§ 1910.97 Nonionizing radiation.

(a) Electromagnetic radiation—(1) Definitions applicable to this paragraph. (i) The term electromagnetic radiation is restricted to that portion of the spectrum commonly defined as the radio frequency region, which for the purpose of this specification shall include the microwave frequency region.

(ii) Partial body irradiation. Pertains to the case in which part of the body is exposed to the incident electromagnetic energy.

(iii) Radiation protection guide. Radiation level which should not be exceeded without careful consideration of the reasons for doing so.

(iv) The word “symbol” as used in this specification refers to the overall design, shape, and coloring of the rf radiation sign shown in figure G–11.

(v) Whole body irradiation. Pertains to the case in which the entire body is exposed to the incident electromagnetic energy or in which the cross section of the body is smaller than the cross section of the incident radiation beam.

(2) Radiation protection guide. (i) For normal environmental conditions and for incident electromagnetic energy of frequencies from 10 MHz to 100 GHz, the radiation protection guide is 10 mW/cm.² (milliwatt per square centimeter) as averaged over any possible 0.1-hour period. This means the following:

Power density: 10 mW/cm.² for periods of 0.1-hour or more.

Energy density: 1 mW-hr./cm.² (milliwatt hour per square centimeter) during any 0.1-hour period.

This guide applies whether the radiation is continuous or intermittent.

(ii) These formulated recommendations pertain to both whole body irradiation and partial body irradiation. Partial body irradiation must be included since it has been shown that some parts of the human body (e.g., eyes, testicles) may be harmed if exposed to incident radiation levels significantly in excess of the recommended levels.

(3) Warning symbol. (i) The warning symbol for radio frequency radiation hazards shall consist of a red isosceles triangle above an inverted black isosceles triangle, separated and outlined by an aluminum color border. The words “Warning—Radio-Frequency Radiation Hazard” shall appear in the upper triangle. See figure G–11.

(ii) American National Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1–1953, which is incorporated by reference as specified in §1910.6, shall be used for color specification. All lettering and the border shall be of aluminum color.
(iii) The inclusion and choice of warning information or precautionary instructions is at the discretion of the user. If such information is included it shall appear in the lower triangle of the warning symbol.

**FIGURE G–11—RADIO-FREQUENCY RADIATION HAZARD WARNING SYMBOL**

1. Place handling and mounting instructions on reverse side.
2. D = Scaling unit.
3. Lettering: Ratio of letter height to thickness of letter lines.
   - Upper triangle: 5 to 1 Large
   - 6 to 1 Medium
   - Lower triangle: 4 to 1 Small
   - 6 to 1 Medium
4. Symbol is square, triangles are right-angle isosceles.
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(4) Scope. This section applies to all radiations originating from radio stations, radar equipment, and other possible sources of electromagnetic radiation such as used for communication, radio navigation, and industrial and scientific purposes. This section does not apply to the deliberate exposure of patients by, or under the direction of, practitioners of the healing arts.

(b) [Reserved]


§ 1910.98 Effective dates.

(a) The provisions of this subpart G shall become effective on August 27, 1971, except as provided in the remaining paragraphs of this section.

(b) The following provisions shall become effective on February 15, 1972:

§ 1910.94 (a)(2)(iii), (a)(3), (b), (c)(2), (c)(3), (c)(4), (c)(5), (c)(6)(i), (c)(6)(ii), (d)(1)(ii), (d)(3), (d)(4), (d)(5), and (d)(7).

(c) Notwithstanding anything in paragraph (a), (b), or (d) of this section, any provision in any other section of this subpart which contains in itself a specific effective date or time limitation shall become effective on such date or shall apply in accordance with such limitation.

(d) Notwithstanding anything in paragraph (a) of this section, if any standard in 41 CFR part 50–204, other than a national consensus standard incorporated by reference in §50–204.2(a)(1), is or becomes applicable at any time to any employment and place of employment, by virtue of the Walsh-Healey Public Contracts Act, or the Service Contract Act of 1965, or the National Foundation on Arts and Humanities Act of 1965, any corresponding established Federal standard in this subpart G which is derived from 41 CFR part 50–204 shall also become effective, and shall be applicable to such employment and place of employment, on the same date.

Subpart H—Hazardous Materials


Section 1910.120 also issued under section 126, Superfund Amendments and Reauthorization Act of 1986 as amended (29 U.S.C. 655 Note), and 5 U.S.C. 553.

§ 1910.101 Compressed gases (general requirements).

(a) Inspection of compressed gas cylinders. Each employer shall determine that compressed gas cylinders under his control are in a safe condition to the extent that this can be determined by visual inspection. Visual and other inspections shall be conducted as prescribed in the Hazardous Materials Regulations of the Department of Transportation (49 CFR parts 171–179 and 14 CFR part 103). Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C–6–1968 and C–8–1962, which is incorporated by reference as specified in §1910.6.

(b) Compressed gases. The in-plant handling, storage, and utilization of all compressed gases in cylinders, portable tanks, rail tankcars, or motor vehicle cargo tanks shall be in accordance with Compressed Gas Association Pamphlet P–1–1965, which is incorporated by reference as specified in §1910.6.

(c) Safety relief devices for compressed gas containers. Compressed gas cylinders, portable tanks, and cargo tanks shall have pressure relief devices installed and maintained in accordance with Compressed Gas Association Pamphlets S–1–1963 and 1965 addenda and S–1–2–1963, which is incorporated by reference as specified in §1910.6.


§ 1910.102 Acetylene.

(a) Cylinders. Employers must ensure that the in-plant transfer, handling, storage, and use of acetylene in cylinders comply with the provisions of CGA Pamphlet G–1–2003 ("Acetylene")