

Abstract Submitted
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Evaluation of the High Power Performance of the Upgraded NSTX HHFW Antenna¹ P.M. RYAN, A. MCLEAN, ORNL, J.C. HOSEA, B.P. LEBLANC, R.J. PERKINS, G. TAYLOR, J.R. WILSON, PPPL, R.I. PINSKER, GA, AND THE NSTX TEAM — The end-grounded straps of the NSTX HHFW antenna array were replaced in 2009 with center-grounded straps to reduce the interior voltages and electric fields in the plasma/Faraday shield region. After accumulated lithium deposits were removed from the antenna surface by plasma conditioning, reliable HHFW power was increased to 3-4 MW from the 2-3 MW levels of 2008. However, in 2010 reliable operation was limited to less than 2 MW, primarily due to changes in the antenna environment associated with the Liquid Li Divertor. The antennas have been cleaned of Li coatings and Li_2CO_3 dust in preparation for the 2011 campaign. The HHFW system will be operated early in the campaign to minimize the effects of Li accumulation in ascertaining the efficacy of reducing internal fields to increase reliability. A visible light camera covering the complete array will observe Li ablation from the powered antenna, and a newly installed IR camera covering ~40% of the array will monitor localized hot spot formation.

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