



Radiation Regulation Requirements for Veterinary Practices

Regulatory Agency

California Department of Health Services
[Radiologic Health Branch](#)
Registration Unit
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Registration

Radiation Control Regulations require that every person possessing a reportable source of radiation (including veterinary X-ray units) shall register each unit with the Department of Health Services within 30 days of the date of acquisition. To obtain registration forms and current registration fees, visit the [Radiologic Health Branch website](#) or call the number listed above.

Specifications for Veterinary Diagnostic Units

The following requirements are specified in Section 30314, Title 17 for Veterinary Medicine Radiographic Installations:

1. The unit must have a diagnostic-type tube housing. A "diagnostic-type tube housing" is defined as one that is built to limit radiation leakage to 100 milliroentgens per hour measured at one meter when the tube is operating at maximum capacity.
2. Diaphragms or cones must be provided for collimating the useful beam to the area of clinical interest and shall provide that same degree of protection as required of the housing.
3. Filtration permanently in the useful beam must be at least 2.0 millimeters aluminum-equivalent for machines operating in excess of 70 kVp. For machines operating up to 70 kVp, at least 1.5 millimeter aluminum-equivalent is required.
4. The unit must have a device to terminate the exposure after a pre-set time of exposure (i.e. timer).
5. A "dead-man type of exposure switch" must be provided along with a cord long enough to allow the operator to stand at least six feet from the animal during X-ray exposure. A "dead-man switch" is defined as one which is "so constructed that a circuit-closing contact can only be maintained by continuous pressure by the operator."

Required Postings

- Caution X-Ray: Areas or rooms that contain permanently installed X-ray machines as the only source of radiation must be posted with a sign reading "CAUTION X-RAY."
- [DHS Form RH-2364](#): You must also post a copy (or copies) of DHS Form RH-2364 (Notice to Employees, Standards for Protection Against Radiation) in sufficient numbers and locations so that anyone entering the area will see a copy.

- Title 17: Section 30255 (b)(2) of Title 17 requires that users of sources of radiation must conspicuously post a current copy of portions of Title 17. Or you can post a notice describing the required documents and where they may be examined.
- 10 CFR 20 is a section of the Code of Federal Regulations pertaining to radiation health and safety. Per state law, it must also be posted in the radiation area or you can post a notice describing the required documents and where they may be examined.
- Licenses for Radioactive Materials (if applicable.) This requirement only applies to practices providing radiation therapy. It does not apply to diagnostic X-Ray units.
- Radiation Safety Instructions
- Radiation Emergency Procedures
- Notices of violations at your practice involving radiation, if applicable.

Required Documentation

- Radiation Safety and Compliance Policy for your Practice: Ultimately, a Radiation Safety and Compliance Policy should be catered specifically to each practice. It should describe your comprehensive radiation safety program. For guidance on creating a policy and program, click [here](#).
- Radiation Safety Training and Documentation for Veterinary Assistants: Practices must be able to demonstrate that all employees (other than veterinarians or RVTs) who assist in the taking of radiographs have radiation safety training. A sample training document and quiz can be found [here](#). Completed quizzes for each staff member who assists in taking radiographs (other than veterinarians or RVTs) should be kept in a dedicated file and available for inspection upon request. These records should not be kept in the employee file. The manual and quiz should be kept in a location where staff can access it. For fixed premises, this can be in a designated drawer or file, for mobile or ambulatory practices, this can be in a binder that is carried in the vehicle.
- Next, you must develop your own Radiation Safety and Protection Training Program and document evidence of ongoing staff training. The program should follow the guidelines set forth in the [Radiation Safety and Protection Training Program Guidance, Section 9](#). All components of your Radiation Safety and Protection Program do not have to be contained in one consolidated document. However, all components do have to be documented and identified as being part of the Radiation Protection Program. Records of the Radiation Safety and Protection Training Program content, implementation, and audits must be maintained and made available for inspection.
- Whatever program you choose to develop should be revisited on an annual basis to ensure that it remains compliant with requirements set forth by regulatory agencies.
- Sample radiology log form: California state law requires that a permanent log of each radiographic study be maintained for each patient. While this may be done in each patient's medical record, some find it useful to compile all studies in a separate log.
- All radiography units must be registered with the California Department of Public Health, Radiologic Health Branch. Online registration information and forms can be accessed [here](#).

Inspections

Veterinary X-ray machines are scheduled to be inspected on-site approximately every 4.25 years. When you are inspected, you must allow the DHS inspector access to your materials, machines, records, and facilities. The inspector may consult privately with workers concerning matters of

radiation protection. You or your representative may accompany the inspector during all other phases of an inspection as long as there is no deliberate attempt to interfere with a fair and orderly inspection.

You will be given 30 days to correct any violations an inspector finds. Failure to do so will result in escalated enforcement activities that can lead to substantial fines.

Occupational Dose Limits

You are required to control the occupational dose to individual adults. Section 20.1201, Title 10 CFR lists the following annual dose limits for an individual adult:

Table 6-1. Occupational Dose Limits

5 rems	Total Effective Dose
15 rems	Equivalent Dose to Lens of Eye
50 rems	Equivalent Dose to Skin or Extremity

Exposure limits for minors is 10% of the annual dose limits listed above. These exposure limits make it impractical to allow persons under 18 years of age to participate in taking radiographs. The dose limits for an embryo/fetus during the entire pregnancy is 0.5 rem.

Personnel Monitoring

You must monitor exposures to radiation "at levels sufficient to demonstrate compliance with the occupational dose limits" listed above. At a minimum, you are required to provide and require the use of individual monitoring devices if exposure is likely to exceed 10 percent of the annual limits. Most veterinary facilities provide individual badges to all personnel involved in taking radiographs even though this is not always required by regulations. The CVMA strongly recommends providing individual monitors, even though we are not likely to exceed the 10% exposure level. Being able to document exposure levels can be valuable to both employees and employers.

Monitoring Devices

Film badges, thermoluminescent badges, pocket dosimeters, and ring badges are all acceptable methods for monitoring radiation exposure. The chosen monitoring device should be worn on the employee's collar outside of the lead apron. Do not allow employees to store their badges on the apron, especially if the aprons are kept near the X-ray machine. This practice is one of the most common causes of "excessive exposure" readings for veterinary employees. Your "control" badge must not be left in the X-ray room. A list of badge vendors can be accessed [here](#).

For more details, contact the CVMA at staff@cvma.net or at (916) 649-0599.