

Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Shielding Design for the CARIBU Project¹ EUGENE MOORE, SCD, Argonne National Laboratory, SAMUEL BAKER, EQO/RSO, Argonne National Laboratory, RICHARD PARDO, GUY SAVARD, PHY, Argonne National Laboratory, CARIBU COLLABORATION — The CALifornium Radioactive Ion Breeder Upgrade (CARIBU) [1] will serve as a source of radioactive ions to be accelerated by the ATLAS accelerator [2]. CARIBU will consist of an open, 1 Ci Cf-252 source electroplated on a Ta backing. Fission fragments emitted from the source will be captured in a He gas cell with DC and RF fields that will direct the radioactive ions toward the exit nozzle. The ions will be mass analyzed and transported to a charge breeding ECR source and injected into ATLAS. The radiation fields produced by an unshielded 1 Ci Cf-252 source exceed 4 rem/hr (neutron), and 250 mR/hr (gamma) at 1 meter. In order to allow unlimited access to the CARIBU source area, we are designing a shielding system to reduce the radiation fields to ~ 1 mrem/hr at 30 cm from accessible surfaces. The MCNPX code [3] is being used to model the neutron and gamma radiation shielding. The results of the simulations and some comparisons with measurements will be presented. REFERENCES [1] www.phy.anl.gov/atlas/caribu.html [2] www.phy.anl.gov/atlas/index.html [3] mcnpx.lanl.gov/.

¹This work was supported by the U.S. Department of Energy, Office of Nuclear Physics, under Contract No. W-31-109-ENG-38.

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Date submitted: 30 Jun 2006

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