**Progress in the BNL Program for a RHIC EBIS***, J. ALESSI, E. BEEBE, A. HERSHCOVITCH, A. KPONOU, K. PRELEC, BNL - The objective of the program is to develop a compact preinjector, based on a high charge state, heavy ion source and state-of-the-art linac technology, to serve as a cost-effective alternative to the BNL Tandem. By the time of RHIC commissioning we expect to have demonstrated operation of the BNL test EBIS at a yield of about 25% of the RHIC requirements which will serve to design the final RHIC device. This paper will report on the studies done since the initial operation of the test EBIS in 1994. A modified electron gun of the source has delivered a low loss, dc electron beam of 350 mA and a low duty factor beam above 0.6 A; the near future objective is to raise the electron beam current to the level of 1 A, which is at least twice the current of any operating EBIS. Charge spectra of several ion species have been measured; for nitrogen we were able to obtain up to 75% of ions in the fully stripped state, while for argon the peak was in the charge state $14^+$. The heaviest species was thallium, with the peak in the state $41^+$. We shall report measurements of charge spectra and abundancies for several ion species, including thallium and possibly uranium.

* Work performed under the auspices of the U.S. Dept. of Energy.