

RADIATION MACHINE COMPLIANCE AT DENTAL FACILITIES

Succeeding in a Dental inspection Inspection Hot Spots

ADMINISTRATIVE PAPER WORK

- The “ Notice to Employees “ form must be posted in a gathering place for employees
- Each Facility must be registered by the facility owner with the State – Evidence of this is a valid registration form hanging on a wall in a public place for the office customer/patient to review.
- If an NOV is issued following an inspection, the NOV is required to be posted within 2 days and is to remain posted for 30 days in a public viewing place.

DARKROOM FOG (or white light leakage) TEST (recommended every 6 months)

- The following seven-step process will help identify film fog issues
 1. In a dark darkroom with the safelight on, lay one film of panoramic/ceph film on top of processor or counter where film is routinely handled.
 2. Cover half of film with film box.
 3. Wait two minutes.
 4. Process film.
 5. If you can see a separation of light and dark on the film to show where the box was sitting, you have light leaking into darkroom.
 6. Repeat test with safelight off to determine how much comes from the safelight.
 7. Repair room and/or safelight light leaks when identified.

Note: Tests performed by the state inspectors are more sensitive than this test. The above process determines gross fog.

- Potential Sources of fog:
 - Look for indicator lights and lamps
 - Look for safelight being too close to work surface
 - Look for light under the door or from the ceiling and tears in the sleeves of auto processors

FILM BADGES

- Each radiation machine facility **must** have records on site to demonstrate either six (6) consecutive months or four (4) consecutive quarters of personal film badge monitoring. If necessary, contact your monitoring company for copies of your records and keep them on site.
- Offices and individuals cannot share badges
 - Badge reports must have names or an identifier of monitored staff
 - Badges must be worn on the collar at the neck
 - Badges must be exchanged on the schedule as contracted, i.e. monthly or quarterly
 - Only monthly (6 readings) or quarterly (4 readings) badges are considered correct.
 - Monitoring, once properly completed, need not be redone unless one of the items below occurs.
- Monitoring must be redone if a facility:
 - Increases the number of x-ray tubes,
 - Relocates,
 - Changes ownership; or
 - Re-arranges the configuration of the radiation machines in the current location.

LOGBOOK FOR CHEMISTRY CHANGES, SERVICE, AND CLEANING

- Each Facility must maintain a Log book that identifies and tracks the frequency of service, repair, chemistry changes, and cleansing of the film processing devices.
- Auto-processor and manual processor chemistry must be replaced per manufacturer's specifications, which average every thirty (30) days.

Note: Your facility is required to maintain on site a **QUALITY ASSURANCE LOGBOOK** that tracks, as a minimum, cleaning and servicing of your processor and changing of chemicals.

X-RAY EQUIPMENT – PM's

- Commonly cited technical deficiencies on x-ray equipment, including high or low tube potential (or kVp) and timer accuracy, can be identified and corrected prior to a State inspection with preventative maintenance by a registered service company. Appropriate levels for kVp or timer accuracy can

best be determined during required preventative maintenance checks performed by an outside company.

Note: There are two primary ways to measure a machine's kVp level. The accepted method of checking this is by reading the value as an output from the tube during an exposure. Some service companies will use an internal diagnostic method to approximate the kVp level. This method can result in a kVp value that will differ from the value determined by the Department's inspector who is measuring a machine's kVp level as an output value. We will base our compliance determination on our measured results. As such, we strongly recommend that service companies performing these checks use a tool that reads kVp levels as an output. A similar issue can arise when measuring timer accuracy.

- According to COMAR 26.12.01.01F.3(d), machines must be maintained per manufacturer's specifications. Documentation of this maintenance must be maintained.

Note: It is important from a public health perspective to follow proper operating procedures and to properly maintain equipment in order to:

Assure that radiation exposures remain at the lowest possible level by avoiding repeat filming and increases in the dosage level, as we do not know a patient's overall exposure to radiation prior to or after a visit to a dental facility

Avoid unnecessary exposure to skin and surrounding tissues in the mouth and neck

Avoid having poor work practices and certain machine deficiencies from escalating into more serious infractions

Assure that everyone in the regulated community is performing at least at a minimum level of radiation safety for the protection of both the operators of the equipment and the patients.

X-Ray Equipment Set-up

- **Panoral Systems:**

Panoral systems cannot have untethered stretch cords. These cords and firing switches must be permanently fixed to the wall in a protected location.

The patient must be viewable by the person making the exposure for the entire time the tube journeys around the patient. This must occur without the staff member leaving or leaning out of the protected area.

The speed of the film and the screens in the cassettes must match

The cassette sleeve must be without tears or rips

ID Systems:

The tube head must be stable and remain in position when released. It may not drift away from the release point.

There cannot be a live exposure switch in the room

The exposure switch must be behind a protective barrier or greater than six feet from the tube head.

• UNDERPROCESSING FROM EQUIPMENT – PM's

Film underprocessing violations often result from technical deficiencies with the processor, such as wrong replenishment rates and improper temperature. These problems will be identified and corrected with preventative maintenance recommended by your autoprocessor's owner's manual. You will need to reference your manufacturer manual to determine the preventative maintenance frequency. You must maintain copies of any service tickets.