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Cryotarget Control Software for Liquid Deuterium¹ DAVID BRAKMAN, GERARD GILFOYLE, University of Richmond, CHRIS CUEVAS, STEVE CHRISTO, Jefferson Lab, CLAS COLLABORATION — One of the experiments in Hall B at Jefferson Lab will measure the neutron elastic magnetic form factor with a 12 GeV electron beam striking a liquid deuterium target (LD2) and measuring the resulting debris in the CEBAF Large Acceptance Spectrometer (CLAS12). A program was created that acts as a control system for the LD2 target. It will monitor the deuterium target and send data to the main control system and the shift workers monitoring the experiment in real time. The data include measurements of pressure, temperature, and liquid level. The system will also control setpoints for temperature, heater power, and other parameters as well as download calibration curves. The program was written in LabVIEW, a graphical programming language noted for readily interfacing with lab equipment. This project has completed two stages so far. Simulated data were generated within LabVIEW and passed to sub-routines that send, log, and display data on a PC. In the second stage, the PC was connected to a data acquisition board, and test signals were read and analyzed to simulate the target sensors.

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