Kansas Administrative Regulations

Department of Health and Environment

Article 35.—Radiation—Part 4. Standards for Protection Against Radiation.

28-35-212b. Compliance with requirements for summation of external and internal doses.

(a) If the licensee or registrant is required to monitor pursuant to both K.A.R. 28-35-217a (a) and (d), the licensee or registrant shall demonstrate compliance with the dose limits by summing external and internal doses.

(1) If the licensee or registrant is required to monitor pursuant to only K.A.R. 28-35-217a(a) or K.A.R. 28-35-217a(d), then the summation shall not be required to demonstrate compliance with the dose limits.

(2) The dose equivalents for the lens of the eye, the skin, and the extremities shall not be included in the summation and shall be subject to separate limits.

(b) Any licensee or registrant may demonstrate compliance with the requirements for summation of external and internal doses pursuant to the following:

(1) Intake by inhalation. If the only intake of radionuclides is by inhalation, the total effective dose equivalent limit shall not be deemed to be 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 one:

(A) The sum of the fractions of the inhalation ALI for each radionuclide;

(B) The total number of derived air concentration-hours (DAC-hours) for all radionuclides divided by 2,000; or

(C) 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 purposes of this requirement, an organ or tissue shall be deemed to be significantly irradiated if, for that organ or tissue, the product of the weighting factors, w_T, and the committed dose

equivalent, $H_{T.50}$, per unit intake is greater than 10 percent of the maximum weighted value of H_{50}.

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

(3) Intake through wounds or absorption through skin. The licensee or registrant shall evaluate and, to the extent practical, account for intakes through wounds or skin absorption. The intake through intact skin is included in the calculation of DAC for hydrogen-3 and shall not be required to be evaluated or accounted for pursuant to this subsection.

(Authorized by and implementing K.S.A. 48-1607; amended Sept. 20, 1993; amended Oct. 17, 1994; amended Dec. 30, 2005.)

***** Authenticated Kansas Administrative Regulation *****