

Abstract Submitted  
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**Overview of NSTX Liquid Lithium Divertor Performance and Divertor Upgrade Plans\*** H.W. KUGEL, M.G. BELL, R. BELL, S. GERHARDT, M.A. JAWORSKI, R. KAITA, J. KALLMAN, B. LEBLANC, D. MANSFIELD, D. MUELLER, S. PAUL, A.L. ROQUEMORE, F. SCOTTI, C.H. SKINNER, J. TIMBERLAKE, L.E. ZAKHAROV, PPPL, J.P. ALLAIN, C. TAYLOR, B. HEIM, Purdue, R. MAINGI, ORNL, R. NYGREN, SNL, R. RAMAN, UWa, S. SABBAGH, Columbia, V. SOUKHANOVSKII, LLNL — NSTX is investigating a Liquid Lithium Divertor (LLD) consisting of four plates forming an annulus 20 cm wide in the outer lower divertor. To contain the Li, the plasma facing surface of the plates was plasma-sprayed with a 0.18 mm layer of semi-porous Mo. Reproducible, ELM-free, H-mode discharges were obtained with the OSP varied from well inside to directly on the LLD. All these exhibited higher energy confinement times, and reduced flux consumption early in the discharge relative to pre-lithium conditions. However, initially little pumping difference was apparent compared to solid Li coatings applied over the same region prior to installation of LLD. Planned upgrades include a fill system to transport liquid lithium directly to each LLD plate, and replacing the graphite plasma facing surfaces of the inner divertor with Mo. \*Work supported by USDOE Contract DE- AC02-09CH11466.

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