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Memo issued on behalf of
National Nuclear Data Center
Brookhaven National Laboratory
USA

Memo CP-C/398

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Date: 29 August 2011
To: Distribution
From: O. Schwerer and N. Otsuka

Subject: **Proposed addition to Dictionary 34 (Modifiers): RRE**
(relative to square-root(E)) and related changes to dictionary 236

Reference: **Memos CP-D/701rev (WP2011-11) and CP-D/635**

While working on the update of entries on prompt fission neutron spectra (Action A21 of the 2011 NRDC meeting, WP2011-11) we found that for some entries the quantity

```
,NU/DE,,RTE
```

should be used which was proposed in memo CP-D/635 and was added in Dictionary 236:

```
PR,NU/DE,,RTE   DE  DERT Prompt neut.spect. relative to square root(E)
```

The modifier RTE is defined in dictionary 34 as "times square-root(E)" and is used for several quantities in dictionary 236, always meaning the factor (times root(E)):

```
,ARE,,RTE
,INT,,RTE
,SIG,,RES/RTE
,SIG,,RTE
PAR,SIG,,RTE
```

We don't think that we should use the same modifier for a factor and its reciprocal value. Therefore a new modifier for "relative to square-root(E)" should be introduced.

(One might argue that anyway the expansion of `PR,NU/DE,,RTE` in dictionary 236 is correctly saying „relative to square-root(E)". However, some users and possibly user-specific software may not rely on dictionary 236 but use the dictionaries for the subfields, and will therefore produce „times square-root(E)" whenever RTE occurs. Therefore, and for the sake of general consistency, a new modifier should be introduced.)

Addition to dictionary 34 (Modifiers)

RRE   relative to square-root(E)

Additions to dictionary 236 (Quantities)

```
,NU/DE,,RRE     DE   DERT Neut.spect. relative to square root(E)
PR,NU/DE,,RRE   DE   DERT Prompt neut.spect. relative to square
                          root(E)
```

Change in dictionary 236:

```
PR,NU/DE,,RTE    Make obsolete
```

Corrections of entries transmitted with `(PR),NU/DE,,RTE:`

Of the entries already transmitted, only 3 entries are affected. If this proposal is approved, they should be retransmitted:

```
22112.002-004, 40358.002-005 : ,NU/DE,,RTE → ,NU/DE,,RRE
40250.002-005: PR,NU/DE,,RTE → PR,NU/DE,,RRE
```

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