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Progress in NCSX Construction[1] G.H. NEILSON, J.H. CHRZANOWSKI, P.J. HEITZENROEDER, M. KALISH, PPPL, J.F. LYON, B.E. NELSON, ORNL, M.E. VIOLA, M.C. ZARNSTORFF, PPPL — The National Compact Stellarator Experiment (NCSX) is being constructed at the Princeton Plasma Physics Laboratory (PPPL) in partnership with the Oak Ridge National Laboratory (ORNL). The NCSX has major radius 1.4 m, aspect ratio 4.4, 3 field periods, and a quasi-axisymmetric magnetic field. The device will provide the 3D plasma configuration flexibility and the heating and diagnostic access needed to study compact stellarator physics. The components have complex geometries and tight tolerances, but the most challenging ones are nearing completion. The vacuum vessel was completed in 2006. Delivery of the 18 modular coil winding forms was completed in 2007 and at least twelve modular coils have been fabricated, satisfying the ± 0.5 mm tolerance requirement on the current center position. The toroidal field coils are in production. Installation of tubing and diagnostic loops on the vessel is nearly complete. Preparations for assembly of modular coil subassemblies began in 2007. Plans for completing NCSX construction, including an updated schedule, will be presented.

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