ANL/NDM-129

EVALUATED NUCLEAR DATA FILES FOR THE NATURALLY-OCCURRING ISOTOPES OF CADMIUM*

by

Joseph McCabe[a], A. B. Smith[a,b] and J. W. Meadows[b]

[a]Department of Nuclear and Energy Engineering
University of Arizona

[b]Engineering Physics Division
Argonne National Laboratory

ABSTRACT

Comprehensive neutronic evaluated data files for the naturally-occurring isotopes of cadmium are deduced from experimental data and nuclear models, and presented in the ENDF/B-VI formats. Particular attention is given to those processes relevant to fuel-cycle and fission-product applications. Comparisons are made with prior evaluations of the cadmium isotopes, and discrepancies and consistencies cited. Some of the discrepancies are very large (e.g., as much as 100%), and the differences have the potential for a pronounced impact on applications usage. The present files are comprehensive, including may important processes that are not represented in the contemporary ENDF/B-VI system. Recommendations are made for future measurements where appropriate.