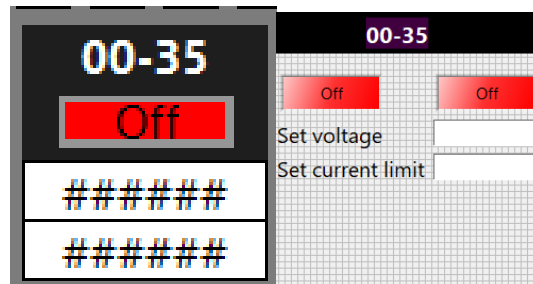# DSG-NPS R&D Meeting

**Date:** October 27, 2020
**Time:** 11:00AM – 12:30PM

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

1. CSS screen development status
    1.1. Mary Ann Antonioli completed 170 PMT Settings blocks on the main NPS screen
        1.1.1. Each block shows for one PMT the location (format: *column # - channel #*), readback voltage, readback current, and a status LED



PMT Setting block on main NPS screen (left) and PMT Settings pop-up screen (right)

    1.1.2. When a block is clicked, a PMT Settings pop-up screen opens for the PMT in that location; screen for that PMT has the location, power and status LEDs, and inputs for voltage and current limits
    1.1.3. The PVs and location are populated in the PMT Settings screen via macros that are defined in the action menu
    1.2. Aaron Brown will continue to research including an "OK" button for PMT Settings screen that confirms entries for both voltage and current limits at the same time; currently each entry field has its own confirmation message
    1.3. Aaron Brown will continue researching possibility of using CSS macros and scripts to programmatically place widgets

2. CAEN PV discussion
    2.1. Reviewed CAEN HV channel PV list and identified all PVs currently being used to generate CSS-BOY screens
        2.1.1. Will go over PV list with Brad Sawatzky during next NPS meeting

3. CAEN testing and data analysis
    3.1. George Jacobs has two modules left to analyze for current stability
    3.2. Spare parts for DSG-designed Radiall 52-to-SHV adapter will be kept in small cleanroom
        3.2.1. Mindy Leffel has everything needed to make a spare adapter, except for extra RG59 cables
    3.3. Discussed fabricating an additional DSG-designed SHV load box and its cost
    3.4. George Jacobs completed 33 of 34 current trip tests
        3.4.1. Module #297 could not be tested because it needs to be repaired
    3.5. Continuing to look for solutions for XY plot time being set to UTC
    3.6. Developing Python analysis package for trip test data analysis

       3.6.1. Code needs to be revised to eliminate extra leading and trailing zero values; at most, only two leading and three trailing zeros will be plotted

4. Hardware Interlock System development
    4.1. Discussed Keysight model 34980A mainframe and model 34921A multiplexer
        4.1.1. Will discuss need for spares at next NPS meeting with Brad Sawatzky and Carlos Munoz-Camacho
    4.2. Discussed the three-meter maximum distance limitation for the two-wire thermocouples from temperature readout system; at larger distances signal-to-noise ratio becomes a problem

5. Cable fabrication
    5.1. Mindy Leffel has fabricated 950 of 1100 HV divider cables