<u>**Memo CP-D/245**</u>

April 12, 1994

To: Distribution

From: O. Schwerer + M. Lämmer

Subject: **1. Dictionary update**
            2. Proposed codes IND,ZP and CUM,ZP

1. We are sending out the dictionary transmission tape 9067 containing the changes/additions requested in memos 4C-4/54, 55, CP-C/206, 207 and others.

In addition, the following new codes are introduced:

Dict. 3 (Institutes)

3MAKMAK	Macedonia
3SN SN	Senegal

Dict. 5 (Journals)

AJSE	Arab.J.Sci.Eng.
BJE	Bezp.Jad.Energ.
JAE	Jadernaja Energetika
RJP	Romanian J. Phys.

Dict. 6 (Reports)

CNEA-CAB-IT-	Bariloche Internal Reports

A complete list of the update is attached.

<u>Distribution:</u>

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2. RE: Memo 4C-4/55: proposed codes IND,ZP and CUM,ZP
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The proposal should be rejected. Reason:

ZP is a parameter of the charge distribution for a given fragment mass,
for which independent and cumulative yields are defined. In practice,
independent and/or cumulative yields are measured, and ZP is derived.
However, the charge distribution for a given mass is the same for
independent and cumulative yields, and hence the parameter ZP is also
the same (i.e. independent of the type of yield measured). Therefore
"IND" and/or "CUM" are superfluous. See LEXFOR, Fission Yields, page 3.

Background:

1) a) IND and CUM (SF5) stand for measured independent and cumulative yields.
   b) ZP is a derived quantity, i.e. a parameter of an empirically assumed
      and fitted distribution.
   c) "fractional", as in LEXFOR, stands for a normalized distribution
      (integral $\equiv$ 1)

2) It is a semi-empirical assumption that independent yields of fragments
   with different charge and the same mass have a Gaussian distribution (apart
   from "odd-even effects"). The parameters of that (normalised) distibution
   are the most probable charge ZP (location of maximum) and the width.

   When several inedependent yields of a given mass are measured, a Gaussian
   can be fitted to them, and ZP can be derived.

   The cumulative yield of a fragment, $Y_c(Z,A)$, is defined as the sum of
   it's own independent yield $Y_i(Z,A)$ and those of it's (beta-decaying)
   precursors $Y_i(Z-x,A)$, x=1,2,... (apart from delayed neutron emission):
        $Y_c(Z,A) = Y_i(Z,A) + Y_i(Z-1,A) + Y_i(Z-2,A) + ...$

   Hence the cumulative yields are assumed to be distributed as the integral
   of the Gaussian distribution for the independent yields. Measured cumulative
   yields can therefore be fitted to that integral Gaussian, and ZP can be
   derived. But the Gaussian and therefore ZP are identical for independent
   and cumulative yields. There is no independent or cumulative ZP!

3) Coding in EXFOR:

   ZP is a deduced quantity, obtained from measured independent or
   cumulative yields. Therfore:

   a) The measured independent or cumulative yields should be given in
      another subentry.

   b) ZP should be coded without any code in SF5. The STATUS code should
      be "dependent" with the SE number given where the measured yields
      are coded in the data table.

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ALTER                                            MEMO 4C-4/54,55,CP-C/206,207 ET AL.
1CANQU      (QUEEN'S UNIV., KINGSTON, ONTARIO)                   30000003000201
1CANUWO     (UNIV.OF WESTERN ONTARIO, LONDON, ONTARIO)           30000003000251
3MAKMAK     (MACEDONIA)                                          30000003009191
3SN SN      (SENEGAL)                                            30000003010151
4RUSEPA     (EXPERIMENTAL PHYSICS INST., ARZAMAS)                30000003011751
4RUSTPC     (TECHNICAL PHYSICS INST., CHELYABINSK)               30000003012281
AJSE        (ARAB.J.SCI.ENG.)                                3SAR30000005000641
             ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING          30000005      2
BJE         (BEZP.JAD.ENERG.) BEZPECNOST JADERNE ENERGIE      3CZR30000005001471
               (SAFETY OF NUCLEAR ENERGY). CONTINUATION OF JE     30000005      2
            JOINT CZECH-SLOVAK J., PRINTED IN PRAGUE, STARTED 1993 30000005      3
JAE         (JADERNAJA ENERGETIKA)                            4RUS30000005003391
JE          (JAD.ENERG. (PRAGUE)) JADERNA ENERGIE             3CSR30000005003461X
            ==CONTINUED FROM 1993 AS BJE                         30000005003461
            ===NOTE: THE CINDA CODE IS  JPAL                     30000005003911
            ===NOTE: THE CINDA CODE IS  JPGL                     30000005004021
            ===NOTE: THE CINDA CODE IS  JPRA                     30000005004141
            ===NOTE: THE CINDA CODE IS  JPRC                     30000005004171
            ===NOTE: THE CINDA CODE IS  JPRL                     30000005004211
            ===NOTE: THE CINDA CODE IS  JPRS                     30000005004251
RJP         (ROMANIAN J.PHYS.) ROMANIAN JOURNAL OF PHYSICS    3RUM30000005007111
              CONTINUATION OF RRP, STARTING WITH VOL.37(7),1992    30000005      2
RRP         (REV.ROUM.PHYS.)                                  3RUM30000005007241X
            ===CONTINUED AS ROMANIAN J.OF PHYSICS   (RJP)         30000005007271
              FROM VOL. 37 (7), 1992                              30000005      2
ENDF-       EVALUATED NUCLEAR DATA FILE (ENDF) REPORTS        1USAUSA30000006002231
CNEA-CAB-ITCENTRO ATOMICO BARILOCHE, INTERNAL REPORTS         3ARGCNE30000006004421
            CINDA INDEX AND LIST OF PARTIC.PUBL.IN NEANDC-312     30000007013411
              SELECTED PAPERS PUBL. IN IZV 56 (11), 57 (1)        30000007013490
92BNL       (INT.SYMP.ON NUCL.DATA EVAL.METHODOLOGY, BNL, OCT.1992)30000007013521
            (INT.SYMP.ON NUCL.DATA EVALUATION METHODOLOGY,        30000007      2
            BROOKHAVEN NATIONAL LABORATORY, USA, 12-16 OCT.1992)   30000007      3
            PROCEEDINGS PUBL.BY WORLD SCIENTIFIC, SINGAPORE       30000007      4
23-V-50     (1 34     CS )                                       30000027002090
56-BA-133   (1 3      C 1)                                       30000027009420
66-DY-159   (  3      C  )                                       30000027011400
77-IR-192   (1 3      C 2)                                       30000027013660
ENDALTER
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