

Radiation Safety Frequently Asked Questions

This FAQ is part of the CDA *Regulatory Compliance Manual*. It was updated November 2018.

How do I register my new X-ray machine? How do I remove an old machine's registration?

X-ray machines, including digital units, and facilities with X-ray machines must be registered with the California Department of Public Health Radiological Health Branch (CDPH). The equipment owner is responsible for registering the machine and the facility. The owner of a new dental practice (purchase or start-up), or of a new additional dental facility, should complete form RH 2261N to register the facility and the machines on-site. Registration is site specific. Manufacturers and distributors of the equipment separately report the sale and installation of equipment to CDPH.

Existing registered dental facilities use form RH 2261C to report a change in equipment (purchase or sale of X-ray machine) or change in address. Use this form also to report the discontinuance of use of an X-ray machine at a facility. Unplugging a machine or placing a functional machine in storage on-site or off-site for use at another time does not mean that a machine has been made incapable of producing radiation. Proof that the machine is nonfunctional is required in order that the dental practice not be billed for the machine registration.

Form RH 2261W is to be used by existing registered dental practices to withdraw its facility registration. Withdrawal of a facility registration means the registered dental practice no longer possesses an X-ray machine or all X-ray machines that were registered at the facility have been made nonfunctional. For example, in the sale of a dental practice, the seller will complete form RH 2261W to report the seller no longer possesses X-ray machines and the buyer will complete form RH 2261N.

Dental practices located in Los Angeles and San Diego counties must submit a plan check to their respective county environmental health department. Check the Los Angeles (publichealth.lacounty.gov/eh/ep/rad_health/index.htm) and San Diego (sandiegocounty.gov/deh/hazmat/radhealth.html) websites for more information.

How do I dispose of my X-ray equipment?

An owner can disassemble or can hire a tech to disassemble the equipment. Electronic components can be disposed as e-waste, and oil, or other liquid, should be disposed properly. The rest is metal and plastic and can be disposed as solid waste. Take photos of the disassembled unit and include the photos with the appropriate form to report the equipment's discontinuance.

Why do I have to pay a fee to register my X-ray machine?

State and federal laws require the registration of all sources of radiation. The state collects a range of fees from all sources of radiation. The current fee for dental X-ray units is \$118 per tube, per year. Fees are collected every other year, with the funds designated for a safety inspection program. Dental X-ray units are scheduled for inspection every five years.

Are personnel monitoring devices (dosimeters) required?

Records of occupational exposure to radiation must be kept. There are two methods for obtaining exposure data. One method is to hire a health physicist to perform the calculations for your facility. The second method is to have staff wear dosimeters for a period adequate to calculate an annual dose.

If exposure data demonstrate that no employee is exposed to more than 10 percent of the maximum allowable annual dose (5 rems), then regulations allow discontinuing radiation monitoring. If a dental office meets this exception, it is recommended that monitoring occur periodically to ensure that exposure does not exceed this amount. For example, employees can wear the dosimeter badges for one year so that a baseline level of exposure is established and then monitor every three to five years thereafter, as long as no significant exposure is demonstrated or no radiographic equipment is changed.

However, dental practices that utilize handheld portable dental X-ray systems may be required to ensure individuals who operate the system wear monitoring devices; some systems are exempt from the monitoring requirement. Exposure from the use of these devices must be evaluated on a monthly basis. Monitoring records must be available to CDPH upon request.

When one or more employees work at other dental practices, CDPH expects each employer to gather information on each employee's radiation exposure at the other employer. "Employee Occupational Exposure to Radiation" is a log and form to assist a dental practice in gathering the required information and is available on cda.org/practicesupport.

Is the use of a handheld portable dental X-ray system allowed in California?

A handheld portable dental X-ray system may be used under the following conditions:

- The unit has FDA approval and is used in a manner consistent with that approval.
- The unit has a manufacturer-provided backscatter shield that is not less than 0.25 mm lead equivalent and that is permanently affixed in place at all times.
- The office holds a valid exemption (from prohibition on holding X-ray tube housing) issued by the RHB. An updated exemption for handheld X-ray units was issued in January 2016 and may be downloaded at cdph.ca.gov/RHB.
- Personnel monitoring devices (dosimeters) are worn as directed in the exemption for handheld X-ray units.

A dental practice that uses a handheld portable dental X-ray system must have on file a CPDH exemption letter. A link to the letter is included below.

My employee informed me she is pregnant. What are my obligations with regard to radiation safety?

Upon notification of the pregnancy, it is the supervising dentist's responsibility to ensure that the occupational dose to an embryo/fetus during the employee's pregnancy does not exceed 0.5 rem. The dentist should provide specific information to the pregnant employee and discuss available options for protecting the embryo/fetus. A dentist can utilize a form, "Pregnancy Declaration for Radiation Safety," to document the discussion with the employee. The form is available on cda.org/practicesupport.

It is recommended that a declared pregnant employee who operates X-ray machinery wear a personnel X-ray monitoring device (dosimeter) during the pregnancy. The monitoring results may be kept with the employee's medical record.

How are dental offices selected for X-ray machine inspection? What happens during an inspection?

All dental offices must be sampled at five-year intervals, which means every year about 20 percent of dental offices with registered X-ray units are sent a screening device for exposure. The results of this exposure are compared to established standards. The dental offices returning screening devices with the greatest deviation, along with those facilities that did not return the screening devices, are then scheduled for an on-site inspection. Some offices that return screening devices that are within the normal range may also be scheduled for inspection for routine quality assurance purposes.

An inspection of a dental office is designed to evaluate compliance with radiation protection laws and regulations. The inspection includes measurements (kVp, timer, exposure and filtration), processing evaluation and radiation protection procedures (posting of required documentation, a Radiation Protection Plan and procedures). Recent inspections included verification that dental office staff has certificates or licenses required to take radiographs. Inspectors make recommendations to correct identified deficiencies. A typical recommendation includes ways to lower patient/worker exposure. A notice of violation is issued if regulatory violations are noted, and the dental office is required to respond.

The following documentation must be present at the office:

- Notice to Employees (included on the CDA-provided poster set, available online from the state [Department of Public Health Radiological Health Branch](#)).
- Title 17 and CCR 22 regulations (CDA includes this in [Radiation Safety in Dental Practice](#)).
- [Radiation Safety Instructions](#).
- Written radiation safety program (template is Appendix IV of Radiation Safety in Dental Practice).
- Radiation warning signs where machines are used.
- Exemption letter for handheld portable X-ray systems (required only if the dental practice has this system) (<https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/RHB/X-ray/ExemptionHandHeld.pdf>).

