Abstract Submitted
for the DNP10 Meeting of
The American Physical Society

Implanted ^{3}He Targets for Inverse Reaction Studies with Radioactive Ion Beams J.L. WHEELER, R.L. KOZUB, S.A. GRAVES, D.J. SISSOM, Tenn. Tech. Univ., D.W. STRACENER, D.W. BARDAYAN, ORNL, C. JOST, Mainz/ORAU, P.D. O'MALLEY, Rutgers Univ. — Proton transfer reactions, such as (^{3}He,d), are extremely important for measuring the properties of single particle states and resonances. Many such resonances are important in the rp process of explosive nucleosynthesis, but cannot be measured via resonance scattering directly. For the (^{3}He,d) reaction, it is necessary to use localized ^{3}He targets, and gas jet targets are expensive and difficult to construct. An alternative approach is to implant ^{3}He into thin aluminum foils. We are continuing our project[1,2] of implanting ^{3}He into 0.65 μm thick aluminum foils at the Holifield Radioactive Ion Beam Facility at ORNL. Target profiles are analyzed using Rutherford backscattering to determine the concentration and distribution of the implanted ^{3}He. An update of these results and a detailed description of the procedures will be presented. This research is supported by the U.S. Department of Energy.

[1]D.J. Sissom *et al.* http://meetings.aps.org/link/BAPS.2008.DNP.DA.92
[2]J.L. Wheeler *et al.* http://meetings.aps.org/link/BAPS.2009.HAW.GB.133

Raymond Kozub
Tennessee Technological Univ.

Date submitted: 27 Jul 2010 Electronic form version 1.4