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Development

Theory     Experiment

**Fusion Development Facility Machine Design Aspects,\*** J.P. Smith, V.S. Chan, A.M. Garofalo, R.D. Stambaugh, and C.P.C. Wong, *General Atomics* –To fill the gap prior to building a fusion demonstration power plant (DEMO), a Fusion Development Facility (FDF) is proposed. As currently configured, FDF is a copper, water-cooled coil machine capable of running continuously for several weeks with the goal to test several blanket configurations in its lifetime. To accommodate multiple changes in blankets, a machine configuration must be chosen that allows for the efficient remote exchange. The TF coil configuration drives the primary maintenance approach decision. A TF coil with joints similar to DIII-D and Alcator C-Mod, allows for one maintenance approach while a continuously wound TF coil drives a different approach. The base machine design parameters are described. The different machine configuration options are presented which consider the design aspects for the machine including alignment of the first wall and divertor, coolant access, and exchange of the blanket.

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