DEPARTMENT OF LABOR AND ECONOMIC GROWTH

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS

(By authority conferred on the director of the department of labor and economic growth by sections 14 and 24 of 1974 PA 154 and Executive Reorganization Orders Nos. 1996-1 and 1996-2, and 2003-1, MCL 408.1014, 408.1024, 330.3101, 445.2001, and 445.2011)

PART 681. RADIATION IN CONSTRUCTION: IONIZING AND NONIONIZING

R 325.68101 Ionizing radiation.

Rule 1. (1) In construction and related activities involving the use of sources of ionizing radiation, the pertinent provisions of the Nuclear Regulatory Commission Standards for Protection Against Radiation (10 CFR Part 20), relating to protection against occupational radiation exposure, shall apply.

(2) Any activity which involves the use of radioactive materials or X-rays, whether or not under license from the Nuclear Regulatory Commission, shall be performed by competent persons specially trained in the proper and safe operation of such equipment. In the case of materials used under Commission license, only persons actually licensed, or competent persons under direction and supervision of the licensee, shall perform such work.

(3) This rule replaces O.H. rule 6265.

History: 2005 AACS.

R 325.68102 Nonionizing radiation; laser equipment.

Rule 2. (1) Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment.

(2) Proof of qualification of the laser equipment operator shall be available and in possession of the operator at all times.

(3) Employees, when working in areas in which a potential exposure to direct or reflected laser light greater than 0.005 watts (5 milliwatts) exists, shall be provided with the following antilaser eye protection devices:

(a) Employees whose occupation or assignment requires exposure to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table E-3 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 to 8.

TABLE E-3
SELECTING LASER SAFETY GLASS

Intensity, Attenuation CW Maximum Power Density (watts/cm2)	Optical Density (O.D.)	Attenuation Factor
10-2	5	105
10-1	6	106
1.0	7	107
10.0	8	108

Output levels falling between lines in this table shall require the higher optical density.

(b) All protective goggles shall bear a label identifying the following data:

(i) Laser wavelengths for which use is intended.

(ii)Optical density of those wavelengths.

(iii)Visible light transmission.

(4) Areas in which lasers are used shall be posted with standard laser warning placards.

(5) Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off.

(6) Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser.

(7) The laser beam shall not be directed at employees.

(8) When it is raining or snowing, or when there is dust or fog in the air, the operation of laser systems shall be prohibited where practicable; in any event, employees shall be kept out of range of the area of source and target during such weather conditions.

(9) Laser equipment shall bear a label to indicate maximum output.

(10) Employees shall not be exposed to light intensities above any of the following:

(a) Direct staring: 1 micro-watt per square centimeter.

(b) Incidental observing: 1 milliwatt per square centimeter.

(c) Diffused reflected light: 2 1/2 watts per square centimeter.

(11) Laser unit in operation shall be set up above the heads of the employees, when possible.

(12) Employees shall not be exposed to microwave power densities in excess of 10 milliwatts per square centimeter.

(13) This rule replaces O.H. rule 6270.

History: 2005 AACS.