

**Abstract Submitted for the Forty-Eighth Annual Meeting  
Division of Plasma Physics  
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Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory     Experiment

**New Valve for Massive Gas Injection in DIII-D,\*** T.C. Jernigan, L.R. Baylor, S.K. Combs, C.R. Foust, *Oak Ridge National Laboratory*, E.M. Hollmann, *University of California-San Diego*, D.A. Humphreys, P.B. Parks, and J.C. Wesley, *General Atomics* – Previous experiments on DIII-D have demonstrated the efficacy of using massive gas injection for disruption mitigation. The new valve has an orifice diameter of 22.3 mm vs 5 mm for the previous valve used from 1998 through 2005. Flows in argon greater than  $2 \times 10^6$  Torr-l/s were measured on a mockup of the injection line. The original valve produced flow of  $\sim 1 \times 10^3$  Torr-l/s when mounted on DIII-D. The new valve is intended to increase the effective risetime of particles delivered to the plasma rather than the total number of particles delivered. It is now on DIII-D undergoing testing under actual tokamak operating conditions to check the opening time in the presence of a magnetic field. Initial experiments of injection into the DIII-D plasma are scheduled for the summer of 2006.

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