Radiology Compliance Branch
RADIATION PROTECTION SECTION

Division of Health Service Regulation ● NC Department of Health and Human Services

Technique Chart

10A NCAC 15 .0603(a) (1) (C) requires all registrants with a diagnostic X-ray system used in healing arts to develop a technique chart specific to each X-ray system.

In the vicinity of each diagnostic X-ray system control panel; a technique chart shall be provided with techniques for all usual examinations and associated projections which are performed on that system. A technique chart is unique to each radiographic unit for the radiographic examinations performed at each facility.

Technique charts are tables that contain exposure settings used for specific anatomical exams. Exposure settings should be adjusted for each anatomical exam. The exposure settings that can be adjusted are the kilovoltage (kVp), the milliampere (mA) and the time expressed in seconds(s) milliampere-seconds. Milliampere-seconds are often referred to as mAs; and are a measure of radiation produced milliamperage over a set amount of time (seconds).

The technique chart may be in the form of a chart, a notebook or pre-programmed techniques in the X-ray control panel. The following must be included for each exam performed.

- Anatomical part to be examined (each view required *e.g. AP / Lat or BW / PA*)
- Measured body part size (measurements listed in cm or inches)
- Source to image (SID) receptor distance
- Exposure factors (kVp, mA, exposure time **OR** mAs settings)
- Grid (if applicable)
- Type and placement of gonadal shielding used

Systems that employ computed radiography (CR) or digital radiography (DR) should have a technique chart that is specific to each CR or DR image receptors.

Guidelines

The technique chart must be posted at the X-ray unit control by the applicable radiographic unit. Other options for technique charts are pre-programmed settings or a technique notebook at the control. Operators must be knowledgeable in selecting exposure settings and have the ability to adjust a technique when necessary due to patient factors.

- Exposure techniques must be adjusted for the patient's condition and body habitus.
- The technique chart must match the technical factors that are typically used. If image quality changes over time, the technique chart should be updated to obtain quality images.

- If AEC is regularly used; a back-up manual technique shall be on the technique chart when manual techniques are used when AEC is non-operational.
- Technique charts must include both adult and pediatric techniques; when both types of patients are imaged in your facility.

Creating or Updating Technique Charts

A technique chart should be initially created when the radiographic unit has been properly calibrated to the image receptor. Calibration and service on X-ray units must be performed by service providers registered with NC Radiation Protection Section at NC Service Provider List. When the X-ray unit has major repairs or when service requires a calibration, this may require an update of the technique chart. When exposure settings no longer provide optimal images, the technique chart must be adjusted for better image quality. Changing from one film speed to another film speed; or a change from one modality (film, computed radiography or digital radiography) to another require an update to technique charts.

Dental Registrants

Dental units are required to meet the same conditions as above. Different manufacturers of dental units have different ways of setting techniques. The most common is with the time being the variable on X-ray units. Other units may require more than one variable to be adjusted. The time may be in milliseconds or set in pulses. Some dental intraoral units require the adjustment of the gray or red setting. All applicable unit settings for each unit should be included in the technique chart.

Podiatry Registrants

The technique chart should include all variables that are available on the exposure control panel. The time may be in pulses or seconds and must be indicated on the technique chart.

Facts that can Affect Technique Charts (this is not an all-inclusive list of variables)

- Technique charts are designed to be regularly used by all operators for each X-ray unit.
- One technique does not fit all exams. Each type of exam uses a specific technique.
- Changing from film screen to phosphor imaging requires adjustment of exposure settings to the phosphor image receptor.
- Changing from film screen to computed radiography requires adjustment of exposure settings to the CR image receptor.
- Changing from film screen to digital radiography requires adjustment of exposure settings to the DR image receptor.
- Changing from one film speed to another film speed requires adjustment of exposure settings to the current film speed.
- The technique chart with pre-set techniques must correlate to what is set and used by operators for each X-ray unit in the facility.