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Motor Controls for the NIFFTE Time Projection Chamber Positioning Stand DANIEL PAMPLIN, NATHAN PICKLE, Abilene Christian University, NIFFTE COLLABORATION — The next generation nuclear power plants will be more efficient and produce smaller amounts of radioactive waste. Design of these new reactors is limited partially by the lack of precise neutron induced fission cross sections at certain incident neutron energies of several isotopes. In order to reduce the uncertainty of the cross sections to less than 1 percent, a Time Projection Chamber (TPC) was built by the Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) collaboration. These improvements in precision will be possible due to the TPC's ability for a full 3-D reconstruction of the fission fragment tracks. The NIFFTE TPC will be installed at Los Alamos National Lab's LANSCE facility. Thin targets will be mounted in the center of the TPC in a pressurized hydrogen gas chamber so that both hemispheres of the reaction will be covered. In this work we will discuss the control of the stepper motors that drive the positioning table of the TPC, which has all of its readout electronics attached, to be lined up with the beam. This includes both the controlling software and its graphical interface to the MIDAS online data acquisition system.

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