

**Memo CP-D/325**

12 June 2001

From: O. Schwerer and M. Lammer  
To: Distribution

**Subject: Actions and Conclusions of the 2001 NRDC Meeting**

Please find attached the Actions and Conclusions of the Technical NRDC Meeting held in Vienna from 28 to 30 May 2001 for your final review. Please send us any corrections or additions as soon as possible, but not later than **30 June 2001**.

Compared to the version distributed at the meeting, some minor editing was done and some clarifications were added. At the end of the conclusions, a recommendation stressing the importance of the upcoming Nuclear Data Conference in Tsukuba was added.

As usual, the meeting report, which will include also the status reports and part of the working papers, will be published as an INDC(NDS)- report.

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## Actions and Conclusions from the NRDC Meeting 28-30 May 2001, Vienna, Austria

### CONCLUSIONS

#### CINDA and CINDA2001

- C1:** The CINDA2001 format as proposed in WP2001-23 is accepted with the addition of hierarchy 7 for multiple authors. The CINDA2001 quantity codes given in a new Dictionary 45 (see WP2001-24, last page) will be reviewed by the NEA Data Bank and be finalized by a working group consisting of McLane, Kellett, Lammer, Maev.  
**There will be the following new dictionaries:**
- 44 Conversion of EXFOR quantities (Dict.36) to new CINDA quantities (Dict.45)
  - 45 (New) CINDA quantities
  - 46 Conversion of old CINDA quantities (Dict.42) to new CINDA quantities (Dict.45)
  - 47 Reader codes
  - 48 Spectra codes
- C2:** The 2001 CINDA book will be issued as **Supplement** to CINDA2000. The format will be as shown as **Layout 4** in WP2001-27.
- C3:** The deadline for receiving CINDA entries to be included in the book is 1 November (for expected publication in January 2002).
- C4:** NEA will continue to produce the CD version of CINDA which will be distributed together with the book to all recipients.

#### EXFOR/CINDA Dictionary System

*(see also Conclusion C1 above on new dictionaries for CINDA2001)*

- C5:** Dictionary transmissions should be four times a year.
- C6:** NEA-DB still needs the dictionaries in "TRANS" format (as described in the EXFOR Systems Manual, Chapter 6).
- C7:** Starting with the year 2000, conferences will be coded with a 4 digit year. The total length will therefore be up to 10 characters. CINDA will use, in all cases, the first 8 characters of the EXFOR code until transmission in the new CINDA 2001 format begins.
- C8:** The proposal to add the OXI code to EXFOR dictionary 9 (Compounds) and DANIEL dictionary 27 (Nuclides and Compounds) as detailed in Memo 4C-4/113 (= WP 2001-10) is accepted.
- C9:** The final implementation of "wild cards" in Dictionary 36 is deferred until all centers can use them. (Note: The use of the wild cards '\*' (for all particles) and '\*F' (for fission fragments) in SF7 (particle considered) of dictionary 36 was agreed in principle at the 1997 NRDC meeting.) *See also Action A12.*

## General EXFOR matters

- C10:** Reactions with many reaction products should be coded in the variable product nucleus formalism (ELEM/MASS) allowing coding in one subentry rather than individual subentries for each product.
- C11:** NNDC will be responsible for co-ordinating the compilation of all charged particle data produced at facilities in USA and Canada.

## EXFOR coding rules and dictionary changes

- C12:** The proceedings of the 2000 Tsukuba conference will be published as a Supplement to the Journal Nucl.Sci.Technol. and should be coded in CINDA under both, the conference code and the journal code.
- C13:** RCL is to be deleted from the “Particle Considered” dictionary (EXFOR Dict.33).
- C14:** A new heading KT-K for kT in temperature units (e.g. Kelvin) as proposed in WP 2001-4(Rev) is adopted. The old heading KT is kept for kT in energy units.
- C15:** The reintroduction of the heading WVE-LN, to be used when wavelength is given in place of EN, is adopted as proposed in WP 2001-4(Rev).
- C16:** Zero errors are not allowed in the COMMON or DATA table. If the value of an error is unknown, the respective data field must remain blank.
- C17:** The quantity NN,POL/DA/DE,,K as proposed in CP-E/002 is approved. *See Action A31 on the other polarization quantities.*
- C18:** All angular correlations are coded as DA/CRL, and the existing codes with FY/CRL and KE/CRL remain. The quantities proposed in Memo 4C-4/107 (WP 2001-7) are accepted with COR replaced by DA/CRL. *See also Action A32.*
- C19:** The case outlined in WP 2001-8 should be coded PR/PAR,DA,G instead of PAR/M-,DA,G.
- C20:** The new IAEA report codes proposed in WP 2001-9 are not adopted, the proposed codes NEACRP-L- for the report NEANDC(E)-NEACRP-L, and PHCL for the journal Physicalia were adopted. The code HIP has to be clarified (*Action A33*).
- C21:** For the coding of isobaric analog states the proposal 1 in Memo CP-C/281, which is equivalent to the proposal in Memo CP-C/264, is adopted (see WP 2001-11).
- C22:** As a temporary solution, the coding of pions as PIN+PIP+X in REACTION SF3 is permitted (see memo CP-A/107, WP2001-12). However, in addition the coding of PIN/PIP in SF7 is required.  
The addition of pions to dictionary 27 is, at this time, not accepted (*see, however, Action A34*).
- C23:** The code PI for unspecified pions will be added to EXFOR Dictionary 29.

- C24:** A new quantity,  $d\sigma/dN$  (cross section differential by number of outgoing neutrons) (WP 2001-15) will be coded as SIG/DN. The independent variable is to be coded under the heading N-OUT.
- C25:** The new units for product yields proposed in WP 2001-14(Rev) are agreed. In addition the unit MB/PRD (millibarns per product particle) is introduced for the quantity proposed in WP 2001-15 (*Conclusion C24*).
- C26:** The new headings LVL-INI and LVL-FIN are introduced for those cases where the initial and final levels are given as additional information but not as independent variables (see WP 2001-16). (As independent variables, the existing headings E-LVL-INI, E-LVL-FIN are to be used.)
- C27:** The quantity PRE,AP/DA,FF as proposed in memo CP-E/001 (WP2001-22) is adopted.

### **Software development on relational database platforms**

- C28:** It would be useful to have frequent meetings among the people involved in the collaboration on the development of the nuclear reaction database and the associated programs. One meeting could be arranged as part or contiguous to the NRDC meeting. For effective co-operation, a minimum of one additional working group meeting annually is advisable. The means of arranging such a meeting should be investigated.

### **RECOMMENDATION**

The NRDC would like to stress the significance of the forthcoming Nuclear Data Conference in Tsukuba to all members and their organisations. An invited paper, authored by representatives of the four core centers will be presented at this conference. The talk will explore the current and future services provided by the Nuclear Reaction Data Centers. It is highly desirable that representatives from each of these core centers be present at the conference.

The NRDC also plan to have a stand at the conference for the demonstration of online services and products available on CD-ROM, particularly EXFOR/CINDA/data plotting. Appropriate staff are needed to allow fruitful use to be made of this opportunity to discuss its services with nuclear data users, including experimentalists and evaluators.

## Actions and Conclusions from the NRDC Meeting 28-30 May 2001, Vienna, Austria

### ACTIONS

#### General

- A1: (All)** To inform the NDS of any documents in the IAEA-NDS series which need to be made available online in PDF format.
- A2: (Lammer)** **(old A5)** To prepare the IAEA-NDS- document for the PC version (by Denschlag et al) of a program package by A.C.Wahl for calculation of fission yield distributions.
- A3: (All)** **(old A11)** To send contributions on frequently asked questions regarding nuclear data issues to the NEA-DB who will then include these as a link from the NRDC web page.
- A4: (NEA-DB)** **(old A12)** To provide a link from the NRDC page to the Network document
- A5: All** **(old A13)** To provide a link from their home page to the NRDC page

#### CINDA and CINDA2001

- A6: NEA-DB** To review the CINDA2001 quantity codes given in the new dictionary 45 (*see also Conclusion C1*).
- A7: all CINDA centres:** To complete table of WP2001-28 (Journals covered for CINDA) and send it to Meinhard Lammer by 30 June 2001
- A8: NDS** To create working environment for area 4 CINDA database located at NDS
- A9: CNDC** To compile Chinese experimental works (journals and conference proceedings) for CINDA and send to NDS in Reader format.

#### EXFOR/CINDA Dictionary System

- A10: All** To propose revised format of Dictionary 27 (nuclides) well before the next meeting. (The goal of the reform is to reduce the frequency of updates of this dictionary while some automatic checking of the nuclides should remain possible).
- A11: McLane** To update the EXFOR manual and LEXFOR sections dealing with chemical compounds with the proposed new oxide codes (WP2001-10).

**A12: All** To ensure that they can use the "wild cards" in Dictionary 36 (*see Conclusion C9*).

**A13: NDS** To remove the restrictions "for photonuclear data (only)" from all dictionaries at their earliest convenience.

#### **General EXFOR matters**

**A14: All** To check/retransmit all entries included in the list of pending retransmissions by McLane distributed at the 2001 NRDC meeting.

**A15: Dunaeva** (**Old A29**) To make a benchmark test of Chukreev's code TEST-EXF vs. CHEX

**A16: Tarkanyi** (**Old A30**) To distribute updated list of references missing in EXFOR obtained in the framework of the CRP on Medical Radioisotope Production

**A17: CPND centers** (**Old A31**) To go through this list and communicate to Tarkanyi which works from their area of responsibility they will compile. Works not covered this way will then be free to be compiled by others.

**A18: NEA-DB,NDS** (**Old A32**) To convert remaining 60000 and 70000 series entries to proper EXFOR entries of area 2 and 3.

**A19: All** To delete all entries of the 80000 series from their local EXFOR data base.

**A20: All** (**Old A33**) In view of the poor statistics for EXFOR compilation of recent works, all centers should give higher priority to new works.

**A21: McLane** (**Old A34**) Send a memorandum of understanding about the compilation responsibilities resulting from the agreement with Phys.Rev.C to all participating centers.

**A22: Dunaeva,  
Chukreev** (**Old A35**) To try to establish an agreement with the publisher of Yadernaya Fizika similar to that between NNDC and Phys. Rev C.

**A23: Maev** To check with Varlamov on the status of the possible inclusion of Blokhin's compilation of emission spectra of photonuclear reactions in EXFOR (follow-up to old A36).

**A24: NDS** To make available the Word files of the EXFOR Systems Manual and the LEXFOR Manual on their FTP site in an appropriate subdirectory.

- A25: All** To send any comments on the above manuals to McLane before the 30<sup>th</sup> June 2001.
- A26: McLane** To update the manuals accordingly and send to NDS for inclusion on their FTP site prior to 31<sup>st</sup> August 2001.
- A27: All interested** To contact Liam Costello in order to obtain access to the NDS version of the CHEX code.
- A28: McLane, Zerkin** To investigate the production of a system-independent version of the CHEX code.
- A29 Zerkin** To rerun the list of multiple appearances of main references in EXFOR entries (WP 2001-20) taking into account superseded entries and deleted entries with subentry 1 remaining in the file.
- A30 All** To correct those entries found to have errors which are given in WP 2001-19 and the revised version of WP 2001-20.

#### **EXFOR coding rules and dictionary changes**

- A31: McLane** To clarify the questions raised in WP2001-6 on proposed Polarization quantities and update the proposed LEXFOR entry on Polarization.
- A32: McLane** To look into all types of 'correlations' and provide a more detailed LEXFOR entry and/or a new proposal.
- A33: McLane** To clarify the code HIP proposed in Memo CP-D/278 (WP 2001-9).
- A34: All** To consider and propose methods for coding fundamental particles in SF4, in particular negatively charged ones, e.g. negative pions.
- A35: Babykina** To send an example for the use of the code PART-OUT as proposed in Memo CP-A/108 (WP 2001-13).
- A36: McLane** To update the LEXFOR entry regarding the E-LVL headings, in particular with respect to the new headings LVL-FIN, LVL-INI.