

## WRITTEN SAFETY PROGRAM

This guide may be used to help construct a Radiation Protection Program specific for each facility, but should not be used to substitute the registrants Radiation Protection Program. The following areas, if applicable, need to be addressed in detail, reference 15A NCAC 11 .0100 .0200, .0600, .1000, and .1600:

### ITEMS TO INCLUDE IN A RADIATION SAFETY PROGRAM

#### ❖ General Information

- Name of the Radiation Safety Officer
- Describe retention for all records, to include but not limited to plan reviews, post installation room surveys, FDA form 2579, dosimeter reports, patient films and reports.
- Describe maintenance of patient films and reports and notice procedures in the event facility ceases to perform radiology exams.
- Location of the following items:
  - Notice to Employee
  - NC Regulation Book
  - Plan Review
  - Post-Installation Survey (Survey not required for dental intra-oral)
  - Notice of Registration

### *SAFETY PROCEDURES USED TO PROTECT PERSONNEL AND THE PUBLIC TO INCLUDE BUT NOT LIMITED TO:*

#### ❖ Personnel Training Policy [.0603]

- Describe how the registrant will ensure that radiation safety activities are being preformed in the facility
- Principals of ALARA [.1603]
- Describe the location of the operator during exposures
- Explain who is allowed in the x-ray room during exposures
- Wearing lead garments if required to be in the room during exposures and where to place dosimetry device during exposures
- For veterinary offices describe the training for using restraining devices of animals
- Describe the training for holding patients or in veterinary office holding animals
- In veterinary offices, list the names of personnel who hold animals and describe how animals are restrained when using mechanical holding devices.
- Visual and aural contact with the patient
- Describe the training of each operator of the x-ray equipment, to include but not limited to:
  - Collimation
  - Aligning the beam to the area of clinical interest
  - Proper use of Source to Image Distance (SID)
  - Film processing and quality assurance
  - Re-take
  - Additional imaging needed (for mammography)
- Technique Chart
- Describe the procedures for selecting the exposure techniques for the different body sizes and each exam performed
- Closing doors during exposures to prevent unnecessary exposure to staff or public

#### ❖ Safety for Personnel

- Occupational Dose Limits For Adults [.1604 & .1638]
- Personnel monitoring [.1614 & .1640]
  - Describe how the control and personnel monitoring devices are stored
  - Person responsible for the exposure records and exchanging the badges
  - Describe the personnel exposure policy
- Personnel pregnancy policy [.1610]

## ❖ Safety for Patients

- Dose Limits For Individual Members Of The Public [.1611 &.1612]
- Use of gonadal shielding [.0603]
- Shielding patients when possible
- Patient pregnancy policy

## ❖ QC and QA (procedures to include but not limited to)

- **Digital Image Acquisitions Systems**
  - Follow quality assurance/quality control protocol for image processing established by the manufacturer if no manufacturer's protocols are available, by the registrant.
- **Radiographic Machines**
  - X-ray tube warm up procedures
  - Processor QC (Sensitometry)
  - Repeat Analysis
  - Film and Chemical Storage
  - Chemicals, (developer-time & temperature)
  - Darkroom fog test
  - Lead Apron, Glove, Gonadal, and Thyroid Shield Integrity
  - Screen-Film Contact Test
  - Cleaning screens
  - Compatibility of film/screens (blue or green)
  - Speed system of film/screen combination (100-200-400)
  - Viewboxes
  - Visual Checklist
- **Fluoroscopic Machines** (also include the applicable parts of the radiographic unit)
  - Fluoroscopy Image Quality Check
  - High Contrast Resolution and Patient Exposure Test
  - Fluoroscopy System Visual Checklist
  - Fluoroscopic High-Level Control Test
- **Dental Facilities** (also include the applicable parts of the radiographic unit)
  - Dental System Constancy Test
  - Dental Tube Head and Boom Stability Test
  - Panoramic Slit Alignment Test

## Glossary

**Quality assurance:** the planned and systematic actions that provide adequate confidence that a diagnostic x-ray facility will produce consistently high quality images with minimum exposure of the patients and healing arts personnel.

**Quality control:** monitoring or testing and maintenance of the components of an x-ray system.

**Radiation Safety Officer (RSO):** person responsible for recommending, or approving corrective actions; identifying radiation safety problems; initiating action; and ensuring compliance with regulations.

**QC Manual:** Should be created and reviewed at least annually. The manual should include the facility's objectives, QC instructions, QC results, and personnel responsibility. Items that should be included in a **QC Manual** are:

- A list of the tests to be performed and the frequency for each test, including acceptable test limits, test procedures, maintenance, and service records
- A list of equipment to be used for testing
- Policy and procedures for QC tests as well as for the facility
- Sample forms

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