Memo CP-D/720

Date: 11 November 2011
To: Distribution
From: N. Otsuka

Subject: **Dictionary 236 (Quantities) – PR,NU/TKE**
Reference: Memo CP-D/705

According to the Action A10 of NRDC 2011 meeting, PR,NU/TKE must be applied to
EXFOR 22650.005-006 included in PRELIM.2227.

Dictionary 32 (Parameters)

TKE   Total kinetic energy

Dictionary 236 (Quantities)

PR,NU/TKE   Prompt neutron multiplicity for a given total kinetic energy

Quantity	Reaction Type	Dimension	Subentry
PR,NU/TKE	NUE	FY	22650.005-006

Additional remark on 22650.006

When the fission neutron multiplicity is given as a function of the fragment mass A, it
is either
   1.   the multiplicity of neutron emitted from <u>one</u> fragment, or
   2.   the <u>total</u> multiplicity of neutron emitted from <u>both</u> fragments.
In Memo CP-D/705 (=WP2011-31), the solution was fixed for #1, while #2 has been
left as an open question.

In the Memo, use of SF7=LF+HF is mentioned for #2 as an option, for example,
          (98-CF-252(N,F)MASS,PR,NU,LF+HF).
Another possibility is to introduce a new branch code (xxx) for #1
          (98-CF-252(N,F)MASS,PR/xxx,NU)
because #1 is a part of #2 (e.g., $\nu_{tot}=\nu(A)+ \nu(252-A)$ for ^{252}Cf spontaneous fission.

In EXFOR 22650.006 (=Fig.6 of Nucl. Sci. Technol. **37**(2000)941) in PRELIM.2227,
the total neutron multiplicity (i.e., #2) correlated with the total kinetic energy (/TKE)
is given for a specific fragment mass. Because we accepted the following principle in
the Memo:

When a quantity for prompt neutron is coded with MASS, the quantity is regarded for a prompt neutron emitted from the fragment mass given under MASS.

, and we have not yet fixed the prescription for #2 above, the following REACTION code is proposed for EXFOR 22650.006

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(94-PU-239(N,F)MASS,PR,NU/TKE,,MSC)
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(Total neutron multiplicity at a given total kinetic energy in coincidence with fragment mass specified.) as a tentative solution.

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