Chapter 246-230 WAC
SECURITY SCREENING SYSTEMS

NEW SECTION

WAC 246-230-001 Authority, purpose, and scope. The requirements of this chapter are adopted pursuant to the provisions of chapter 70A.388 RCW and RCW 72.09.775. This chapter establishes radiation safety standards for the use of security screening systems that emit ionizing radiation to detect contraband under clothing and within body cavities of incarcerated individuals.

NEW SECTION

WAC 246-230-005 Relationship to other regulations. In addition to the requirements established in this chapter, registrants shall also comply with applicable requirements of the following:

(1) Chapter 246-220 WAC;
(2) Chapter 246-221 WAC;
(3) Chapter 246-222 WAC; and
(4) Chapter 246-224 WAC.

NEW SECTION

WAC 246-230-010 Definitions. The definitions in this section apply throughout this chapter unless the context clearly indicates otherwise.

(1) "ALARA" means the same as in WAC 246-220-010.

(2) "Contraband" means any article or thing which a person confined in a detention facility or a secure facility under chapter 71.09 RCW is prohibited from obtaining or possessing by statute, rule, regulation, or order of a court.

(3) "Department" means the Washington state department of health, which has been designated as the state radiation control agency under chapter 70A.388 RCW.

(4) "Dose record" means a record for each incarcerated individual subject to screening and includes:

(a) Name of incarcerated individual;
(b) Date and time of screening;
(c) Dose of radiation received at time of screening.

This record does not include images produced by the security screening system.

(5) "Engineering control" means a safety component of the security screening system designed to prevent improper operation or unintended radiation exposure.

(6) "General-use security screening system" means a security screening system that delivers an effective radiation dose equal to or less than 0.25 µSv (25 µrem) per screening.

(7) "Incarcerated individual" means a person:

(a) Committed to the custody of Washington state department of corrections including, but not limited to, persons:

(i) Residing in a correctional institution or facility;

(ii) Released from such facility on furlough, work release, or community custody; or

(iii) Received from another state, state agency, county, federally recognized tribe, or federal jurisdiction; or

(b) Held in custody under process of law or lawful arrest by a state agency, city, county, or federal jurisdiction.

(8) "Limited-use security screening system" means a security screening system that is capable of delivering an effective dose greater than 0.25 µSv (25 µrem) per screening, but shall not exceed an effective dose of 10 µSv (1 mrem) per screening.

(9) "Minor" means the same as in WAC 246-220-010.

(10) "Operator" means a trained employee associated with the operation of the security screening system whose responsibilities include at least one of the following:

(a) Initiating or stopping a scan;

(b) Verifying the security screening system is operating correctly;

(c) Providing information and instructions to screened incarcerated individuals; or

(d) Controlling access to the radiation screening zone.

(11) "Primary beam" means the beam of radiation emanating from the security screening system intended to reach the incarcerated individual being scanned. This excludes scattered radiation and radiation transmitted through shielding.

(12) "Qualified expert" means the same as in WAC 246-220-010.

(13) "Radiation screening zone" means the general area established for the purpose of limiting or controlling access to the area where screening will be performed.

(14) "Registrant" means the same as in WAC 246-220-010.

(15) "Safety interlock" means a device that is intended to automatically prevent or interrupt the radiation hazard whenever safety is compromised by access to the interior of the system, unauthorized access to a radiation area, or by an operational malfunction.

(16) "Screening" means the sum of radiation exposures or scans necessary to image objects concealed on all sides of the body as intended by the system design under normal conditions. A screening consists of one scan. If more than one scan needs to be performed to determine if the incarcerated individual is concealing contraband, all additional scans will be considered repeat screenings.

(17) "Security screening system" means a screening system that intentionally exposes an individual to ionizing radiation for the purpose of detecting contraband hidden in an incarcerated individual's body or under clothing. Security screening systems must use transmission X-ray and may operate as a general-use or limited-use system.

(18) "Shutter" means the same as in WAC 246-225-010.

(19) "Technique factors" means the X-ray settings, including:

(a) The peak kilovoltage applied to the X-ray tube;

(b) The electric current passing through the X-ray tube; and

(c) The scan time.

(20) "Transmission X-ray" means a security screening system that uses conventional means of radiographic imaging, in which X-rays or gamma rays pass through an incarcerated individual to create shadowgrams of enclosed contraband based on their radiation attenuating properties. For the purposes of this chapter, any transmission X-ray system for which at least one dimension of the scan area is greater than 50 cm is considered a security screening system.

NEW SECTION

WAC 246-230-020 Security screening system requirements. The registrant shall meet the following requirements:

(1) A security screening system must meet the definition of a general-use security screening system unless a variance, as outlined in WAC 246-230-090, is obtained from the department to operate a limited-use security screening system. If a security screening system is capable of functioning as both a general-use security screening system and a limited-use security screening system, the limited-use function must be disabled unless a variance to operate it as a limited-use security screening system has been obtained from the department.

(2) There must be at least one indicator, clearly visible from any location, indicating when a scan is in progress.

(3) Security screening systems must have the following engineering controls in place:

(a) Power to the security screening system must be controlled by a key switch. The key must be captured (unable to remove) whenever it is positioned to allow exposures to be initiated.

(b) A means for the operator to:

(i) Initiate the emission of radiation other than the function of an interlock or the main power control.

(ii) Terminate the emission of radiation other than the function of an interlock.

(c) Radiation emission must automatically terminate after a preset time or exposure.

(d) Technique factors for each mode of operation must be preset by the manufacturer and must not be alterable by the system operator. If a security screening system has more than one mode, prior to each scan, a mode indicator must be clearly visible to the operator.

(e) A warning label must be permanently affixed or inscribed on the security screening system at any location of any controls used to initiate the emission of radiation. The warning label must read "CAUTION: RADIATION PRODUCED WHEN ENERGIZED."

(4) Security screening systems must have safety interlocks in place:

(a) Failure of any single component of the security screening system must not cause failure of more than one safety interlock.

(b) A tool or key must be required to open or remove access panels. Each access panel to a radiation source must have at least one safety interlock to terminate radiation production when opened.

(c) Safety interlocks must terminate the primary beam in the event of any security screening system problem that may result in abnormal or unintended radiation emission. This includes, but is not limited to:

(i) Unintended stoppage of beam motion;

(ii) Abnormal or unintended radiation source output;
(iii) Computer safety system malfunction;
(iv) Termination malfunction; or
(v) Shutter mechanism malfunction.

(d) Resetting a safety interlock, following any interruption of radiation production by the functioning of any safety interlock, must not result in the production of radiation.

(5) Security screening systems must employ shielding requirements so that under maximum operating parameters, the leakage equivalent dose at any point 30 cm from any external surface of the security screening system, outside of the primary beam, must not exceed 2.5 µSv (0.25 mrem) in any one hour.

NEW SECTION

WAC 246-230-030 Operating requirements of security screening system. (1) Each operator of a security screening system shall complete radiation safety training prior to performing any security screening system operations. A training program shall be developed in consultation with a qualified expert and must include, at a minimum:

(a) Radiation safety, including:
(i) Identification of radiation hazards associated with the use of the security screening system;
(ii) Operating and emergency procedures;
(iii) Proper procedures for reporting an actual or suspected overexposure;
(iv) Radiation units;
(v) Risk and biological effects associated with radiation;
(vi) Methods of controlling radiation dose, including:
(A) Time;
(B) Distance; and
(C) Shielding;
(vii) Concept of ALARA;
(b) Preoperational checks;
(c) Routine maintenance;
(d) Procedures to follow if the security screening system is damaged or malfunctions; and
(e) Supervised practical operations in accordance with the manufacturer's operations manual and facility procedures.

(2) Each operator must complete an annual refresher training, fulfilling the requirements of subsection (1) of this section, not to exceed 12 months.

(3) Written operating and emergency procedures must be immediately available to each operator. Written procedures must be consistent with manufacturer standards and include, at a minimum:

(a) Operational procedures to safely use security screening system;
(b) Warnings of potential safety hazards;
(c) Emergency procedures;
(d) Preoperational checks; and
(e) Routine maintenance requirements.

(4) For security screening systems with more than one mode, operating procedures must outline technique factors for each operating mode and appropriate use of each mode.

(5) A security screening system may only be used to screen an incarcerated individual as defined in WAC 246-230-010(7).

(6) Security screening systems must not be used to screen the following:

(a) Minors;

(b) Anyone except for an incarcerated individual as defined in WAC 246-230-010(7);

(c) Incarcerated individuals who are pregnant or suspect they may be pregnant;

(d) Incarcerated individuals who are health compromised as determined by a licensed health care practitioner;

(e) Incarcerated individuals who have met the annual dosage limit established in WAC 246-230-040; or

(f) For medical purposes.

(7) The following requirements apply when screening incarcerated individuals using a security screening system:

(a) The operator must follow operating procedures for use of the security screening system;

(b) The operator must have a clear view of the radiation screening area. This may be direct line-of-sight, mirror view, or real-time video of the radiation screening area;

(c) Controls must be in place to prohibit anyone from entering or reentering the inspection area while radiation is being produced; and

(d) If the operator cannot determine if an incarcerated individual is concealing contraband from the initial screening, additional screening may occur, consistent with a written repeat screening policy developed in consultation with a qualified expert meeting the requirements in WAC 246-230-080(4).

NEW SECTION

WAC 246-230-040 Dose limits. (1) The manufacturer of the security screening system shall ensure that operating parameters are optimized for the best performance at the lowest dose.

(2) The radiation dose delivered to an incarcerated individual must be ALARA while meeting the required detection performance; and

(3) The total effective dose to an incarcerated individual must not exceed 0.25 mSV (25 mrem) in a calendar year from security screening systems.

(4) The area outside the radiation screening zone must not exceed 20 µSv (2 mrem) in any one hour.

NEW SECTION

WAC 246-230-050 Requirements for tracking dosage. (1) The registrant must ensure a system is in place to track the dose of radiation an incarcerated individual receives as a result of security screening. The system must track the dose of radiation an incarcerated individual receives from security screening systems:

(a) Per screening;

(b) Per calendar year; and

(c) In a lifetime.

(2) Dose records must transfer with an incarcerated individual between facilities.

(3) Dose records must be provided to an incarcerated individual upon request.

(4) Dose records must be maintained for the lifetime of each incarcerated individual.

NEW SECTION

WAC 246-230-060 Information to be provided to scanned individuals. Prior to screening, an incarcerated individual must be informed:

(1) That the security screening system emits ionizing radiation and meets all requirements of this chapter; and

(2) Of any available alternative screening options.

NEW SECTION

WAC 246-230-070 Radiation surveys. (1) Radiation surveys must be conducted by a qualified expert to verify:

(a) Dose of radiation per screening and maximum allowable scans per year at stated dosage per screening;

(b) Radiation leakage at the surface, within radiation screening zone, at operator position, and surrounding areas. If the radiation survey conducted by a qualified expert indicates the operators could receive 10 percent of the occupational worker's annual dose limit of 5 rem, a dosimetry badge shall be worn while within the radiation screening zone;

(c) Safety interlocks are functioning properly;

(d) Operation and emergency procedures;

(e) Training program and training log; and

(f) Any other parameters specified by the manufacturer.

(2) Radiation surveys must be completed:

(a) Prior to first use or upon replacement of security screening system;

(b) Every 10 to 14 months;

(c) Within 30 days following any maintenance that affects:

(i) Radiation shielding;

(ii) Shutter mechanism;

(iii) Radiation production components; or

(d) Within 30 days following any alteration or incident that may have damaged the system in a way that unintended radiation emission occurs.

(3) A qualified expert will provide a summary of each radiation survey to the registrant, outlining results and recommendations for corrections. Corrections must be made within 30 days of receiving the recommendations.

NEW SECTION

WAC 246-230-080 Records. The following records must be maintained on-site and made available to the department as outlined:

(1) Training records for each operator must be maintained for five years. Training records must document:

(a) Operator's name;

(b) Date of training; and

(c) Training curriculum provided.

(2) Radiation surveys conducted by a qualified expert must be maintained for five years. The following information must be documented:

(a) Security screening system make, model, serial number, and facility location;

(b) Name of qualified expert who completed the survey;

(c) Survey date;

(d) Make, model, serial number, and calibration dates of instrumentation used to conduct the survey;

(e) Results of the visual inspection of the security screening system safety interlocks;

(f) Background measurements;

(g) Radiation survey measurements;

(h) Survey diagram, including:

(i) Security screening system parameters at which measurements were made; and

(ii) Drawings must be to scale as applicable.

(3) Maintenance logs must be maintained for the life of the security screening system. Logs must document:

(a) Upgrades;

(b) Modifications;

(c) Maintenance or repairs made; and

(d) Replacement.

(4) Repeat screening log must be maintained for five years. Repeat screening log must be completed any time an operator cannot determine if an incarcerated individual is concealing contraband from the initial screening, and additional screening occurs. The following must be documented:

(a) Name of operator conducting the screening;

(b) Name of incarcerated individual screened;

(c) Number of repeated screens performed; and

(d) Justification for conducting the repeat screening.

NEW SECTION

WAC 246-230-090 Variance request. A registrant may submit a written request to the department for a variance from WAC 246-230-020(1). The registrant shall not use a security screening system on incarcerated individuals until the department approves the variance request.

(1) The written request must be addressed to: X-ray Supervisor, Office of Radiation Protection, Department of Health, P.O. Box 47827, Olympia, Washington 98504-7827, and must include:

(a) An explanation of the circumstances involved, and the reason why a limited-use security screening system must be used;

(b) A description of how using a limited-use security screening system meets the intent of the chapter and how the registrant will protect incarcerated individuals and operators;

(c) A description of the limited-use security screening system to be used with supporting pictures or documents; and

(d) The time period for which the variance is requested.

(2) The department may impose conditions that may be necessary to protect human health and safety during the term of the variance.

(3) If necessary, the department may require the registrant to submit additional information.

(4) The department may conduct an on-site variance inspection to verify the information provided, or if it determines that an inspection is necessary.

(5) As determined by the department, variances may be permanent or temporary.

(6) The department may, at any time, revoke a variance if it is determined that the terms and conditions of the variance are not being followed.