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Status and plans for the PFRC-2 device[1] SAMUEL COHEN, PPPL, B. ALESSIO, Princeton University, B. BERLINGER, C. BRUNKHORST, PPPL, C. SWANSON, PSS, C. ARENS, Princeton University, E.A. EVANS, PPPL, G. GONZALEZ JUSINO, U. Puerto Rico, J. COHEN, NC State U., K. TORRENS, Princeton University, P. JANDOVITZ, S. VINOTH, PPPL, N. CANNON, Cal State U., Long Beach — The PFRC-2 is magnetized, steady-state, RF-heated plasma device on which research is performed to develop small, clean fusion reactors suitable for mobile power plants or propulsion of spacecraft throughout the solar system. With a duty of factor near 1%, the PFRC-2 forms high-beta plasmas of up to 300 ms duration and radius to 8 cm with line-average electron density exceeding 5e12/cc and a minority electron temperature exceeding 600 eV. Up to 70 kW of RF heating power at 6 MHz has been applied using the RMF_o method. The present maximum vacuum magnetic field is 300 G. Plans for the next year focus on ion heating to an average energy of 600 eV at a peak density of 1e13/cc. To achieve this, the vacuum magnetic field will be increased to in excess of 600 G, the RMF frequency reduced to below 2 MHz, and the RMF power increased to 200 kW corresponding to B_RMF = 15 G. At these parameters stochastic ion heating is predicted.

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