

26 June 1995

To: Distribution

From: *Hans Lemmel O. Schwerer*
H.D. Lemmel, O.Schwerer and H. Wienke

Subject: **Actions and Conclusions of the 1995 NRDC Meeting**

Please find enclosed the actions and conclusions of the NRDC Meeting in Vienna, 2-4 May 1995.

You will notice that some conclusions, which had been reached at the meeting or in a subgroup but were not yet included in the draft conclusions distributed at the meeting, were added (in particular: conclusions on the unweighted neutron production cross sections found in photonuclear data [64-67], on memo 4C-4/57 and EXFOR entry 40420 [45-48], and on the CINDA cooperation NDS - CNDC [108-109]).

For this reason, and because the actions continuing from the 1994 meeting are now sorted with the agenda items they belong to, all actions and conclusions were renumbered.

We would like to thank all participants for their cooperation at this meeting. Let's start working on the actions immediately so that next time the number of continuing actions can be kept at a minimum.

Unless hearing from you within four weeks, we will consider the present write-up as approved. We will then issue the complete meeting report including the status reports of the data centres as an INDC report.

• Date of next NRDC-Meeting

The last action on the attached list has already been fulfilled. The next NRDC-Meeting is scheduled for

3-7 June 1996 at Brookhaven,

followed by the meeting of the NEANSC Working Parties 10-13 June at Argonne. We hope that the proposed date is acceptable.

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**IAEA Consultants' Meeting on
Technical Aspects of the Nuclear Reaction Data Centres
IAEA Headquarters, Vienna, Austria, 2-4 May 1995**

CONCLUSIONS and ACTIONS

Network document and communication between centres

- 1) Concl. The Network document (to be issued as INDC(NDS)-324) was approved.
- 2) Act. All To return to NDS the duly signed pages.
- 3) Act. NDS To finalize the network document and send copies to the centers, to INDC and other authorities such as the IAEA missions of the centres' countries.
- 4) Act. NDS To produce an e-mail document with the centre addresses and memo distribution lists, highlighting any changes.

EXFOR/CINDA dictionary system

- 5) Act. McLane (old action 7 continuing) Send EXFOR checking codes (executables only) plus the accompanying dictionaries (in DANIEL format) to NEA.
- 6) Act. McLane
Schwerer Draft a new proposal to permit use in REACTION SF7 any combination of codes from dict. 33 or 27, without updating dict. 36.
- 7) Act. McLane to update the programs using dictionary 36 accordingly.
- 8) Act. McLane
Schwerer Come-up with a list of more sorting flags for dict. 36.
- 9) Act. Schwerer Remove free text on top of dict. 9 concerning compounds.
- 10) Act. McLane Change title of dict. 19 to old one and remove the word 'codes' from the other titles.
- 11) Action NDS Dictionary transmissions are, from now on, available in two formats: in the "traditional" TRANS format, or as a DANIEL backup file. NDS will send:
 - TRANS only: to CDFE (by FTP), JCPRG, RIKEN, ATOMKI, CAJaD
 - both TRANS and DANIEL backup: to CJD, CNDC, NEA-DB, NNDC.

- 12) Act. Schwerer Send dictionary write-up (dict. memos) to Konieczny, Pakhomova, Lammer.
- 13) Act. NDS Send to CNDC and CJD the DANIEL backup file and programs and the CSISRS programs.

EXFOR, general

- 14) Act. CJD (rel. old action 11) Update lab dictionaries for Russian institutes by June 1995 to meet the book deadline, thereafter to continue to update the institute names continuously.
- 15) Act. McLane
Varlamov (old action 12 continuing) To update and submit dictionary 36 entries on photonuclear quantities (with expansions) and to make appropriate changes in LEXFOR entry. (See memo CP-C/200 and reply in CP-D/219)
- 16) Act. McLane (old action 13 continuing) To provide LEXFOR entry for energy spectra of particle pairs and PAR,SIG,P/T.
- 17) Act. NDS (old action 14 continuing) Follow item (3), to update dictionary 36 accordingly, possibly introducing longer expansions for these quantities.
- 18) Act. McLane (old action 15 continuing) If staffing permits, update the EXFOR manual.
- 19) Act. NNDC (old action 16 continuing) Send the remaining entries from EXFOR files 6,7,8 to the other neutron data centres.
- 20) Act. All (old action 17 continuing) Go through these entries and decide which entries need conversion to EXFOR.
- 21) Act. All (old action 18 continuing) Retransmit those entries listed in V. McLane's list of pending retransmissions.
- 22) Act. NNDC (old action 19 continuing) To update the EXFOR manual Chapter 7 (dictionaries) on dictionary 6: how to invent report codes for annual reports without a report code on the cover. Accepted procedure is A- (3-digit labcode from dict.3, e.g. A-ALB-.).
- 23) Act. McLane (old action 25 continuing) Clarify wording on free text in the EXFOR manual. (If both coded information and free text are given for a keyword, it is legal and often necessary to start with free text and give the code(s) only in one of the following lines.)
- 24) Act. McLane (old action 26 continuing) Add a note in the EXFOR manual on the possibility of retransmission of entries belonging to a centre which is

no longer active in this type of data.

- 25) Act. NDS (rel. old action 27) Distribute corrected Münzel data after final corrections by CAJaD.
- 26) Act. NDS (rel. old action 28) Distribute corrected L-series after final corrections by CDFE.
- 27) Act. NDS (old action 33 continuing) Provide NEA-DB with an expanded list of errors in old entries from area 2 needing retransmission.
- 28) Act. NDS (old action 34 continuing) Retransmit entry 22242 with an EXFOR G-series number.
- 29) Act. NDS
NEA-DB Investigate possibility to station NEADB EXFOR consultant at NDS.
- 30) Recom. CNDC Try to find an EXFOR compiler to be trained by Liang.
- 31) Concl. Remove the heading "For photonuclear data only" in all dictionaries where it occurs because these headings and quantities are used also for CPND.
- 32) Act. McLane
Schwerer To provide the necessary changes in Dicts. 24, 32 and 36.
- 33) Concl. The quantities PAR,DA/DA/DE (proposed in memo CP-A/70) and PAR,DA/DA/DE,P/A/P are approved.
- 34) Act. Schwerer Update Dict. 36 correspondingly.
- 35) Act. McLane Update EXFOR manual: if more than one angle is given in (double- or triple-)differential data, they should be given in the same order as in SF7.
- 36) Concl. Radioactive decay data should not be compiled into EXFOR. In case the proposal (Memo CP-A/71, items 1 and 2) is misunderstood and meant for something else, it should be resubmitted with additional information.
- 37) Concl. Item 3 of memo CP-A/71 is cancelled (withdrawn by author).
- 38) Concl. The quantities for relativistic heavy-ion collision and electron reaction data are approved as submitted in memo CP-C/208.
- 39) Act. McLane Introduce a flag for relativistic heavy-ion data for all dictionaries concerned.
- 40) Act. Schwerer Update dictionaries correspondingly (memo CP-C/208).

- 41) Concl. The quantities proposed in memo CP-C/209 are approved:
Dict.32: CRL correlation
Dict.36: IND,FY,CRL independent yield of correlated fragment pairs.
- 42) Act. Schwerer Update dictionaries accordingly.
- 43) Act. Lammer Check existing codes for fission quantities for possible overlap with the case of memo CP-C/209 and existing EXFOR entries for necessary revisions.
- 44) Act. McLane To check whether other correlation quantities can be changed to new formalism.
- 45) Concl. Subentry 40420.002 should be coded ...(0,F)MASS,PR,NU
- 46) Concl. Item 3 of memo 4C-4/57 (code DA/DE,N,RSD for Dict.36) is approved.
- 47) Act. Lammer Reply to items 1, 2 and 4 of memo 4C/57 (codes PR,NU,FF, PRE,FY/DE, and PAR/IND,FY,G for dict.36) and propose solutions for the remaining questions on entry 40420 in a CP memo.
- 48) Act.CJD Retransmit entry 40420 accordingly, after fulfillment of the previous action.
- 49) Concl. The quantities ,AKE and ,MLT for dict.36, without a code in SF7, are approved as proposed in memo CP-D/249.
- 50) Concl. If neutron data and CPND or photonuclear data are present in the same publication, they must be compiled in separate entries. The centre compiling the data should contact the centre responsible for the other data type and both centres should agree on who should compile the other data. The accession number should always be assigned by the centre responsible for the data type compiled in the entry.
- 51) Concl. The code 2GERUH for Univ. Hannover (formerly Techn. Univ. Hannover) is approved. The code 2GERTUH can be obsoleted and later be deleted from dict.3.
- 52) Act. CAJaD Regarding the question whether units BARN/UNIT OF LETHARGY/SR should be introduced, or, alternatively, units SEE TEXT should be allowed for DATA (currently SEE TEXT is allowed only for MISC): CAJaD is requested to contact the authors of the paper concerned, whether the original data are available in 'natural' units.
- 53) Concl. In general every effort should be made to compile data in existing units.

- 54) Concl. Units 'SEE TEXT' for DATA are not approved.
- 55) Act. Schwerer Send updated dictionaries for ANDEX to Tarkanyi.
- 56) Act. McLane To correct the wording in EXFOR manual p. 6.8 on secondary energies to be given with SF5=PAR (item 11).
- 57) Concl. Items 3 and 4 of memo CP/A-72 (new codes for dicts. 20, 27) are agreed.
- 58) Concl. ARZ- should be changed to EPA- in dict. 6.
- 59) Act. CAJaD To change ARZ- into EPA- in the EXFOR entry (entries) where it is used.
- 60) Act. CAJaD To change the REACTION codes in A0527.002,3 to TTY/DA/DE.
- 61) Concl. The dict. 27 update proposed in memo 4C-4/58 is approved.
- 62) Act. Schwerer Send detailed list of old pending retransmissions to NNDC and NEA-DB.
- 63) Act. Wienke Update Working Paper 9 (Frequently encountered errors in TRANS tapes) with collected comments.
- 64) Statement The meeting appreciated that, through comparisons of the NDS and CDFE versions of the EXFOR L-series, an apparent inconsistency in the photoneutron production data was discovered which actually means the presence of two different cross section types. Both types will be available in the revised version of the L-series which was sent to NDS by CDFE and will be distributed soon. This version therefore has considerably more data than the original L-series.
- 65) Concl. This new cross section type is the arithmetical sum of all reactions producing at least one outgoing neutron, NOT weighted by the neutron multiplicity (as opposed to the neutron production cross section coded ...(G,X)0-NN-1,,SIG). Since it is impractical to code this quantity as an explicit sum when more than 2 - 3 reactions contribute, it was concluded to introduce a new sum cross section ...(G,X)0-NN-1,UNW,SIG.
- 66) Act. Schwerer Submit an addition to the LEXFOR page 'Production cross sections' and appropriately update dicts.31 and 36.
- 67) Act. Schwerer
Varlamov Introduce UNW,SIG in all subentries of the L-series where appropriate
- 68) Act. Chukreev Regarding B-series: to send to NDS a list of the changes made and/or detailed HISTORY entries.

- 69) Act. NDS To keep a backup copy of the original B-file.
- 70) Concl. CAJaD's version of B0135 is correct in principle but doesn't conform with earlier practice of entering renormalized data. In general, both sets of data should be given either in separate subents or as multiple reactions, distinguished by appropriate status codes.
- 71) Act. CAJaD To correct B0135 subents 8, 9 giving both the old and renormalized data as multiple reactions with status codes 'outdated' and 'renormalized' resp.. Therefore subentry 9 should be split into two subentries.

Fission Product Yield data

- 72) Act. NNDC
NDS (old action 38 continuing) EXFOR retrievals by fission-product nuclides should be possible. While the old NDS EXFOR index provided this possibility, it is not yet possible in the VAX EXFOR retrieval system, which should be updated accordingly.
- 73) Act. Lammer (old action 39 continuing) To revise the LEXFOR entry on FP yields.
- 74) Act. NDS (old action 40) To distribute the ASIYAD-MIFI library.
- 75) Act. Lammer (old action 41 continuing) Submit a proposal on the coding of mass yields as a CP memo with information on corresponding measurements.

EXFOR compilation and checking on PC

- 76) Act. Chukreev Compare Working Paper 9 with error check program TEST-EXF.
- 77) Act. NDS To send the latest available version of TEST-EXF to McLane. (Done at meeting)
- 78) Act. McLane To make a benchmark test of TEST-EXF.
- 79) Act. NDS Send TEST-EXF to CNDC and RIKEN.
- 80) Act. NDS Check whether V. Osorio can be hired as a consultant for updating ANDEX.
- 81) Recom. All To consider to take over the updating of the ANDEX code.
- 82) Act. Chukreev Update TEST-EXF to accept blanks instead of zero's in col. 72-78.
- 83) Act. NDS To send the complete charged-particle EXFOR file to ATOMKI.

CPND compilation

- 84) Act. NDS (old action 55 continuing) To contact the authors of the Landolt-Börnstein CPND compilation to obtain a computer file of this database for free distribution, and to find out whether and how this group can contribute to the network in future.
- 85) Act. NDS (rel. old action 57) Check if the evaluated CPND file in ENDF-6 format by CNDC has been received.
- 86) Act. Debrecen (old action 58 continuing) Evaluations at Debrecen have been completed. They should be put in ENDF-6 format in cooperation with CNDC.
CNDC
- 87) Act. McLane (old action 60 continuing) Try to find time to compile and distribute, after consultation with F. Chukreev, the EXFOR converted CPND file of R. White (Livermore) on light-element neutron-producing reactions.
- 88) Act. CAJaD (old action 62 continuing) Inform other centres of plans for evaluation compilation of monitor reactions and of medical radioisotope production reactions, through regular consultation.
CNDC
RIKEN
ATOMKI
- 89) Act. NEADB To keep the NRDC network and specifically the CPND centres informed about developments for intermediate energy CPND.
- 90) Act. NDS To distribute trans O001 to all CPND centers.
- 91) Act. McLane To update the EXFOR manual to include the O series of accession numbers.
- 92) Act. all (To work on the duplications indicated in Memo CP/A-66.)
CPND Centres
- 93) Concl. Coordinative function of CAJaD for CPND compilation is confirmed. Special attention will have to be given to high-energy and heavy-ion data where, however, there is at present no risk of duplication of efforts.

Photonuclear Data

- 94) Act. CDFE (old action 69 continuing) Find out whether NEA, NDS, NNDC can obtain the data file containing the bibliographic data on photonuclear data.
JAERI
- 95) Recom. - To continue the EXFOR compilation of experimental data.
CDFE - To continue the cooperation with CJD and JAERI to work towards

an evaluated photonuclear data library.

- To continue with the bibliographic index and possibly make this available not only in printed form but also as a computer file.

CINDA

- 96) Act. NEA-DB (old action 42 continuing) To update the CINDA manual and the NNDC EXFOR manual with information about using diskettes (which format and density etc.) for EXFOR/CINDA transmissions.
- 97) Act. NEA-DB (old action 43 continuing) Update CINDA manual to show that blank E-MIN field is now permitted.
- 98) Concl. Literature coverage at NEA-DB: up-to-date with respect to major journals (see Working Paper 24) and with respect to EXFOR index lines but a serious backlog exists with respect to some LAB reports.
- 99) Act. NEA-DB To convert the CINDA entries for JEF.
- 100) Act. NDS Update coverage of INDC reports for CINDA.
- 101) Concl. CINDA situation of CJD will be reviewed during the stay of Ms. Pakhomova at IAEA.
- 102) Act. NDS To transmit the recent CJD batch to the other centres.
- 103) Concl. CINDA situation at NNDC: main literature is covered but only for US experimental data and ENDF data. Supplementary coverage is done by NDS and NEA-DB.
- 104) Act. all Update handbook section and list of compilers.
- 105) Act. NDS Cover Gatlinburg conference.
- 106) Concl. Working Paper 10 (Memo 4C-3/74, Rev. 4 of 4 May 1995: CINDA manual revision: Coding of (2n,f), (n,n'f) and (n,2nf) reactions) adopted unless comments are received by 1 July 1995.
- 107) Act. Lammer To distribute the final version of WP 10 to the CINDA centres.
- 108) Concl. On CINDA compilation at CNDC and cooperation CNDC/NDS:
As a 1st step, Liang will compile for CINDA only blocks for EXFOR entries made by CNDC. No regular scanning of literature for CINDA will be done yet. Entries will be compiled by Liang in reader format (as far as possible with correct blocking); these entries will be sent to NDS by e-mail; NDS will do the checking and processing of CNDC CINDA entries.
- 109) Act. NDS Send to Liang:

- a) A copy of the CINDA manual (current plus updates as continuing action);
- b) CINDA entry forms, if any can still be found;
- c) A partial CINDA file of Chinese labs, preferably in reader format;
- d) A copy of the description of CINDA formats and the exchange system (by Monica Seits, if possible updated).

Evaluated data libraries

- 110) Recom. (old action 45 recommendation) When preparing evaluated data libraries, characteristic values (thermal cross sections, resonance integrals, etc.) should be quoted in the text or in accompanying documents together with their uncertainties; however, these values (and uncertainties) would be better usable if they were in a computer-readable file.
- 111) Recom. (old action 46 recommendation) To collect lists of known faults in the evaluated data libraries, communicate these lists to the other originators data centres, possibly to include such lists in a forthcoming issue of NNDEN.
- 112) Recom. CJD CNDC To transmit new BROND and CENDL evaluations as soon as possible after testing and finalization. The procedures adopted by NNDC to release updates in regular intervals (ENDF/B-6.2 and -6.3), are recommended.
- 113) Recom. NEA-DB To possibly release JEF-PC to the network centres for their internal use costfree.
- 114) Act. NEA-DB To distribute to the other centres their FTP access recording system for review and possible use.
- 115) Recom. NNDC NEA-DB To strive at common procedures, methods, formats for obtaining processed data and to include JAERI, CJD and CNDC in the discussion.
- 116) Act. All To develop a standard for the file transfer access of data files and related documentation.

Online systems and computer matters

- 117) Act. NDS To take the responsibility for a WWW page on the NRDC network with drop-throughs to the other centres and initiate that the other centers provide drop-throughs to the network pages.
- 118) Recom. NEA-DB To do the same for the international evaluation cooperation.

Address lists and document distribution

- 119) Act. all To inform the NDS how they propose to handle the L- and U-document distribution and address list maintenance.

Citation of databases

- 120) Act. McLane To develop an online EXFOR user manual to be used as a reference for the EXFOR system as a whole.
- 121) Concl. Reference guidelines for databases require further discussion. In the specific case of EXFOR the guideline given in WP 14 should be modified such that the journal article is quoted in the first place and the EXFOR ref. in the second place only. If the data in the journal and in EXFOR are not identical this should be mentioned explicitly.

Next NRDC Meeting

- 122) Act. McLane To finalize the date of the next NRDC meeting.