

**REGULATORY GUIDE B8
PERSONNEL SECURITY SCREENING SYSTEMS**



SC DEPARTMENT *of*
**ENVIRONMENTAL
SERVICES**

September 2025

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PERSONNEL SECURITY SCREENING SYSTEMS

Each x-ray facility that is registered with the Department is required to comply with Regulations 61-64, X-Rays (Title B), which are the regulations concerning x-ray equipment. This guide is intended to assist the facility in complying with Title B regulations.

The registrant utilizing a personnel security screening system shall be a correctional institution, detention center, prison, or jail. (See RHB 9.3)

FACILITY REGISTRATION APPROVAL

(See RHB 2.4)

Prior to installing an x-ray machine, a facility must apply to the Department for a Facility Registration Approval (FRA). To receive a Facility Registration Approval, complete and return SCDES Form 0845 "Facility Registration Approval Request" along with the non-refundable application fee of \$62.50. This form may be submitted by email to XRayFRA-ShieldingPlans@des.sc.gov or mailed to 2600 Bull Street, Columbia, SC 29201. Fees may be paid by check, or an invoice will be issued after the application is received. Applications are processed in the order received, with a typical turnaround time of 15 business days (excluding weekends and holidays) once a complete submission and payment are received. As the Department transitions to electronic correspondence, all approval letters and documentation will be delivered electronically. Please maintain digital records, as paper copies will not be mailed.

A FACILITY SHALL NOT INSTALL AN X-RAY PRODUCING MACHINE UNTIL THE DEPARTMENT HAS ISSUED A FACILITY REGISTRATION APPROVAL.

If a facility relocates, SCDES Form 4262 "Report of Change" must be submitted to the Department within thirty (30) calendar days. This form may be submitted by email to XRayRegistration@des.sc.gov or mailed to 2600 Bull Street, Columbia, SC 29201. Facility Registration Approval is not transferable to a new owner or additional locations. A new Facility Registration Approval and associated fees are required for the acquisition of an existing facility.

SHIELDING REQUIREMENTS

(See RHB 9.4)

Prior to installation or replacement, the registrant shall submit to the Department for review and acceptance a floor plan and equipment arrangement. Floor plan must be prepared by a registered Class II vendor and must include at a minimum:

- 1) The proposed location of the system;
- 2) Surrounding adjacent areas with occupancy;
- 3) General direction of the useful beam;
- 4) Location of the control panel and operator.

The Department may require a shielding plan as described in RHB 4.4.

An inspection zone shall be established around system whereby standers are prohibited during the operation of the device. A means shall be provided for operators to maintain full visual surveillance of the inspection zone. The registrant shall also ensure that only the scan individual is within 2 meters of the scanner when in operation.

REGISTERING EQUIPMENT

(See RHB 2.5)

All x-ray equipment must be registered with the Department within thirty (30) calendar days of installation by submitting SCDES Form 0819 "Registration and/or Deletion of X-ray Producing Machines." This form may be submitted by email to XRayRegistration@des.sc.gov or mailed to 2600 Bull Street, Columbia, SC 29201. The Department will issue a registration sticker for each control panel. Stickers must be affixed in a clearly visible location to indicate the facility's registration status.

See Regulatory Guide B1 for additional details on registration requirements.

INSTALLATION

(See RHB 9.9)

The system shall be stationary and installed in such a way that the exposure switch is located behind a protective barrier requiring the operator to remain behind the barrier during the entire exposure while still being able to view the individual being scanned, surrounding areas, and access doors. Mobile or portable x-ray controls, including wireless or remote exposures switches, are not permitted.

OPERATION

(See RHB 9.2)

Each system shall be maintained and operated solely for security screening purposes in compliance with, and fully according to, the most restrictive standards found in the American National Standards Institute (ANSI) publication ANSI/HPS N43.17-2009, "Radiation Safety for Personnel Security Screening Systems Using X-Ray or Gamma Radiation" and subsequent revisions.

RADIATION SAFETY PROGRAM

(See RHB 9.6)

The registrant shall institute a radiation safety program. This program shall include at a minimum written operator procedures and area monitoring. Operating procedures shall include all requirements of ANSI/HPS standard N43.17. Area monitors shall be located at the operator's location and any area around the unit that is routinely occupied during the scan. Record of operating procedures and dosimetry shall be maintained for review.

RADIATION SAFETY OFFICER

(See RHB 9.7)

The registrant shall appoint a radiation safety officer for oversight of the radiation safety program. The RSO must complete a 40-hour radiation safety course. Documentation of this training must be maintained

for Department review.

OPERATOR TRAINING

(See RHB 9.8)

Prior to performing personnel security screening, each operator shall be trained in all topics required by ANSI/HPS standard N43.17. Refresher training shall be provided every 12 months. Documentation of initial training and refresher training shall be maintained to Department review. Training records shall contain the date of the training, an outline of the training, and names of those in attendance.

SURVEYS

(See RHB 9.10)

The facility shall ensure that radiation survey's are performed:

- 1) Upon installation;
- 2) At least once every 12 months;
- 3) After any maintenance that affects the radiation shielding, shutter mechanism or x-ray producing components;
- 4) And after any incident that may have damaged the system in such a way that unintended radiation emission occurred.

The survey shall verify the reference affected dose, radiation leakage, inspection zone and other parameters specified by the manufacturer. Survey records shall include all requirements of ANSI/HPS standard N43.17.

DOSE

(RHB 9.11)

The radiation dose delivered to a scanned individual shall be as low as reasonably achievable and shall not exceed limits required by ANSI/HPS standard N43.17. The dose outside the inspection zone shall not exceed 20uSv (2mrem) in any one hour.

INSPECTIONS

The Department conducts routine **unannounced** inspections of x-ray facilities. The Department will also conduct inspections if a complaint is received or if a facility requests an inspection. If violations are found on an inspection, a follow-up inspection may be conducted if the Department deems necessary. Inspections by the Department are mandatory but every attempt will be made to accommodate patient schedules.

The inspection consists of checking/verifying the operation of the x-ray equipment as well as reviewing records as outlined in the attached checklist. The facility can greatly assist the Department inspector by using the attached inspection checklist to ensure that all records are available for review. At the conclusion of the inspection, the inspector will conduct an exit interview to discuss items of non-compliance as well as any other items the inspector deems relevant.

The inspector may leave an inspection report at the conclusion of the inspection or send a written report to the facility within approximately two weeks of the inspection. Any violations will be included in this report.

All corrections must be made within sixty (60) days of receipt of the inspection report. The facility must notify the Department, in writing, by this date that corrections have been made. Corrective action must be described for each violation. Each violation must be addressed individually. It will not suffice to simply state that all violations have been corrected. After the Department has received the sixty (60) day notification and accepted the corrective action, a compliance letter will be sent to the facility.

QUESTIONS

If you have questions, please feel free to call or write:

SC Department of Environmental Services
Radiation Protection Program
2600 Bull Street
Columbia, SC 29201
PHONE: (803) 545-4400
FAX: (803) 545-4412

EMAIL –

REGISTRATIONS: XRayRegistration@des.sc.gov

FACILITY REGISTRATION APPROVALS AND SHIELDING PLANS: XRayFRA-ShieldingPlans@des.sc.gov

COMPLIANCE: XRayCompliance@des.sc.gov

REGULATORY GUIDES

- B1 - Registration of X-ray Facilities and Equipment
- B2 - Complying with Title B - Medical Facilities
- B3 - Complying with Title B - Dental Facilities
- B4 - Complying with Title B - Facilities Utilizing Analytical or Industrial X-ray Equipment
- B5 - Vendor Registration and Responsibilities
- B6 - X-Ray Facility Shielding Plans
- B7 - Complying with Title B - Mammography
- B8 - Complying with Title B – Personnel Security Screening Systems
- B9 - Complying with Title B - Veterinary Facilities
- B10 - Complying with Title B - Hospitals

Visit our website at: <https://des.sc.gov/programs/bureau-land-waste-management/radiation-protection-program/x-ray-regulations>