IEC-130

Status of OECD / NEANSC / WPEC Subgroup 18

Epithermal capture cross section of ^{235}U

C. R. Lubitz, KAPL, Coordinator

R. W. Roussin, ORNL, Monitor

Presented by Richard D. McKnight, ANL

May 17, 1995

Following the circulation of an initial letter of invitation to about 30 people, positive responses were received from, or on behalf of, the following:

Robert C. Block (RPI), Allan D. Carlson (NIST), Herve' Derrien (Saclay), Colin Durston (S. Levy, Inc.), Donald R. Harris (RPI), Jack A. Harvey (ORNL (ret.)), W. Curtis Jordan (ORNL), Albert C. Kahler (Bettis), Yasuyuki Kikuchi (JAERI), Nancy M. Larson (ORNL), Luiz Leal (ORNL), Hiroyuki Matsunobu (Sumitomo AE Industries), Michael Milgram (Chalk River), Michael S. Moore (LANL (ret.)), Tsuneo Nakagawa (JAERI), Burton Rothleder (DOE), Robert W. Roussin (ORNL), Massimo Salvatores (Cadarache), Roald Schrack (NIST (ret.)), Hideki Takano (JAERI), R. Q. Wright (ORNL).

Many of the acceptances were conditional, since funding is a widespread problem, but the collective expertise of the group should produce positive results. The initial letter contained a list of topics for possible exploration, and this list has been augmented by recommendations made in the response letters. The next round of activity will be directed at choosing a feasible subset, prioritizing it, and finding the support needed to investigate the selected topics. An

important task to accomplish soon is for the Subgroup members to recalculate their benchmarks with ENDF6 (Revision 3) U235, with JENDL-3.2, and with JEF, in order to establish a baseline for further work. Rev. 3 is part of ENDF6 Release 3, available through the usual data center channels. Anyone interested in participating in this work, or who has suggestions for improving the U235 capture cross section, should contact the coordinator.

L. Leal at ORNL is using SAMMY to re-fit the ENDF6 resonance region, 0-2250 eV. In this effort he has the cooperation of N. Larson, and input from H. Derrien. The aim of the work is to provide a more conventional basis for the resonance parameters than that used by Lubitz and reported at Gatlinburg. and to incorporate if possible new measurements by Gwin (ORNL) and Moxon (Harwell/ORNL). Leal's schedule calls for completion of the work early in 1996.

RQ Wright has suggested that we interpret the Subgroup's "charter" to allow small changes to the fission cross section also, since our principal goal is to make the final data set work well in a variety of integral applications, while staying within the envelope of credible microscopic measurements.

H. Matsunobu communicated a description of the procedures he used to arrive at the JENDL-3.2 U235 capture values in the unresolved resonance region from 100 eV - 30 keV. A close comparison with ENDF6 Rev 3 is needed, to understand the differences and assess their behavior in benchmark calculations.

Members who have already committed are urged to do their ENDF6 Rev 3, JENDL-3.2, and JEF benchmark calculations, and to communicate their ideas and conclusions to the coordinator.