REMARKS CONCERNING THE ACCURATE MEASUREMENT OF DIFFERENTIAL CROSS SECTIONS FOR THRESHOLD REACTIONS USED IN FAST-NEUTRON DOSIMETRY FOR FISSION REACTORS

by

Donald L. Smith

Argonne National Laboratory, Argonne, Illinois 60439, U.S.A.

ABSTRACT

Some remarks are submitted concerning the measurement of differential cross sections for threshold reactions which are used in fast-neutron dosimetry for fission reactors. The objective is to familiarize the reader with some of the problems associated with these measurements and, in the process, to explain why the existence of large discrepancies in the data sets for many of these reactions is not surprising. Limits to the accuracy which can be expected for these cross sections in the near future—using current technology and available resources—are examined in a general way and recommendations for improving the accuracy of the differential data base for dosimetry reactions are presented.

* This work has been supported by the U.S. Energy Research and Development Administration.