

ANS Issues Clarification on ANSI/ANS-6.1.1-1991 (W2001), “Neutron and Gamma-Ray Fluence-to-Dose Factors.”

(*Nuclear News*, May 2008)

Inquiry:

I believe that I came across two errors in the ANSI/ANS-6.1.1-1991 Table 6 – Neutron Fluence-to-Dose Polynomial Coefficients:

- 1) For LAT Exposure, Neutron Energy $E > 0.01$ MeV, $C_2 = -4.227422E+00$, but should be $-4.227422E-02$, and
- 2) For ROT Exposure, Neutron Energy $E > 0.01$ MeV, C_2 is $-6.771566E-02$, but should be $-6.771566E-03$

However, a FORTRAN code I wrote did not fit correction #2 as closely as I had anticipated. Am I correct in that these are typos and should be the values that I have specified?

Response:

Writing group members of the 1991 standard were consulted. They concur with Correction #1. A review of the 1988 draft of the standard agreed with the number in Correction #1 but had the same number in the draft as did the 1991 standard for #2.

The values generated with the fitting coefficients in Table 6 were compared with the factors in Table 4. All ROT values were found to be reproduced within 6%. Using Correction #1, the values reproduced by the fits were within about 5% except the value at 1.0 MeV which was about 7.5% different than the value in Table 4 of the standard.

An errata will be issued to state the value of C_2 for LAT exposure for $E > 0.01$ MeV should be $-4.227422E-02$ rather than $-4.227422E00$.