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CHAIRMAN'S SUMMARY AND HIGHLIGHTS

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The 46th meeting of the Cross Section Evaluation Working Group was held at Brookhaven National Laboratory, October 7-9, 1997. In addition to a large number of CSEWG members in attendance, we were pleased to welcome guests from the JEFF (Europe), JENDL (Japan), and CENDL (China) projects to the meeting.

This meeting marked the end of Phil Young's chairmanship of the Evaluation Committee. He has served CSEWG and the entire nuclear community in an outstanding manner for many years. We all owe him a debt of gratitude. He will be succeeded by Mark Chadwick, also from Los Alamos.

The annual "Nuclear Criticality Predictability Program Review" was held adjacent to the CSEWG meeting. The summary of this meeting is attached.

Committee Highlights

Evaluation:

A review was held to approve the new and revised materials to be included in Release 5 of ENDF/B-VI. This release will be issued in late 1997 or early 1998. The plan is to prepare another release, Release 6, in about one year.

This meeting saw the culmination of an extensive effort to improve the thermal and resonance region for U-235. Release 5 will contain an evaluation which will be a significant improvement to prior evaluations. The result is due to the work of Luiz Leal and coworkers at ORNL, Cecil Lubitz of KAPL who coordinated the work within CSEWG and internationally, and to the data testers whose insight showed the way and whose work verified the conclusions.

An important discussion and review of the ENDF/B-VI delayed neutron data was held. Some problems with the evaluation were noted. Tal England (LANL) will lead an effort to correct the deficiencies.

Significant work is underway to produce medium energy evaluations for a number of materials at LANL with the help of foreign collaborations. Some of these evaluations should be available in the next release. Other ongoing efforts presented at the meeting included improved resonance region evaluations for O¹⁶ at KAPL and U²³³ at ORNL.

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Formats and Processing:

An updated version of the format manual, ENDF-102, has been completed. It is available electronically from the NNDC web site. Errors reported to the NNDC in the manual and in the ENDF/B-VI data base will be available from this web site also.

A new release of the processing code NJOY was made in August 1997. Work continues on processing code systems at ANL and ORNL.

Several format revisions were adapted provisionally at the meeting. They will become final if no comments are received by the end of December 1997.

The problem and consequences of computer codes using "different" values for physical constants was discussed. A task force was formed to make recommendations before the next meeting.

Data Validation:

Members of this committee have done extensive testing of the new U^{235} evaluation. The results of the benchmark tests are good with significant reduction in some long standing biases. There is some indication that the hydrogen thermal cross section needs to be reduced slightly and that the angular distributions for oxygen scattering need to be improved.

Several new benchmarks are being prepared (PNL-30 thru 35) and (ORNL-5 thru 9). After review, they will be added to the CSEWG benchmark book. Benchmark testing of U^{233} is currently being carried out as part of the criticality safety program. Testing of HEU systems with concrete reflectors and LEU systems with lead reflectors shows significant discrepancies. The new Si evaluation does not resolve the HEU - concrete problem.

Measurements and Basic Science:

The annual report of the U.S. data measurement program has been completed. It is available from the NNDC web site. A High Priority Nuclear Data Request list has been prepared by the NEA Working Party for Measurement Activities. It is rather large and uneven in content.

Now that the ENDF/B-VI standard work is complete with the publication of Wolfgang Poenitz's documentation, the idea to internationalize this activity is being discussed. Alan Carlson has been given the responsibility to organize this project with NEA and the IAEA.

Next Meeting:

The next CSEWG meeting will be held at Brookhaven National Laboratory on October 20-22, 1998.