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**Increasing the Fusion Gain in DIII-D**<sup>1</sup> E.A. LAZARUS, *Oak Ridge National Laboratory*, G.A. NAVRATIL, *Columbia University*, E.J. STRAIT, C.M. GREENFIELD, THE DIII-D TEAM, *General Atomics*, B.W. RICE, *Lawrence Livermore National Laboratory* — The performance of DIII-D tokamak discharges has been extended. In discharges where an NCS target is formed, the pressure is broadened to avoid pressure-driven global external kink limit. This pressure profile control is exercised by selecting the timing of an L–H transition. This transition results in an evolution of the pressure profile form,  $p_0/\langle p \rangle$ , from 5 to 2.5, allowing a doubling of  $\beta^*$ , resulting in neutron rates up to  $2.4 \times 10^{16}/\text{s}$ . We consistently observe that plasmas which maintain significant shear reversal collapse at lower values of  $\beta^*$  than those which have an essentially flat  $q$ -profile. Comparisons to stability calculations will be presented.

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☒ Prefer Oral Session  
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