

§ 835.1303

10 CFR Ch. III (1–11 Edition)

§ 835.202(a) shall be trained in accordance with § 835.901(b) and briefed beforehand on the known or anticipated hazards to which the individual will be subjected.

[58 FR 65485, Dec. 14, 1993, as amended at 63 FR 59687, Nov. 4, 1998]

§ 835.1303 [Reserved]

§ 835.1304 Nuclear accident dosimetry.

(a) Installations possessing sufficient quantities of fissile material to potentially constitute a critical mass, such that the excessive exposure of individuals to radiation from a nuclear accident is possible, shall provide nuclear accident dosimetry for those individuals.

(b) Nuclear accident dosimetry shall include the following:

(1) A method to conduct initial screening of individuals involved in a nuclear accident to determine whether significant exposures to radiation occurred;

(2) Methods and equipment for analysis of biological materials;

(3) A system of fixed nuclear accident dosimeter units; and

(4) Personal nuclear accident dosimeters.

[58 FR 65485, Dec. 14, 1993, as amended at 63 FR 59687, Nov. 4, 1998]

APPENDIX A TO PART 835—DERIVED AIR CONCENTRATIONS (DAC) FOR CONTROLLING RADIATION EXPOSURE TO WORKERS AT DOE FACILITIES

The data presented in appendix A are to be used for controlling individual internal doses in accordance with § 835.209, identifying the need for air monitoring in accordance with § 835.403, and identifying and posting airborne radioactivity areas in accordance with § 835.603(d).

The DAC values are given for individual radionuclides. For known mixtures of radionuclides, determine the sum of the ratio of

the observed concentration of a particular radionuclide and its corresponding DAC for all radionuclides in the mixture. If this sum exceeds unity (1), then the DAC has been exceeded. For unknown radionuclides, the most restrictive DAC (lowest value) for those isotopes not known to be absent shall be used. For any single radionuclide not listed in appendix A with decay mode other than alpha emission or spontaneous fission and with radioactive half-life greater than two hours, the DAC value shall be 4 E-11 µCi/mL (1 Bq/m³). For any single radionuclide not listed in appendix A that decays by alpha emission or spontaneous fission the DAC value shall be 2 E-13 µCi/mL (8 E-03 Bq/m³).

The DACs for limiting radiation exposures through inhalation of radionuclides by workers are listed in this appendix. The values are based on either a stochastic (committed effective dose) dose limit of 5 rems (0.05 Sv) or a deterministic (organ or tissue) dose limit of 50 rems (0.5 Sv) per year, whichever is more limiting.

NOTE: the 15 rems (0.15 Sv) dose limit for the lens of the eye does not appear as a critical organ dose limit.

The columns in this appendix contain the following information: (1) Radionuclide; (2) inhaled air DAC for type F (fast), type M (moderate), and type S (slow) materials in units of µCi/mL; (3) inhaled air DAC for type F (fast), type M (moderate), and type S (slow) materials in units of Bq/m³; (4) an indication of whether or not the DAC for each class is controlled by the stochastic (effective dose) or deterministic (organ or tissue) dose. The absorption types (F, M, and S) have been established to describe the absorption type of the materials from the respiratory tract into the blood. The range of half-times for the absorption types correspond to: Type F, 100% at 10 minutes; Type M, 10% at 10 minutes and 90% at 140 days; and Type S 0.1% at 10 minutes and 99.9% at 7000 days. The DACs are listed by radionuclide, in order of increasing atomic mass, and are based on the assumption that the particle size distribution of 5 micrometers AMAD is used. For situations where the particle size distribution is known to differ significantly from 5 micrometers AMAD, appropriate corrections may be made to both the estimated dose to workers and the DACs.

Radionuclide	Absorption type ³			Absorption type ³			Stochastic or organ or tissue ¹ (F/M/S)
	µCi/mL			Bq/m ³			
	F	M	S	F	M	S	
H-3 (Water) ² ..	2 E-05	2 E-05	2 E-05	7 E+05	7 E+05	7 E+05	St/St/St
H-3 (Elemental) ² .	2 E-01	2 E-01	2 E-01	9 E+09	9 E+09	9 E+09	St/St/St
STCs (Insoluble) ⁴ .	1 E-05	6 E-06	2 E-06	3 E+05	2 E+05	8 E+04	St/St/St
STCs (Soluble)	1 E-05	1 E-05	1 E-05	5 E+05	5 E+05	5 E+05	St/St/St
Be-7	-	1 E-05	1 E-05	-	4 E+05	4 E+05	/St/St