MEMORANDUM 4C-2/28

From: H. Potters

Subject: TRANS 2001, 2002, 2003, 2004, 2005

27th March 1972

A. General remarks

1. Retransmissions of CCDN

Due to lack of programming manpower (Hans Willars has not been replaced up to the present), we will certainly not be able to do any retransmission before the end of this year. We are very sorry about this, and we hope it will not cause serious problems for anybody. If so, let us know and we will see if provisional measures can be taken to overcome them. To begin with, we have tried to be as explicit as possible in the description of the changes in this memo.

2. Retransmission conventions

In order to contribute to the discussion started at the Brookhaven Four-Centre meeting (Draft 4CM/VII/MIN, item IV e, para. 51), we would like to propose tentatively the following procedure :

Prior to the transmission of a tape containing replacements of subworks, the originating centre sends to all other centres a complete list of correction card images in dictionary update format. The purely administrative changes need not be included (although CCDN probably will do so). On this list is indicated (e.g. by centre number) which subentries, according to their wishes expressed in 4C memos, will not be sent to that centre. If no reaction has been received within two weeks, the originating centre will assume that the list is correct and send off the tapes. If a certain centre does not want to receive a certain entry or subentry, this will appear as NOENTRY resp NOSUBENT flagged with a C in column 80 on its tape, in order to indicate that the subentry resp.entry has been changed on the archive files.

This is the procedure we at CCDN have in mind and which seems to us to fit well in a "computer-assisted" system in the centres (at least, at ours). Any comments will be welcome.

3. New EXFOR tapes

Due to certain circumstances (mainly related to the new CINDA system) the EXFOR transmissions have been delayed until the new big disc drives on our installation are in operation, that is by May. From that moment on we will concentrate on sending transmissions at more regular intervals (one or more tapes every two months). The first tapes will contain big data sets from Saclay (medium Z and fissile nuclides), Geel (fissile nuclides) and KFK (van de Graaff data).

4. Comments on our tapes

We are answering several memos and letters: they are marked at each point by the following numbers :

1.	Letter P. Attree	28.12.70
2.	Letter V. May	9. 8.71
3.	Letter V. May	19. 8.71
4.	Letter P. Attree	28. 9.71
5.	Memo 4C-3/48	
6.	Memo 4C-3/53	
7.	CATCHR-RUN NNCSC	27.10.71

We thank you for these comments and apologise for the fact that it took such a long time to answer. But different aspects of our internal EXFOR management had to be organised one by one and other things had priority.

In addition to the numbers above, the changes and corrections we are going to make have been marked with letters :

I. is an important correction,

U. being a less important one.

This is our own evaluation, and we are always willing to change it if someone gives a good argument for it. We will probably make use of this classification as Hans Lemmel has proposed (memo 4C-3/43, part 2, page 15, point 4).

5. Except the CATCHR-run which I took from the Brookhaven meeting and some errors which Vicki communicated to me, we have not yet received comments on TRANS 2005 from NNCSC. Please check our listing with what you found and report any additional errors.

6. May we ask CJD to comment on our tapes?

B. TRANS 2001

20001 001 5 General

In general we would like to express the same opinion as is stated in memo 4C-1/21, page 5, first paragraph, point 1. Actually we are in the process of cleaning up the big data sets of Saclay and the Pu-239 have already been done. The situation is as follows :

There are four data sets in the file which are still valid :

1. 66 Paris, Vol. 2, p. 195, 3.8-40. eV.

2. Comptes-Rendus, Vol. 267, p. 901, 40. eV-20 keV. This is a remeasurement (see STANDARD in this subentry).

3. From 1 and 2 the resonance parameters of 70 Helsinki, Vol. 1, p. 513, have been derived. All older data from the Salzburg and Paris conferences are superseded and will not appear in EXFOR at all. These references should not appear under the keyword REFERENCE either in this subentry.

4. Quite recently we received as a private communication a new data set which is a renormalisation of 1. and 2. between 37.7 eV and 30 keV. The author looks upon this data set as his final one; the resonance parameters will not, however, be recalculated.

As a consequence, we will keep 20001 in our file and will send the data sets 1, 3 and 4 in one of the forthcoming transmissions.

The following changes will be made to 20001 001 :

REFERENCE

I Add (C,70HELSINKI, 1, 513, 7006) with "Resonance parameters" in free text.

U Add free text "Experimental description" and "Data on tape" to the other references.

U STANDARD

Add data set number (DSN) to the reference in the first paragraph.

U COMMENT

Add the Helsinki conference reference with DSN to the first paragraph and complete the reference in the second.

I STATUS

Add (SPSDD) and free text :

"Renormalised", followed by reference and DSN.

20002 001 5 General

The Helsinki data (Vol. 1, p. 315) are in the pipeline.

I STATUS

Will be marked (SPSDD) with reference and DSN in free text.

U CORRECTION

"Technique" misspelt.

003-005) 1 DATA
007)

I Due to an error in the conversion dictionaries the heading EN-MAX and EN-MIN have been inverted.

007 3 ISO-QUANT/COMMENT

U Drop DRT modifier and related text in COMMENT.

20003 001 REFERENCE

U Change second reference in (70HELSINKI, 1,419,7006).

3 CORRECTION

U "Technique" misspelt.

002-003 3 PART-DET

U Add: "Fission fragments".

006-008 1 DATA

I Invert EN-MAX and EN-MIN headings.

006-011 PART-DET

U Add: "Fission fragments, neutrons".

	008	3	ISO-QUANT
		I	Should be NF/ARE).
			Free text should go under COMMENT and should read "Data compared with ...".
20004	001	3	DATA
			The objections against NUC-QUANT with EN data heading have been withdrawn (memo 4C-1/21, page 3, first paragraph).
	002-007 009-014 016-019 021-024 026-029 031-036 038-041 043-050 052-055 057-062 064-067 069-074 076-079 081-084 086-089 091-096 099-111	1	ISO-QUANT The suspicion expressed in note 2 of letter 1 is not correct. The direct interaction is negligible at 120 degrees where the measurement has been done (as is obvious). But the integral cross-section has been derived as was clearly stated in ANALYSIS (4PI1A) and the author does not state that direct interaction is negligible for all angles. On the contrary: although this might be the case for certain nuclides, it is certainly not true for all nuclides because the author found it necessary to eliminate direct interaction by measuring at 120 degrees. We do not feel obliged to verify the necessity for this elimination. We are compiling data, not evaluating them.
			The free text under ANALYSIS explains fully enough what the CN modifier means. In order to avoid duplication of information we will point to ANALYSIS :
		U	Add free text: "SEE ANALYSIS".
		1	ANALYSIS
		U	(HISTM) should indeed be (HIST).
	002-111		PART-DET
		U	Add: "Protons".
	099,111	1,3	ISO-QUANT
		I	Isotopes should be 33-AS-75 (for 099) and 53-I-127 (for 111).

	008,015 020,025 030,037 042,051 056,063 068,075 080,085 090,097 098	1	STANDARD Is missing because it is irrelevant for nuclear temperature.
20006	001	1	REFERENCE
		U	(W,LUNDGREN,68).
	002	3	PART-DET
		U	Add "Gammas" after each energy interval.
		U	"Has" should be "have".
	003-004	3	PART-DET
		U	Add "Gammas".
	003	3	ISO-QUANT
		U	Drop DRT modifier and adapt the free text. Alternatively: add RV modifier (newly to be proposed, see memo 4C-2/27, page 8; 30018 001).
	004	1	STANDARD
			Left out because it was not relevant as the data were derived from the 1/V dependence in the ratio (see ANALYSIS).
20007	001		REFERENCE
		U	Change first reference to : (C,70HELSINKI,1,177,7006)
			Add as second reference
		U	(R,EUR-4538,70) with free text : "The same content as Helsinki Conference".
		3	STATUS
		U	Add: "Data taken from private communication".
	002-032	3	PART-DET
		I	Should be (N) not (G).
		U	Add: "Neutrons".

20008	001		REFERENCE
		U	First reference should be (C,70HELSINKI,2,301,7006).
		3	STATUS
		U	Add: "Data taken from private communication".
	002-035	3	PART-DET
		U	Add: "Neutrons".
	036-052	3	PART-DET
		U	Add: "Gammas".
	019-052		DATA
		U	Author cited .845 MeV for gamma energy (E) instead of the more precise value .847 MeV; so we will do so.
	002-052		DATA
		I	Energy resolution should be 2.5E-2.
	019		DATA
		I	DATA value on line 24 ($Cos(\theta)$ = 0.146) should be 4.38E+1MB/SR instead of 4.08E+1MB/SR.
20009	001		REFERENCE
		U	First reference should be: (C,70HELSINKI,1,437,7006).
	004-005		DATA
		I	EN-MAX and EN-MIN headings inverted.

C. TRANS 2002 — Due to a programme error, the date on the TRANS-record is missing.

20010	001	2	STATUS
		U	"Telephone"misspelt.
	002-009	2	PART-DET
		U	Add: "Neutrons".

D. TRANS 2003 — Date on TRANS-record missing.

20011 001	2	STATUS
	U	"Telephone" misspelt.
002-007	2	PART-DET
	U	Add: "Neutrons".

E. TRANS 2004 — Date on TRANS-record missing.

20012 001 20013 001 20014 001 20015 001 20016 001	2	STATUS
	U	"Telephone" misspelt.
20012 002-004 20013 002 20014 002 20015 002 20016 002	2	PART-DET
	U	Add: "Neutrons".

F. TRANS 2005 — 4 — Date on TRANS-record missing.

20020 002-032	6	TABLE-NR
	U	Digit in code should be changed to the table number mentioned under STATUS.
20023 001	6	ANALYSIS
	I	Add paragraph : ". Data reduced to 2200 m/sec. values".
002	6	ISO-QUANT
	I	Drop MXW modifier.
	6	DATA
	I	EN-DUMMY → EN.
20024 003	6	ISO-QUANT
		We shall wait until we have an answer to memo 4C-2/26, point E.
20028 002-004		CMPD-QUANT
	I	Adapt compound code: (1-H-CXX,TOT,,SPA). Add free text: "Polystyrene".
005-007		CMPD-QUANT
	I	Idem: "(1-H-PLE,TOT,,SPA) Polyethylene".

20029 001 4 REFERENCE

U Second reference should be: (R,EANDC(CR)-68,6801).

20031 001 6 COMMENT

The nuclide on line 20 is correct: $Pt^{196}(n,p)$ gives Ir^{196} decaying to Pt^{196} by Beta-decay, in this case via excited levels of Pt^{196}.

20033 001 6 REFERENCE

All references give the same numbers. See first sentence of B. 20001 001.

Antwerp conference is not important since it gives no information which is not in the other references.

6 STATUS

U "... publications".

005,009 ISO-QUANT

U Drop DRT modifier (see memo 4C-2/25, point 3).

005-006
009-010 RESID-NUC

U Add -G extension.

005 COMMON

I Put H-LIFE MIN 70.

009 COMMON

I Put H-LIFE MIN 4.4

20036 001 COMMENT

I Add: ".Note by the compiler,

A misprint appears in the reference, the differential elastic cross-sections of tables 1 and 2 are not given in millibarn /ster. but in barn/steradian (see evaluation by Prince, 71 Helsinki, Vol. 2, p. 825)".

002-004
012-014 DATA

I All numbers under DATA and DATA-ERR should be multiplied by 1.0E+3.

20037 003-004 4,7 DATA

I Due to a programme error, three data columns were specified but only two were given.

20038 002-003 CMPD-QUANT

Adapt compound code: (1-D-WTR,TOT) D2O.

20041 6 General

We have many very old data in our file taken over from SCISRS-I and coded at NNCSC (at that time Sigma Center). Although we make a big effort to clean up also old data, you cannot expect that the BIB information is always complete: we have simply no time to do that, and moreover old data usually have lost most of their importance. Nevertheless, we are grateful to other centres providing us with information which is lacking in our files so long as it is important enough. We will not enter BNL-325 as a REFERENCE since this is a compilation but point to it in free text.

001 6 REFERENCE

U Add free text: "more details in BNL-325, second ed., suppl. 2".

STATUS

U "Private communication to NNCSC".

002 ISO-QUANT

I Modifier should be SPA.

N-SOURCE

I "(REAC) Reactor neutrons".

STANDARD

I "(11-NA-23 NG) Sigma = 535 MB. Renormalised by BNL-325; Author reported 210MB based on Sigma = 510 MB".

PART-DET

U "(B-) Decay Beta's".

003 STANDARD

I "(15-P-31,NG) Sigma = 190 mb".

	004-005		ISO-QUANT
		I	Add MS modifier.
			PART-DET
		U	"(B-) Decay Beta's".
			RESID-NUC
		I	Add -M1 extension and free text "Half-life = 270 DAYS".
			DATA
		I	H-LIFE D 270.
20043	001		RESID-NUC
		U	Add -G extension.
	002-003		COMMON
		I	H-LIFE HR 53.
20045	003,005		DATA
		I	Numbers under -EN-RSL should be positive.
	005		COMMON
		I	H-LIFE 15.5.
20049	002-006, 008	6	DATA
		I	Energy value should be multiplied by 1.0E-3.
	003	4,6	RESID-NUC
		U	Should be (25-MN-55).
	007	6	ISO-QUANT
		I	Add MXW modifier.
20050	001	6	COMMON
		I	Energy value should be multiplied by 1.0E-3.
20053	001	4	REFERENCE
			Sorry, we overlooked KR- in setting up memo 4C-2/20; it has been added in the meantime following memo 4C-2/22.

003 RESID-NUC

U Add -G extension.

20055 002,005 4,7 STANDARD

Is irrelevant for nuclear temperature.

20062 002 DATA

I Add: H-LIFE MICROSEC 608. H-LIFE-ERR MICROSEC 22.

004 RESID-NUC

U Add -G modifier.

20063 002,006 RESID-NUC

U Add -G extension.

003 RESID-NUC

U Add -M1 extension.

004 DATA

I Add: H-LIFE MIN 20.4 H-LIFE-ERR MIN 0.4

RESID-NUC

I (49-IN-112-G) T(1/2) = 14.5+-0.58 MIN.
(49-IN-112-M1) T(1/2) = 20.4+-0.4 MIN.

STANDARD

U Drop (irrelevant).

005 COMMENT

U Coefficient misspelt.

006 DATA

I Add: H-LIFE D 50.

RESID-NUC

I (49-IN-114-G) T(1/2) = 72. SEC
(49-IN-114-M1) T(1/2) = 50. DAYS

STANDARD

U Drop (irrelevant).

20064 001 STANDARD

U Drop (irrelevant).

002-005 6 ISO-QUANT

I Add: REL modifier.

20071 001 6 General

This data set was coded by the author himself when he was here at the centre. The values of the data and their errors have clearly been re-evaluated; so we will not change them or add partial errors because they are certainly not valid any more. Another important difference was the standard (ABSOLUTE in DASTAR) which is not true; this might illustrate that author proofs are not a watertight panacea against serious errors, while often author's jargon is different from that at the centres (e.g. "absolute" means in the minds of many people "expressed in barns", which is the opposite of what we express by the REL-modifier).

REFERENCE

U Add: (T,WINIWARTER,7002) Univ. Vienna, Prelim. data.

003 RESID-NUC
005-007

U Add -G extension.

005 DATA

I Add:

H-LIFE	H-LIFE-ERR
HR	HR
13.03	0.21

009 DATA

I Add:

H-LIFE	H-LIFE-ERR
MIN	MIN
96.	4.

005,009 STANDARD

U Drop (irrelevant).

20073 002-003
20074 002 4,7 DATA

I N1 should be 2. (see 20037).

20075 001 4 REFERENCE

Maybe NDS can change the last hyphen to a slash themselves (see memo 4C-1/21, page 4, second paragraph from bottom) just as NNCSC moves the S,P,D modifiers into the ISO-QUANT and we move the half-lives into the DATA.

20083 003 RESID-NUC

U Add -G extension.

20084 002 RESID-NUC

I (17-CL-34-M1) 32 MIN Metastable state with ...
(17-CL-34-G) 1.57 SEC Groundstate with ...

DATA

I Add: H-LIFE MIN 32.

003 RESID-NUC

I (19-K-38-M1) 0.95 SEC Metastable state with ...
(19-K-38-G) 7.7 MIN Groundstate with ...

DATA

I Add: H-LIFE SEC 0.95.

20087 002-003 ISO-QUANT

U Drop DRT modifier (see memo 4C-2/25, point 3).

002 RESID-NUC

U Add -G extension.

DATA

I Add: H-LIFE MIN 70.

20089 003-004 RESID-NUC

U Add -G extension.

20092 008 ISO-QUANT

I Add GND modifier.

RESID-NUC

U Add -G extension.

20098 002-003		ISO-QUANT
	U	Drop DRT modifier and adapt free text. Alternatively, add RV modifier (see memo 4C-2/27, page 8, 30018 001).
20100 002	6	COMMENT
		See our Comment at 20041 General:
	U	Add: Remeasured with improved technique, see Phys. Rev. 96 (1954) 1245; especially discussion on page 1248.
20101 004	6	DATA
	I	Due to an error in the dictionaries, the heading and the units are wrong; should be EN-RES EV instead of EN MEV.
20102 002		ISO-QUANT
	I	Drop MXW modifier.
		COMMENT
	I	Add: Data reduced to 2200 m/sec. value.
		DATA
	I	EN-DUMMY should be EN.
20103 004	6	DATA
	I	EN MEV should read EN-RES EV. (see 20101 004).
20105 002		DATA
	I	-DATA-ERR should be positive.
003	4,7	DATA
	I	MISC-COL should be MISC (dictionary error).
20106 012 20107 006 20109 009		RESID-NUC
	U	Add G-extension.

Distribution

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