

Abstract Submitted  
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**Overview of the C-2W Field-Reversed Configuration Experimental Program** H. GOTA, A. SMIRNOV, M. BINDERBAUER, T. TAJIMA, S. PUTVINSKI, M. TUSZEWSKI, R. MAGEE, T. ROCHE, E. TRASK, P. YUSHMANOV, THE TAE TEAM, TAE Technologies, Inc. — TAE Technologies, Inc. (TAE) is a privately-funded company pursuing an alternative approach to magnetic confinement fusion, which relies on field-reversed configuration (FRC) plasmas composed of mostly energetic and well-confined particles via neutral-beam injection (NBI). TAE’s current experimental device, C-2W (also called “Norman”) [1], is the world’s largest compact-toroid device which has the following key features: linear and axisymmetric configuration; NBI with high injection power (up to 20 MW) and intra-discharge variable energy (15–40 keV) functionality; flexible edge-biasing systems in divertors; external magnetic field fast control capabilities, such as ramp-up, and active feedback control of the FRC plasma. In C-2W, record breaking, advanced beam-driven FRC plasmas dominated by fast particles are produced, achieving total plasma temperature of  $>3$  keV and sustained in steady state up to 30 ms that is only limited by energy storage. Dedicated experimental campaigns have been conducted to further optimize and also characterize FRC plasmas. This paper will review the highlights of the C-2W experimental program and newly obtained experimental results.

[1] H. Gota *et al.*, Nucl. Fusion **59**, 112009 (2019).

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