



Oregon

Theodore R. Kulongoski, Governor

Department of Human
Services
Public Health
Division
Environmental Public
Health
Radiation Protection
Services

800 NE Oregon Street, Suite 640
Portland, OR 97232-2162



December 14, 2010

Terrence Reis, Deputy Director
Division Materials Safety and State Agreements
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
T8-E24
Washington, D.C. 20555-0001

Dear Mr. Reis:

Enclosed is a copy of the State of Oregon, Radiation Protections Services Section, Administrative Rule **draft revisions**. Text underlined is additions and strikeouts represent deleted text within the rules. Upon receiving approval from your office, these revisions are scheduled to be submitted to the Oregon Secretary of State Office to become final rules.

<u>Rats ID</u>	<u>Title</u>	<u>State Section</u>
2008-1	Occupational Dose Records, Labeling Containers, and the Total Effective Dose Equivalent Parts – 19 and 20	Divisions 111 and 120

We believe that adoption of these rules satisfies the compatibility and health and safety categories established in the Office of Federal and State Materials and Environmental Management Programs (FSME) Procedure SA-200.

If you have any questions, please feel free to contact me at (971) 673-0500 or email me @ Todd.s.carpenter@state.or.us

Sincerely,

Todd S. Carpenter
Licensing Manager

Cc: Kathleen Schneider
Enclosures:
Compatibility Chart
Draft Oregon Administrative Rules

“Assisting People to Become Independent, Healthy and Safe”
An Equal Opportunity Employer

333-111-0015

Notifications and Reports to Individuals

(1) Radiation exposure data for an individual and the results of any measurements, analyses and calculations of radioactive material deposited or retained in the body of an individual shall be reported to the individual as specified in this rule. The information reported shall include data and results obtained pursuant to these rules, orders or license conditions, as shown in records maintained by the licensee or registrant pursuant to OAR 333-120-0650. Each notification and report shall:

- (a) Be in writing;
- (b) Include the appropriate identifying data such as the name of the licensee or registrant, the name of the individual and the individual's social security number;
- (c) Include the individual's exposure information; and
- (d) Contain the following statement: "This report is furnished to you under the provisions of rules entitled Oregon Rules for the Control of Radiation, ~~De~~Division 111. You should preserve this report for further reference."

(2) Each licensee or registrant shall ~~make dose information available to workers as shown in records maintained by the licensee or registrant under the provisions of 333-120-0650. The licensee shall provide an annual report to each individual monitored under 333-120-0210 of the dose received in that monitoring year if:~~

- ~~(a) The individual's occupational dose exceeds 1 mSv (100 mrem) TEDE or 1 mSv (100 mrem) to any individual organ or tissue; or~~
- ~~(b) The individual requests his or her annual dose report.~~

~~advise each worker annually in writing of the worker's exposure to radiation or radioactive material as shown in records maintained by the licensee or registrant pursuant to OAR 333-120-0650. Prior to January 1, 1994, licensees are required to provide this information only upon request of the worker.~~

(3) At the request of a worker formerly engaged in work controlled by the licensee or registrant, each licensee or registrant shall furnish to the worker a report of the worker's exposure to radiation or radioactive material. Such report shall be furnished within 30 days from the time the request is made or within 30 days after the exposure of the individual has been determined by the licensee or registrant, whichever is later; shall cover, within the period of time specified in the request, each calendar quarter in which the worker's activities involved exposure to radiation from radioactive material licensed by, or radiation machines registered with the Department; and shall include the dates and locations of work under the license or registration in which the worker participated during this period.

(4) When a licensee or registrant is required ~~pursuant to~~ OAR 333-120-0710, 333-120-0720 or 333-120-0730 ~~division 120 of this chapter~~ to report to the Department any exposure of an individual to radiation or radioactive material, the licensee or the registrant shall also provide the individual a report on the exposure data included ~~in the report to the Department. therein.~~ Such reports shall be transmitted at a time not later than the transmittal to the Department.

(5) At the request of a worker who is terminating employment in a given calendar quarter with the licensee or registrant in work involving radiation dose, or of a worker who, while employed by another person, is terminating assignment to work involving radiation dose in the licensee's or registrant's facility in that calendar quarter, each licensee or registrant shall provide to each such worker, or to the worker's designee, at termination, a written report regarding the radiation dose received by that worker from operations of the licensee or registrant during that specifically identified calendar quarter or fraction thereof, or provide a written estimate of that dose if the finally determined personnel monitoring results are not available at that time. Estimated doses shall be clearly indicated as such.

Stat. Auth.: ORS 453.605 - 453.755

Stats. Implemented: ORS 453.605 - 453.755

Hist.: HD 4-1985, f. & ef. 3-20-85; HD 1-1991, f. & cert. ef. 1-8-91; HD 15-1994, f. & cert. ef. 5-6-94; PH 14-2008, f. & cert. ef. 9-15-08

333-120-0015

Definitions

(1) "Absorbed dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the gray (Gy) and the rad.

(2) "Activity" is the rate of disintegration (transformation) or decay of radioactive material. The units of activity are the becquerel (Bq) and the Curie (Ci). The becquerel is equal to one disintegration per second (dps) and the Curie is equal to 3.7×10^{10} dps.

(3) "Accelerator produced radioactive material" means any material made radioactive by a particle accelerator.

(4) "Adult" means an individual 18 or more years of age.

(5) "Airborne radioactive material" means radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

(6) "Airborne radioactivity area" means a room, enclosure, or area in which the airborne radioactive materials, composed wholly or partly of licensed material, exist in concentrations:

(a) In excess of the derived air concentrations (DACs) specified in 10 CFR 20 Appendix B; or

(b) To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours present in a week, and intake of 0.6 percent of the annual limit of intake (ALI) or 12 DAC hours.

(7) "Air-purifying respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

(8) "ALARA" (acronym for "as low as is reasonably achievable") means making every reasonable effort to maintain exposures to radiation as far below the dose limits in this division as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the use of licensed materials in the public interest.

(9) "Annual limit on intake" (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of 0.05 Sv (5 rem) or a committed dose equivalent of 0.5 Sv (50 rem) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are given on page 1 of Tables 1, 2, and 3, Appendix B to 10 CFR Part 20.

(10) "Assigned protection factor (APF)" means the expected workplace level of respiratory protection that would be provided by a properly functioning respirator or a class of respirators to properly fitted and trained users. Operationally, the inhaled concentration can be estimated by dividing the ambient airborne concentration by the APF.

(11) "Atmosphere supplying respirator" means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

(12) "Background radiation" means radiation from cosmic sources; naturally occurring radioactive material, including radon (except as a decay product of source or special nuclear material); and global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include radiation from radioactive or special nuclear materials regulated by the Department.

(13) "Bioassay" (radiobioassay) means the determination of kinds, quantities or concentrations, and, in some cases, the locations of radioactive material in the human body, whether by direct measurement (in vivo counting) or by analysis and evaluation of materials excreted or removed from the human body.

(14) "Byproduct material" means:

(a) Any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or using special nuclear material.

(b) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute "byproduct material" within this definition.

(c) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity. Any material that has been made radioactive by use of a particle accelerator and is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity.

(d) Any discrete source of naturally occurring radioactive material, other than source materials, that:

(A) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate federal agency determines a threat to the public health and safety or the common defense, is similar to the threat posed by a discrete source of radium-226 material to the public health and safety or the common defense and security; and

(B) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical or research activity.

(15) "Class" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times: for Class D, Days, of less than 10 days; for Class W, Weeks, from 10 to 100 days; and for Class Y, Years, of greater than 100 days. For purposes of these regulations, "lung class" and "inhalation class" are equivalent terms.

(16) "Collective dose" is the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

(17) "Committed dose equivalent" (HT,50) means the dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

(18) "Committed effective dose equivalent" (HE,50) is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to these organs or tissues (HE,50) = The Sum of WTHT,50.

(19) "Controlled area" means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason.

(20) "Consortium" means an association of medical use licensees and a PET radionuclide production facility in the same geographical area that jointly own or share in the operation and maintenance cost of the PET radionuclide production facility that produces PET radionuclides for use in producing radiopharmaceutical drugs within the consortium for noncommercial distributions among its associated members for medical use. The PET radionuclide production facility within the consortium must be located at an educational institution or a federal facility or a medical facility.

(21) Constraint (dose constraint) means a value above which specified licensee actions are required.

(22) "Critical Group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

(23) "Declared pregnant woman" means a woman who has voluntarily informed the licensee, 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.

(24) "Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits:

(a) Release of the property for unrestricted use and termination of the license; or

(b) Release of the property under restricted conditions and termination of the license.

(25) "Deep-dose equivalent" (Hd), which applies to external whole-body exposure, is the dose equivalent at a tissue depth of one cm (1000 mg/cm²).

(26) "Demand respirator" means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

(27) "Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work, results in an intake of one ALI. For purposes of these regulations, the condition of light work is an inhalation rate of 1.2 cubic meters of air per hour for 2,000 hours in a year. DAC values are given in Table I, Column 3, of 10 CFR 20 Appendix B.

(28) "Derived air concentration-hour" (DAC-hour) means the product of the concentration of radioactive material in air, expressed as a fraction or multiple of the derived air concentration for each radionuclide, and the time of exposure to that radionuclide, in hours. A licensee or registrant may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of 0.05 Sv (5 rem).

(29) "Discrete Source" means a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical or research activities.

(30) "Disposable respirator" means a respirator for which maintenance is not intended and that is designed to be discarded after excessive breathing resistance, sorbent exhaustion, physical damage, or end-of-service-life renders it unsuitable for use. Examples of this type of respirator are a disposable half-mask respirator or a disposable escape-only self-contained breathing apparatus (SCBA).

(31) "Distinguishable from background" means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

(32) "Dose or radiation dose" is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent, as defined in this rule.

(33) "Dose equivalent" (HT) means the product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The units of dose equivalent are the rem and sievert (Sv).

(34) "Dosimetry processor" means an individual or an organization that processes and evaluates individual monitoring devices in order to determine the radiation dose delivered to the monitoring devices.

(35) "Effective Dose Equivalent" (HE) is the sum of the products of the dose equivalent to the organ or tissue (HT) and the weighting factor (WT) applicable to each of the body organs or tissues that are irradiated ($HE = \text{The Sum of } WTHT$).

(36) "Embryo/fetus" means the developing human organism from conception until the time of birth.

(37) "Entrance or access point" means any location through which an individual could gain access to radiation areas or to radioactive materials. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.

(38) "Exposure" means being exposed to ionizing radiation or to radioactive material.

(39) "External dose" means that portion of the dose equivalent received from radiation sources outside the body.

- (40) "Extremity" means hand, elbow, arm below the elbow, foot, knee, or leg below the knee.
- (41) "Eye dose equivalent" 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). (See "lens dose equivalent").
- (42) "Filtering facepiece (dust mask)" means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium, not equipped with elastomeric sealing surfaces and adjustable straps.
- (43) "Fit factor" means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.
- (44) "Fit test" means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.
- (45) "Generally applicable environmental radiation standards" means standards issued by the Environmental Protection Agency (EPA) under the authority of the Atomic Energy Act of 1954, as amended, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.
- (46) "Helmet" means a rigid respiratory inlet covering that also provides head protection against impact and penetration.
- (47) "High radiation area" means an 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 one mSv (0.1 rem) in one hour at 30 centimeters from the radiation source or 30 centimeters from any surface that the radiation penetrates.
- (48) "Hood" means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.
- (49) "Individual" means any human being.
- (50) "Individual monitoring" means:
- (a) The assessment of dose equivalent by the use of devices designed to be worn by an individual;
 - (b) The assessment of committed effective dose equivalent by bioassay (see Bioassay) or by determination of the time-weighted air concentrations to which an individual has been exposed, i.e. DAC-hours; or
 - (c) The assessment of dose equivalent by the use of survey data.
- (51) "Individual monitoring devices" (individual monitoring equipment) means devices designed to be worn by a single individual for the assessment of dose equivalent such as film badges, thermoluminescence dosimeters (TLDs), pocket ionization chambers, and personal ("lapel") air sampling devices.
- (52) "Internal dose" means that portion of the dose equivalent received from radioactive material taken into the body.

(53) "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).

(54) "Loose fitting facepiece" means a respiratory inlet covering that is designed to form a partial seal with the face.

(55) "Member of the public" means any individual except when that individual is receiving an occupational dose.

(56) "Minor" means an individual less than 18 years of age.

(57) "Monitoring (radiation monitoring, radiation protection monitoring)" means the measurement of radiation levels, concentrations, surface area concentrations or quantities of radioactive material and the use of the results of these measurements to evaluate potential exposures and doses.

(58) "Nationally Tracked Source" means a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of radioactive material listed in 10 CFR Part 20, Appendix E. In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded in a solid form and that is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel rod, or fuel pellet.

(a) Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than Category 1 threshold.

(b) Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

(59) "Negative pressure respirator (tight fitting)" means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

(60) "Nonstochastic effect" means a health effect, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect. For purposes of these regulations, "deterministic effect" is an equivalent term.

(61) "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 dose received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material for medical purposes and released under OAR 333-116-0260, from voluntary participation in medical research programs, or as a member of the public.

(62) "Particle accelerator" means any machine capable of accelerating electrons, protons, deuterons or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of 1 megaelectron volt. For purposes of this definition, "accelerator" is an equivalent term.

(63) "Planned special exposure" means an infrequent exposure to radiation, separate from and in addition to the annual occupational dose limits.

- (64) "Positive pressure respirator" means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.
- (65) "Powered air purifying respirator" (PAPR) means an air purifying respirator that uses a blower to force the ambient air through air purifying elements to the inlet covering.
- (66) "Pressure demand respirator" means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.
- (67) "Public dose" means the dose received by a member of the public from exposure to radiation or radioactive material released by a licensee, or to any other source of radiation under the control of a licensee. Public dose does not include occupational dose or doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material for medical purposes and released under OAR 333-116-0260, or from voluntary participation in medical research programs.
- (68) "Qualitative fit test (QLFT)" means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.
- (69) "Quantitative fit test (QNFT)" means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.
- (70) "Quarter" means a period of time equal to one-fourth of the year observed by the licensee, approximately 13 consecutive weeks, providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.
- (71) "Radiation" (ionizing radiation) means alpha particles, beta particles, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Radiation, as used in this part, does not include non-ionizing radiation, such as radio- or microwaves, or visible, infrared, or ultraviolet light.
- (72) "Radiation area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.05 mSv (0.005 rem) in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates.
- (73) "Reference man" means a hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health employees to standardize results of experiments and to relate biological insult to a common base. A description of the reference man is contained in the International Commission on Radiological Protection report, ICRP Publication 23, "Report of the Task Group on Reference Man."
- (74) "Residual radioactivity" means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site.
- (75) "Restricted area" means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

(76) "Respiratory protective equipment" means an apparatus, such as a respirator, used to reduce an individual's intake of airborne radioactive materials.

(77) "Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee or registrant.

(78) "Self-contained breathing apparatus" (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

(79) "Shallow-dose equivalent" (HS), which applies to the external exposure of the skin of the whole body or the skin of an extremity, is taken as the dose equivalent at a tissue depth of 0.007 centimeter (7 mg/cm²) averaged over an area of one square centimeter.

(80) "Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee.

(81) "Stochastic effect" means a health effect that occurs randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects. For purposes of these regulations, "probabilistic effect" is an equivalent term.

(82) "Supplied-air respirator" (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

(83) "Survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. When appropriate, such an evaluation includes a physical survey of the location of radioactive material and measurements or calculations of levels of radiation, or concentrations or quantities of radioactive material present.

(84) "Tight-fitting facepiece" means a respiratory inlet covering that forms a complete seal with the face.

(85) "Total Effective Dose Equivalent" (TEDE) means the sum of the ~~effective dose deep-dose~~ equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

333-120-0100

Occupational Dose Limits For Adults

(1) Each licensee or registrant must control the occupational dose to individual adults, except for planned special exposures under OAR 333-120-0150, to the following dose limits:

(a) An annual limit, which is the more limiting of:

(A) The total effective dose equivalent being equal to 0.05 Sv (5 rem); or

(B) The sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 0.5 Sv (50 rem).

(b) The annual limits to the lens of the eye, to the skin, and to the extremities that are:

(A) A lens dose equivalent of 0.15 Sv (15 rem); and

(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.

(2) Doses received in excess of the annual limits, including doses received during accidents, emergencies, and planned special exposures, must be subtracted from the limits for planned special exposures, as defined in OAR 333-100-0005, that the individual may receive during the current year OAR 333-120-0150(5)(a) and during the individual's lifetime OAR 333-120-0150(5)(b).

NOTE: A licensee or registrant may permit a radiation worker to receive more than 0.05 Sv (5 rem) per year TEDE or 0.5 Sv (50 rem) to the skin, extremities, or organ, or 0.15 Sv (15 rem) to the lens of the eye during a planned special exposure (PSE) only if: (a) there are no other alternatives available or practical; (b) the PSE is authorized in writing before it occurs; (c) the individuals who will be exposed are told the reason for the PSE, the dose they are expected to receive, the risks from that dose and the conditions under which they will be working (e.g. radiation or contamination levels), and how to keep their doses ALARA; (d) the licensee or registrant determines the worker's prior doses (lifetime history); (e) the total dose expected from the PSE plus any previous doses over the annual limit do not exceed the standard annual dose limits, or five times the standard limits in the worker's lifetime; (f) the licensee or registrant maintains the appropriate records and files the appropriate reports; and (g) after the PSE, the licensee or registrant records the dose received and notifies the worker in writing of the dose received within 30 days after the PSE. The dose received from the PSE does not affect the worker's ability to receive the standard annual doses but is included in the worker's lifetime history and added to any future PSEs.

(3) When the external exposure is determined by measurement with an external personal monitoring device, the assigned 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. ~~for the part of the body receiving the highest exposure.~~ The assigned deepshallow-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 ten square centimeters of skin receiving the highest exposure. The deep-dose equivalent, lens-dose equivalent, and shallow-dose equivalent may be assessed from surveys or other radiation measurements for the purpose 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 individual monitoring are unavailable:

(a) The deep-dose equivalent, lens dose equivalent and shallow-dose equivalent may be assessed from surveys or other radiation measurements for the purpose 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 individual monitoring are unavailable; or

(b) When a protective apron is worn while working with medical fluoroscopic equipment and monitoring is conducted as specified in OAR 333-120-0210(1)(e) the effective dose equivalent for external radiation must be determined as follows:

(A) When only one individual monitoring device is used and it is located at the neck outside the protective apron, the reported deep dose equivalent must be the effective dose equivalent for external radiation; or

(B) When only one individual monitoring device is used and it is located at the neck outside the protective apron, and the reported dose exceeds 25 percent of the limit specified in section (1) of this rule the reported deep dose equivalent value multiplied by 0.3 must be the effective dose equivalent for external radiation; or

(C) When individual monitoring devices are worn, both under the protective apron at the waist and outside the protective apron at the neck, the effective dose equivalent for external radiation must be assigned the value of the sum of the deep dose equivalent reported for the individual monitoring device located at the waist under the protective apron multiplied by 1.5 and the deep dose equivalent reported for the individual monitoring device located at the neck outside the protective apron multiplied by 0.04.

(4) Derived air concentration (DAC) and annual limit on intake (ALI) values are presented in 10 CFR Part 20 Table 1 of Appendix B to 20.1001 to 20.2401 and may be used to determine the individual's dose (OAR 333-120-0650) and to demonstrate compliance with the occupational dose limits.

(5) In addition to the annual dose limits, the licensee must limit the soluble uranium intake by an individual to 10 milligrams in a week in consideration of chemical toxicity (see 10 CFR Part 20 footnote 3 of Appendix B to 20.1001 to 20.2401).

(6) When monitoring is required by OAR 333-120-0210 each licensee or registrant must reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person (OAR 333-120-0630(5)).

(7) The licensee must reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 15-1994, f. & cert. ef. 5-6-94; HD 1-1995, f. & cert. ef. 4-26-95; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 12-2006, f. & cert. ef. 6-16-06; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08

333-120-0740

Reports to Individuals Exceeding Dose Limits

When a licensee or registrant is required, pursuant to the provisions of OAR 333-120-0720 or 333-120-0730, to report to the Department any exposure of an identified occupationally exposed individual or an identified member of the public to radiation or radioactive material, the licensee or registrant must also provide **the individual a report on his or her exposure data included in copy of** the report submitted to the Department. ~~to the individual.~~ This report must be transmitted at a time no later than the transmittal to the Department.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: PH 12-2006, f. & cert. ef. 6-16-06; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08

Occupational Dose Records, Labeling Containers, and the Total Effective Dose Equivalent Parts – 19 and 20
(72 FR 68043) RATS ID # 2008-1 Effective date 02/15/08
Date Due for State Adoption 02/15/11

Change to NRC Section	Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not Was a Comment Generated
				material, the licensee shall also provide the individual a report on his or her exposure data included in the report to the Commission. This report must be transmitted no later than the transmittal to the Commission.			
§20.1003	Definition: Total Effective Dose Equivalent (TEDE)		A	<p>In § 20.1003, the definition of <i>Total Effective Dose Equivalent (TEDE)</i> is revised to read as follows:</p> <p><i>Total Effective Dose Equivalent (TEDE)</i> means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).</p>			Revised 333-120-0015(85)
§20.1201	Occupational Dose Limits for Adults		A	<p>In § 20.1201, paragraph (c) is revised to read as follows:</p> <p>(c) When the external exposure is determined by measurement with an</p>			Revised 333-120-0100(3)

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				<p>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 NRC. 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 skin receiving the highest exposure. The deep-dose equivalent, lens dose equivalent, and shallow-dose equivalent may be assessed from surveys or other radiation measurements for the purpose 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 individual monitoring are unavailable.</p>			<p>Revised 333-120-0100</p>
§20.1905	Exemptions to		NRC	In § 20.1905 paragraph (g) is added			

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Change to NRC Section	Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not Was a Comment Generated
(g)	Labeling Requirements		<p>(***please note Part 20.1905 (a) – (f) still remains a Compatibility Category A only the newly added paragraph (g) is a Compatibility Category NRC)</p>	<p>to read as follows:</p> <p>(g) Containers holding licensed material (other than sealed sources that are either specifically or generally licensed) at a facility licensed under Parts 50 or 52 of this chapter, not including non-power reactors, that are within an area posted under the requirements in § 20.1902 if the containers are:</p> <p>(1) Conspicuously marked (such as by providing a system of color coding of containers) commensurate with the radiological hazard;</p> <p>(2) Accessible only to individuals who have sufficient instruction to minimize radiation exposure while handling or working in the vicinity of the containers; and</p> <p>(3) Subject to plant procedures to ensure they are appropriately labeled, as specified at § 20.1904 before being removed from the posted area.</p>			

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Change to NRC Section	Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not Was a Comment Generated
§20.2104	Determination of Prior Occupational Dose		D	N/A	N/A		
§20.2205	Reports to Individuals of Exceeding Dose Limits		C	<p>Section 20.2205 is revised to read as follows:</p> <p>When a licensee is required by §§ 20.2203 or 20.2204 to report to the Commission any exposure of an identified occupationally exposed individual, or an identified member of the public, to radiation or radioactive material, the licensee shall also provide the individual a report on his or her exposure data included in the report to Commission. This report must be transmitted no later than the transmittal to the Commission.</p>			<p>Revised 333-120-0740</p>