

**Abstract Submitted for the 54th Annual Meeting
Division of Plasma Physics
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Category Number and Subject: 6.1.2 Plasma Facing Components

☐ Theory ☒ Experiment

Survey and Cleaning of Metal Contamination in Graphite Plasma-Facing Tiles in DIII-D,* C.P. Chrobak, F. Chamberlain, R.L. Lee, K.L. Holtrop, P.L. Taylor, G.L. Jackson, D. Wall, *General Atomics*; D.A. Buchenauer, B.E. Mills, *Sandia National Laboratories* – During the DIII-D FY11 and FY12 campaigns, relatively high levels of high-Z metallic core plasma impurities impeded high performance plasma operation. Observations made during a vessel entry revealed potential sources of the increased metals, including: copper and Inconel splatter from a probe head damaged by runaway electrons, partial melting of a neutral beam molybdenum shield plate, and exposed metals on the Fast Wave antenna Faraday shields. Portable beta-backscattering and x-ray fluorescence diagnostics were used to map the areal density of metals deposited on the graphite plasma-facing tiles around the vessel. Tile surfaces with deposits exceeding 7×10^{16} metal atoms/cm² were sanded in place or grit blasted outside of the vessel to remove impurities. The distribution of metals before and after resurfacing and the effectiveness of the tile resurfacing techniques on subsequent plasmas will be presented.

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