Mo-99 2016 TOPICAL MEETING ON
MOLYBDENUM-99 TECHNOLOGICAL DEVELOPMENT

SEPTEMBER 11-14, 2016
THE RITZ-CARLTON
ST. LOUIS, MISSOURI

^{100}Mo to ^{99}Mo Production Target Design and Testing Updates

K. A. Woloshun, E. Olivas and G. Dale
AOT Division
Los Alamos National Laboratory
PO Box 1663, MS H856, Los Alamos, NM 87545 – USA LA-UR-16-25814

ABSTRACT

The Northstar Medical Technologies ^{99}Mo production scheme utilizes a 42 MeV electron beam on a ^{100}Mo target comprised of a stack of thin disks cooled with helium through narrow gaps between the disks. With 2.86 mA beam current on each end of the target, the total heat load is 154 kW (64% of the beam power) and the peak heat flux is nearly 1500 W/cm^2. Design, analysis and testing to optimize performance have been ongoing. New work reported herein includes test results on a target comprised in part with disks made by the pressed powder process at ORNL. A new, larger capacity (400 g/s) blower has been installed and operated at LANL. Performance results during 2 tests of 1000 hr duration are reported. The design of a resistively heated target for testing with the new blower will be reported, as well as the design of a 29 mm target for testing at ANL.