Three-Dimensional Equilibrium Reconstruction: V3FIT J.D. HANSON, S.F. KNOWLTON, Auburn University, S.P. HIRSHMAN, E.A. LAZARUS, Oak Ridge National Laboratory, L. LAO, General Atomics — Equilibrium Reconstruction (ER) is an inverse problem, where the signals from experimental diagnostics are used to determine the parameters (current profile, pressure profile) which specify an MHD equilibrium. The V3FIT code is a tightly coupled ER code that uses VMEC (a three-dimensional MHD equilibrium code) to solve the forward problem. Results of a careful comparison with the axisymmetric ER code EFIT will be presented. We will also show results of reconstructions of the CTH toroidal hybrid experiment at Auburn University.