The Detector Support Group designed, developed, and instrumented the gas system [1, 2] and the controls and monitoring system [3] of the Bound Nucleon Structure Experiment’s detector and target gas system.

The Radial Time Projection Chamber (RTPC) and the Drift Monitoring System (DMS) detectors use premixed 20% carbon dioxide and 80% helium. The hardware for the detectors is mounted on lower portion of gas panel A, Fig. 1.

The target (Kapton straw) gas can be either flammable deuterium or hydrogen, or non-flammable helium or nitrogen. Additionally, there is a buffer volume of helium between the target and the RTPC.

The target gas instrumentation, Fig. 2, is installed on two panels — upper part gas panel A and on a separate gas panel B (Fig. 3) located on the gas pad outside Hall B.

The developed gas system has been tested and deployed in Hall B.