

Memo CP-D/194

7 July 1989

To: Distribution

From: O. Schwerer *O. Schwerer*

Subject: Dictionary update and response to memos CP-C/179, 184, 187 and CP-M/10.

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We are sending out dictionary transmission 9059 containing updates as requested in recent memos. Please note the following comments on some specific items.

Memo CP-C/179 (dimension codes in dict. 25+36):

DPS This unit was not found in the NDS master file and is being obsoleted\*). If no objection is received until the NRDC meeting, it will be deleted from the dictionary.

Dimensions TTY and TTT: depend on new formalism for thick target yields (memo CP-C/178) to be approved at NRDC meeting.

GY\*M-SQ and quantity ,KER: new dimension code KER

\*) It was probably introduced together with DPS/MUAHR which is needed for thick target yields.

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PC/DECAY and quantity ,PN: new dimension code PN

The quantities (1) IND,FY/DE

(2) PR,DE,N,RTE

(3) PR,COR/DE,N/FF

are, so far, only used with the REL modifier in SF8 and, therefore, do not have any corresponding units (all existing data have ARB-UNITS). Since the only function of the dimension code is to check the validity of units (see also the first sentence of memo CP-C/179), there should be no use for a dimension code in these cases. However, in the meantime we were informed that NNDC needs dimension codes anyway for other purposes. Therefore, we introduce dimension codes 'FYDE' and 'DERT', respectively, for the first 2 cases mentioned above. In case (3), however, we are not sure what to use, because dictionary 36 gives the warning "free text explanation of quantity and units required". Possibly the dimension would be 1/E, but we do not want to speculate on this without any actual Exfor data in units other than ARB-UNITS.

Memo CP-M/10

- Concerning the proposed new modifiers CA,CB,CC etc. see our counter-proposal in memo CP-D/193. Since this will have to be discussed at the next NRDC meeting, these new codes were not included this time.
- Angle-dependent primary fission product yield:  
,DA/PRE is not possible because PRE belongs to SF5. To decide on correct coding and dimension we need the actual data and units. Possible quantities are PRE,DA,FF (dimension DA - ang.dist. of primary fission fragments) and PRE,FY/DA (new dimension FYDA - primary fiss.prod.yield at a given angle).
- Angle-dependent cross section integrals (units MB\*MEV/SR): we introduce the dimension BEDA.
- Dictionary 34, BRA (Bremsstrahlung average):  
we assume that this modifier should be added to the list of modifiers which can be added to any quantity without entry in dictionary 36. We therefore add it to the top part of dict. 34 with the comment "for photonuclear data", pending final approval at the next NRDC meeting. When approved, the text on top of dictionary 36 and the check programs will have to be updated accordingly.

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Dictionary 36:, DA/DE,,LEG/RS: Since this is the first case of Legendre coefficients for double-differential cross sections in Exfor, I am not quite sure about the correct expansion for this code. The expansion as proposed in the memo cannot be used because we need a formula how to calculate the double-diff. cross section from the coefficients, e.g.

$$\frac{4\pi}{\sigma} \frac{d^2\sigma}{d\Omega dE'} = \sum a_l(E') P_l$$

Is this formula correct? (The coefficients  $a_l$  would have the dimension  $1/E$ ).

Memo CP-C/187, new quantity code 2,DE in dictionary 36

This code was (with a more general wording for the expansion) added to the dictionary, pending final approval at the forthcoming NRDC meeting. When approved, the explanation of codes 1,2,3,4 in dictionary 31 should also be modified.

Memo CP-C/184, flag in col. 66 of dictionary 16 (STATUS)

This flag was added, pending final approval at the forthcoming NRDC meeting.