

Abstract Submitted  
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**Electrode biasing system in C-2W** VLADIMIR SOKOLOV, SERGEY KOREPANOV, PETER YUSHMANOV, SERGEI PUTVINSKI, THE TAE TEAM, Tri Alpha Energy, Inc., TAE TEAM — In TAE Technologies current experimental device, C-2W (also called Norman) [1], record breaking, advanced beam-driven field reversed configuration (FRC) plasmas [2] are produced and sustained in steady state utilizing variable energy neutral beams (15 - 40 keV, total power up to 20 MW), advanced divertors, end bias electrodes, and an active plasma control system. The end bias electrode system provides stabilization and heating of the high-beta axisymmetric plasmas by inducing azimuthal plasma rotation via the application of radial electric fields [3]. The bias electrodes and limiters are designed for high voltage operation and were tested for up to 15 kV in vacuum. The bias voltage of -2 kV (on the device axis) with the total current through the electrodes of 5-7 kA were proven sufficient for stabilization of the C-2W plasmas. The details of the electrode-biasing system, protection and measurement circuits, as well as experimental results will be presented.

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

[2] M.W. Binderbauer *et al.*, AIP Conf. Proc. **1721**, 030003 (2016).

[3] A.D. Beklemishev *et al.*, Fusion Sci.Technol. **57**, N4, 351 (2010).

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