

**3701:1-38-13 Dose limits for individual members of the public.**

- (A) Each licensee or registrant shall conduct operations so that:
- (1) The total effective dose equivalent to individual members of the public from the licensed or registered operation does not exceed one millisievert (0.1 rem) in a year, exclusive of the dose contribution from the following:
    - (a) Background radiation;
    - (b) Radiation attributable to any medical administration the individual has received;
    - (c) Exposure to an individual that was administered radioactive materials and has been released in accordance with rule 3701:1-58-30 of the Administrative Code or equivalent United States nuclear regulatory agency or agreement state regulations;
    - (d) Voluntary participation in medical research programs;
    - (e) The licensee's disposal of radioactive material into sanitary sewerage in accordance with paragraph (D) of rule 3701:1-38-19 of the Administrative Code; and
  - (2) The dose in any unrestricted area from external sources, exclusive of the dose contribution from patients administered radioactive material and released in accordance with rule 3701:1-58-30 of the Administrative Code or equivalent United States nuclear regulatory agency or agreement state regulations, does not exceed 0.02 millisievert (0.002 rem) in any one hour.
- (B) If the licensee or registrant permits members of the public to have access to controlled or restricted areas, the limits for members of the public continue to apply to those individuals.
- (C) A licensee, registrant, or an applicant for a license or registration may apply for prior department authorization to operate up to an annual dose limit for an individual member of the public of five millisievert (0.5 rem). This application shall include the following information:
- (1) Demonstration of the need for and the expected duration of operation in excess of the limit set forth in paragraph (A) of this rule;
  - (2) The licensee's or registrant's program to assess and control dose within the five millisievert (0.5 rem) annual limit; and
  - (3) The procedures that the registrant or licensee will follow to maintain the dose ALARA.
  - (4) Notwithstanding paragraph (A)(1) of this rule, a licensee may permit visitors to an individual who cannot be released, under rule 3701:1-58-30 of the Administrative Code, to receive a radiation dose greater than one millisievert (0.1 rem) if:
    - (a) The radiation dose received does not exceed five millisievert (0.5 rem); and

- (b) The authorized user, as defined in Chapter 3701:1-58 of the Administrative Code, has determined before the visit that it is appropriate.
- (D) In addition to the requirements of paragraphs (A) and (B) of this rule:
- (1) A licensee subject to the provisions of the United States environmental protection agency's generally applicable environmental radiation standards in 40 C.F.R. 190, as published in the July 1, 2014 Code of Federal Regulations, shall also comply with those standards.
  - (2) The department may impose additional restrictions on radiation levels in unrestricted areas and on the total quantity of radionuclides that a licensee may release in effluents in order to restrict the collective dose.
- (E) The licensee or registrant shall demonstrate compliance with dose limits for individual members of the public.
- (1) The licensee or registrant shall make or cause to be made surveys of radiation levels in unrestricted and controlled areas and radioactive materials in effluents released to unrestricted and controlled areas to demonstrate compliance with the dose limits for individual members of the public in paragraph (A) of this rule.
  - (2) A licensee or registrant shall show compliance with the annual dose limit in paragraph (A) of this rule by:
    - (a) Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed or registered operation does not exceed the annual dose limit; or
    - (b) Demonstrating that:
      - (i) The annual average concentrations of radioactive material released in gaseous and liquid effluents at the boundary of the unrestricted area do not exceed the values specified in appendix C to rule 3701:1-38-12 of the Administrative Code; and
      - (ii) If an individual were continuously present in an unrestricted area, the dose from external sources would not exceed 0.02 millisievert (0.002 rem) in an hour and 0.5 millisievert (0.05 rem) in a year.
  - (3) Upon approval from the department, the licensee may adjust the effluent concentration values in appendix C to rule 3701:1-38-12 of the Administrative Code for members of the public, to take into account the actual physical and chemical characteristics of the effluents, such as aerosol size distribution, solubility, density, radioactive decay equilibrium, or chemical form.

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