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Experimental Investigation of ITER Startup and Rampdown Scenarios in the DIII-D Tokamak[1] G.L. JACKSON, A.W. HYATT, J.R. FERRON, T.C. LUCE, D.A. HUMPHREYS, T.W. PETRIE, General Atomics, T.A. CASPER, Lawrence Livermore National Laboratory — ITER scenario studies have focused on the current flattop phase, but reaching current flattop and successful discharge termination (i.e. a "soft landing") must also be considered. Experiments in DIII-D have simulated ITER discharges including low inductive electric field ($E_\phi \leq 0.3\,\mathrm{V/m}$), startup limiting on the low field side (LFS), and ℓ_i control mostly for vertical stability control. ITER-like LFS startup has been achieved in two scenarios: constant q_{95} (small bore) and a larger volume diverting earlier in time to reduce heat flux to the outer wall (large bore). With a large bore startup, both hybrid and ITER baseline H-mode discharges have been obtained during the flattop phase. We will present the effects of variations in density, auxiliary power, and current ramp rate on ℓ_i. Low voltage startup, $V_{loop} \geq 2.2\,\mathrm{V}$ (0.21 V/m) with EC assist will be discussed and initial results simulating the ITER rampdown phase will also be presented.

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