Abstract Submitted
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Modular Total Absorption Spectrometer (MTAS) for decay heat studies of fission products[1] MARZENA WOLINSKA-CICHOCKA, ORAU - ORNL, KRZYSZTOF RYKACZEWSKI, ORNL, ROBERT GRZYWACZ, University of Tennessee, MAREK KARNY, ORAU - ORNL, ALEKSANDRA KUZNIAK, University of Warsaw, BERTIS RASCO, STYS, MTAS COLLABORATION — First tests of new Modular Total Absorption Spectrometer (MTAS) will be presented. MTAS is under construction at the Holifield Radioactive Ion Beam Facility (HRIBF) at Oak Ridge National Laboratory. The delivery of first modules is expected in July 2010. The detector array consists of 19 NaI (Tl) hexagonal shape blocks, each one 21 inches long and 8 inches maximum diameter. The housing of the individual modules is kept at the minimum (0.8 mm carbon fiber) to reduce γ-absorption effects. The photo-peak efficiency is expected to reach nearly 90% around 300 keV and over 75% for a 5 MeV single γ-transition [1]. The total absorption gamma spectra measured with MTAS will be used to derive a true beta-feeding pattern for neutron-rich nuclei produced in the proton-induced fission of ^{238}U at the HRIBF. In particular, the measurements of decay heat released by radioactive nuclei produced in nuclear fuels at will be performed. [1] B.C. Rasco, GEANT4 simulations (2010).

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