May, 1994

NEANSC Working Party on International Evaluation Coordination:

Subgroup 13: Intermediate Energy Nuclear Data Evaluation

Meeting report

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On May 11, 1994, during the Gatlinburg conference on Nuclear Data for Science and Technology, the members of Subgroup 13 of the NEANSC WPIEC on Intermediate Energy Nuclear Data Evaluation held their first informal meeting. Dr. Kikuchi from JAERI, Japan, acts as chairman. The meeting is attended by:

R.C. Haight	LANL, USA
P.G. Young	LANL, USA
M.B. Chadwick	LLNL, USA
M. Blann	LLNL, USA
R.W. Roussin	ORNL, USA
T.A. Gabriel	ORNL, USA
T. Fukahori	JAERI, Japan (Coordinator)
Y. Kikuchi	JAERI, Japan (Monitor)
Y. Watanabe	Kyushu, Japan
P. Oblozinsky	IAEA, Austria
E. Menapace	ENEA, Italy
G. Reffo	ENEA, Italy
O. Bersillon	CEA, France
V. Avrigeanu	IPNE, Romania
H. Kalka	TUD, Germany
R. Michel	Hannover, Germany
Yu.N. Shubin	Obninsk, Russia
S.G. Mashnik	Dubna, Russia
V. Maslov	RPCPI, Belarus
A.J. Koning	ECN, The Netherlands (Coordinator)

1. OPENING

Kikuchi opens the meeting by presenting a global specification (as sent to the members by November, 1993) of the objectives of the Subgroup. Furthermore, he argues that it is not yet appropriate to initiate evaluations, since the needs and priorities should be better defined. Next, the meeting proceeds by a discussion of the major tasks.

2. NEEDS AND PRIORITIES

Kikuchi has distributed an inquiry form among potential users. So far, only a few responses have been received. A new deadline for inquiries is set for middle July. Koning presents his views on priorities for an ATW-system (from ref. [1]) and emphasizes the necessity for more specific priorities and needs (applied community!). Michel adresses to a wide scope of applications of intermediate-energy data (i.e. besides ATW). He argues that priorities should not only be assigned on a scientific basis but also (perhaps mainly) on the basis of urgent user requests (of course, this includes the funding aspect).

3. EXPERIMENTS

Mashnik calls attention to a work by Barashenkov, which contains a large amount of available pion- and nucleon-nucleus data. Michel is in the possession of a large set of product nuclide data. One agrees that these kind of data should be made generally available to the users (inclusion in EXFOR).

4. FORMATS

Koning presents the proposals concerning formats for future evaluations above 20 MeV (ref. [2]). Blann, Young and Chadwick agree with the compact way of storing high-energy data (mainly MF6/MT5). Kikuchi mentions that the JAERI approach is somewhat different (use of MT201-207 for light-particle energy-angle distributions). Koning states that this is equivalent to his approach (personal communication with Fukahori). Gabriel wants as much specific data (MT-numbers!) as possible. This is certainly advisable for low energies. In Obninsk (Shubin) an activation library up to 100 MeV has been developed. Koning will assist in transforming this library into ENDF-6 format (Shubin and Ignatyuk, personal communication). Koning stresses that requirements for evaluated files and the associated aspects of processing codes (NJOY) and transport codes (MCNP) should be further investigated in parallel with the other activities. With respect to this, Menapace encourages a cooperation with Subgroup 7 (Roussin) on Multigroup Cross Section Processing.

5. MODEL CODES

This has not yet been discussed within SG13 but a cooperation with SG12 (Reffo) on nuclear model validation is recommended. The results of the NEA intermediate energy intercomparison [3] and the intercomparison by Fukahori et al. [4] should be incorporated when further actions concerning model codes are defined.

6. STARTING ACTIONS
Several tasks are delegated:

- Compilation of Russian evaluations: Shubin
- Compilation of American evaluations: Chadwick
- Experimental compilation: Fukahori
- Further study of formats: Fukahori and Koning

7. CLOSING
Koning announces that the next meeting of SG13 will probably be held in parallel with the JEF-meeting in december 1994 in Paris. Confirmation of this will be sent to the members. Kikuchi closes the meeting.

8. REFERENCES

1 A.J. Koning, "Review of High Energy Data and Model Codes for Accelerator-Based Transmutation", NEA Data Bank Report NEA/NSC/DOC (92) 12.

2 A.J. Koning, "Requirements for an Evaluated Nuclear Data File for Accelerator-Based Transmutation", NEA Data Bank Report NEA/NSC/DOC(93) 6.

3 M. Blann, H. Gruppelaar, P. Nagel and J. Rodens, "International Code Intercomparison for Intermediate Energy Nuclear Data", NEA Data Bank report, 1994.

4 T. Fukahori, S. Chiba, H. Takada, N. Kishida, Y. Watanabe and N. Yamamuro,"Comparison of isotope production cross section in the intermediate energy region calculated by various theoretical calculation codes for nuclear data evaluation", JAERI report 1994.

ACTIONS DEFINED AT THE MEETING

1. All members: comment on reports 1 and 2 of Koning.
2. All members: fill in or distribute inquiry form. A more precise specification of needs is necessary!
3. Discuss the results of the Intercomparison (Paris, May 30 - June 1) and report this to the members (Koning).
4. Compilation tasks:
   - Russian evaluations: Shubin
   - American evaluations: Chadwick
   - Experiments: Fukahori
   - Formats: Fukahori and Koning

SUGGESTED ADDITIONAL ACTIONS (Koning)

5. In parallel with a further specification of needs and priorities one may practice evaluation techniques in order to see what (format) problems one may encounter and to acquire routine.
6. Sensitivity calculations for energies above 20 MeV to assess the nuclear data priorities, e.g. as reported by PSI.
7. Extension of EXFOR for high energies (Konieczny, NEA).
8. Compilation and centralisation of model parameters (optical model, level density), in cooperation with IAEA (CRP).