Memo CP-A/40

To: see distribution

From: G.M.Zhuravleva, F.E.Chukreev

Subjects: (1) Column heading definitions in BIB section.

(2) Multiple monitors.

(3) Delayed neutron emission probability.

(4) Branch-code PAR with DE and SPC.

(5) Units DPS/MUAHR.

(6) Repetition of column heading.

(7) Family flag J in DIC 24.

(8) Multiple reaction formalism.

We would like to comment upon some suggestions of other Centres to be discussed at the forthcoming technical conference in Vienna (September, 1984).
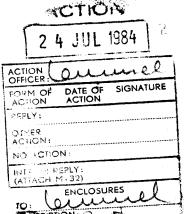
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## 1. Column Heading Definitions in BIB Section (to Memo CP-C/111)

The suggestions contained in Memo CP-C/111 are logically quite clear and we have no objections to them from the point of view of human understanding and comprehension. It seems absolutely correct to get rid of the necessity to repeatedly write one and the same words in the form of explanatory free text. However, it should be kept in mind that the data recorded on computer-read media in any formats will "live" still very long. The tendencies of computer facilities development should result in a completely automatized processing of these data. In this respect our primary goal is that the recorded data should have unequivocal interpretation by a computer.

Human intellect will always have advantages over the logic of the computer "intellect". And though computer facilities and algorithms are constantly perfected, its logic will always remain formalized.

Therefore, it seems to us that in case the suggestions contained in Memo CP-C/111 are adopted it may result in decrease of reliability and quality of Exfor texts, since for a computer formal checking by the suggested way of coding will be difficult. The more so when the concept of this approach is employed in analogous cases (for example, for the ASSUMED, MISC-COL key words, etc.).

As a solution, we can suggest a method used at the CAJaD.

A text occuring several times in a compiled paper is declared a pattern and is written in the form of a separate file. When ENTRY is entered this file is called by its name and its contents are automatically transferred to the ENTRY text. Thus, there is no need for a person who enters ENTRY to punch one and the same text several times. At the same time the reliability, validity and unambiguity of the whole ENTRY are increased. This method was used, in particular, for compiling A0178 for the DATA-ERR key-

word.

The other side of this problem is the number of bytes of stored information. The suggestion of CP-C/111 reduces, no doubt, this number, while that of ours, increases. But the point is that we must make sure that even after dozens of years a computer (and, consequently, a man) could unambiguously find and interpret the information prepared and recorded by us (see Item 2.2 of the present Memo).

2. Multiple Monitors (to Memo CP-C/113)

The approach suggested in CP-C/113 to coding and communication of information between sections complies with our attitude, upon the whole: each data-heading should have its "image" in the BIB-section.

Those who deal with the problems of development of the ENTRY check programs, in particular, of checking the links between sections know how difficult it is to find a common algorithm taking into account all the rules prescribed by the "Exfor Manual" description of links between the sections. A tendency to formalize and then to algorithmize these rules is now giving rise to memos pertaining to the problems of coding rules.

It seems to us that it is impossible to solve this problem separately for each key word, it requires a global approach. In case the former means have become inadequate, they should be discarded. And it should be done as soon as possible. No doubt, it may result in alteration of some old data files. However, all of us should remember that our data will "live" longer than we shall. And future results will show that the work done was not useless. Here we can suggest a variant according to which the Centres should revise their compiled ENTRY in compliance with the adopted innovations beginning from a certain date We have experience of this kind (for example, the refusal to use the

GEOMETRY key-word).

Making a concrete conclusion from the suggestions contained in CP-C/113 one should say the following.

2.1. It is essential to have such rules of information coding that their unambiguity be clear both to a man and a computer.

2.2. From our point of view the DATA section should be of primary importance for the analysis of data on communications between the sections: all the column headings in the DATA section must have their descriptions in the form of concrete representations in the BIB section.

Then the check program formation will be considerably simplified. And it is difficult to overestimate the possibilities offered to us by good and simple check programs for reliability and unambiguity of data determination.

3. Delayed Neutron Emission Probability (to Memo CP-C/118 and Memo CP-D/128)

In reply to Memo CP-C/118 we would like to note the following.

3.1. We completely share the point of view of the NDS given in Memo CP-D/128 pertaining to the problem of coding the probability of delayed neutron emission.

3.2. It is desirable that this suggestion should refer not only to neutrons but to any delayed particles. The variant suggested by us may be the following:

PN FY delayed particle emission probability

In coding such processes the FY code is positioned under the REACTION key-word in SF6, and in SF7 the code of a particle inducing the emission. I.e. an example of entering into dictionary 36 (from Memo CP-C/118) will have the form:

DL, FY/NU, N

### 4. Branch-Code PAR with DE and SPC (to Memo CP-C/110)

In reply to Memo CP-C/110 we can say that we agree with the arguments given in item 1 of Memo CP-D/119 and advocate them completely.

### 5. Units DPS/MUAHR (to Memo CP-D/119, item 4)

The arguments presented in item 4 of Memo CP-D/119 are quite correct. At the same time it seems to us that it is a key problem. In compilation of data we often encounter variety of units of measurements employed in publications. We noted that as far as at the Conference in Obninsk in 1983. We are ready to welcome any simplifications in order to reduce the number of units of measurements. It should also "make easier the life" of data consumers. From our point of view it can be achieved in two ways.

5.1. It is possible to influence editor's offices of publishing houses so as to make them decrease the number of units of measurements allowed to be used in publications.

5.2. A compiler must clearly indicate the method by which the data are recalculated from "author's" units into those allowed by dictionary 25, with obligatory quotation of the data in the units of measurement employed by the author, in the BIB section (apparently, under the COMMENT key-word with a note "by compiler"). An example of this approach can be found in ENTRY A0197, TRANS A012.

### 6. Repetition of Column Heading (to Memo CP-D/120)

Following the ideas given in Items 1 and 2 we consider that to increase reliability and quality of check programs, as well as for the

possibility of unambiguous interpretation of the data presented in ENTRY by computers, it is impossible to allow the presence of identical "determinants" for data describing different processes and phenomena. In the particular example presented (ENTRY 30639) we could suggest for the "precursor nucleus" the following data-headings:

DECAY-PAR for the data on the parent state;

DECAY-DAT for those on the daughter state.


7. Family Flag J in DIC 24 (to Memo CP-C/108)


We agree to use the J flag for MASS in dictionary 24.


8. Multiple Reaction Formalism (to Memo CP-C/112)


We agree to add Item (e).