MEMORANDUM 4C-2/35 DAT|324-0

From: Hans Potters (OECD)

Subject: Comments on EXFOR tapes

22.5.73

15th May 1973

- Three
- Calamand
- Dunford
- Lemley
- Lemmel
- Schmidt
- NDS

CONTENTS:

Fritz Fröhner

Distribution:

Dr. V. Manokhin (5 copies)
Dr. S. Pearlstein (" ")
Dr. J. Schmidt (" ")

4C-2/35

GENERAL

1. We have converted and scanned tapes 1012, 3005-3008 and 4002-4005.

2. We found a suspicious number on tape 3003.

3. We ran tape 3009 through our CHECKT programme and found a considerable number of formal errors. We hope NDS will soon implement the CHECKT programme as updated by us on their new computer.

4. We cannot guarantee that we have not made remarks concerning rules which have come in to vigour since a work was coded. Centres can nevertheless assign priorities to changes or refuse changes as they wish.

5. We hope, however, that we shall get reactions on our remarks via the mechanism proposed in memorandum 4C-2/29, point 7. We shall shortly send off a memorandum with photocopies of remarks in earlier memoranda on which no reaction has been received up to the present.

6. With regard to missing information, we noted what we thought was useful information. However, there are some items which we strongly feel should be in, or should be corrected. We shall come back to these points if the reaction is negative.

7. We have just received TRANS 4007 and have run it through our CHECKT programme. More comments on TRANS 3009 and 4007 will follow when conversion to NEUDADA is done.

4C-2/35

TRANS 1012

10012.all — STANDARD

Missing for all cross sections.

.004,005 — BIB

Line 6: Free text parenthesis in column 12.

COMMON

E should be E-LVL.

.001,006 — COMMON/DATA

EN-RSL in subwork .001 is not valid for subwork .006.

.006 ? METHOD

Transmission missing.

.006-010 — DETECTOR

Missing.

10013.001 ? CORRECTION

Should be ANALYSIS?

DETECTOR

Expand.

FACILITY

Lines 12 and 13: . . . Spectro-meter.

.008,010 — STANDARD

Missing.

.009 — SUBENT

Missing (92-U-234,NG) ?

10083.001 ? ERR-ANALYS

Text unclear; contains information on STANDARD, ANALYSIS and CORRECTION, which should go under relevant keywords.

? STANDARD

Drop code; should be gold, according to ERR-ANALYS.

METHOD

Isotopic misspelt.

10126.001 ? BIB

Line 13. Unclear: should PUC1 be PU-C?

DETECTOR

Missing.

ANALYS/STANDARD/DATA

According to DATA, this is a 2200 m/sec. cross section: how is this derived and normalized?

10132.001 STANDARD

Drop (not pertinent).

GEOMETRY

Obsolete: move to METHOD.

? ANALYSIS

No information on how the spins were derived (Shape analysis?).

10146.001 ? METHOD

Time-of-flight?

ERR-ANALYS

Points to ANALYS, where there is no information concerning errors.

ANALYSIS

Part of this information should go under CORRECTION.

N-SOURCE

Expand.

.002 ? ISO-QUANT/STANDARD

The same data are taken as standard. How are they normalized?

10152.001 STANDARD

Missing.

10159.001 ERR-ANALYS

Should be CORRECTION: therefore, ERR-ANALYS is missing.

REFERENCE

According to COMMENT in subwork .005 the reference Ann. Phys. should be added.

STANDARD

Missing.

10159.009 ? ANALYSIS

Text unclear: from a spline fit of 125 data points?

.010,011 DATA
.019

Blank out the zeros in the DATA-ERR columns.

.010,011 STANDARD/STATUS

Unclear: how can one normalize elastic cross sections to total nonelastic if the nonelastic cross section is not known as it is derived from the elastic to be normalized?

.018 SUBENT

Missing (1-H-3,TOT)?

.020 BIB

Line 4: Total-elastic.

.021 COMMENT

Should be STANDARD.

METHOD

Left-right asymmetry or magnetic field rotation missing.

10162.001 GEOMETRY

Obsolete: move under DETECTOR.

.002 ISO-QUANT

Should be (...,NU,RES,PR/REL)
(see PART-DET in subwork .001 and EN-RES in DATA).

10168.001 N-SOURCE

Misspelt.

? Thermal column?

STANDARD/METHOD

Missing.

.002,006 ? DETECTOR
.007

Also Moxon-Rae detector?

.002-008 DATA

EN-DUMMY should be 0.0253 eV.

10189.001 STANDARD

Missing.

.002 ISO-QUANT

Should be (6-C-0,EL,DA).

.003 COMMENT

Should be CORRECTION.

10212.001 DETECTOR

Missing.

.002 METHOD

Missing.

DATA

Independent variable repeated:
8.0465E01 and 8.0665E-01 MeV.

.003,004 DATA

Many independent variables repeated.

? Lines in subwork .003 correspond to fits (5 lines each) in subwork .004, except for 750 keV where there are 3 lines in subwork .003 and 4 fits in subwork .004. One line forgotten in subwork .003?

.004 ISO-QUANT

Should probably be:
((94-PU-239,EL,LEG,RS)+(94-PU-239,INL,LEG,PAR/RS))

Lines 5 to 8 of subwork .003 should also appear here (why not in DATA/COMMON?).

STANDARD

Drop code.

10227.001 STANDARD

Absolute.

ERR-ANALYS

Unclear: what are TAC window shifts?

.002 STATUS

Add free text.

METHOD

Drop TOF (already in subwork .001) and add transmission (see TITLE).

10227.002 DATA

EN-ERR should be EN-RSL.

10237.001 BIB

Line 11: Evaporation misspelt.

.002,003 GEOMETRY

Should become DETECTOR (obsolete).

? ERR-ANALYS/DATA

What is the relation between the errors mentioned in BIB of subwork .002 and DATA in subworks .002 and .003? There is no agreement between any numbers.

.003 COMMENT

Should not these values be taken out of this subwork and the 'total errors' given as DATA-ERR2 in the subwork .002 instead of coding the values twice?

STANDARD

What is 'previous' data set? Please formulate independently of the EXFOR transmission format. At the four centres the order of the subworks is not generally preserved.

10242.001 METHOD

Expand codes.

REFERENCE

Add month (03).

10255.001 REFERENCE

Add month (08).

10256.001 METHOD

Expand TOF.

.004 A COMMON

ℓ=0 assumed.

DATA

Drop E from number format.

.004,005 ANALYSIS/ERR-ANALYS

Missing.

.005 DATA

-04 exponent forgotten in DATA/DATA-ERR.

10258.001 ERR-ANALYS/ANALYSIS

Missing.

METHOD

Wrong code TRANSM,: drop code.

.007,010 A COMMON

ℓ=0 assumed.

.008-010 A DATA

Half-life 41.8 days assumed.

10260.002 ISO-QUANT

No competing reaction, so ABS should be NG.

10280.001 STANDARD

Absolute missing.

DETECTOR

Missing.

10290.001 REFERENCE

Add month (07).

.002,003 DATA

Drop E from number format.

.003 STANDARD

What is the difference between this and (92-U-235, NF) ?

TRANS 3003

30021.002 ? DATA

Line 14: DATA=0.0. Is this correct?

TRANS 3005

30017.001 BIB

Line 21: Cross section misspelt.

.001 DATA

±EN-ERR should be ±EN-RSL.

30037.001 GEOMETRY

Information from line 29 onwards should go under CORRECTION.

.002-015 COMMENT

The sentence concerning inscattering should go under CORRECTION; the rest under STANDARD.

BIB

Please do not mix up keyword order!

30055.002-004 STATUS
.006

'Entries' should be 'subentries': add also 'from double differential data in subentries ...'.

.007.010 BIB

Delete line 15.

30059.004 BIB

Line 6: 'TION....' dropped.

30061.001 REFERENCE

Line 6: Unclear - incomplete?

30073.001 BIB

Line 19: Drift of amplifiers.

A ANALYSIS

How is the reduction to the 2200 m/sec. cross section done? Or should there be an SPA modifier in the ISO-QUANTS; and should EN become EN-DUMMY? This is likely in view of the method used.

.007,009 SAMPLE

V2-O3, U3-O8.

30076.002,003 ? ISO-QUANT
.011-013
.015-017

845 keV level belongs to Fe-56. Natural Fe means not corrected for isotopic abundance, so the Fe-56 cross section is about 9% higher. Is this true?

30076.003 STATUS

From Table 1 in PEL-180.

.005 DATA

Illegitimate lines: 79,121,122.

.006 TABLE-NR

Missing.

.007-010
.012-013
.016-017 STANDARD

Drop.

30092.002-005
.008 FLAG

Note by the compiler. Why do the compilers regard certain values as valid or invalid? It looks rather arbitrary.

.004-010 A DATA

What does EN DATA-CM mean? We interpreted it as EN-CM DATA.

30105.007,012 DATA

Add half-lives.

30108.001 PART-DET

Code should be (AR).

30123.001 REFERENCE

Add month (05) to JNE, ...

30126.001 COMMON

E-RSL does not apply to subwork .002.

STANDARD

Free text THC should be BI-212(TH-C) and THC' PO-212(TH-C').

GEOMETRY

Should go under ERR-ANALYS with (ANG-RSL).

COMMENT

Where are the data for IN-113 ?

30127.001 SAMPLE

Replace twice 'target' by 'sample'.

BIB

Line 19: Channel misspelt.

30127.001 ERR-ANALYS/COMMON

If the compiler is not sure of the value of EN-RSL it should be left out of COMMON.

30130.001 METHOD

In view of the information under STANDARD and N-SOURCE, METHOD (ASSOP) should be added.

.007 SUBENT

As it stands it is a quite meaningless subentry. It should be organized as subentry .008 and at least contain the value mentioned under COMMENT of subentry .006.

.008 FLAG

Replace twice 'cross sections' by 'formula'.

.010-011 EN-SEC

Why not enter these values in COMMON ?

.012 STATUS

Can be entered under ANALYSIS as in subwork .006.

Remove plural s in adjectives.

.013-015 TABLE-NR

'Data in subentries .013, .014 and .015'.

30135.001 TITLE

This is the same paper as in entry 30105. Which is the correct title ?

.004 DATA

Add half-lives.

30136.004,008 DATA
.013

Add half-lives.

30137.002-007 ISO-QUANT

Should be NG,RI.

30139.003,005 A DATA

DATA-ERR units PER-CENT are ambiguous. We assumed absolute error.

30142.001 PART-DET

This is an activation measurement. The fission fragments are equivalent to the residual nucleus in a non-fissile activation measurement and should not be entered under PART-DET.

30142.001 METHOD

Code (ACTIV) missing.

TRANS 3006

30016.001 TITLE

Why adapt the title ?

.001,002 HISTORY

R-flag used without justification in HISTORY.

.002 DATA/BIB

Why use R-flag here? Only EN-ERR has been changed to EN-RSL. We had therefore to compare the whole data section. Also, in the BIB-section the I-flag could have been used.

30018.001 ISO-QUANT

PAR should be RV.

30020.008 DATA

Resonance value should be 21.6 eV.

30057.001 STANDARD

Was hydrogen also used to obtain the cross section values in MB/SR/MEV ? If not, remove code. If yes, adapt free text.

A STATUS

Data taken from Priv. Comm. ?

ANALYSIS

Should be COMMENT.

ERR-ANALYS

... 10 - 20 PC...

.002-004
.005-008 SAMPLE/ANALYSIS

Should this not be repeated in subentries .003-004 and .006-008 ?

30060.002-009 MISC-COL/DATA

Use HL.

Add half-lives for ratios.

30067.016 DATA

Add half-life.

30071.003-007 COMMON

Enter levels 0. and 12 keV.

.004-007 STANDARD

Free text only (RS modifier).

30072.001 N-SOURCE/METHOD

Remove code THCOL. First paragraph of METHOD should go under N-SOURCE. The neutron source is in fact the converter plate.

.004-005 BIB

Line 5: X should be *. Nice idea, 0/0 for PER-CENT, but 100 0/0 might be somewhat unclear.

30082.001 ? INC-SPECT/ERR-ANALYS

Are the numbers under EN-RSL energy-spread FWHM ?

RESID-NUC

G-extension, as the half-life pertains to the ground state.

.003,006 COMMON
.007

Add half-lives.

30083.001 ERR-ANALYS

Partial errors add up to an error greater than 20%.

30084.002 DATA

Values of -EN-RSL should be positive.

30085.001 STANDARD

ABS should be NG for gold.

STAND1 and STAND2 should be repeated.

? COMMON

Is STAND2 also taken at an EN-NRM of 0.0253 eV?

.002 A DATA

Cut-off energy of 0.5 eV assumed.

ISO-QUANT

ABS should be NG.

30097.001 PART-DET

G should be DG.

INC-SPECT

Is EN-RSL in FWHM?

.002 DATA

Half-lives should be added.

30099.002,003

ISO-QUANT

Add PR modifier (neutrons and fission-fragments in coincidence - see subwork .001).

30100.005
30102.002

DATA

Was it necessary to use the R-flag here?

30104.001

STANDARD

According to free text, the code does not apply to any of the two subentries. Free text difficult to understand. Reformulate.

PART-DET

Code G should be AR (see METHOD), otherwise DG.

.002

DATA

Add half-lives.

30106.001

REFERENCE

Add month (10)

30110.001

BIB

Invert lines 16 and 17.

STANDARD

Free text unclear: which angular distribution is meant?

PART-DET

Add (B-) (see METHOD).

COMMON/STANDARD

Has to move to subentry .003: EN-NRM and EN-RSL can then be dropped.

Half-life should go into COMMON of subwork .001 instead.

30111.001

BIB

Line 19: Irradiation misspelt.

.002

ISO-QUANT

REL should be FCT.

DATA

H-LIFE: what is probably meant is between
0.5 and 0.6 sec.
0.6 and 1.8 sec. etc.
In that case, use HL-MIN and HL-MAX.

30121.003 COMMON

Put E = 10.3 MEV.

30138.002 COMMON

Add half-life.

30143.002-004
.006-011
.013-015 COMMENT

First sentence belongs under ERR-ANALYS.

30144.003 CORRECTION

What has 27-CO-58 burn-up to do with 22-TI-46 activation?

30146.003 ISO-QUANT/COMMON

Add PAR modifier and E-MIN = 12. MEV in COMMON.

30147.002,003 ? ISO-QUANT/COMMON

What is the minimum gamma energy in order to ensure measurement of NG only?

30148.001 GEOMETRY

'Targets' should be 'samples'. Drop keyword.

30151.002,003 COMMON

Add half-lives.

30153.002,003 COMMON

TEMP is sample temperature only. Use MISC or invent new heading.

30154.001 STANDARD/METHOD

Associated particle method used? How was the gamma detector efficiency established?

.009-016 DATA

Add half-lives.

30155.002,004,007
.009,011,012 COMMON

Add half-lives

30157.001 STANDARD

Add half-life in free text.

.002 DATA

Add half-life.

30158.all
(see also TRANS 3007)

GEOMETRY/COMMON/DETECTOR

ANG = 0 ± 60 degr. must be wrong in view of the detector diameter: arctg 0.75 = 37 degr. Therefore, take authors' values 50 degr. FWHM i.e. 35 ± 25 degr. HWHM everywhere.

Both ANG, ANG-RSL and EN, ± EN-RSL are common to all entries and also to the level density parameter entries which have been derived from the spectra at that energy and angle. Level density parameters in general are energy- and angle-dependent, as are the spectrum shapes.

.001

GEOMETRY

Use sample instead of target (twice).

METHOD

TH-C(BI-212),TH-C'(PO-212).

STANDARD

Absolute in contradiction with the remark in subwork .010 (e.g.) under REFERENCE (P,INR-1401,13,7205). Does this mean that (26-FE-56,NP) is the standard? This must be an activation measurement as the 847 keV gamma belongs to Fe-56 and appears in the beta decay of Mn-56.

A compiler should be extremely suspicious about "absolute" measurements: with the exception of transmission measurements, they are relatively rare.

.010,014
.018

COMMENT

1. should go under EN-SEC and
2. under ERR-ANALYS.

ERR-ANALYS

Statistical misspelt.

.027,028

STATUS

Subentry .014 and .018 respectively.

.002,004,006
.008,012,016
.020,022,024

COMMENT

Should be STATUS (UNOBT).

30159.003,004,006
.007,009,010
.012,013,015
.016,018,019
.021,022,024
.025,027,028
.030,031

COMMON

E-MIN = 3.75 MEV.

30160.001

REFERENCE

Add month (04) to ZP.

30163.001

COMMON

EN-ERR should be EN-RSL.

30168.003 ?

CMPD-QUANT/DATA

Are MXW and EN-DUMMY correct?
ANALYSIS suggests a 2200 m/sec. cross section.

30170.002

DATA

Lines 51, 56 and 64 invalid.

30175.004

DATA

Add half-life.

Small value: should it not be DATA-MAX?

30176.001

COMMON

Add half-lives.

TRANS 3007

30025.001

HISTORY

R-flag not documented.

30029.002,003

ANALYSIS/STATUS

Derived from subwork .004 and not from subwork .005.

Subwork .003 is dependent on subwork .005 and should be changed accordingly.

30056.001

STANDARD/ISO-QUANT/COMMENT

Delete STANDARD and COMMENT.

Add RSD modifier.

PART-DET

Expand.

ERR-ANALYS

Missing.

.002-006

DATA/COMMON

ARB-UNITS should be NO-DIM.

EN-ERR should be EN-RSL.

.003,005

DATA

Illegitimate lines with blank DATA-column.

ANALYSIS

Should be COMMENT.

In subwork .005 the text should be repeated and the reference to subwork .003 should be removed.

MISC-COL

Explanation of DELTA missing. I know at least two different definitions for the mixing parameter delta.

We suggest putting the contents of MISC-COL, ANALYSIS and the relevant numbers all under COMMENT.

30093.001
(see also TRANS 3009)

STANDARD

This is energy calibration: drop code.

ANALYSIS

Should go under the relevant subentries.

N-SOURCE

Any information about reactor n-source?

30093.002,004 ISO-QUANT

.006 FAC should be FCT.

.003,005 ISO-QUANT

.008 FAC should be RSD.

.007 ISO-QUANT

Why not 'simply' ((92-U-235,NF,AKE,,FF)-(92-U-235,NF,AKE,TER,FF))?

.007,011 DATA/ISO-QUANT

Is the 2.53E-2 eV value not some spectrum average? If so, these subentries should be broken up: EN should be EN-DUMMY and SPA or MXW modifier should be added to the ISO-QUANTs.

.009 STATUS

Code (UNOBT) missing. If this is a mere remark in the article and there are no data measured, a note under COMMENT in subwork .001 or .008 is sufficient.

30101.001 STANDARD

Remove.

.002,003 DATA

.005-018 Half-lives missing.

.004,019-032 NUC-QUANT

The nucleus should be that to which the quantity pertains. In this case it is the residual nucleus and not the compound, because that is the nucleus for which the spin cut-off parameter describes the spin distribution according to the theory of Huizenga and Vandenbosch. Compare Nucl. Phys., A122(1968) 234, section 1 (third line): final nucleus.

.004 COMMENT/DATA

Is E-EXC the excitation energy of the residual nucleus? E-EXC should be E-EXC-MAX.

.013,030 DATA

Use DATA-APRX.

.026,028 DATA

Use DATA-MAX.

30140.001 STANDARD

Not absolute - see 30089.002.

30162.001 COMMENT

Drop (see subwork .003).

.003 COMMENT/DATA

Should be ANALYSIS.

Why is the DATA-ERR = 0.04 not entered?

30164.001
30165.001 COMMENT

Please add references.

30171.001-005 PART-DET/DATA

Ask for half-lives.

30172.001 METHOD/STANDARD

Standard is not absolute but Fe.

30173.001 BIB

Identification part wrong !!!?? (line 6).

.003 STATUS

DEP is wrong, as the teflon cross section is not given. Subworks .003 and .004 contain inter-dependent data with correlated errors. STATUS should become ANALYSIS and ERR-ANALYS should give the reason for the higher (2%) error.

30177.002 HISTORY

Second paragraph: date missing.

Third paragraph should go under COMMENT.

Angstroms are converted to Milli-eV and not to eV.

30183.001 ? METHOD

Add code ASSOP?

30187.001 METHOD

'Target' should be 'sample'.

ERR-ANALYS

Should read 'Most of the error is due to ...'.

TRANS 3008

30023.001 PART-DET

Missing.

30032.001
30038.001 REFERENCE

(C,65ANTWERP,,537,6507).

30032.002-009 ISO-QUANT/DATA

REL should be FCT.

ARB-UNITS should be NO-DIM.

30065.002 DATA

Data heading FLAG blanked out.

30066.003,004 STATUS

The 14.67 MeV values should be flagged (DEP) dependent - see FLAG (2.). This would avoid breaking up the subentries for a mere STATUS.

30070.002,003 COMMENT/COMMON/STANDARD

COMMENT should be STANDARD (7-N-14, NA) + free text. STAND = 100MB in COMMON.

30074.001 STANDARD

Expand MFF.

30116.001-003 STANDARD/FLAG

Refer to entry 30186 for 14.7 MeV standard.

EN-SEC

This is an activation measurement, so the information should go under COMMENT and/or RESID-NUC.

.003 COMMENT

Should be STANDARD.

30118.001 STANDARD

Drop.

30137.001 INC-SPECT

Line 15: 1/E should read 1/V.

30184.001 ? STANDARD/METHOD

Is this not standard source?

ERR-ANALYS

Partial errors do not add up to the resulting error of 15%.

30184.008 ISO-QUANT

Should this not be 20-CA-0?

.013 COMMENT

Occurs twice.

30185.001 STANDARD/METHOD/ERR-ANALYS

See entry 30184.001.

.002-011 SAMPLE/ISO-QUANT

Why is isotopic abundance given at natural samples - because it was slightly different from the natural composition? If so, sample should appear in the NG,DE subentries too.

30186.001 COMMENT

Refer to entry 30116, same reference.

TITLE

Why different titles for the same reference?

30191.001 STATUS

Data taken from which reference?

.002,004 SAMPLE

Replace 10B by B-10.

.003 COMMENT

Unclear: is Sigma (Th) = 4*Sigma(Ex) or Sigma(Ex) = 4*Sigma(Th)?

.006 ISO-QUANT

In analogy with (3-LI-7,NNT) via He^5 or three particle breakup (see LEXFOR light-nuclei reactions) this should be (3-LI-6,NND,DA,PAR).

SAMPLE

LI-F should be more readable.

30192.001 STATUS

Data taken from which reference?

.002 BIB

Line 10: second 'cross' should read 'angle'.

Line 11: from +60 to -60 degr. or from +30 to -30 degr.?

30193.004 COMMENT/STATUS

COMMENT should be ANALYSIS and STATUS should have (DEP).

30195.005 PART-DET

Expand.

30196.001 BIB

Line 20: superseded misspelt.

STATUS

Expand NP/A.

.005 RESID-NUC

Check threshold / Q-value (see LEXFOR).

30197.003 ISO-QUANT/COMMENT/DATA

ARB-UNITS should be MB/SR.

ISO-QUANT should have FCT modifier in second term with free text 'Factor is abundance(37)/ abundance(35)'.

COMMENT should be reformulated and become ANALYSIS.

30198.001 BIB

Line 23: Priv. Comm.

PART-DET

Code (RSD) for He-6.

.002,003 RESID-NUC

Parentheses missing.

COMMON

LVL = 0. MEV.

.003 STATUS/COMMENT

STATUS is (DEP) and COMMENT should be ANALYSIS.

30199.002-004 COMMON

LVL = 0. MEV.

30200.001 METHOD

ASSOP?

30201.001 N-SOURCE/STANDARD/PART-DET

D(D,P)H-3: where are the neutrons?
D(D,N)HE-3 looks better, but then what about the protons in STANDARD? Is there a known ratio P/N production? In that case 'absolute' should be removed and explanation in free text should be added.

Delete (P) + free text (monitoring!).

30202.011 A RESID-NUC

IN-116 has two metastable states: that of HL = 54. Min. assumed.

30203.001 TITLE

Should not be an abstract. Leave out for private communication.

.003,005
.007,009 COMMENT/STATUS

COMMENT should be ANALYSIS and STATUS should have (DEP).

30206.001 SAMPLE

Impurities each less than .3% or altogether? In the former case Fe should be deleted from the list.

30208.001 STANDARD

Drop.

.002 DATA

Units PER-CENT should be GAM/100N.

.003-005 ? ISO-QUANT/DATA

Add REL modifier or change ARB-UNITS in GAM/100N.

.004 ISO-QUANT

Spectrum modifier missing (EN-DUMMY in subwork .001).

.005 ISO-QUANT

Why SPA here? Spectrum description in subwork .001 missing.

ING for thermal neutrons? γ-lines do not fit into known level schemes of 1967 (Lederer, Table of Isotopes, 6th Edition).

DATA

First line illegitimate.

30209.001 METHOD

Code PLSED should be ACTIV. PLSED is for buckling measurements.

? COMMENT

Unclear: what is equal to 2.9+-0.4 - the threshold of the reaction leading to the ground state itself or its difference with 9.7+-0.3 MEV? I assume the latter.

30209.002 RESID-NUC/COMMON

Extension missing: half-life in COMMON.

DATA

Independent variable 9.4 MEV repeated.

30212.001 REFERENCE

Where are the data from 2.1 to 2.9 MEV?

30213.001 COMMON

EN-ERR should be EN-RSL.

.003,007 .009 ISO-QUANT

ABS should be NG.

.005,010 DATA

? Should units be B/MEV?

.009 DATA

Unit line missing, N1, N2 messed up.

.010 DATA

Independent variable must not be blank.

30214.002 STANDARD

Drop.

.003 STANDARD

Value should go under DATA.

30216.001 STANDARD

Drop.

.001,002 ANALYSIS/DATA

Half-lives should go under DATA.

30217.001 METHOD

Add TOF.

.002,003 COMMENT/DATA

Add two subentries for interpolated 2200 m/sec. cross section values.

TRANS 3009

30036.001 INSTITUTE

Should be (3CHLSAN) - obsolete code.

STANDARD

Remove code.

30041.001 STATUS/FACILITY

Missing.

.003,006
.008,009
.011 HALF-LIFE

-G extension missing.

30046.004,005 ISO-QUANT

'94-PU-.....'

30124.001 GEOMETRY

Obsolete.

.002 DATA

Independent variables repeated: 61., 70., 117., 149., 152. and 278.1eV, of which only 70.keV has different FLAG values.

30125.001 STANDARD

Drop code.

.002,003 DATA

More than one independent variable (EN and COS). Although this was strictly speaking agreed upon only for Legendre coefficients, we cannot see any reason why we should not accept this case too. It has formally the same structure.

30128.001 STATUS

Drop code.

30129.001 STATUS

Drop code.

.003 ISO-QUANT

Parenthesis on first line missing.

30188.001 STATUS

Drop code.

.004,005
.007 ERR-ANALYS

Missing.

30188.004,007 DATA

EN-MIN = 0.6 eV of subwork .001 does not apply to these entries.

30189.001 STATUS

Drop code.

ERR-ANALYS

Missing.

30190.001 STATUS

Drop code.

30218.001 GEOMETRY
30219.001
30220.001

Obsolete.

30222.002 STANDARD

Drop.

.003,004 STANDARD

Drop code.

30223.001 STANDARD

Absolute missing.

STATUS

Drop code.

30224.001 STANDARD

Drop code.

DETECTOR

Missing.

30225.001-003 STANDARD/ISO-QUANT

FCT/DL modifier missing: STANDARD can be dropped. Free text to explain FCT modifier.

30226.001 STANDARD

Absolute missing.

DETECTOR

Missing.

30227.002-009 DATA

Heading 'WVE-LN' is not unique if used for outgoing energy. Should it not be replaced by E in this case? Units ANGSTROM is sufficient.

30227.004 DATA

Drop lines with no data.

.005 DATA

Independent variable repeated:
1.03, 1.11 and 1.19 ANGSTROM.

30228.001 STANDARD

Drop.

DETECTOR

Missing.

.002-007 ISO-QUANT/DATA

REL modifier missing (ARB-UNITS).

30229.002,004 DATA

Independent variable repeated: 3.90E-3eV.

.005 DATA

Invalid data line: (136) 1.48E-2eV.

30230.001 DETECTOR

Missing.

30231.001 STANDARD

Absolute missing.

DETECTOR

Missing.

30232.001 DETECTOR

Missing.

TRANS 4002

40001.001

REFERENCE

(C,68DUBNA,... paper number between parentheses.

BIB

Line 13: STEHN misspelt.

Lines 18, 54: Private misspelt.

Line 29: should read 'Sample backing and sample holder'.

Line 32: 'foreign' should read 'other' or 'parasitic'.

Line 34: Target misspelt.

Line 37: Dependence misspelt.

Line 40: should read 'proton energy-spread'.

Lines 50,56: Does 'supporting' mean 'reference cross sections'?

Line 51: Measurement misspelt.

Line 58: Edition misspelt.

STANDARD/COMMENT

COMMENT information should go to subwork .002 under STANDARD.

To which cross section have the data been normalized? The Priv. Comm. probably contained Mn NG at 740 keV which were normalized to the new Iodide cross section (also NG at 740 keV). Is this correct? Enter the relevant codes.

The Uranium standard is used for the Ga-isotopes only and should move to subentries .003 and .004. Is this correct?

ERR-ANALYS

(EN-ERR) should be (EN-RSL).

STATUS

Drop code (PUBL).

.002-004

DATA

$\pm$EN-ERR should be $\pm$EN-RSL.

.003,004

COMMENT

Information should go under STANDARD.

The cross sections given here are probably thermal cross sections for the same ISO-QUANT and the link has been done via U-235 fission (thermal) and U-235 fission (fast). Is this correct? Enter the relevant codes.

40001.003,004 COMMENT (cont'd)

Please state the reactor source information for the relative thermal measurements.

40010.001 BIB

Line 3: 'On subthreshold fission ...'?

Line 17: '... there are errors from ...'.

Line 18: Drop the comma; 'target' should be 'sample'.

Line 19: Drop 'error'.

DETECTOR

Add free text.

40011.001 STANDARD

Drop.

ISO-QUANT

(92-U-235,NF,AKE,FCT,FF) Ratio to thermal value.

STATUS/ERR-ANALYS

Add free text.

METHOD

Ratio of which counters?

.002 COMMENT

Should be STATUS (PRELM) + free text.

.002,003 DATA

ARB-UNITS should be NO-DIM.

40014.001 BIB

Line 16: polynomials misspelt.

Line 21: at 0 degrees (not O).

ERR-ANALYS

Free text.

.002-019 DATA

EN-ERR should be EN-RSL.

40015.001 BIB

Line 19: Isotopes misspelt.

Line 22: Movement misspelt.

.002,003 DATA

EN-ERR should be EN-RSL.

40020.001 BIB

Line 9: YFI-8,19.

40024.001 BIB

Line 23: 'Plural' should read 'multiple'.

Lines 26, 27: Series misspelt.

Line 27: 'averaged over'.

N-SOURCE

Free text missing.

40025.001 BIB

Line 24: decrease misspelt.

STATUS/N-SOURCE

Free text missing.

.003 BIB

Line 7: series misspelt.

40028.001 STANDARD

Drop (irrelevant).

STATUS/N-SOURCE/PART-DET

Free text missing.

.002,003
.008,009 DATA

EN-RSL should be EN-RES-ERR (for resonance energies).

.007,013 ISO-QUANT/COMMON/DATA/STATUS

Only one spin value measured: therefore

Drop AV modifier.

Drop COMMON and enter EN-RES in DATA.

Enter '(DEP) from spin value and g * Gamma (gamma)' under STATUS.

40033.001 BIB

Line 13: 'Impulses' should read 'pulses'.

REFERENCE

Can now be written as (C,70HELSINKI,2,167,7006)

PART-DET

Add (N) neutrons.

40033.002,003

ISO-QUANT/DATA

The value at EN = 0. is spontaneous nu-bar and has a different ISO-QUANT: SF/NU,PR. So the subentries have to be broken up.

DATA

EN-ERR should be EN-RSL.

40034.001

STANDARD

Memo 4C-2/30 wrongly mentioned 40024.001.

RATIO obsolete and incompatible with units.

N-SOURCE/PART-DET

Free text missing.

40050.001

STATUS

Free text missing.

METHOD

Transmission method appears to be incompatible with the ISO-QUANT (INL). Is there any information concerning ANALYSIS?

SAMPLE

This cannot apply to subwork .002 (9-F-19).

BIB

Line 26: 'to' should read 'for'.

40055.001

PART-DET

Missing.

40056.001

PART-DET

Free text missing.

.002

DATA

Line 27: Is DATA = 1.95 MB correct, or should it be 19.5 MB?

TRANS 4003

40057.001 STANDARD

Cannot be absolute if normalization error is 15% (subwork .002). What is the STANDARD?

.002 BIB

Line 6: 'Absolutization' should be 'normalization'.

DATA

EN-ERR should be EN-RSL.

40058.001 REFERENCE

Should be (C,70HELSINKI,2,157,7006)

STANDARD

Should be (98-CF-252,SF/NU,,PR)

BIB

Line 22: Those misspelt.

Line 24: 'of _ other isotopes'.

Line 29: 'background definition'.

ERR-ANALYS

(EN-ERR) can be dropped.

INSTITUTE/STATUS

Must be known as data are received from author.

40059.001 BIB

Line 11: deuterons misspelt.

Line 12: pulse misspelt.

Line 22: 'instability of apparatus'.

PART-DET

Free text missing.

40060.001 STANDARD/STATUS/PART-DET

Free text missing.

SAMPLE

Lines 28, 30: One of the two sample thicknesses must be wrong (the upper one?).

BIB

Line 46: 'Transparency' should be 'Transmission'.

40060.002 ISO-QUANT

Replace DRT by RAW (new convention).

BIB

Line 9: 'Transmission for resonance ....'

.002-004 STATUS

Should be Private Communication and not (PUBL) as stated in subwork .001.

40061.001 STANDARD/PART-DET

Free text missing.

.002-004 CORRECTION

ER+++ should be 'the ER+++ ion'.

'was changed' should be 'varied'.

.002-009 SAMPLE
.018-025

Replace zero by Oh in ER2O3 and ER2(SO4)3

.005,007 SAMPLE
.008

Users do not know what 'subentry 40061002' etc. is, so please repeat isotopic abundance.

.005-009 STATUS

Free text missing.

A COMMON

Momentum $\ell=0$ missing.

COMMENT

Total width is not a constant: should it not be gamma width?

.008 DATA

Illegitimate lines without data should be entered in separate subentry with ISO-QUANT (....,EN,RES)

.017 ERR-ANALYS

This is not true: errors are given (0.8B). Maybe 'No further details given' is meant?

.018-022 BIB

Line 5: 'received' should be 'derived'.

STATUS

Add (DEP) dependent.

40061.023 COMMENT

Should be ANALYS.

.023-025 COMMON

Should not 'ℓ=0' be added, as all the resonances have it?

40062.002,003 COMMON
.006,007

Half-lives missing.

.002-006 N-SOURCE
.008

Neutron fluxes should be noted as e.g. '1.5E+13 to 1.0E+14 neutrons/cm **2/sec'.

.002-005 PART-DET

Free text missing.

.003 BIB

Line 11: 'Aurum' should read 'gold'.

.001 COMMON/COMMENT
.006-008

Explanation of headings STAND1, STAND2 etc. should go under STANDARD.

.004 A DATA/ISO-QUANT/SAMPLE/COMMON

The same value and error are given as in subwork .006, which is unlikely. In view of COMMENT in subwork .003, N-SOURCE in subwork .003 and .004 and STANDARD in subwork .004, we have assumed that the data value must be 7200.0+-300.0 B as is the STAND1, STAND1-ERR in subwork .003 and that the ISO-QUANT must be (95-AM-242-M1, NF)

SAMPLE is correct, only 'after ... hours irradiation with a flux of ..... neutrons/cm **2/sec' should be added.

Half-life has to be added in COMMON.

.007 N-SOURCE

Free text missing.

.008 COMMENT

Line 17: 'EN-MIN' should read 'EN-MAX'.

40068.001 N-SOURCE/METHOD

Free text missing.

40068.001

BIB

Line 13: Product misspelt.

Line 16: 'More' should probably read 'much'.

Line 29: 'That' should read 'The same'.

40073.001

STANDARD/PART-DET

Free text missing.

What does STANDARD absolute for alpha mean?

BIB

Line 30: centimetre misspelt.

ERR-ANALYS

EN-ERR should be EN-RSL.

.002-003

DATA

EN-ERR should be EN-RSL.

General

ERR-ANALYS

The heading has to be given in parentheses only when there is a remark about it and confusion could arise as to which item this remark pertains.

TRANS 4004

40070.001

Identification part

The ENTRY should have 40070000000001.

The SUBENT record should start with 1 and all the records should be numbered.

ENDBIB

N1 should be 41 too.

STANDARD

Free text missing.

BIB

Line 26: expand PTE.

Line 41: cylindrical LI-F6 powder filter.

CORRECTION

Unclear - reformulate. We understood :

'For time-dependent background.

Time-independent background.
Room activity
Cosmic radiation
Natural gamma activity of the sample and room neutron scattering.

Background from U-238 and U-234 contaminations in the plates.

In order ...'.

Is this correct?

.002,003 ISO-QUANT

.....NF/WID,S0)

.010 DATA

In memo 4C-4/18 record 44 should be record 45.

STATUS/ANALYSIS

Is this derived as Gamma(fission)/Gamma(gamma)? In that case, this should be stated under ANALYSIS, and STATUS should have (DEP).

.015 ISO-QUANT

....TOT/WID)

.025 ENDSUBENT

N1 should be 19.

40070.025-027 ERR-ANALYS

Should read 'explained by'.

COMMENT

Should read 'stated in'.

40071.001 N-SOURCE

Free text missing.

STANDARD

Absolute is in contradiction with free text.

? ERR-ANALYS

'Statistical errors' is true for the transmission measurements which are not given. Is this true also for the resonance parameters?

FLAG

Should go to the relevant subentries.

BIB

Line 7: should read 'Absolute normalization of gamma widths'.

Line 10: SM-149.

Lines 7, 31, 33, 34, 43: 'widths'.

Line 33: assumption misspelt.

Line 39: resolution misspelt.

.003,009 STATUS

Should this not be (DEP), as 2g*Gamma(n) is given?

.003,006 COMMON
.007
.009-012

Momentum $\ell=0$ missing.

.005 ENDDATA

N1 should be 9.

.005,007 ISO-QUANT

Should read (62-SM-.....

.006,007 ? COMMON

Should not EN-MAX be 423 eV?

ENDSUBENT

N1 should be 15.

.008 DATA (Memo 4C-4/18)

The record to be inserted after 00046 should be 104.7 0.3 20. 4.0 in view of the corresponding value in subwork .009.

.008.009 DATA

Invalid line for EN-RES=72.2 eV. Add subentry with ISO-QUANT (...,EN,RES).

.010,011 ? COMMON

Should not EN-MAX be 134 eV in both subentries?

.011,012 COMMON

Headings have to be inverted.

Why not combined in one subentry?

40072.001 BIB

N2 should be 50.

ENDBIB

N1 should be 50.

ENDSUBENT

N1 should be 53.

BIB

Lines 15, 16: '2, 4 or 6 mm'.

Line 26: '4 long counters'.

Line 45: 'Correction errors'.

Line 47: 'from inaccuracy ...'

.002-017 ISO-QUANT

ABS should be NG in view of the low energy (24 keV).

.017 ISO-QUANT

(83-BI-209,.....

40074.001 BIB

Line 20: Water misspelt.

PART-DET/DETECTOR/METHOD

Unclear. If METHOD is true, PART-DET is neutron and the Sodium Iodide crystal is used for measuring the activation in the Indium Chloride solution of the activation detector.

.002-006 ISO-QUANT

ABS should be NG (at 24 keV).

DATA

EN-ERR should be EN-RSL.

40076.001 N-SOURCE

Free text missing.

BIB

Line 24: Weight misspelt.

Line 27: 'On average neutron path-length in sample'.

Line 29: 'Exceeding' misspelt.

Line 30: '.... and error in standard cross section...'

40080.001 STANDARD

We agree with the proposal contained in Memo 4C-4/18 but without code (free text only).

N-SOURCE/INC-SPECT

How were these spectra obtained with a reactor? And which reactor was used?

PART-DET/DETECTOR

How were the neutrons measured with an ionchamber - via proton recoil, Li(n,alpha) or Boron(n,alpha)?

40088.001 ENDBIB

N1 should be 26.

ENDSUBENT

N1 should be 29.

BIB

Line 4: 'Neutron scattering ..... on nuclei of' ...

Line 14: Deuterons misspelt; 'on' should read 'of'.

Line 22: 'Neutron absorption'.

STANDARD

How is the measurement made absolute - by flux measurements, detection efficiency? (see 4C-2/36,p.3).

ERR-ANALYS

(ANG-RSL).

.002,004 ISO-QUANT

Should this not be A=0 (natural)? For Ti this is given under SAMPLE; for Fe the abundance of Fe-56 is more than 90%, so enrichment is unlikely.

.004 ENDCOMMON

N1 should be 3.

.005 DATA (4C-4/18)

Record 00012 (and not 00011) should be dropped.

TRANS 4005

General: Memo 4C-3/19 (from Vienna)

This memo has the wrong number (4C-4/18).

40027.002,003 BIB

Lines 13, 20 (in .002) and 12, 19 (in .003): 'strange' should read 'other'.

Lines 21 (in .002) and 20 (in .003): isotopes misspelt.

PART-DET

Misspelt.

COMMENT

Information should go under STANDARD.

.002-005 DATA

EN-ERR should probably be EN-R$L.

.004 ISO-QUANT

Second item: add NF.

BIB

Line 6: Oxide misspelt.

Lines10: '1-1.5 percent.

.005 BIB

Line 9: 1.5 percent.

40081.001 METHOD

Add code (ASSOP).

DETECTOR

Should read 'Five mica layers .....'.

CORRECTION

The correction amounted to 4.0+-1.0% as the detector efficiency was 96.0+-10%. Should not this last number go under DETECTOR?

STANDARD

Free text missing.

BIB

Lines 5, 22: 'accompaning' should read 'associated'.

Line 36: Limits misspelt.

40084.001 GEOMETRY

'In the same plane' or 'on the same plate' (therefore back-to-back)?

Keyword is obsolete and information should go under SAMPLE.

METHOD

Line 20: add 'as Pu-240'.

.002-003 DATA

EN-ERR should be EN-RSL.

40090.001 METHOD

Add code TOF.

BIB

Lines 28, 29: should read 'could cause the cross sections to be too high by an amount of 2.PC for Dy-164 and 8.PC for Dy-162.

.002,004 SAMPLE

Isotope 161 is 94.2% (sum = 100%).

.002-013 SAMPLE

At (OXIDE) free text missing.

.004,007
.010,013 ISO-QUANT

ABS should be NG at these energies.

.011 BIB

Lines 5 and 6 inverted.

40094.001 FACILITY

Chopper used?

.003,005
.006 DATA

Units should be MILLI-EV.

.008 DATA

Decimal point missing under EN-MAX.

40097.001 ANALYSIS/ERR-ANALYS

Unclear free text under (HIST). We infer from ERR-ANALYS that the histogram method is applied to derive strength functions from neutron widths which could be calculated; hence <36 eV. Is this correct?

This should probably go under the strength function subworks.

40097.001 Under ERR-ANALYS we would prefer:

Lines 22, 23: 'due to very large level density of ...'

Line 24: 'number of omitted levels .....'

N-SOURCE/FACILITY

Chopper used?

.002-007 DATA

Units MEV should be MILLI-EV.

.003 BIB

Line 9: isotope_ misspelt.

.003,004,006 .007,010 SAMPLE

The abundances given do not add up to 100%.

.003,006 DATA

Last line invalid (no data).

.005-007 .011,012 ? COMMON

ℓ=0 missing?

.008-010 DATA

Resonance energies already mentioned in subworks .002-007 can be deleted.

40098.001 STATUS

Source of data missing.

N-SOURCE/METHOD

Remove codes (except TOF).

ANALYSIS

Unclear: see remark at subwork 40097.001, ANALYSIS, first two paragraphs.

Where were the Gamma 0(n) taken from?

BIB

Lines 8, 9, 12: 'Regime' should read 'mode'.

Line 16: NaI-Crystals misspelt.

Lines 18, 19: We would prefer '... 95 percent for each isotope measured'.

TRANS 4007

General: TRANS

Is TRANS 4006 still under way? If so, it should have a date between 09/11/72 and 05/02/73 (see Manual III.3: TRANS numbers (N1) should be assigned sequentially).

If the number is wrong (and should have been 4006), CCDN would prefer not to send 4006 or a second 4007 but to continue with 4008 and leave 4006 non-existent in aeternum.

40012.001 BIB

Invalid codes: PUBL, ACCEL, CRAT.

GEOMETRY

Obsolete keyword: change to COMMENT.

.004 DATA

Column 4: units NO-DIM misspelt.

40038.001 BIB

Invalid codes: PUBL, L-R, NONE.

40042.001 BIB

Invalid codes: PUBL, DIDET, ACCEL.

GEOMETRY

Obsolete keyword: change to COMMENT.

.005 ISO-QUANT

Nuclide should be 27-CO-59.

40047.001 BIB

Invalid codes: ABSOL, PUBL, ACCEL, TRNSS, SURBA.

GEOMETRY

Obsolete keyword: change to COMMENT.

.006 DATA

Headings (DATA-ERR, blanks) should be (DATA, DATA-ERR).

40069.001 BIB

Invalid codes: DIDET, IONCH, PUBL.

GEOMETRY

Obsolete keywords: change to COMMENT.

40069.001 REFERENCE

(R,INDC-232E): Ref date missing.

.002 STANDARD

Invalid code: ABSOL.

DATA

Last column: heading and unit shifted.

.003-009 BIB

N1 should be 3.

.008 DATA

Line 20: Invalid number 23.0

40077.001 BIB

Invalid codes: DIDET, IONCH, PRIV.

GEOMETRY

Keyword obsolete: information should go under DETECTOR.

.002 STANDARD

Invalid code: ABSOL.

DATA

Independent variables 200., 350. keV repeated.

Lines 27 to 34 out of order.

.003-005 BIB

N1 should be 3.

40078.001 BIB

Invalid codes: ABSOL, ACCEL, PRIV.

GEOMETRY

Obsolete keyword: use COMMENT.

DETECTOR

Missing.

40079.001 BIB

Invalid code: CRAT. APRVD misspelt.

GEOMETRY

Obsolete keyword: information should go under DETECTOR.

REFERENCE

(R,YFI-10,17,7105).

40079.001 BIB

N1 should be 17: if, however, GEOMETRY goes under DETECTOR, it should remain 16.

40093.001 BIB

Invalid codes: ABSOL, PRIV; REACT, TRNSM, HELIUM-3 SPECTROMETER.

Keyword ERR-ANALYS misspelt.

REFERENCE

Ref date missing in first reference.

.002 DATA

Line 88: Invalid number 1.113.

.006,008 ANALYSIS

Missing.

.007 ANALYSIS

Invalid code HIST.

.009 DATA

Column 2: heading shifted.

Column 3: unit missing.

TRANS 9013 (Dictionary tape)

Dict. 003

2JAPJAE

TOKYO should be TOKAI.

2JAPOSP

SOKAI should be SAKAI.

Dict. 006

JAERI

TOKYO should be TOKAI.

Dict. 014

Why not remove the AV-modifier entries for the resonance parameters also?

Dict. 050

NDS/CCDN only

Add the following nuclides (on NDS tapes) to dict. 50:

1-H-4, 2-HE-5, 2-HE-6 and 27-CO-61

all with the unstable flag.

DAS/324-0

NOTE FROM CENTRAL REGISTRY

ATTACHED ENCLOSURE WAS RECEIVED WITHOUT COVERING NOTE

FROM: Hans Postens OECD, Enea

ADDRESSED TO: Schmidt

DESPATCHED ON: 8/II/73

SUBJECT: Memorandum 4C-2/34

a Schmidt
Calamand
Dunford
Lennek
Lemley
NDS
} + u end