

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

**Long-Term Operating Experience with High-Power Gyrotron Oscillators** KEVIN FELCH, MONICA BLANK, PHILIPP BORCHARD, PATRICK CAHALAN, STEVE CAUFFMAN, TAK SAM CHU, HOWARD JORY, Communications and Power Industries — High-power, megawatt-class gyrotron oscillators have now been used in electron cyclotron heating (ECH) experiments for several years. The long periods of sustained operation have provided important information about the design limits that had initially been placed on the key elements of the gyrotron. In particular, observations made on recent 110 GHz, 1 MW gyrotrons used in ECH experiments on DIII-D at General Atomics indicate that several of the important components of the device, including the electron guns, interaction cavities and diamond output windows, have performed quite well, while analyses of the electron beam collectors on some of the devices indicate that design limits have often been exceeded. Observations made on these gyrotrons will be summarized and plans to address problem areas will be discussed.

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Date submitted: 22 Jul 2005

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