

TITLE 25	HEALTH SERVICES
PART 1	DEPARTMENT OF STATE HEALTH SERVICES
CHAPTER 289	RADIATION CONTROL
SUBCHAPTER E	REGISTRATION REGULATIONS

PROPOSAL PREAMBLE

The executive commissioner of the Texas Health and Human Services Commission (HHSC), on behalf of the Texas Department of State Health Services (DSHS), proposes an amendment to §289.228, concerning Radiation Safety Requirements for Industrial Radiation Machines.

BACKGROUND AND PURPOSE

The purpose of the proposal is to update and modernize radiation safety requirements for non-healing arts radiation generating devices (RGDs) regulated under §289.228, concerning Radiation Safety Requirements for Industrial Radiation Machines. RGDs are used in a multitude of industrial and public safety settings, including cargo inspection, law enforcement, and security screening operations.

Program staff and stakeholders identified the need for improved clarity, updated terminology, and reorganization to support consistent understanding and radiation safety in the current rule to reflect technological advancements and changes in operational practices.

The proposed rule changes align with current inspection criteria and provide transparency in compliance and enforcement requirements.

SECTION-BY-SECTION SUMMARY

The proposed amendment changes the rule title, reorganizes the rule to align with other sections of Chapter 289, removes the "minimal threat" category, updates terminology, and clarifies definitions. The proposal incorporates feedback from stakeholders and regulated entities requesting clarification of rule language and requirements.

The proposal clarifies requirements related to operator training, operating and safety procedures, documentation, equipment testing, and safety device testing. Additional provisions address the use of RGDs for bomb detection and set requirements for RGDs used in whole-body scanning for security purposes and in occupied vehicle screening.

These changes improve the rule's clarity, organization, and consistency, and enhance the protection of public health and safety.

Proposed amendment to §289.228(a) outlines the types of RGDs and machine output applicable to this rule.

Proposed amendment to §289.228(b) provides the scope of the rule and clarifies that the rule applies to all persons with a machine regardless of registration status.

The proposed amendment adds new §289.228(c) which outlines the prohibited uses of an RGD.

Proposed amendment to §289.228(d) provides exemptions for certain RGDs from specific requirements of the rule.

Proposed amendment to §289.228(e), currently subsection (c), renumbers the subsection and provides definitions of applicable terms within the rule.

The proposed amendment adds new §289.228(f) which provides registration requirements and includes the timeframe for when applications must be submitted.

Proposed amendment to §289.228(g), currently subsection (h), renumbers the subsection and outlines personnel requirements, including instructions, training, and occupational monitoring.

Proposed amendment to §289.228(h), currently subsection (f), renumbers the subsection and establishes the requirements for area monitoring of dose limits for individual members of the public.

Proposed amendment to §289.228(i), currently subsection (g), renumbers the subsection and provides general operating requirements applicable to all machines regulated by this rule. These requirements include procedures, bypassing safety devices, installation, assembly, repair, or modification of radiation generating devices (RGDs), control panels, interlocks, multiple sources, and testing safety devices.

Proposed amendment to §289.228(j), currently subsection (e), renumbers the subsection and includes equipment requirements applicable to all machines regulated by this rule. These include warning devices, labeling, interlocks, radiation emission limits, and generator cabinet requirements.

The proposed amendment adds new §289.228(k) which provides additional requirements specific to closed-beam RGDs. Closed-beam RGD requirements replace the previous requirements for "minimal threat" radiation machines.

The proposed amendment adds new §289.228(l) which separates the additional requirements specific to open-beam RGDs.

The proposed amendment adds new §289.228(m) which provides additional requirements specific to shielding room RGDs.

The proposed amendment adds new §289.228(n) which provides additional requirements specific to bomb detection RGDs.

The proposed amendment adds new §289.228(o) which provides additional requirements specific to RGDs used for whole-body scanning for security.

The proposed amendment adds new §289.228(p) which provides additional requirements specific to RGDs used for occupied vehicle screening for security.

The proposed amendment adds new §289.228(q) which includes record retention requirements for department inspection and provides a new figure for clarity.

FISCAL NOTE

Christy Havel Burton, Chief Financial Officer, has determined that for each year of the first five years that the rule will be in effect, enforcing or administering the rule does not have foreseeable implications relating to costs or revenues of state or local governments.

GOVERNMENT GROWTH IMPACT STATEMENT

DSHS has determined that during the first five years that the rule will be in effect:

- (1) the proposed rule will not create or eliminate a government program;
- (2) implementation of the proposed rule will not affect the number of DSHS employee positions;
- (3) implementation of the proposed rule will result in no assumed change in future legislative appropriations;
- (4) the proposed rule will not affect fees paid to DSHS;
- (5) the proposed rule will not create a new regulation;
- (6) the proposed rule will not expand, limit, or repeal existing regulation;
- (7) the proposed rule will not change the number of individuals subject to the rule; and
- (8) the proposed rule will not affect the state's economy.

SMALL BUSINESS, MICRO-BUSINESS, AND RURAL COMMUNITY IMPACT ANALYSIS

Christy Havel Burton has also determined that there will be no adverse economic effect on small businesses, micro-businesses, or rural communities because the rule does not impose additional costs beyond existing regulatory expectations and reflects current practices for regulated entities.

LOCAL EMPLOYMENT IMPACT

The proposed rule will not affect a local economy.

COSTS TO REGULATED PERSONS

Texas Government Code §2001.0045 does not apply to this rule because it is necessary to protect the health, safety, and welfare of Texas residents and does not impose a cost on regulated persons.

PUBLIC BENEFIT AND COSTS

Timothy Stevenson, Deputy Commissioner, Consumer Protection Division, has determined that for each of the first five years the rule is in effect, the public benefit will be improved clarity and understanding of regulatory requirements, which supports the protection of public health and safety.

Christy Havel Burton has also determined that for the first five years the rule is in effect, there are no anticipated economic costs to persons who are required to comply with the proposed rule because the amendment reflects current practices and clarifies existing regulatory requirements.

TAKINGS IMPACT ASSESSMENT

DSHS has determined that the proposal does not restrict or limit an owner's right to the owner's property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking under Texas Government Code §2007.043.

PUBLIC COMMENT

Written comments on the proposal, including information related to the cost, benefit, or effect of the proposed rule, as well as any applicable data, research, or analysis, may be submitted to Rules Coordination Office, P.O. Box 13247, Mail Code 4102, Austin, Texas 78711-3247, or street address 4601 West Guadalupe Street, Austin, TX 78751; or emailed to HHSRulesCoordinationOffice@hhs.texas.gov.

To be considered, comments must be submitted no later than 31 days after the date of this issue of the *Texas Register*. Comments must be (1) postmarked or shipped before the last day of the comment period; (2) hand-delivered before 5:00 p.m. on the last working day of the comment period; or (3) emailed before midnight on the last day of the comment period. If the last day to submit comments falls on a holiday, comments must be postmarked, shipped, or emailed before midnight on the following business day to be accepted. When emailing comments, please indicate "Comments on Proposed Rule 26R080" in the subject line.

STATUTORY AUTHORITY

The amendment is authorized by Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system; Texas Health and Safety Code (HSC) §1001.075, which authorizes the executive commissioner of HHSC to adopt rules and policies for the operation and provision of health and human services by DSHS and for the administration of HSC Chapter 1001; HSC Chapter 401 (the Texas Radiation Control Act), which provides for DSHS radiation control rules and regulatory program to be compatible with federal standards and regulations; HSC §401.051, which provides the required authority to adopt rules and guidelines relating to the control of sources of radiation; HSC §401.064, which provides for the authority to adopt rules related to inspection of x-ray equipment; HSC §401.101, providing for DSHS registration of facilities possessing sources of radiation; and HSC Chapter 401, Subchapter J, which authorizes enforcement of the Act.

The amendment affects Texas Government Code §524.0151, HSC §1001.075, and HSC Chapter 401.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

ADDITIONAL INFORMATION

For further information, please call: (512) 834-6655

TITLE 25 HEALTH SERVICES
PART 1 DEPARTMENT OF STATE HEALTH SERVICES
CHAPTER 289 RADIATION CONTROL
SUBCHAPTER E REGISTRATION REGULATIONS

§289.228. Radiation Safety Requirements for Non-Healing Arts Radiation
Generating Devices [Industrial Radiation Machines].

(a) Purpose. This section establishes special requirements for the use of non-healing arts radiation generating devices (RGDs) operating up to 1 megaelectron volts (MeV) using industrial radiation machines not otherwise covered by this chapter.

(1) For purposes of this section, RGDs, as defined in subsection (e)(26) of this section, [industrial radiation machines] include: [but are not limited to,]

(A) portable or handheld [portable/handheld] fluorescence x-ray; [(open-beam),]

(B) fluoroscopy handheld [hand-held] intensified;[;]

(C) fluoroscopy; [x-ray, industrial accelerator,]

(D) spectroscopy; [spectrography x-ray, flash x-ray, flash x-ray for bomb-detection, educational facility (x-ray for non-human or not live animal use),]

(E) diffraction x-ray;[;]

(F) backscatter devices;

(G) certified and certifiable [uncertified] cabinet x-ray; [and]

(H) flash x-ray;

(I) whole-body scanners for security purposes;

(J) devices used in educational, forensic, or research facilities, including post mortem examinations and work with non-human species; and

(K) emerging and future RGDs [minimal threat radiation machines].

(2) Requirements for industrial radiography are specified in §289.255 of this chapter (relating to Radiation Safety Requirements and Licensing and Registration Procedures for Industrial Radiography).

(b) Scope.

(1) This section applies to a person who receives, possesses, uses, acquires, or transfers an RGD used for operations other than healing arts purposes. The registrant is responsible for the administrative control and directing the use of the RGD.

(2) ~~[(1)]~~ The requirements of this section are in addition to and not in substitution for other applicable requirements of this chapter.

~~[(2) In addition to the requirements of this section, all registrants, unless otherwise specified, are subject to the requirements of §289.203 of this title (relating to Notices, Instructions, and Reports to Workers; Inspections), §289.204 of this title (relating to Fees for Certificates of Registration, Radioactive Material Licenses, Emergency Planning and Implementation, and Other Regulatory Services), §289.205 of this title (relating to Hearing and Enforcement Procedures), §289.226 of this title (relating to Registration of Radiation Machine Use and Services), and §289.231 of this title (relating to General Provisions and Standards for Protection Against Machine-Produced Radiation).]~~

~~[(3) Radiation safety requirements and registration procedures for industrial radiography are specified in §289.255 of this title (relating to Radiation Safety Requirements and Licensing and Registration Procedures for Industrial Radiography).]~~

(c) Prohibitions.

(1) Except for whole-body scanners for security purposes, exposing an individual to the primary beam is prohibited. This provision specifically prohibits the deliberate exposure of an individual for:

(A) training;

(B) demonstration;

(C) healing arts; or

(D) other non-healing arts purposes.

(2) Holding a sample during the operation of any RGD is prohibited.

(d) Exemptions.

(1) Excluding training operations, RGDs meeting the definition of "bomb detection equipment," as defined in subsection (e)(5) of this section, are exempt from the requirements of subsection (h) of this section.

(2) The following are exempt from the requirements of this section:

(A) domestic television receivers, with exposure rates less than 0.005 millisieverts (mSv) (0.5 millirem (mrem)) per hour at 5 centimeters (cm) from any outer surface; and

(B) cold-cathode gas discharge tubes, with exposure rates less than 0.1 mSv (10 mrem) per hour at 30 cm from any point on the external surface of the tube.

(3) Equipment described in this subsection is not exempt if used or handled so that any individual might receive a dose of radiation exceeding the limits specified

in §289.231 of this subchapter (relating to General Provisions and Standards for Protection Against Machine-Produced Radiation).

(4) Certified and certifiable cabinet x-ray systems are exempt from the requirements of subsection (h) of this section. This exemption applies only to RGDs that, by design, cannot expose an individual or any body part to the primary beam.

(e) [(e)] Definitions. The following [words-and] terms [,-when-used] in this section, [shall] have the following meanings[,-] unless the context clearly indicates otherwise.

(1) Accessible surface--The external or outside surface of the enclosure or housing provided by the manufacturer. This includes:

(A) the high-voltage generator;

(B) doors;

(C) access panels;

(D) latches;

(E) control knobs; and

(F) other permanently mounted hardware, as well as the plane across the exterior edge of any opening.

(2) Administrative controls--Workplace policies, procedures, and training regimens designed to reduce personnel exposure to radiation hazards.

(3) Analytical x-ray equipment--Machines that electronically generate and use ionizing radiation to examine the microstructure of materials, such as diffraction, spectroscopy, and fluorescence.

(4) Beam port--An opening on the x-ray housing designed to emit a primary beam. This does not include openings on package x-ray systems.

(5) Bomb detection equipment--RGDs used solely to detect explosive devices.

(6) Cabinet x-ray system--An RGD with the x-ray tube installed in an enclosure which is independent of existing architectural structures, except the floor on which it is placed. An x-ray tube used within a shielded part of a building, or x-ray equipment which may temporarily or occasionally incorporate portable shielding, is not a cabinet x-ray system. The cabinet x-ray system is intended to:

(A) contain at least the portion of a material being irradiated;

(B) provide radiation attenuation; and

(C) exclude personnel from its interior during the generation of radiation.

(7) Certifiable cabinet x-ray system--An existing uncertified x-ray system that has been modified to meet the certification requirements as required by 21 Code of Federal Regulations (CFR) §1020.40.

(8) Certified cabinet x-ray system--An x-ray system that has been certified under 21 CFR §1010.2 as being manufactured and assembled on or after April 10, 1975, as required by 21 CFR §1020.40.

(9) Closed-beam RGD--A system in which the beam path cannot be entered by any part of the body when operated under normal conditions.

(10) Cold-cathode gas discharge tube--An electronic device in which electron flow is produced and sustained by ionization of contained gas atoms and ion bombardment of the cathode.

(11) Collimator--A device for restricting the useful x-ray beam in one or more directions.

(12) Control panel--The part of the RGD that includes the switches, knobs, push buttons, and other hardware necessary for initiating and operating the device.

(13) Emergency procedure--The written, pre-planned steps to be taken in the event of actual or suspected exposure of an individual above the administrative or regulatory limits.

~~[(1) Fail-safe characteristics--Design features that cause beam port shutters to close, or otherwise prevent emergence of the primary beam, upon the failure of a safety or warning device.]~~

(14) Fail-safe design--A design where any likely failure of indicators or safety components prevents the primary beam, ensuring individuals remain protected from radiation even if a safety device fails.

(15) Hand-held RGD--See "radiation generating device" in paragraph (26) of this subsection.

(16) Industrial radiation machine--See "radiation generating device" in paragraph (26) of this subsection.

(17) Industrial radiography--A non-destructive testing method using ionizing radiation, such as gamma rays or x-rays, to make radiographic images for the purpose of detecting flaws in objects without destroying it.

(18) Interlock--A device preventing the start or continued operation of an RGD unless certain predetermined conditions are met.

(19) Leakage radiation--All ionizing radiation emanating from the source housing, except the primary beam.

(20) [(2)] Local components--Parts of an x-ray system that include areas that are struck by x-rays [~~x-rays~~], such as radiation source housings, port and shutter

assemblies, collimators, sample holders, cameras, goniometers, detectors, and shielding, but do not include power supplies, transformers, amplifiers, readout devices, and control panels.

~~[(3) Minimal threat radiation machines--Minimal threat radiation machines include, but are not limited to, fluorescence x-ray (closed beam), gauges x-ray, certified cabinet x-ray, package x-ray, electron beam welding, particle size analyzer, ion implant, and cathodoluminescence. In addition, minimal threat radiation machines are those radiation machines capable of generating or emitting fields of radiation that, during the operation of which:]~~

~~[(A) no deliberate exposure of an individual occurs;]~~

~~[(B) the radiation is not emitted in an open beam configuration; and]~~

~~[(C) no known physical injury to an individual has occurred.]~~

(21) ~~[(4)]~~ Open-beam configuration--An RGD [A radiation machine] in which an individual's body part [individual] could cross [accidentally place some part of his/her body in] the path of the primary beam [path] during normal operation.

(22) Package x-ray system--A non-human use, closed-beam RGD or cabinet x-ray system with accessible openings designed for the detection of weapons, bombs, or contraband concealed in baggage, mail, or packages.

(23) Personal protective equipment (PPE)--Device used to mitigate hazards associated with RGD use, including eye protection, protective clothing, or gloves.

(24) Portable RGD--See "radiation generating device" in paragraph (26) of this subsection.

(25) ~~[(5)]~~ Primary beam--Ionizing radiation that passes through an aperture of the source housing by a direct path from the x-ray tube located in the radiation source housing.

(26) Radiation generating device (RGD)--Any system that generates x-rays or particle radiation up to 1 MeV and is not intended for healing arts as defined in §289.227 of this subchapter (relating to Use of Radiation Machines in the Healing Arts), or veterinary use as defined in §289.233 of this subchapter (Radiation Control Regulations for Radiation Machines Used in Veterinary Medicine), including:

(A) industrial radiation machine--a radiation machine not intended for healing arts or veterinary use;

(B) portable RGD--equipment designed to be hand-carried or mounted on a permanent base with wheels or casters for moving while completely assembled;

(C) hand-held RGD--a portable instrument that is designed to operate when held in the hand; or

(D) stationary RGD--equipment that is installed or placed in a fixed location.

(27) Radiation safety officer (RSO)--An individual meeting the qualification requirements of §289.226 of this subchapter (relating to Registration of Radiation Machine Use and Services) and designated on the certificate of registration.

(28) Radiation source housing--The portion of an x-ray system that contains the x-ray tube or secondary target and contains radiation shielding material or inherently provides shielding.

(29) [({6})] Safety device--A device that prevents the entry of any portion of an individual's body into the primary x-ray beam path or that causes the beam to be shut off upon entry into its path.

(30) Scattered radiation--Radiation that has been deviated in direction or energy by interaction with matter.

(31) Shielded room--A room housing an RGD where, with the RGD at maximum output, the exterior of the room meets the dose limits for individual members of the public as specified in §289.231 of this subchapter.

(32) Shutter--A movable device used to block the useful, or primary, beam emitted from an x-ray tube assembly.

(33) Source--The focal spot of the x-ray tube.

(34) Stationary RGD--See "radiation generating device" in paragraph (26) of this subsection.

(35) Warning device--A visible or audible signal that warns individuals when radiation is being produced.

(36) Whole-body scanner for security purposes--A scanner for security using ionizing radiation to screen individuals for concealed items, including weapons, drugs, or explosives.

(37) X-ray generator--The portion of an x-ray system that provides the accelerating high voltage and current for the x-ray tube.

~~[(7) X-ray system--A group of components utilizing x rays to determine the elemental composition or to examine the microstructure of materials.]~~

(f) Registration.

(1) Each person possessing a whole-body scanner or occupied vehicle scanner for security purposes, or an accelerator for non-human use, must apply and receive a certificate of registration from the department, as specified in §289.226 of this subchapter, before beginning use.

(2) Each person possessing an RGD for non-human use must apply and receive a certificate of registration from the department, as specified in §289.226 of this subchapter, within 30 days of beginning use of the RGD.

(g) Personnel requirements.

(1) Instructions. An individual is not permitted to operate an RGD unless the individual has received documented training and demonstrated competence in the following areas.

(A) Radiation safety fundamentals.

(i) Understanding the properties of ionizing radiation, the types of radiation emitted by the machine, and the biological effects associated with exposure.

(ii) Identifying potential radiation hazards specific to the RGD and the environment.

(iii) The documentation specified in this subparagraph must include:

(I) record of RGD-specific training;

(II) log of demonstration of competency; and

(III) date and signature of trainer or RSO.

(B) Operating and safety procedures (OSP).

(i) The registrant must document that each individual operating an RGD has read the OSP at least annually.

(ii) The documentation specified in clause (i) of this subparagraph must include:

(I) name and signature of individual;

(II) date individual read the operating and safety procedures; and

(III) initials of the RSO.

(C) Radiation protection principles.

(i) Adhering to "as low as reasonably achievable" (ALARA) principles, as defined in §289.231 of this subchapter, including the use of time, distance, and shielding to minimize exposure.

(ii) Proper use of PPE and individual monitoring devices, including routine monitoring and understanding of dose reports.

(D) Reporting exposures and radiation levels exceeding the limits.

(i) Recognizing and responding to radiation-related emergencies, including suspected overexposures, RGD malfunctions, or breaches of shielding.

(ii) Reporting procedures for actual or suspected exposures exceeding regulatory limits, as specified in §289.231 of this subchapter, including the required documentation and notification protocols.

(E) Machine-specific training.

(i) Familiarity with the manufacturer's operating manual, specific safety features, and maintenance requirements for the RGD being used.

(ii) Performing pre-use inspections and identifying conditions that require immediate shutdown or maintenance.

(2) Instructions for bomb detection RGDs. Personnel operating bomb detection RGDs must be trained in the setup and operation of the RGD, and in establishing a restricted area.

(3) Individual monitoring of occupational dose. In addition to the requirements of §289.231 of this subchapter, each registrant must supply and require the use of an extremity dosimetry device by:

(A) radiation workers using systems with an open-beam configuration without a safety device; and

(B) personnel maintaining radiation machines if the maintenance procedures require the presence of a primary x-ray beam when any local component in the x-ray system is disassembled or removed.

(4) Instruction and training as specified in paragraphs (1) and (2) of this subsection must be documented, maintained, and available for inspection by the department as specified in subsection (q) of this section.

(h) Area monitoring of dose limits for individual members of the public.

(1) Radiation levels. The local components of the RGD must include sufficient shielding or access control so that the dose to an individual present in the area does not exceed the dose limits for individual members of the public specified in §289.231 of this subchapter.

(2) Posting. Each area or room containing an RGD must be conspicuously posted with a sign or signs bearing the radiation symbol and stating, "CAUTION - X-RAY EQUIPMENT" or "CAUTION - RADIATION GENERATING DEVICE" or words with a similar intent.

(i) General operating requirements.

(1) Procedures.

(A) Each registrant must develop, implement, and maintain written OSP. The OSP must be maintained and available for inspection by the department as specified in subsection (q) of this section. The OSP must include:

(i) proper start-up, operation, and shutdown procedures for each RGD, including emergency shutdown procedures;

(ii) use of radiation warning and safety devices, such as shields, beam stops, and alarms, and knowledge of its purpose, function, and limitations;

(iii) procedures for preventing unauthorized access to radiation areas and maintaining compliance with radiation protection standards; and

(iv) emergency procedures in the event of an actual or suspected exposure of an individual above the dose limit specified in §289.231 of this subchapter.

(I) Emergency procedures must include the:

(-a-) names and telephone numbers of individuals to be contacted;
and

(-b-) instructions for processing individual monitoring devices.

(II) Documentation of an actual or suspected exposure of an individual above the dose limits must be maintained and available for inspection by the department as specified in subsection (q) of this section.

(B) Operating a radiation machine in any manner other than those specified in the OSP is prohibited unless the operator has obtained written approval from the RSO. Written approval must be documented, maintained, and available for inspection by the department as specified in subsection (q) of this section.

(2) Bypassing safety devices.

(A) Bypassing a safety device is prohibited without the written approval from the radiation safety officer.

(B) If a safety device has been bypassed, a visible sign stating, "SAFETY DEVICE NOT WORKING" or words with a similar intent, must be placed on the radiation source housing and at the control switch.

(C) Documentation of bypassing a safety device or interlock must be maintained and available for inspection by the department as specified in subsection (q) of this section. Documentation must include the:

(i) RGD information, including the;

(I) manufacturer;

(II) model; and

(III) serial number of the RGD;

(ii) date the alteration was made;

(iii) type of alteration;

(iv) name of the individual who made the alteration;

(v) name of the individual who restored the RGD to normal operating condition;

(vi) date the RGD was restored to normal operating condition; and
(vii) result of an area survey, conducted after the RGD is restored to normal operating condition, signed by the RSO.

(3) Installation, assembly, repair, or modification of RGDs.

(A) Only registered service providers are permitted to install, assemble, repair, or modify the RGD.

(B) Except as specified in paragraph (2) of this subsection, the removal of covers, shielding materials, tube housing, or modifications to shutters, collimators, or beam stops is prohibited without:

(i) verifying the tube is de-energized before beginning work and will remain de-energized until safe conditions are restored;

(ii) ensuring the main switch is used for routine shutdown in preparation for repairs; and

(iii) implementing lockout/tagout procedures, as specified by the manufacturer's operating manual, to secure the RGD and prevent accidental re-energization.

(C) Documentation of installation, assembly, repair, or modification of RGDs must be maintained and available for inspection by the department as specified in subsection (q) of this section. Documentation must include:

(i) RGD information, including the;

(I) manufacturer;

(II) model; and

(III) serial number of the RGD;

(ii) the date of service;

(iii) the name of the individual performing the service;

(iv) findings; and

(v) corrective actions.

(4) Control panel.

(A) Activation of the RGD must only be possible from the control panel.

(B) All indicators and controls that operate the primary beam must be clearly labeled with its function.

(5) Interlocks.

(A) De-energizing the x-ray tube or RGD using an interlock is prohibited except in an emergency or during testing of the interlock system.

(B) When an interlock is activated, restoring the RGD to normal operation must require manually resetting it from the control panel.

(C) All interlocks must be of a fail-safe design.

(6) Multiple sources.

(A) If more than one x-ray tube assembly or focal spot can be operated sequentially or simultaneously from a control panel, visual indicators must show which tube assembly or focal spot is selected.

(B) The selector must be clearly labeled with its function.

(C) Symbols must be identified by a reference on the control panel.

(7) Testing safety devices.

(A) Interlocks, shutters, warning lights, and required emergency shut-off switches must be tested within 30 days of receipt or installation, then annually, not to exceed 14 months from the date of the previous test on all operable RGDs.

(B) If any safety device fails during testing, the:

(i) RGD must be removed from service;

(ii) safety device failure must be corrected before returning to normal operation; and

(iii) corrective actions taken for each safety device must be documented and signed by the RSO.

(C) Documentation of testing must be completed and include:

(i) RGD information, including the;

(I) manufacturer;

(II) model; and

(III) serial number of the RGD;

(ii) survey instrument information, as applicable;

(I) manufacturer;

(II) model;

(III) serial number; and

(IV) calibration date, calibrated within the previous 24 months and after any service that may have affected the system calibration;

- (iii) the date of the test;
- (iv) a list of the safety devices tested;
- (v) indication of a pass or fail for each test; and
- (vi) the name of the individual performing the tests.

(D) Testing of safety devices may be deferred if the RGD is out of service and visibly marked. Testing must be performed before returning the RGD to normal operation.

(E) Safety device testing is exempt if it cannot be performed due to the manufacturer's design. The registrant must document the exemption in writing and maintain the record as specified in subsection (q) of this section for inspection by the department.

(F) Documentation of the safety device testing must be maintained and available for inspection by the department as specified in subsection (q) of this section.

~~[(d) Exemptions.]~~

~~[(1) Uses of minimal threat radiation machines as specified in §289.231(II)(3) of this title, are exempt from the requirements of subsections (e)(2)(B) and (C), (f)(3), and (g)(1) of this section.]~~

~~[(2) Uses of certified and certifiable cabinet x-ray systems are exempt from the requirements of subsection (f)(1) and (2) of this section. This exemption will apply only to those radiation machines that do not allow a person or body part to be exposed to the radiation beam.]~~

~~[(3) Uses of portable/handheld fluorescence x-ray (open beam) devices that are manufactured without safety devices are exempt from the requirements of subsection (e)(1)(A) of this section.]~~

(j) ~~[(e)]~~ Equipment requirements. Unless otherwise specified in this chapter, this subsection applies to all RGDs.

~~[(1) Safety devices.]~~

~~[(A) A safety device shall be provided on all open beam configurations.]~~

~~[(B) A registrant may apply to the agency for an exemption from the requirement of a safety device in accordance with §289.231 of this title. Any such request shall include:]~~

- ~~[(i) a description of the various safety devices that have been evaluated;]~~
- ~~[(ii) the reason each of these devices cannot be used; and]~~

~~[(iii) a description of the alternative methods that will be employed to minimize the possibility of an accidental exposure, including procedures to assure that operators and others in the area will be informed of the absence of safety devices.]~~

(1) ~~[(2)]~~ Warning devices.

~~[(A) Open beam configurations shall be provided with a visible indication of:]~~

~~[(i) x-ray tube status (ON-OFF) located near the radiation source housing, if the primary beam is controlled in this manner; and/or]~~

~~[(ii) shutter status (OPEN-CLOSED) located near each port on the radiation source housing, if the primary beam is controlled in this manner.]~~

(A) ~~[(B)]~~ Each area or room containing an RGD must ~~[The x-ray control shall]~~ provide a visual indication whenever x-rays ~~[x-rays]~~ are produced.

(B) ~~[(C)]~~ Warning devices must ~~[shall]~~ be labeled so the ~~[that their]~~ purpose of each device is easily identified and ~~[shall]~~ have a fail-safe design ~~[characteristics]~~.

(2) ~~[(3)]~~ Ports. Any unused port ~~[Unused ports]~~ on RGD ~~[radiation machine]~~ source housings must ~~[shall]~~ be secured in the closed position to ~~[in a manner that will]~~ prevent unintentional ~~[inadvertent]~~ opening.

(3) ~~[(4)]~~ Labeling.

(A) All RGDs must be labeled with the radiation symbol and the words: "CAUTION RADIATION - THIS EQUIPMENT PRODUCES RADIATION WHEN ENERGIZED" or words with a similar intent, near any switch that energizes an x-ray tube.

(B) For package x-ray systems, the following must be posted at or near each opening: "CAUTION - X-RAY HAZARD: DO NOT INSERT ANY PART OF THE BODY WHEN SYSTEM IS ENERGIZED" or words with a similar intent. ~~[Each registrant shall ensure that each radiation machine is labeled in a conspicuous manner to caution individuals that radiation is produced when it is energized. This label shall be affixed in a clearly visible location on the face of the control unit. If the radiation machine is not visible from the control unit, the radiation machine shall have a visible indication that it is energized.]~~

~~[(5) Shutters. On open beam configurations, each port on the radiation source housing shall be equipped with a shutter that cannot be opened unless a collimator or a coupling has been connected to the port.]~~

~~[(6) Radiation source housing.]~~

(4) Interlocks.

(A) Each x-ray tube housing must ~~[shall]~~ be equipped with an interlock that de-energizes ~~[shuts off]~~ the tube if it is removed from the radiation source housing or if the housing is disassembled.

(B) When the x-ray tube housing is the primary shielding for the x-ray tube and is intended to be opened for normal use or maintenance, the housing must be equipped with an interlock that de-energizes high voltage to the x-ray tube if the housing is opened.

(5) Radiation emission limit. With all shutters closed, the leakage radiation from the x-ray tube housing, measured at 5 cm from the housing surface, must not exceed 0.025 mSv (2.5 mrem) per hour. This limit must be met at the maximum output.

(6) ~~[(7)]~~ Generator cabinet. Each x-ray generator must ~~[shall]~~ be supplied with a protective cabinet that limits leakage radiation to less than 0.005 mSv (0.5 mrem) in any one hour when measured at 5 cm from its surface. ~~[a distance of 5-centimeters from its surface such that it is not capable of producing a dose in excess of 0.5 millirem (5.0 microsieverts (μSv)) in any one hour.]~~

(k) Additional requirements for closed-beam RGDs. In addition to the requirements in subsection (i) of this section, the following requirements apply to all closed-beam RGDs not addressed in this section.

(1) Certified and certifiable cabinet x-ray systems, as defined in this subsection, must also meet the requirements of 21 CFR §1020.40.

(2) The registrant must perform a survey to ensure that radiation emitted 5 cm from any accessible surface of the closed-beam RGD does not exceed 0.005 mSv (0.5 mrem) in any one hour.

(A) Equipment survey frequency. RGDs must be evaluated:

(i) within 30 days of receipt or installation;

(ii) annually, not to exceed 14 months from the date of the previous evaluation;

(iii) after any maintenance that affects the radiation shielding or x-ray production components; and

(iv) after any incident that may have damaged the radiation shielding or x-ray production components.

(B) Equipment survey report must include:

(i) RGD information, including the;

(I) manufacturer;

(II) model; and

- (III) serial number of the RGD;
- (ii) survey instrument information, as applicable, including the:
 - (I) manufacturer;
 - (II) model;
 - (III) serial number; and
 - (IV) calibration date, calibrated within the previous 24 months and after any service that may have affected the system calibration;
- (iii) the date of the test;
- (iv) indication of a pass or fail for each test;
- (v) the name of the individual performing the tests;
- (vi) the registration number of the service provider, if the survey is performed by a third party;
- (vii) numerical data;
- (viii) diagram of the location of measurements; and
- (ix) any other parameter required by the manufacturer.

(C) Documentation of the equipment survey must be maintained and available for inspection by the department as specified in subsection (q) of this section. Documentation must include the:

- (i) date; and
- (ii) initials of the individual performing these functions.

(3) System enclosure. The radiation source, sample or object, detector, and analyzing crystal must be enclosed in a chamber or coupled chambers that cannot be entered by any part of the body during normal operation.

(4) Interlocks.

(A) Interlocks must be provided as specified in subsection (i)(5) of this section. All doors and panels accessing the RGDs must be interlocked.

(B) Interlock functions. The sample chamber door or other enclosure must have a fail-safe interlock on the x-ray tube high-voltage supply or a shutter in the primary beam so that the x-ray beam cannot enter the sample chamber while it is open.

(5) Radiation emission limit. The radiation emission for all closed-beam RGDs must not exceed a dose rate of 0.005 mSv (0.5 mrem) in one hour at 5 cm outside any accessible surface.

(6) Package x-ray systems. Package x-ray systems must have an operator present at the controls so that the operator can clearly view the ports and doors at all times during x-ray generation.

(A) During an exposure or preset succession of exposures of one-half second or greater duration, the means provided must allow the operator to terminate the exposure or preset succession of exposures at any time.

(B) During an exposure or preset succession of exposures of less than one-half second duration, the means provided may allow completion of the exposure in progress but must allow the operator to prevent additional exposures.

(l) Additional requirements for open-beam RGDs. In addition to the requirements in subsection (i) of this section, the following requirements apply to all open-beam RGDs not addressed in this section.

(1) Shutters. Each port on the radiation source housing must be equipped with a shutter that cannot be opened unless a collimator or a coupling has been connected to the port and provided with a visible indication of:

(A) x-ray tube status (ON-OFF) located near the radiation source housing; or

(B) shutter status (OPEN-CLOSED) located near each port on the radiation source housing.

(2) Beam ports. Unused beam ports on a radiation source housing must be secured in the closed position to prevent inadvertent opening.

(3) Radiation emission limits. The local components of an open-beam RGD must include sufficient shielding or access control to meet dose limits for individual members of the public as specified in §289.231 of this subchapter. These emissions must be met at the maximum output.

(4) Primary beam attenuation. If the primary beam is not intercepted by its detector under all operating conditions, protective measures must be provided to prevent exposure of an individual to the primary beam.

(5) Operator position. The operator must be physically present when the RGD is in operation to prevent unauthorized or accidental entry.

(6) Control of access. If the RGD is not in a restricted area as defined in §289.231 of this subchapter, the operator must be able to control access to the RGD at all times during operation.

(7) Personnel monitoring. In addition to the personnel monitoring requirements specified in §289.231 of this subchapter, individual monitoring devices used to measure the dose to an extremity must be provided to and used by:

(A) personnel with potential for extremity exposure to the primary beam of an open-beam RGD;

(B) personnel maintaining RGDs if the maintenance procedures require the presence of a primary radiation beam when any local component in the RGD is disassembled or removed; and

(C) personnel operating hand-held RGDs.

(m) Shielded room RGDs. For RGDs that do not meet the dose limits of individual members of the public as specified in §289.231 of this subchapter, the RGD must be maintained inside a shielded room. In addition to the requirements in subsection (i) of this section, the following requirements apply to shielded room RGDs not addressed in this section.

(1) Room warning signals.

(A) The interior of the shielded room must be provided with at least one flashing or rotating warning light that only operates when radiation is being produced.

(B) An audible warning signal within the room must be activated for at least 10 seconds immediately before the initiation of radiation.

(C) A sign must be posted to indicate "DANGER – RADIATION AREA – X-RAY IN USE WHEN SIGNAL IS ON" or words with a similar intent.

(D) The sign must be readable and easily accessible for viewing.

(2) Emergency shut-off.

(A) If dose rates exceed the high radiation area limits, as defined in §289.231 of this subchapter, an emergency shut-off switch must be located within the high radiation areas.

(B) The switch must include a manual reset so the RGD cannot be restarted from the console without resetting the shut-off switch.

(C) The switch must be labeled "EMERGENCY SHUT-OFF."

(3) Separate electrical systems. The interlock and emergency shut-off systems must be separate, either electrically or mechanically.

(4) Control panel security. The RGD control panel must not be left unattended unless secured by a locking device or a computerized password system, preventing unauthorized use.

(5) Malfunctions. If a safety or warning device malfunctions, the RGD must not be used until the device is functioning properly.

(n) Additional requirements for bomb detection RGDs. In addition to the requirements in subsection (i) of this section, the following requirements apply to bomb detection RGDs not addressed in this section.

(1) Control panel security. When not in use, each bomb detection RGD must be locked to prevent unauthorized use. This is in addition to the requirements of §289.231 of this subchapter, relating to security and control of radiation machines.

(2) Utilization log. The registrant must maintain a utilization log for each bomb detection RGD.

(A) This log must include the:

(i) RGD information, including the:

(I) manufacturer;

(II) model; and

(III) serial number of the RGD;

(ii) date removed from storage;

(iii) date returned to storage;

(iv) name and signature of the individual using the RGD; and

(v) date and location of use.

(B) Documentation must be maintained and available for inspection by the department as specified in subsection (q) of this section.

(3) Area control. The registrant must establish boundaries to prevent unauthorized entry into the restricted area when the machine is energized.

(o) RGDs used for whole-body scanning for security.

(1) Whole-body scanning for security purposes. Each applicant must apply for and receive a certificate of registration before use.

(A) The OSP must be submitted to the department with the application for evaluation and approval.

(B) In addition to the requirements of subsection (i)(1) of this section, the OSP must address the following requirements:

(i) scans are prohibited on individuals 17 years of age or younger;

(ii) scans are prohibited on pregnant individuals;

(iii) scans are only permitted on inmates, detainees, employees, or contractors;

(iv) dose limits specified in paragraph (3) of this subsection must be met;

(v) effective dose must not exceed 0.0025 mSv (0.25 mrem) per scan;
and

(vi) specific controls that limit the number of individuals scanned or the number of scans per individual in 365 calendar days.

(2) Additional requirements for whole-body scanning for security purposes. In addition to the requirements in subsection (i) of this section, the following requirements apply to whole-body scanning for security purposes.

(A) Posting requirements. The registrant must post a sign stating: "If you are pregnant or think you might be pregnant, tell the operator before the scan" or words with a similar intent, in each radiation area.

(B) Equipment evaluation.

(i) RGDs used for whole-body scanning of humans must be evaluated by a registered service provider:

(I) within 30 days of receipt or installation;

(II) annually, not to exceed 14 months from the date of the previous evaluation;

(III) after any maintenance that affects the radiation shielding or x-ray production components; and

(IV) after any incident that may have damaged the system in a way that x-ray leakage may occur.

(ii) Equipment evaluation must include:

(I) effective dose to the individual;

(II) radiation leakage;

(III) inspection zone; and

(IV) any other parameter required by the manufacturer.

(iii) Documentation of the equipment evaluation must include the:

(I) date;

(II) registration number of the registered service provider performing the evaluation; and

(III) initials of the individual performing these functions.

(iv) Records of the equipment evaluation must be maintained as specified in subsection (q) of this section for inspection by the department.

(3) Dose limits for whole-body scanners. For whole-body scanning, an effective dose for a single complete screening must be limited to 0.0025 mSv (0.25 mrem).

(4) Dose limits for repeat security screenings. Individuals subject to repeat security screening must not receive an effective dose greater than 0.25 mSv (25 mrem) annually.

(p) Occupied vehicle screening for security.

(1) Occupied vehicle screening for security purposes. Each applicant must apply and receive a certificate of registration before use.

(A) The OSP must be submitted to the department with the application for evaluation and approval.

(B) The OSP must include the requirements of subsection (i)(1) of this section and address the following:

(i) scans are prohibited on individuals 17 years of age or younger;

(ii) scans are prohibited on pregnant individuals;

(iii) the use of x-ray-based occupied vehicle screening must be used as a secondary screening measure, used only after standard, non-radiological screening procedures indicate further evaluation;

(iv) dose limits specified in paragraph (2)(C) of this subsection must be met; and

(v) exposure from the primary beam must not exceed 0.0025 mSv (0.25 mrem) per scan.

(2) Additional requirements for occupied vehicle screening for security purposes. In addition to the requirements of subsection (i) of this section, the following requirements apply to occupied vehicle screening for security purposes.

(A) Posting requirements. The registrant must post a sign stating: "If you are pregnant or think you might be pregnant, tell the operator before the scan" or words with a similar intent, in each radiation area.

(B) Equipment evaluation.

(i) RGDs used for occupied vehicle screening must be evaluated by a registered service provider:

(I) upon installation;

(II) annually, not to exceed 14 months from the date of the previous evaluation;

(III) after any maintenance that affects the radiation shielding or x-ray production components; and

(IV) after any incident that may have damaged the system in a way that x-ray leakage may occur.

(ii) Equipment evaluation must include:

(I) effective dose to an individual;

(II) radiation leakage;

(III) inspection zone; and

(IV) any other parameter required by the manufacturer.

(iii) Documentation of the equipment evaluation must be maintained and available for inspection by the department as specified in subsection (q) of this section. Documentation must include the:

(I) date;

(II) registration number of the registered service provider performing the evaluation; and

(III) initials of the individual performing these functions.

(C) Dose limits. The effective dose to an individual for a single inadvertent exposure to the primary beam must not exceed 5 mSv (500 mrem). A pre-screening mode or system that meets the limits in subsection (o)(3) - (4) of this section must be used to verify that there are no occupants in the vehicle being examined if the 5 mSv (500 mrem) limit cannot be met.

(q) Records for department inspection. The registrant must maintain the following records at the time intervals specified, for inspection by the department. The records must be available for review at the time of the inspection and may be maintained in electronic format.

Figure: 25 TAC 289.228(q)

~~[(8) Certified and certifiable cabinet x-ray systems. Certified and certifiable cabinet x-ray systems, including those designed to allow admittance of individuals, shall:]~~

~~[(A) be maintained in compliance with Title 21, Code of Federal Regulations (CFR), §1020.40 and no modification shall be made to the system unless prior agency approval has been granted in accordance with §289.231(d) of this title; and]~~

~~[(B) comply with the following requirements:]~~

~~[(i) No registrant shall permit any individual to operate a cabinet x-ray system until the individual has received a copy of and instruction in the operating procedures for the unit.]~~

~~[(ii) Tests for proper operation of interlocks shall be conducted and recorded at intervals not to exceed 12 months.]~~

~~[(iii) The registrant shall perform an evaluation to determinate compliance with §289.231(o)(1) — (3) of this title and Title 21, CFR, §1020.40 at intervals not to exceed one year. The registrant shall ensure that radiation emitted 5 centimeters from the external surface of the cabinet x-ray system does not exceed 0.5 millirem (5.0 µSv) in any one hour.]~~

~~[(iv) Documentation of the requirements in clauses (i) — (iii) of this subparagraph shall be maintained by the registrant for 10 years for inspection by the agency.]~~

~~[(9) Package x-ray systems:]~~

~~[(A) The registrant shall perform an annual evaluation to ensure radiation emitted 5 centimeters from the external surface of the package x-ray system does not exceed 0.5 millirem (5.0 µSv) in any one hour.]~~

~~[(B) Tests for proper operation of interlocks shall be conducted and recorded at intervals not to exceed 12 months.]~~

~~[(C) Documentation of the requirements in subparagraphs (A) and (B) of this paragraph shall be maintained by the registrant for 10 years for inspection by the agency.]~~

~~[(f) Area requirements:]~~

~~[(1) Radiation levels. The local components of an x-ray system shall be located and arranged and shall include sufficient shielding or access control such that no radiation levels exist in any area surrounding the local component group that could result in a dose to an individual present in the area in excess of the dose limits specified in §289.231 of this title.]~~

~~[(2) Surveys:]~~

~~[(A) Radiation surveys, as required by §289.231 of this title, of all radiation machines and x-ray systems sufficient to show compliance with paragraph (1) of this subsection shall be performed:]~~

~~[(i) upon installation of the equipment;]~~

~~[(ii) following any change in the initial arrangement, number, or type of local components in the system;]~~

~~[(iii) following any maintenance requiring the disassembly or removal of a local component in the system;]~~

~~[(iv) during the performance of maintenance and alignment procedures if the procedures require the presence of a primary x-ray beam when any local component in the system is disassembled or removed;]~~

~~[(v) any time a visual inspection of the local components in the system reveals an abnormal condition; or]~~

~~[(vi) whenever individual monitoring devices show a significant increase over the previous monitoring period or the readings are approaching the radiation dose limits.]~~

~~[(B) Radiation survey measurements shall not be required if a registrant can demonstrate, to the satisfaction of the agency, compliance with paragraph (1) of this subsection in some other manner.]~~

~~[(3) Posting. Each area or room containing radiation machines shall be conspicuously posted with a sign or signs bearing the radiation symbol and the words "CAUTION—X-RAY EQUIPMENT," or words having a similar intent.]~~

~~[(g) Operating requirements.]~~

~~[(1) Procedures. Operating and safety procedures shall be written and made available to all radiation machine operators. No person shall be permitted to operate radiation machines in any manner other than that specified in the procedures unless that person has obtained written approval of the radiation safety officer.]~~

~~[(2) Bypassing. No person shall bypass a safety device unless that person has obtained the approval of the radiation safety officer. When a safety device has been bypassed, a visible sign bearing the words "SAFETY DEVICE NOT WORKING," or words having a similar intent, shall be placed on the radiation source housing.]~~

~~[(3) Repair or modification of radiation machines. Except as specified in paragraph (2) of this subsection, no operation involving removal of covers, shielding materials, or tube housings, or modifications to shutters, collimators, or beam stops shall be performed without ensuring that the tube is off and will remain off until safe conditions have been restored. The main switch, rather than interlocks, shall be used for routine shutdown in preparation for repairs.]~~

~~[(h) Personnel requirements.]~~

~~[(1) Instructions. No person shall be permitted to operate or maintain radiation machines unless such person has received instruction in and demonstrated competence in the following:]~~

~~[(A) identification of radiation hazards associated with the use of the radiation machine;]~~

~~[(B) radiation warning and safety devices incorporated into the radiation machine, or the reasons they have not been installed on certain pieces of equipment and the extra precautions required in such cases;]~~

~~[(C) operating and safety procedures for the radiation machine; and]~~

~~[(D) proper procedures for reporting an actual or suspected exposure in excess of the limits specified in §289.231 of this title.]~~

~~[(2) Instructions for bomb detection radiation machines. All personnel operating bomb detection radiation machines shall be trained in the set up and operation of the radiation machine and in establishing a restricted area.]~~

~~[(3) Individual monitoring. In addition to the requirements of §289.231(n)(1)(A) of this title, finger dosimetric devices shall be provided to and shall be used by:]~~

~~[(A) radiation machine workers using systems having an open beam configuration and not equipped with a safety device; and]~~

~~[(B) personnel maintaining radiation machines if the maintenance procedures require the presence of a primary x-ray beam when any local component in the x-ray system is disassembled or removed.]~~

~~[(4) Records and documentation. Documentation of the requirements in paragraphs (1) — (3) of this subsection shall be maintained by the registrant for 10 years for inspection by the agency. In addition to complying with the requirements of this paragraph, records of individual monitoring results shall be maintained by the registrant in accordance with §289.231(dd) of this title.]~~

Figure: 25 TAC 289.228(q)

<u>Name of Record</u>	<u>Rule Cross-Reference</u>	<u>Time Interval Required for Record Keeping</u>
<u>Review of Operating and Safety Procedures (OSP)</u>	<u>§289.228(g)(1)(B)(ii)</u>	<u>Until 2 years after termination of employment</u>
<u>Instruction and Training</u>	<u>§289.228(g)(4)</u>	<u>Until 2 years after termination of employment</u>
<u>Written OSP</u>	<u>§289.228(i)(1)(A)</u>	<u>Until termination of registration.</u>
<u>Emergency Procedures</u>	<u>§289.228(i)(1)(A)(iv)(II)</u>	<u>Until termination of registration</u>
<u>Deviation from OSP</u>	<u>§289.228(i)(1)(B)</u>	<u>Until termination of registration</u>
<u>Bypassing Safety Devices</u>	<u>§289.228(i)(2)(C)</u>	<u>Until termination of registration</u>
<u>Documentation of Installation, Assembly, Repair, or Modification of RGDs</u>	<u>§289.228(i)(3)(C)</u>	<u>Until termination of registration</u>
<u>Safety Device Testing Exemption</u>	<u>§289.228(i)(7)(E)</u>	<u>Until termination of registration</u>
<u>Testing Safety Devices</u>	<u>§289.228(i)(7)(F)</u>	<u>10 years</u>
<u>Equipment Survey for Closed Beam RGD</u>	<u>§289.228(k)(2)(C)</u>	<u>10 years</u>
<u>Bomb Detection RGD Utilization Log</u>	<u>§289.228(n)(2)(B)</u>	<u>10 years</u>
<u>Equipment Evaluation for Whole-Body Scanners</u>	<u>§289.228(o)(2)(B)(iv)</u>	<u>10 years</u>
<u>Equipment Evaluation for Occupied Vehicle Screening for Security</u>	<u>§289.228(p)(2)(B)(iii)</u>	<u>10 years</u>