

Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Gamma-ray Spectroscopic Performance of a ~10 kg Array of High Purity Germanium Crystals¹ JOHN ORRELL, CRAIG AALSETH, CHRIS BONEBRAKE, JAC CAGGIANO, TONY DAY, JIM FAST, ERIN FULLER, BRIAN HYRONIMUS, DENNIS MULLEN, BOB RUNKLE, JES SMART, GLEN WARREN, Pacific Northwest National Laboratory — The gamma-ray spectroscopic performance of a single-cryostat, close-pack array of high purity germanium crystals is presented. The unit design is intended to provide high detection efficiency (~1000% relative efficiency) for standoff gamma-ray detection in field measurement applications. However, the array design shares much in common with design concepts proposed by the Majorana Collaboration to search for neutrinoless double beta decay of Ge-76. The presentation will focus on those topics of relevance to both the field application and basic scientific research. Specifically this will include array operation, data collection, and data reduction that elucidate the unique features of a ~10 kg compact array of high purity germanium gamma-ray spectrometers.

¹This work was funded by the Office of Defense Nuclear Nonproliferation, Office of Nonproliferation Research and Development (NA-22).

John Orrell
Pacific Northwest National Laboratory

Date submitted: 26 Jun 2009

Electronic form version 1.4