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Memo CP-D/542

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To: Distribution
From: O. Schwerer, N. Otsuka,

Subject: Intensity of prompt and delayed fission gammas

1. Prompt fission gamma spectra integrated over a partial energy range

New entry 14195 (V. V. Verbinski *et al*., Phys. Rev. C **7** (1973) 1173) compiles multiplicity of prompt fission gammas obtained by continuous spectra of prompt fission gammas integrated over a partial range of gamma energy. Because existing quantity code PR,SPC is for prompt discrete gamma lines, we need a new quantity code for 14195.

The data are given in the article in units photons/fission (in the table annotation misspelled as "protons per fission"). These units correspond to EXFOR units PRT/FIS which has in our dictionary the dimension code FY

Dictionary 236 (Quantities)

PR/PAR,MLT,G Partial multiplicity of prompt gamma
(Use PR,SPC for prompt discrete gamma)

Quantity	Reaction Type	Dimension	Subentry
PR/PAR,MLT,G	PZ	FY	14195.002-004

2. Intensity of prompt and delayed fission gammas – unit dimension

Dictionary 236, the quantity PR,SPC and DL,SPC have still an old dimension code SPC which is no longer used in the quantity dictionary 25. Therefore, whatever units are used with quantity PR,SPC or DL,SPC, they will generate an error message.

It is not surprising that these inconsistencies were not yet found, because in the master file there is not a single EXFOR entry of PR,SPC or DL,SPC using "real" units. These are all the occurrences:

PR,SPC	20956	NODATA
	20957	Relative data with ARB-UNITS
	20958	Relative data with ARB-UNITS
DL,SPC	20956	NODATA
	21592	Relative data with ARB-UNITS

PR/TER,SPC 30760 NODATA

Note that other quantities with SF6=SPC have dimension YLD, which includes following units:

PC/INC, PC/REAC, PRD/INC, PRD/REAC, PRT/INC, PRT/REAC

On the other hand, dimension FY corresponds to these units:

PC/FIS, PRD/FIS, PRT/FIS.

So FY units are very similar to YLD units except that REAC is replaced by FIS. It is a special case for fission, to be similar to units traditionally used in the literature. Since both quantities, PR,SPC and DL,SPC, are restricted to fission reactions, it is logical to use units of dimension FY.

Dictionary 236 (Quantities)

PR,SPC	Change unit family code from SPC to FY
DL,SPC	Change unit family code from SPC to FY
PR/TER,SPC	Change unit family code from YLD to FY

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