

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Total absorption spectroscopy of $N = 51$ nucleus ^{85}Se K.C. GOETZ, UTK-CIRE, R.K. GRZYWACZ, UTK/ORNL, K.P. RYKACZEWSKI, ORNL, M. KARNY, ORNL/ORAU/UW, A. FIALKOWSKA, UTK/UW, M. WOLINSKA-CICHOCKA, ORNL/UW, B.C. RASCO, E.F. ZGANJAR, LSU, J.W. JOHNSON, C.J. GROSS, ORNL — An experimental campaign utilizing the Modular Total Absorption Spectrometer (MTAS) was conducted at the HRIBF facility in January of 2012. The campaign studied 22 isotopes, many of which were identified as the highest priority for decay heat analysis during a nuclear fuel cycle, see the report by the OECD-IAEA Nuclear Energy Agency in 2007 [1]. The case of ^{85}Se will be discussed. ^{85}Se is a $Z=34$, $N=51$ nucleus with the valence neutron located in the positive parity sd single particle state. Therefore, its decay properties are determined by interplay between first forbidden decays of the valence neutron and Gamow-Teller decay of a ^{78}Ni core. Analysis of the data obtained during the January 2012 run indicates a significant increase of the beta strength function when compared with previous measurements, see ref [2].

[1] OECD-IAEA, NEA No 6284, vol. 25, ISBN 978-92-64-99034-0, 2007.

[2] Zendel et al, J. inorg, nucl. Chem. Vol.42, pp. 1387-1395 Pergamon Press Ltd., 1980.

Kathleen Goetz
UTK-CIRE

Date submitted: 24 Jun 2014

Electronic form version 1.4