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Category Number and Subject: 5.6.2. DIII-D Tokamak

[ ] Theory [X] Experiment

Upgrades for the ECH System on DIII-D,* J. Lohr, M. Cengher, J. Doane, Y.A. Gorelov, C.P. Moeller, D. Ponce, S. Noraky, B.G. Penaflor, *General Atomics*; E. Kolemen, *Princeton Plasma Physics Laboratory* – The gyrotron system for electron cyclotron heating on the DIII-D tokamak is being upgraded with the addition of higher efficiency gyrotrons having collector potential depression. Two new gyrotrons, operating at the present frequency of 110 GHz and generating 1.2 MW per unit, have been manufactured and are being installed and tested. The subsequent group of gyrotrons have been designed to generate 1.5 MW for 10 s pulses at 117.5 GHz. The first of these tubes is presently being manufactured at Communications and Power Industries. By the end of 2013, the system will comprise eight high power gyrotrons and, pending the successful performance of the 1.5 MW tube, an upgrade to a 15 MW system will begin. High voltage power supplies, transmission lines, launchers and associated control and data acquisition systems are included in the upgrades as is enhanced ability to steer the rf beams under a variety of pre-programed and reactive scenarios.

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