



ADMINISTRATIVE RULES OF MONTANA



37.14.1012 RADIOGRAPHIC INSTALLATIONS OTHER THAN DENTAL AND VETERINARY MEDICINE

- (1) The equipment used in radiographic installations in other than dental and veterinary medicine shall be as follows:
 - (a) The tube housing will be of diagnostic type.
 - (b) Suitable devices (diaphragms, cones, adjustable collimators) , capable of restricting the useful beam to the area of clinical interest shall be provided to define the beam and shall provide the same degree of attenuation as that required of the tube housing. Such devices shall be calibrated in terms of the size of the projected useful beam at specified source-film distances. For chest photofluorographic equipment, the collimator shall restrict the beam to dimensions no greater than those of the fluorographic screen and shall confine the beam to the screen.
 - (c) Radiographic equipment, including multipurpose machines sold in Montana after July 1, 1969, shall be equipped with adjustable rectangular collimators containing light localizers that define the entire field. Equipment installed prior to March 28, 1980, utilizing circular collimators which have met or will meet established standards will be acceptable. The field size indication on adjustable collimators shall be accurate with a tolerance not exceeding 1 inch for a source-film distance of 72 inches, the light field shall align with the x-ray field with the same degree of accuracy.
 - (d) The size of the x-ray beam projected by fixed aperture cones and collimators, except those used for stereo-radiography, should not exceed the minimum dimensions of the x-ray film by more than 2 inches (1 inch border) for a source-film distance of 72 inches or 1 inch (1/2 inch border) for a source-film distance of 36 inches.
 - (e) Except when contraindicated for a particular radiographic purpose, the aluminum equivalent of the total filtration in the primary beam shall not be less than 0.5 millimeters aluminum for machines capable of operating not over 50 kVp, 1.5 millimeters for those capable of operating between 50-70 kVp and 2.5 millimeters for those capable of operating above 70 kVp.
 - (f) A device shall be provided which terminates the exposure at a preset time interval or exposure. The operator shall be able to terminate the exposure at any time.
 - (g) A type of dead-man switch for an exposure switch, except for those used in conjunction with "spot-film", shall be required and so arranged that it cannot be operated outside a shielded area.
 - (h) The control panel shall include a device such as a milliammeter or equivalent to give positive indication of the production of x-rays whenever the x-ray tube is energized.

- (i) The control panel shall include devices, (labeled control settings and/or meters) indicating the physical factors (such as kVp, mA, exposure time, or whether timing is automatic) used for the exposure.
 - (j) Machines equipped with beryllium window x-ray tubes shall contain keyed filter interlock switches in the tube housing and suitable indication on the control panel of the added filter in the useful beam if the total filtration permanently in the useful beam is less than 0.5 mm aluminum equivalent. The total filtration permanently in the useful beam shall be clearly indicated on the tube housing.
 - (k) Beryllium window x-ray tubes shall not be used on multipurpose radiographic equipment.
 - (l) Gonadal shielding shall be used for the patient when appropriate.
 - (m) When a patient must be held in position for radiography, mechanical supporting or restraining devices shall be used whenever possible. If the patient must be held by an individual, that individual shall be protected with appropriate shielding devices such as protective gloves and apron and he shall be so positioned that no part of his body will be struck by the useful beam and that his body is as far as possible from the edge of the useful beam.
 - (n) Only persons whose presence is necessary shall be in the radiographic room during exposure. All such persons shall be protected.
- (2) The structural shielding of radiographic equipment in other than dental or veterinary medicine shall be as follows:
- (a) All wall, floor, and ceiling areas exposed to the useful beam shall have primary barriers. Primary barriers in walls shall extend to a minimum height of 84 inches above the floor.
 - (b) Secondary barriers shall be provided in all wall, floor, and ceiling areas not having primary barriers or where the primary barrier requirements are lower than the secondary barrier requirements.
 - (c) The operator's station at the control shall be behind a protective barrier, either in a separate room, in a protected booth, or behind a shield which will intercept the useful beam and any radiation which has been scattered only once.
 - (d) A window of lead-equivalent glass equal to that required by the adjacent barrier or a mirror system shall be provided large enough and so placed that the operator can see the patient without having to leave the protected area during exposure.
- (3) The operating procedures applicable to radiographic installations other than in dental or veterinary medicine shall be as follows:
- (a) Personnel monitoring shall be performed in controlled areas for each occupationally exposed individual beyond the required 13-week period, for whom there is a reasonable possibility of receiving a dose exceeding one-fourth the applicable maximum permissible dose.
 - (b) No individual occupationally exposed to radiation shall be permitted to hold patients during exposures except during emergencies, nor shall any individual be regularly used for this service.

- (c) Only individuals required for the radiographic procedure shall be in the radiographic room during exposure; and, except for the patient, no unprotected parts of their bodies shall be in the useful beam.
- (d) The useful beam shall be restricted to the area of clinical interest.

Authorizing statute(s): Sec. 75-3-201 and 75-3-202, MCA

Implementing statute(s): Sec. 75-3-201, 75-3-202 and 75-3-204, MCA

History: NEW, 1980 MAR p. 1069, Eff. 3/28/80; TRANS, from DHES, 1996 MAR p. 433; TRANS, from DEQ, 2000 MAR p. 189.