**Section 340.220 Compliance with Requirements for Summation of External and Internal Doses**

a) General Requirement. If the licensee is required to monitor individual occupational dose pursuant to both Section 340.520(a) and (b) of this Part, the licensee shall demonstrate compliance with the dose limits by summing external and internal doses. If the licensee or registrant is required to monitor individual occupational dose only pursuant to Section 340.520(a) of this Part or only pursuant to Section 340.520(b) of this Part, 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 pursuant to subsections (b), (c) and (d) of this Section. 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) Intake by Inhalation. 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 biological models and expressed as a fraction of the annual limit. For purposes of this requirement, an organ or tissue is deemed to be significantly irradiated if, for that organ or tissue, the product of the weighting factor (wT) and the committed dose equivalent, HT,50, per unit intake is greater than ten percent of the maximum weighted value of HT,50 (i.e., wTHT,50) per unit intake for any organ or tissue.

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

d) Intake Through Wounds or Absorption Through Skin. The licensee shall evaluate and, to the extent practicable, 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 or accounted for pursuant to this subsection.

(Source: Amended at 29 Ill. Reg. 20841, effective December 16, 2005)