

Abstract Submitted  
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**Status of the design of the Diagnostic Residual Gas Analyzer System for ITER first plasma**<sup>1</sup> T.M. BIEWER, C.C. KLEPPER, B. DEVAN, V. GRAVES, C. MARCUS, T. YOUNKIN, Oak Ridge National Laboratory, Oak Ridge, TN, USA, P. ANDREW, ITER International Organization, Vinon-sur-Verdon, France, D.W. JOHNSON, Princeton Plasma Physics Laboratory, Princeton, NJ, USA — Among the ITER procurements awarded to the US ITER Domestic Agency, and subsequently to the ORNL Fusion & Materials for Nuclear Systems Division, is the design and fabrication of the Diagnostic Residual Gas Analyzer (DRGA) system. The DRGA system reached the Preliminary Design Review (PDR) in Spring 2013, and has transitioned into the Final Design phase. As a result of the PDR, and ITER systems design evolutions, several design changes have been incorporated into the DRGA system. The design effort has focused on the vacuum and mechanical interface of the DRGA gas sampling tube with the ITER vacuum vessel and cryostat. Moreover, R&D tasks to demonstrate the 3-sensor instrumentation design (quadrupole mass spectrometer, ion-trap mass spectrometer, and optical Penning gauge) are maturing through the construction and testing of a DRGA prototype at ORNL. Results will be presented at this poster along with the DRGA design overview.

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