Nuclear Data Section
International Atomic Energy Agency
P.O.Box 100, A-1400 Vienna, Austria

Memo CP-D/415

Date: 29 November 2004
To: Distribution
From: O. Schwerer

Subject: Conclusions and Actions of the 2004 NRDC meeting

Please find attached the Conclusions and Actions of the 2004 NRDC meeting in Brookhaven.

Compared to the version distributed at the meeting, they were sorted by main topics and renumbered. Only minor editing of the wording was done.

Please give your feedback about any mistakes or other editorial comments by 15 December.

As usual, the complete meeting report, containing also the status reports of the centers and part of the working papers, will be issued as an INDC report.

Distribution:

oblozinsky@bnl.gov
vml@bnl.gov
drochman@bnl.gov
nordborg@nea.fr
manokhin@ippe.obninsk.ru
maev@ippe.obninsk.ru
may@obninsk.ru
Mmarina@ippe.obninsk.rug
blokhin@ippe.obninsk.ru
feliks@polyn.kiae.su
chukreev@polyn.kiae.su
S.Dunaeva@iaea.org
taova@expd.vniief.ru
varlamov@depni.sinp.msu.ru
chiba@earth.sgu.ac.jp
kato@nucl.sci.hokudai.ac.jp
ohnishi@nucl.sci.hokudai.ac.jp
oba@nrdf.meme.hokudai.ac.jp
yxzhuang@iris.ciae.ac.cn
gezg@iris.ciae.ac.cn
hongwei@iris.ciae.ac.cn
tarkanyi@atomki.hu
stakacs@atomki.hu
katakura@ndc.tokai.jaeri.go.jp
hasegawa@ndc.tokai.jaeri.go.jp
vlasov@kinr.kiev.ua
kaltchenko@kinr.kiev.ua
ogritzay@kinr.kiev.ua
jhchang@kaeri.re.kr
ohtsuka@nucl.sci.hokudai.ac.jp

m.wirtz@iaea.org
m.lammer@iaea.org
v.pronyaev@iaea.org
schwerer@iaeand.iaea.org
v.zerkin@iaea.org
henriksson@nea.fr
exfor@nea.fr

Conclusions and Actions / NRDC 2004

Conclusions

General

C1 The short version of the NRDC Protocol (Annexes 3 and 4 in the Network Document) will be replaced by a reference to the full-length Protocol (Part IV of the new NRDC Manual).

C2 The next Technical NRDC Meeting is tentatively scheduled for 17 – 19 October 2005 in Vienna. The next full meeting (with centre heads) will take place in Vienna in 2006.

CINDA

C3 The conversion to CINDA2001 will be done in the following steps, with an overall deadline of May 2005:

1. Convert ALL EXFOR (also neutron data) to CINDA2001 format
2. Convert all CINDA entries which do not have an EXFOR line to the new format
3. Take remaining CINDA entries (those with EXFOR lines) and compare them with the file generated before and add any missing references to existing blocks and add any missing blocks with EXFOR lines, printing out a message saying that there was no match.
4. The responsible centers will go through the messages with no matches and correct the file.
5. Ranges of subentries can be put in with reference types 5 (for the first subentry) and 6 (for the last subentry in the range). (Note: Multiple EXFOR lines, and multiple ranges within a block, are legal.)

C4 New deadline for CINDA compilation in new format: May 2005.

C5 WP2004-5 on CINDA 2001 format, “Improvements”: Items 1-3 are agreed, 4-5 are not needed because they can be taken care of by software.
Agreed items:
(1) To extend Sequence number to (at least up to) 3 digits. The reason is that some of EXFOR Entries have more than 99 Subentries, but the data naturally have to be in one CINDA block
(2) For Hierarchy Codes 8 and 9 Energy fields are not used, then if Hierarchy Code will be moved just after Sequence Number, the place of Energy can be used for products and institutes.
(3) For Block-related information (Hierarchy 8 and 9) Sequence Number counting should be negative (-1, -2, -3, etc.)

C6 WP2004-5: Proposed “Extensions” were found interesting but not of immediate priority.

C7 Clarification on coding of Production cross sections in CINDA2001: if there is an old CINDA quantity, there is a translation to the new CINDA quantity according to dictionary 47, e.g. NEM -> (N,X+N). For heavy single products, however, hierarchy 8 records are to be used to define the product. Though this is not elegant, the output can be formatted differently.

C8 Future of the CINDA book: NEA will send out a questionnaire on whether or not the book is still wanted, the results of which are expected by spring 2005. If the book is continued to be produced, NEA-DB will take care of updating the book program to the new CINDA format. Anyway the next issue will probably still be based on the old format.

Common CINDA/EXFOR dictionaries

C9 The proposal of WP 2004-3 (new dictionary structure) is approved in principle, except for the agreed changes in dictionary 47 (see following conclusion).

C10 Some changes to the conversion dictionary 47 were approved (see Appendix 1).

C11 Compound dictionary 209: -CMP and –OXI (for general compounds and oxides, respectively) will be used as before.

C12 Wildcards for REACTION SF7 will be introduced in the new quantities dictionary 236, the redundant quantities with explicit SF7 can be deleted. Old dictionary 36 will continue to be available (but not updated).

Manuals

C13 The revision of the EXFOR Manual as submitted by Schwerer is approved.

EXFOR, general

C14 WP2004-10 on compilation scope is accepted in general. Nordborg will discuss the scope of the O series with CAJAD, exotic data will be moved to a new CIC. JCPRG will start a new J series for exotic projectiles.

C15 Neutron-induced gamma spectra data should be compiled (compulsory).

C16 Coverage of major journals by data centre:

PR/C	NNDC
NSE	NNDC
NP/A	NDS
YF and EPJ	CAJAD
YK	CJD
ANE	NEA
NST	NEA
NSTS	NEA
RCA	NEA
CNP	CNDC
NIM/A and B	ATOMKI
ARI	ATOMKI
PL/B	NDS
PRL	NNDC

Each responsible centre will rapidly assess the contents of an issue of the above journals, and communicate rapidly with relevant compilation centres and NDS to point out their need to compile asap. The NDS coordinator will oversee implementation and report on a quarterly basis to all responsible centres collectively.

C17 If several institutes and several experimental facilities are involved in an experiment, the first author of the paper will determine the centre responsible for the EXFOR compilation.

C18 On Renormalization of old works to new standards: The meeting could not find a practical solution within the EXFOR system beyond the present compilation practices (compilers have to take care to include all information about the standards used as given in the publication, and to include also the ratio to the standard if given by authors)

EXFOR, technical

C19 Coding of quasi-metastable states (WP2004-12) is approved.

C20 New detector codes (WP2004-13):
GE approved, to be used if specific type is not known
SI approved, to be used if specific type is not known
PS is introduced as general code to be used like COIN
MWPC: expansion: take out “position sensitive”
PSSCN: obsolete

PSSSD: obsolete
PSPC, PSSI: not introduced
SWPC: expansion: take out “position sensitive”

C21 The proposal on coding of differential data (WP2004-14) is approved with the understanding that a sentence will be added about differential cross sections at one point (angle) which cannot be defined as an (angular) distribution.

C22 The quantity ,SGV,,SFC (thermonuclear s-factor) is deleted because it is identical with ,SIG,,SFC (astrophysical s-factor). The affected entries have to be retransmitted.

C23 The proposal of SIG,HF and SIG,LF (WP2004-17) is withdrawn

C24 TT is approved as a general modifier as proposed in WP2004-18

C25 The definitions of thick/thin target yields as submitted in the new LEXFOR manual (superseding WP2004-18) are approved.

C26 Long reaction strings: the solution proposed at the 2002 Paris meeting (Conclusion 20 of 2002 NRDC meeting) will be implemented (continuation records following the same rules as for DECAY-DATA). All affected programs will have to be updated.

C27 The probability for emission of N particles (WP 2004-20) will be given in units NO-DIM.

C28 The probability of e.g. producing N protons is to be coded
….(P,X)NPART,NUM,PY,P
(but not …(P,X)1-H-1,NUM,PY)).

C29 Order of REACTION SF1, SF2 (target vs. projectile): It is agreed that data will continue to be coded in the way they were measured (no change of present rules). It is however important that retrieval codes will be updated to find also data with target and projectile exchanged.

C30 Quantity MCO is not needed (can be coded with DP) and will be deleted.

C31 Quantity EMC is obsoleted and the one existing entry will be deleted.
(JCPRG may come up with a new proposal later, they have many similar new data not yet compiled)

Actions

General

A1	Schwerer	Review protocol wording (WP 2004-2) for outdated technical terms (e.g., "tapes")
A2	All	(Continuing) All recognized policy papers for consideration by the NRDC members need to be prepared and distributed four weeks before the Annual NRDC meeting. This will ensure adequate thought and discussion prior to the meeting.
A3	NDS	Provide more user-friendly access to the information collected in the “internal” NRDC web page.

CINDA

A4	CNDC	(Continuing) Compile all Chinese experimental works (journals and conference proceedings) for CINDA and send to NDS in Reader format. Send first transmission within a month after the meeting.
A5	CINDA centers	(Continuing) When coming across report codes in dictionary 6 which differ significantly from what is shown on the cover, submit additional explanation to NDS for inclusion in dictionary 6
A6	McLane, NEA-DB, CJD	(Continuing) Check and confirm/clarify report codes given in WP 2003-8, Sections 4 and 5
A7	CINDA centers	(Continuing) Correct errors in report coding, as listed in Sections 6 and 7 of WP 2003-8
A8	All CINDA centers except NNDC	Search for illegal experimental entries for MANY and replace them with individual entries, and for the many illegal entries for FPROD which may be used only for lumped fission products.
A9	NEA-DB, NNDC	Send to NDS their area’s CINDA master file in the new format by the end of 2004.
A10	NDS	Check Zerkin’s output of CINDA conversion program

Common CINDA/EXFOR dictionaries

A11	NDS	(Continuing) Remove the restrictions "for photonuclear data (only)" from all dictionaries at their earliest convenience.
A12	McLane	Update the output for the new nuclides dictionary 227 according to WP 2004-8 and provide it together with the related computer code to NDS.

Manuals

A13	NEA	Issue final CINDA 2001 manual reflecting the conclusions of the present meeting. After this, it will be maintained by NDS.
A14	All	Give feedback to McLane about the new LEXFOR Manual distributed at the meeting (which contains the new proposals from this meeting's agenda) by the end of this year. (From January 2005, NDS will take over responsibility for LEXFOR.)
A15	Schwerer	Review the EXFOR Basics Manual and submit revision when time permits. Also include the "C4" computational format.
A16	All	Review the Citation Guidelines (2004 version from NRDC internal webpage) and send updates to NDS.

EXFOR, general

A17	All	(Continuing) Check/retransmit those entries from the list of pending retransmissions (distributed by McLane at the 2001 NRDC meeting) which still need correction
A18	All	(Continuing) All centers should give high priority to compiling new publications.
A19	Nichols	Communicate with major journals concerning data transfer to the network for inclusion in EXFOR. Complete initial communication by end of 2004.
A20	NDS	Compare EXFOR master files received from other centres with the NDS file, and as far as possible correct them (with help of other centers) by 1 July 2005.

A21	NDS	Make available to all centres the “final” EXFOR master file, together with a matching set of dictionaries, by 1 July 2005.
A22	JCPRG	Before transmitting the first J-series transmission, distribute a memo defining the scope.
A23	All	Review the new agreement with regards to “exotic data” and compilation scope (see WP 2004-10 and Conclusion C14), to discuss at next meeting.
A24	NDS	How to store and transmit covariance data – issue instructions/guidance by end of 2004. All centres are invited to submit proposals.

EXFOR, technical

A25	McLane	Send memo on proposed coding of isotopic abundance (for minor isotopes, where the value may have changed)
A26	McLane	(Continuing) Check whether there is a LEXFOR entry on the process code FUS (total fusion, Dictionary 30); if not, provide such an entry.

Software

A27	McLane	Send all EXFOR processing codes (except CHEX) to NDS. They are all now in standard Fortran90 (ANSI standard). CHEX will follow sometime later (spring 2005). (From end of January 2005, NDS will maintain all these codes.)

Appendix 1

Revised dictionary 47 as agreed at 2004 NRDC Meeting

XXX = no corresponding unique new quantity (= blank in actual dictionary)
* = changed compared to dictionary 47 as in transmission 9185 of 7 July 2004

Old Q	Reaction	New Q	Modifications agreed upon during NRDC2004
SEL	N,EL	CS	
DEL	N,EL	DA	
POL	N,X	POL	
POT	N,EL	**CS**	*
SIN	N,INL	CS	
DIN	N,INL	XXX	
SCT	N,SCT	XXX	
N2N	N,2N	XXX	
NXN	N,XN	XXX	
NEM	N,X+N	XXX	
NG	N,G	**CS**	*
RIG	N,G	RI	
SNG	N,G	XXX	
DNG	N,INL+G	XXX	
NEG	N,X+G	XXX	
NP	N,P	XXX	
NNP	N,N+P	XXX	
PEM	N,X+P	XXX	
ND	N,D	XXX	
NND	N,N+D	XXX	
DEM	N,X+D	XXX	
NT	N,T	XXX	
NNT	N,N+T	XXX	
TEM	N,X+T	XXX	
NHE	N,HE3	XXX	
NA	N,A	XXX	
NNA	N,N+A	XXX	
AEM	N,X+A	XXX	
NF	N,F	CS	
RIF	N,F	RI	
ALF	N,ABS	ALF	
ETA	N,ABS	ETA	
NU	N,F	NU	*If Energy = SPON -> 0,F*
NUD	N,F	NUD	
NUF	N,F	**NUF**	*
SFN	N,F	**XXX**	*
SFG	N,F	SPC	
FPG	N,F	**XXX**	*
FPB	N,F	**XXX**	*
NFY	N,F	FY	
FRS	N,F	**XXX**	*
CHG	N,F	**CHG**	*
TOT	N,TOT	CS	

SNE	N,NON	CS
NX	N,X	XXX
ABS	N,ABS	CS
RIA	N,ABS	RI
RES	N,0	RP
STF	N,0	RP
LDL	0,0	NQ
GN	G,N	XXX
GF	G,F	XXX
EVL	N,X	EVL
TSL	N,THS	TSL