

RATS ID 1995-5

20.1003 Member of the Public

16.2 Definitions

Member of the Public means any individual except when that individual is receiving an occupational dose.

20.1003 Occupational dose and Public Dose – See RATS ID 1997-5

19.12 Instruction to workers

16.13(c) Instruction to workers

(c) Instructions. All individuals likely to receive an occupational dose or frequenting any portion of a restricted area shall be provided instruction as specified in this subdivision. In determining those individuals subject to the requirements of this subdivision, licensees and registrants must take into consideration assigned activities during normal and abnormal situations involving exposure to radiation and/or radioactive material which can reasonably be expected to occur during the life of a licensed and/or registered facility. The extent of these instructions must be commensurate with potential radiological health protection problems present in the work place. Individuals shall be:

- (1) kept informed of the storage, transfer or use of radioactive material, of radiation-producing equipment or of radiation in such portions of the restricted area;
- (2) instructed in the operating procedures applicable to work under the license or registration and the health protection problems associated with exposure to such radioactive material, radiation equipment, or radiation, in precautions or procedures to minimize exposure, in the purposes and functions of protective devices employed, and required to demonstrate familiarity with such precautions, procedures and devices;
- (3) instructed in, and required to observe, to the extent within the worker's control, the applicable provisions of this Part and licenses and/or registrations for the protection of personnel from exposures to radiation, radiation equipment, or radioactive material occurring in such areas;
- (4) instructed of their responsibility to report promptly to the licensee or registrant any condition which may lead to or cause a violation of the department regulations and licenses or unnecessary exposure to radiation or radioactive material;
- (5) instructed in the appropriate response to warnings made in the event of any unusual occurrence of malfunction that may involve exposure to radiation or radioactive material; and
- (6) advised as to the radiation exposure reports which workers must be given or may request pursuant to subdivision (d) of this section.

RATS ID 1995-7 (See SRS -Only Part 20 provisions pending)

20.1003 Occupation Dose and Public Dose

20.2003 - Occupational dose

16.2 Definitions

"Occupational dose" means the dose received by an individual in the course of employment in which the individual's assigned duties involve exposure to radiation or to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. Occupational dose does not include doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released under 10 CFR 35.75, from voluntary participation in medical research programs, or as a member of the public.

20.1003 – Public dose

16.2 Definitions

"Public dose" means the dose received by a member of the public from exposure to sources of radiation released by the licensee or registrant, or to any other source of radiation under the control of the licensee or registrant. Public dose does not include occupational dose, dose received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released under 10 CFR 35.75, or dose from voluntary participation in medical research programs.

20.1301(a) Dose limits for individual members of the public

16.7(a)(1)(ii) The total effective dose equivalent to individual members of the public from the licensed operation does not exceed 1 mSv (0.1 rem) in a year, exclusive of the dose contributions from background radiation, from any administration the individual has received, from exposure to individuals administered radioactive material and released under 16.123, from voluntary participation in medical research programs, and from the licensee's disposal of radioactive material into sanitary sewerage in accordance with 16.8.

RATS ID 1998-1

Deliberate misconduct

See incorporation by reference for Parts 30, 40 and 70.

RATS ID 1998-4

See incorporation of 10 CFR 34 by reference.

RATS ID 1998-5

20.103 Definitions

16.2 Definitions

"Declared pregnant woman" means a woman who has voluntarily informed the licensee or registrant, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

"High radiation area" means any area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of 1mSv (0.1 rem) in 1 hour at 30 centimeters from any source of radiation or 30 centimeters from any surface that the radiation penetrates. For the purposes of these regulations, rooms or areas in which diagnostic X-ray systems are used for healing arts purposes are not considered high radiation areas.

"Individual monitoring devices" means devices designed to be worn by a single individual for the assessment of dose equivalent. For purposes of these regulations, "personnel dosimeter" and "dosimeter" are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescence dosimeters (TLDs), pocket ionization chambers, and personal (lapel) air sampling devices.

"Lens dose equivalent" (LDE) applies to the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm²).

"Very high radiation area" means any area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess of 5 Gy (500 rad) in 1 hour at 1 meter from a radiation source or 1 meter from any surface that the radiation penetrates. (Note: At very high doses received at high dose rates, units of absorbed dose (e.g., rads and grays) are appropriate, rather than units of dose equivalent (e.g., rems and sieverts)).

20.1101(b) Radiation protection programs

16.5(a)

16.5 Responsibility for radiation safety. No person shall operate or permit the operation of a radiation installation nor shall the person operate, transfer, receive, possess or use or permit the operation, transfer, receipt, possession or use of any radiation source unless that person:

(a) achieves occupational doses and doses to members of the public as low as is reasonably achievable (ALARA). Such effort shall include, to the extent practicable, the use of procedures and engineering controls which are based on sound radiation protection principles.

20.1201 (a)(2) Occupational dose limits for adults

16.6 (a)(1)(ii)(a) (a) A lens dose equivalent of 0.15 Sv (15 rem)

20.1201 (c) Occupational dose limits for adults

16.6 (a)(3) When the external exposure is determined by measurement with an external personal monitoring device, the deep-dose equivalent must be used in place of the effective dose equivalent, unless the effective dose equivalent is determined by a dosimetry method approved by the Department. The assigned deep dose equivalent [and shallow dose equivalent shall] must be for the [portion] part of the body receiving the highest exposure. The assigned shallow dose equivalent must be the dose averaged over the contiguous 10 square centimeters of the skin receiving the highest exposure. The assigned deep dose equivalent and assigned shallow dose equivalent shall be determined as follows:

(i) The deep dose equivalent, eye lens dose equivalent and shallow dose equivalent may be assessed from surveys or other radiation measurements for the purposes of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure, or the results of the individual monitoring are unavailable.

20.1203 Determination of external dose from airborne radioactive material

16.6(c)(1) Licensees shall, when determining the dose from airborne radioactive material, include the contribution to the deep dose equivalent, eye lens dose equivalent, and shallow dose equivalent from external exposure to the radioactive cloud (See 10 CFR 20 Appendix B, footnotes 1 and 2).

20.1208(a) Dose equivalent to an embryo/fetus

16.6 (h)(1)

The licensee or registrant shall ensure that the dose equivalent to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 5 mSv (0.5 rem). (See section 16.14(f) for recordkeeping requirements.)

20.1208 (c) Dose equivalent to an embryo/fetus

16.6 (h) (3) The dose equivalent to an embryo/fetus shall be taken as the sum of:

- (i) The deep dose equivalent to the declared pregnant woman; and
- (ii) The dose to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.

20.1208

16.6 (h) (4) If by the time the woman declares pregnancy to the licensee or registrant, the dose to the embryo/fetus exceeded 5 mSv (5 rem), the licensee or registrant shall be deemed to be in compliance with paragraph (1) of this subdivision if the additional dose equivalent to the embryo/fetus does not exceed 0.50 mSv (0.05 rem) during the remainder of the pregnancy.

20.1501(a)(i)&(iii) General

16.10 Inspections, surveys, checks and tests; vacating installations; securing radiation sources.

(a) Each person who possesses any radiation source shall make, or cause to be made, the applicable surveys required under this section and such additional surveys as may be necessary for him/her to comply with other sections in this Part, to determine the magnitude and extent of radiation levels and concentrations or quantities of radioactive material in areas including the subsurface, or and as the Department may direct in order to evaluate the extent of the radiation hazard or potential radiation hazards of the radiation levels and residual radioactivity detected that may be present. Each person who possesses any radioactive material not in a sealed source for which surveys are required shall provide or have available appropriate calibrated and operable instruments capable of detecting and measuring radiation and radioactive contamination. Records of surveys describing the location and amount of subsurface residual radioactivity identified at the site must be kept with records important for decommissioning in accordance with this Part.

20.1502 Conditions requiring individual monitoring of external and internal occupational dose.

16.11 Personnel monitoring.

(a) External radiation sources. Each licensee and registrant shall monitor occupational exposure to radiation from licensed and unlicensed radiation sources under the control of the licensee or registrant and shall supply and require the use of individual monitoring devices by: Each person who possesses any radiation source shall supply and require the proper use of appropriate, calibrated and operable individual monitoring devices by:

(1) Adults likely to receive, in one year from sources external to the body, a dose in excess of 10 percent of the limits in paragraph (1) of section 16.6(a); and

(2) Minors likely to receive, in 1 year, from radiation sources external to the body, a deep dose equivalent in excess of 1 mSv (0.1 rem), a lens dose equivalent in excess of 1.5 mSv (0.15 rem), or a shallow dose equivalent to the skin or to the extremities in excess of 0.5 rem (5 mSv);

(3) Declared pregnant women likely to receive during the entire pregnancy, from radiation sources external to the body, a deep dose equivalent in excess of 1 mSv (0.1 rem) (Note: All of the occupational doses in 16.6 continue to be applicable to the declared pregnant worker as long as the embryo/fetus dose limit is not exceeded.); and

(4) Individuals entering a high or very high radiation area.

20.1502

16.11(d) Intake of radioactive material. Each licensee shall perform all appropriate measurements of those specified in paragraph (1) of subdivision (d) of section 16.6 of this Part which will enable him/her to determine the occupational intake of radioactive material by and assess the committed effective dose equivalent to:

(1) Adults likely to receive, in one year, an intake in excess of 10 percent of the applicable ALI(s) in 10 CFR 20.1001-20.2402, table 1, Columns 1 and 2, of appendix B to 20.1001-20. infra; and

(2) Minors and declared pregnant women likely to receive, in one year, a committed effective dose equivalent in excess of 0.50 mSv (0.05 rem).

(3) Declared pregnant women likely to receive, during the entire pregnancy, a committed effective dose equivalent in excess of 0.50 mSv (0.05 rem).

20.1906 Procedures for receiving and opening packages

Section 16.6 (c) The licensee shall immediately notify the final delivery carrier and the department Notification to the department shall be made by telephone as well as by telegram, mailgram or facsimile. (Note: Section 16.1(c) Communications has current phone number and address.

20.2101 (a) General Provisions

16.14 Records

(a) General provisions.

(1) Each licensee or registrant shall use the SI units - becquerel, gray, sievert and coulomb per kilogram, or the special units: curie, rad, rem, and roentgen, including multiples and subdivisions, and shall clearly indicate the units of all quantities on records required by Part 16. (This is the current language – no changes are proposed. Note: All limits in Part 16 are expressed in both SI and traditional units, so licensees and registrants are in compliance by using either convention.)

(f) Records of individual monitoring results.

(1) Recordkeeping requirement. Each licensee or registrant shall maintain records of doses received by all individuals for whom monitoring was required pursuant to section 16.11, and records of doses received during planned special exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before the effective date of Part 16 need not be changed. These records shall include, when applicable.

(i) The deep dose equivalent to the whole body, [eye] lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities; and

(ii) The estimated intake or body burden of radionuclides, see section 16.6(b); and

(iii) The committed effective dose equivalent assigned to the intake or body burden of radionuclides; and

(iv) The specific information used to assess calculate the committed effective dose equivalent pursuant to section 16.6(d); and

20.2106(a) (1-4) Records of individual monitoring results.

16.14(f) Records of individual monitoring results.

(1) Recordkeeping requirement. Each licensee or registrant shall maintain records of doses received by all individuals for whom monitoring was required pursuant to section 16.11, and records of doses received during planned special exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before [effective date of this amendment] need not be changed. These records shall include, when applicable.

(i) The deep dose equivalent to the whole body, [eye] lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities; and

(ii) The estimated intake or body burden of radionuclides, see section 16.6(b); and

(iii) The committed effective dose equivalent assigned to the intake or body burden of radionuclides; and

(iv) The specific information used to assess the committed effective dose equivalent pursuant to section 16.6(d);

20.2202 Notification of incidents.

20.2202(a)(1)(ii) Immediate

16.15(b)(1)(i)(b) A lens dose equivalent of 0.75 Sv (75 rem) or more; or

20.2202(b)(1)(ii) twenty-four hour

16.15(b)(2)(i)(b) A lens dose equivalent exceeding 0.15 Sv (15 rem);

Part s 32, 36 and 39 – see incorporation of 10 CFR Parts 32, 36 and 39 by reference

35.641(a)(2) and 35.643

These changes became effective May 8, 2013 via incorporation of 10 CFR 35 into 16.123. See SRS sheet

RATS IS 2002-1

20.1003 Definitions Shallow-dose equivalent

16.2 Definitions“ Shallow dose equivalent” (Hs), which applies to the external exposure of the skin of the whole body or the skin of an extremity, means the dose equivalent at a tissue depth of 0.007 centimeter (7 mg/cm²).

20.1201(a)(2), (a)(2)(ii) & (c) Occupational dose limits.

16.6 (a) Occupational dose limits for adults

(ii) The annual limits to the lens of the eye, to the skin of the whole body, and to the skin of the extremities which are:

(b) A shallow dose equivalent of 0.50 Sv (50 rem) to the skin of the whole body or to the skin of any extremity.

(3) When the external exposure is determined by measurement with an external personal monitoring device, the deep-dose equivalent must be used in place of the effective dose equivalent, unless the effective dose equivalent is determined by a dosimetry method approved by the Department. The assigned deep dose equivalent must be for the part of the body receiving the highest exposure. The assigned shallow dose equivalent must be the dose averaged over the contiguous 10 square centimeters of the skin receiving the highest exposure.

(i) The deep dose equivalent, lens dose equivalent and shallow dose equivalent may be assessed from surveys or other radiation measurements for the purposes of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure, or the results of the individual monitoring are unavailable.

Part 20 APPENDIX A is incorporated by reference.

RATS ID 2002-2

Comment resolution – See NRC Review Letter dated August 8, 2013 to S. Gavitt

The definition of authorized medical physicist in 16.123(b)(1)(i)&(ii) has been edited as per the comment to remove 35.51 and 35.57.

Authorized user. This is a practice of medicine issue. The Department cannot implement a regulation that is contrary to the New York State Department of Education Law as it applies to authorization for medical use. Additionally the Department has not received any request from a dentist or podiatrist to use radioactive material for human use (including research subjects).

20.1003 Occupational Dose and Public Dose – see RATS ID 1995-7

20.1301(a)&(c) 16.7(a)(1) &(3)

16.7 Radiation dose limits for individual members of the public.

(a) Dose limits for individual members of the public.

(1) Each licensee or registrant shall conduct operations so that:

(i) The dose in any unrestricted area from external sources, exclusive of the dose contributions from patients administered radioactive material and released in accordance with 16.123, does not exceed 0.02 mSv (0.002 rem) in any one hour; and

(ii) The total effective dose equivalent to individual members of the public from the licensed operation, or registered equipment operation, does not exceed 1 mSv (0.1 rem) in a year, exclusive of dose contribution from background radiation, from any administration the individual has received, from exposure to individuals administered radioactive material and released under 16.123 from voluntary participation in medical research programs, and the dose contribution from the licensee's or registrant's disposal of radioactive material into sanitary sewerage in accordance with section 16.8.

(3) Notwithstanding subparagraph (1)(ii) of this section, a licensee may permit visitors to an individual who cannot be released, under section 16.123, to receive a radiation dose greater than 0.1 rem (1 mSv), but not exceeding 0.5 rem (5 mSv) if the authorized user, as defined in section 16.123, has determined before the visit that it is appropriate.

Part 32 items – see incorporation of 10 CFR 32 by reference.

RATS ID 2006-1

Part 20, Appendix B All former references to 10 NYCRR 16 Appendix now refer to the current Part 20, Appendix B

32.72(b)(2)(ii) – see incorporation of 10 CFR 32 by reference.

RATS ID 2007-1

32.72 (b)(5) and 32.74(a) --- see incorporation of 10 CFR 32 by reference.

RATS ID 2007-2

30.14, 30.15, 30.18 (c)&(d) State Section 16.4

16.4 Exemption of certain radiation sources from the requirements of this Part. Any person is hereby exempted from the requirements of this Part to the extent that such person transfers, receives, possesses, installs, operates or uses:

(a) any of the radioactive material or items containing radioactive material in accordance with the provisions in 10 CFR 30 sections 30.14, 30.15, 30.18, 30.19, 30.20, 30.21(a), (b) and (d), 30.22(a), and 10 CFR 40.13.

31.5(c)(8)(ii) State Section 16.101

See incorporation of 10 CFR 31 by reference

32.72(b)(2) - --- see incorporation of 10 CFR 32 by reference.

RATS ID 2007-4

Superseded by Part 37 – See RATS ID 2013-1

RATS ID 2012-3

See incorporation of 10 CFR Part 71.

RATS ID 2012-3

See incorporation of 10 CFR Parts 30, 34, 40 and 71.

RATS ID 2012-4

See incorporation of 10 CFR Parts 30, 31, 32, 40 and 70.

RATS ID 2013-1

Open comment resolution – final version was implemented March 2016

Change License Condition No. XX to Read:

LC No. XX.

A. The license shall comply with Section 71.97 of Title 10 Code of Federal Regulations, Part 71, Packaging and Transportation of Radioactive Material, January 1, 2016 version.

B. The licensee shall comply with the Title 10 Code of Federal Regulations, Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," January 1, 2016 version, except as follows:

- (1) Sections 37.1, 37.3, 37.7, 37.9, 37.11(a-b), 37.13, 37.105, 37.107, and 37.109 are excluded.
- (2) Any reference to the Commission or NRC shall be deemed to be a reference to the New York State Department of Health, except:
 - (a) 37.5 Definitions: Agreement State, Byproduct material, Commission, Fingerprint orders, Person,
 - (b) 37.25(b),
 - (c) 37.27(a) and (c),
 - (d) 37.29(a),
 - (e) 37.71 referring to NRC's license verification system.
- (3) License required reports of events or notifications in 37.41, 37.45, 37.57, 37.77(a-d), and 37.81, shall be reported to the Department by means specified in 10 NYCRR 16.1(c) instead of to the NRC.

RATS ID 2013-2

See incorporation of 10 CFR Parts 30, 40 and 70.

RATS ID 2013-2

See incorporation of 10 CFR Part 70.

RATS ID 2015-3

See incorporation of 10 CFR Part 71.

RATS ID 2015-4

See incorporation of 10 CFR Part 70.

See RATS ID 2013-1 (Incorporation of Part 37, January 1, 2016 version)

