

HDice Controls Meeting Minutes of 3/10/2015

Present: Xiangdong Wei, Peter Bonneau, Dave Butler, Brian Eng, and Werth Teachey.

- Update of research for independent current measurement instrumentation for the HDice SC magnet.
 - Since last meeting, DCCT systems by Danfysik, CAEN, and others were researched.
 - The CAEN system was found to be the best overall system for the HDice application. This system featured a +/- 200 Amp range, 24 bit DAq, < .005% accuracy, built-in temperature compensation, integral power supply, local readback display, and multiple communication interfaces including USB, RS232, and Ethernet for ~ \$4700. The Danfysik system did not have an integrated burden resistor or an ADC and therefore would require additional instrumentation.
 - The CAEN DCCT system specifications and quote is available on the HDice slow controls website at:
https://userweb.jlab.org/~bonneau/HDice/Instrumentation/CAEN_DCCT_System/
The delivery time for the CAEN system is about 12 weeks. **HDice group should procure the system as soon as possible.**
- Two new RS-485 instrumentation communication hubs will be needed since updated device drivers are not available for the current hubs. DSG has placed the specifications and purchase information for new hubs manufactured by National Instruments on the HDice website at
https://userweb.jlab.org/~bonneau/HDice/Instrumentation/Ni_485_Hubs/
HDice group should procure the hubs as soon as possible.
- The status of the Mathematica analysis code effort was discussed. To test the NMR analysis code, an example of a data file is needed. Several CD's from Alexandre Deur were received on 3/10/15. The files received were researched by DSG and the needed data file type was not found. **The reception of the correct file types is essential to continue the Mathematica analysis code effort.**
- A detailed NMR program flow description was presented. This program flow description is essential to determining the strategy for the adding the additional features requested by the HDice group.
- Xiangdong gave an overview of the way to switch from a positive field to a negative field on the magnet. A second power supply will be needed to hold the target polarization as the primary power supply switches from a positive to negative field.
 - For the LabVIEW programming effort, DSG *has to know* the power supply current /field levels needed in order to hold target polarization, desired ramp rates, and sequenced power supply procedures for switching polarity in order to protect the target.
- Next HDice controls meeting will take place Tuesday, March 24th at 9:30 AM in the DSG Control Room (EEL R121C).