 03, 2020

Time: 11:00AM – 12:15PM

Attendees: Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Marc McMullen, and Amrit Yegneswaran

1. CSS screen development status

- 1.1. Mary Ann Antonioli has completed 196 PMT Settings blocks on the main NPS screen
- 1.2. Aaron Brown is revising the *NPS Overview* screen
 - 1.2.1. Each LED will blink if channel has a fault
 - 1.2.2. Each LED is clickable and opens a PMT Status pop-up screen (see appendix)
 - 1.2.3. Label to indicate screen is for the CAEN HV system will be added
 - 1.2.4. “Over Temperature” warning will be relabeled as “Module Over Temperature”
- 1.3. Aaron Brown will continue to research an “OK” button for PMT Settings screen that confirms entries for both voltage and current limit at the same time; currently each entry field has its own confirmation message

2. CAEN testing and data analysis

- 2.1. George Jacobs completed analysis of current stability test data
- 2.2. Discussed making additional DSG-designed SHV Load Box and its cost; SHV connectors cost ~\$800
 - 2.2.1. Marc McMullen is gathering RG59 cables for additional Load Box
 - 2.2.2. Mindy Leffel has already populated a few PCBs with 2 M Ω resistors
- 2.3. George Jacobs completed ramp tests for 16 of 34 modules
- 2.4. Developing Python analysis package for trip test data analysis
 - 2.4.1. Code being rewritten to remove unwanted leading and trailing zeros
- 2.5. Aaron Brown will ask Brad Sawatzky if there is a spare CAEN HV crate to use for testing/debugging of NPS controls and monitoring screens

3. Hardware Interlock System development

- 3.1. Aaron Brown will ask Brad Sawatzky about ordering spare Keysight model 34980A mainframe and model 34921A multiplexer
- 3.2. Discussed detector frame assembly
 - 3.2.1. Presentation given by Carlos Munoz-Camacho at the October 1st NPS Collaborators’ Meeting has been added to the [Readings](#) section of the DSG-NPS Technical Documentation webpage

4. Cable fabrication

- 4.1. Mindy Leffel has fabricated 980 of 1100 HV divider cables

Appendix

NPS Overview Revision

The screenshot displays the NPS Overview interface. On the left is a large grid of red LEDs. A legend to the right of the grid defines the LED colors: green for 'V_set = V_read', red for 'Off', yellow for 'V_set ≠ V_read', orange for 'Trip', and purple for 'Over Temperature'. Below the legend are two buttons: 'TRIP RESTORE' and 'CAEN MODULE TEMPERATURES'. On the right side of the interface, a 'PMT Status pop-up screen' is shown, featuring five green LEDs and two rows of '#####' characters. A blue box labeled 'NPS Overview' is positioned above the legend, and a black arrow points from a small red box in the top-left corner of the LED grid to the PMT Status pop-up screen.

- LED indicator for each channel will blink there is any fault
- Clicking on blinking LED will open this PMT Status pop-up screen
- PMT Status screen displays voltage and current readback
- Also PMT Status screen has 5 LED indicators that will display the colors for whichever fault has occurred