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Memo CP-D/396

Date: 20 May 2004
To: Distribution
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Subject: **Non-differential thick target yields with units µCi/µAhr/MeV: Proposed new quantity code for dictionary 36**

The units µCi/µAhr/MeV were first proposed in memo CP-A/152, and because of the space limitations in the format, were introduced as

CI/AHR/MEV	**Curie/Ampere-hour/MeV = muCi/(muAhr * MeV)**	**Dimension: TTTE**

They are, so far, used only in PRELIM.O017, entry 00847, subentries 2-4, with REACTION quantity **,IND,PY**. In spite of the **/MeV** factor in the units, these data are **not** differential by energy, and no secondary energy is given. (So far, all our units including the factor "per energy" were for differential data of type d/dE). Memo CP-A/152 defines the quantity as "product yields in micro-curie **from 1 MeV target thickness".**

Actually, the dimension corresponds to dimension **TTT** (used for quantity **TTY,,DT**) except for the factor 1/MeV for the thickness. Therefore, to keep consistent, I propose to introduce a new quantity using TTY rather than PY in SF6 for

Dictionary 36:

,TTY,,TM **Production thick target yield (decay rate per unit of beam current * time) for 1 MeV target thickness**

Reaction type (dict.13): TT+ (Flag in dict.36, determines which independent variables are required; here: no secondary energy)
Unit dimension (dict. 26): TTTE (Flag in dict. 36, links quantity to units in dict.25, here: CI/AHR/MEV)

(Note that, in principle, these units might also be used in future for some type of thick target yields differential by a secondary particle energy. Such a quantity will have a different Reaction type but the same unit dimension.)

Since the definitions of thick target quantities were rewritten not so long ago by V. McLane and S. Takacs in memo CP-C/334, I request in particular their feedback, as well as the feedback of all others who regularly compile thick target yields.

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