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The NIFFTE Time Projection Chamber Gas Handling System Assembly[1] DANA DUKE, California Polytechnic State University, NIFFTE COLLABORATION — The Neutron Induced Fission Fragment Tracking Experiment (NIFFTE) uses a Time Projection Chamber (TPC) to obtain more accurate measurements of the fission cross sections of radioactive isotopes such as Pu-239, U-235, U-238, etc. Past cross section measurements have used various detection methods, but by using current TPC technology, accuracy levels can be improved to sub 1% error. Analysis of TPC data will improve the current understanding of fission dynamics and of the fission process. A summary of time projection chamber operations is given. The NIFFTE TPC is located at the 90L flight path at LANSCE-WNR where targets are bombarded with fast neutrons to induce fission. The resulting fission fragments are tracked using gas ionization within the TPC. Gas Handling system function and assembly is examined and justified. Major system components are discussed.

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