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Thermo-Oxidation Experiments in the DIII-D Tokamak,*

C. Chrobak, P.L. Taylor, N.H. Brooks, G.L. Jackson, D. Wall, *GA*; E.A. Unterberg, *ORNL*; B. Fitzpatrick, J. Davis, A.A. Haasz, A.G. McLean, P.C. Stangeby, C. Tsui, *U Toronto*; K.R. Umstadter, *UCSD*; S.L. Allen, *LLNL*; W.R. Wampler, *SNL* — To evaluate the effectiveness of removing carbon co-deposits and trapped deuterium from tokamak surfaces by thermo-oxidation and to demonstrate the recovery of high performance plasmas, two independent thermo-oxidations of the DIII-D tokamak were performed. Graphite tiles containing ^{13}C rich co-deposits and various witness samples were installed on passively heated, flange-mounted platforms for the first exposure. Plasma operations were recovered and followed by a series of ^{13}C -seeded plasma shots. A second thermo-oxidation was performed, followed by a removal of select wall and divertor tiles. Results show a decrease in co-deposited ^{13}C and D content on precharacterized tiles, and a temperature dependent uptake of D on stainless steel witness samples. Preliminary results, as well as operational and experimental details of the thermo-oxidation exposures are presented.

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