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...NOTE: Attention is directed to the fact that regulation by the State of source material, byproduct material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the State and the U.S. Nuclear Regulatory Commission and to 10 CFR Part 150 of the Commission's regulations.

CMR - Code of Maine Regulations

(83) "**Principal activities**", as used in this part, means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

(84) "**Production facility**" means production facility as defined in the regulations contained in Part C of these regulations.

(85) "**Public dose**" means the dose received by a member of the public from exposure to sources of radiation either within a licensee's or registrant's controlled area or in unrestricted areas. It does not include occupational dose, dose received from background radiation, dose received as a patient from medical practices, or dose from voluntary participation in medical research programs.

(86) "**Pyrophoric liquid**" means any liquid that ignites spontaneously in dry or moist air at or below 130 °F (54.4 °C). A pyrophoric solid is any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

(87) "**Qualified Expert**" means an individual who is either a Radiological Physicist, or an X-ray Survey Technician (see Part F.4.) and has demonstrated to the satisfaction of the Agency that such individual possesses the knowledge and training to measure ionizing radiation, to evaluate safety techniques, and advise regarding radiation protection needs. With reference to the calibration of radiation therapy equipment, an individual having, in addition to the above qualifications, training and experience in the clinical applications of radiation physics to radiation therapy.

(88) "**Quality factor**" (Q) means the modifying factor, listed in Tables I and II of A.13 that is used to derive dose equivalent from absorbed dose.

(89) "**Rad**" means the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram (0.01 Gy).

(90) "**Radiation**" means ionizing radiation, which includes any or all of the following: gamma and x-rays, alpha and beta particles, high speed electrons, neutrons, high speed protons, and other atomic particles.

(91) "**Radiation Area**" means any area, accessible to individuals, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose in excess of 0.05 mSv (0.005 rem), or in any 5 consecutive days a dose in excess of 1mSv (100 mrem).

(92) "**Radiation dose**" [See "Dose"].

(93) "**Radiation machine**" means any device capable of producing radiation except those, which produce radiation only from radioactive material.

(94) "**Radiation safety officer**" means one who has the knowledge and responsibility to apply appropriate radiation protection regulations.

(95) "**Radioactive material**" means any solid, liquid, or gas, which emits radiation spontaneously.

(96) "**Radioactivity**" means the transformation of unstable atomic nuclei by the emission of radiation.

(97) "**Radiobioassay**" [See "Bioassay"].

(98) "**Radiological Physicist**" means an individual who:

(a) is certified by the American Board of Radiology in therapeutic radiological physics, diagnostic radiological physics, or medical nuclear physics; or

(b) has a bachelor's degree in one of the physical sciences or engineering and three years full-time experience working in therapeutic radiological physics under the direction of a physicist certified by the American Board of Radiology. The work duties must include duties involving the calibration and spot checks of a medical accelerator or sealed source teletherapy unit; or

(c) has a Master's degree or Doctorate in physics, biophysics, radiological physics, health physics, or engineering; has had 1 year's full-time training in therapeutic radiological physics; and has had 1 year's full-time work experience in a radiotherapy facility where the individual's duties involve calibration and spot checks of a medical accelerator or a sealed source teletherapy unit.

13. The International System of Units (SI). The Metric Conversion Act of 1975 (PL 94-168) urged the increasing awareness and use of the International System of Units (SI). The generally accepted regulatory values in the narrative portions of this document are followed by the SI equivalents in parentheses. Where appropriate, schedules and appendices are provided with notes concerning conversion factors. The inclusion of the SI equivalent is for informational purposes only unless otherwise specified.

A. Units of Exposure and Dose

(1) ABSORBED DOSE. The unit of absorbed dose is the gray (Gy) which is equal to 1 joule per kilogram. One rad is equal to 1×10^{-2} gray. Sub-multiples included in this document are the milligray (mGy) and the microgray (μGy).

(2) DOSE EQUIVALENT. The unit of dose equivalent is the sievert (Sv) which is equal to 1 joule per kilogram. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor. One REM is equal to 1×10^{-2} sievert. Submultiples included in this document are the millisievert (mSv) and the microsievert (μSv).

(3) EXPOSURE. The unit of exposure is the coulomb per kilogram (C/kg). One roentgen is equal to 2.58×10^{-4} coulomb per kilogram of air. Submultiples of this unit are the millicoulomb per kilogram (mC/kg) and the microcoulomb per kilogram (μC/kg).

(4) QUALITY FACTORS. As used in these regulations, the quality factors for converting absorbed dose to dose equivalent are shown in Table I.

TABLE I

QUALITY FACTORS AND ABSORBED DOSE EQUIVALENCIES

TYPE OF RADIATION	(Q)	Quality Factor Absorbed Dose Equal to a Unit Dose Equivalent[a]
X, gamma, or beta radiation and high-speed electrons	1	1
Alpha particles, multiple-charged particles, fission fragments and heavy particles of unknown charge	20	0.05
Neutrons of unknown energy	10	0.1
High-energy protons	10	0.1

[a] Absorbed dose in gray equal to 1 Sv or the absorbed dose in rad equal to 1 rem.

(5) If it is more convenient to measure the neutron fluence rate than to determine the neutron dose equivalent rate in sievert per hour or rem per hour, as provided in A.13.A(4), 0.01 Sv (1 rem) of neutron radiation of unknown energies may, for purposes of these regulations, be assumed to result from a total fluence of 25 million neutrons per square centimeter incident upon the body. If sufficient information exists to estimate the approximate energy distribution of the neutrons, the licensee or registrant may use the fluence rate per unit dose equivalent or the appropriate Q value from Table II to convert a measured tissue dose in gray or rad to dose equivalent in sievert or rem.