

10A NCAC 15 .1605 REQUIREMENTS FOR SUMMATION OF EXTERNAL, INTERNAL DOSES

(a) If the licensee is required to monitor under both Items (1) and (2) of Rule .1614 of this Section, the licensee shall demonstrate compliance with the dose limits by summing external and internal doses. If the licensee is required to monitor only by Rule .1614(1) of this Section or only by Rule .1614(2) of this Section, then summation is not required to demonstrate compliance with the dose limits. The licensee may demonstrate compliance with the requirements for summation of external and internal doses by meeting one of the conditions specified in Paragraph (b) of this Rule and the conditions in Paragraphs (c) and (d) of this Rule. The dose equivalents for the lens of the eye, the skin, and the extremities are not included in the summation, but are subject to separate limits.

(b) If the only intake of radionuclides is by inhalation, the total effective dose equivalent limit is not exceeded if the sum of the deep-dose equivalent divided by the total effective dose equivalent limit, and one of the following, does not exceed unity:

- (1) the sum of the fractions of the inhalation ALI for each radionuclide, or
- (2) the total number of derived air concentration-hours (DAC-hours) for all radionuclides divided by 2,000, or
- (3) the sum of the calculated committed effective dose equivalents to all significantly irradiated organs or tissues (T) calculated from bioassay data using appropriate biological models and expressed as a fraction of the annual limit. For the purposes of this Rule an organ or tissue is deemed to be significantly irradiated if, for that organ or tissue, the product of the weighing factors, w_T , and the committed dose equivalent, HT_{50} per unit intake is greater than 10 percent of the maximum weighted value of HT_{50} (i.e., $w_T HT_{50}$) per unit intake for any organ or tissue.

(c) If the occupationally exposed individual also receives an intake of radionuclides by oral ingestion greater than 10 percent of the applicable oral ALI, the licensee shall account for this intake and include it in demonstrating compliance with the limits.

(d) The licensee shall evaluate and, to the extent practical, account for intakes through wounds or skin absorption. The intake through intact skin has been included in the calculation of DAC for hydrogen-3 and does not need to be further evaluated.

*History Note: Authority G.S. 104E-7(a)(2);
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