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Measurements of radiated power during LiTER operation in NSTX[1] STEPHEN PAUL, Princeton Plasma Physics Laboratory, NSTX RESEARCH TEAM — Lithium vapor was injected into the NSTX vacuum vessel by heating lithium in a stainless steel oven that was placed in close proximity to the plasma facing components during the 2007 experimental campaign. Low-Z coating experiments using carbonization, boronzation, an lithium pellets have been used for many years to improve confinement and performance. Time-resolved radiated power profiles of the total plasma radiation in the mid-plane was measured using a 16-channel tangential bolometer. Results showed that confinement was appreciably affected during the runs with lithium deposition. Generally, ELM's were either reduced or eliminated for hundreds of milliseconds, and the density profiles were peaked, rather than flat as in typical H-mode plasmas. The metallic impurity profiles tended to be highly peaked as well, often accompanied by strong impurity accumulation in the center of the plasma. In the more severe cases, the volume-integrated radiated power would exceed 50% of the total input power and the estimated concentration of metals on axis (modeled using iron as the representative impurity) reached 0.2% of the electron density.

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