Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

NIFFTE TPC Experiment: Slow Controls NATHAN PICKLE, Abilene Christian University — The Time Projection Chamber (TPC) experiment conducted by the Neutron-Induced Fission Fragment Tracking Experiment (NIFFTE) collaboration will allow for unprecedented precision in observing neutron-induced fission events. Previous fission detectors only registered quantity and magnitude of events; the TPC will be capable of reconstructing a track for each fragment that is detected. Developing a better understanding of fission events will allow for the design of nuclear reactors that are more efficient and produce minimal waste. The slow controls portion of the data acquisition (DAQ) system for this experiment will set and monitor high and low voltages, as well as make measurements of temperature, barometric pressure, humidity, and other factors that might affect experimental results. The Maximum Integration Data Acquisition System (MIDAS) framework software will be used as the basis of the slow controls DAQ system. IOtech DaqScan/2001 hardware will be used with DBK50 and DBK51 modules to monitor voltages, and DBK90 modules to record temperature. Support for other hardware modules may be added in the future. The presented work includes device driver development and DAQ system construction.

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Date submitted: 14 Aug 2009 Electronic form version 1.4