

 <p style="text-align: center;">KENTUCKY CORRECTIONS Policies and Procedures</p>	Policy Number	Total Pages
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Authority/References KRS 196.035, 197.020, 197.110, 211.842-852 902 KAR 100:019, 902 KAR 100:165 ANSI/HPS N43.17-2009 (as amended) CPP 9.8, 9.23	Subject RADIATION SAFETY PROGRAM	

I. DEFINITIONS

“Declared pregnant woman” means a woman who has voluntarily informed the Department of Corrections, in writing with a letter signed by a physician or medical provider, of her pregnancy and the estimated date of conception. The declaration remains in effect for ten (10) months after the estimated date of conception or until the declared pregnant woman withdraws the declaration, whichever occurs first.

“Operator” means any staff member associated with the operation of the full-body scanner whose responsibilities include at least one of the following: initiating or stopping the scan, verifying the system is operating correctly, providing information and instructions to the screened individuals, and controlling access to the inspection zone. This does not include other employees, such as individuals who may be remotely viewing the image results but are not directly responsible for other functions.

“Operator training” means the training received in accordance with the manufacturer’s specifications of the WBI device, any Departmental training, and the standards contained in ANSI/HPS N43.17-2009 (as amended).

“Radiation dosimeter” means an instrument for measuring and monitoring exposure to doses of radiation over a period of time.

“Radiation Safety Coordinator” means an individual assigned by the Warden with an established set of duties and responsibilities who is responsible for administering the radiation protection program for the WBI system and institution.

“Radiation survey” means a survey required by manufacturer specifications or ANSI/HPS N43.17-2009 (as amended).

“Supervisor” means the staff supervising daily operation of the WBI device who can perform all functions of the operator level and who is authorized to accomplish password-protected functions as determined by the Warden and as specified by the manufacturer’s manuals and procedures.

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“Whole Body Imaging” or “WBI” means a low dose, non-medical, ionizing radiation system used to body scan inmates, staff, and all visitors to produce an x-ray image of the entire body to detect and prevent the possession and introduction of contraband.

“X-ray property screening system” means a device used for non-medical screening, non-human materials (i.e. personal belongings, mail, packages), to detect and deter contraband.

II. POLICY and PROCEDURE

A. Radiation Safety Program

1. The use of Whole Body Imaging on staff, visitors, and inmates or an X-ray property screening system shall be used to mitigate the introduction, possession, and use of weapons and other contraband within Department of Corrections (DOC) institutions to protect institutional security, staff, visitors, and inmates.
2. The Radiation Safety Coordinator shall ensure the WBI device and X-ray property screening system is registered and complies with any applicable Federal, state, and local regulations.
3. The institution shall adhere to the requirements of 902 KAR 100:165 concerning notices, reports, and instructions to staff.

B. Radiation Dose Limitations

1. The radiation dose delivered to a human subject should be as low as reasonably achievable, while meeting the desired detection performance.
2. The radiation dose delivered to the operator of a WBI device should not exceed an annual effective dose of 1 millisievert (1 mSv).
3. Subjects being scanned shall not exceed an annual effective dose of 250 micro sieverts (250 μ Sv).
4. An inspection zone shall be established around the WBI device where bystanders are prohibited while the device is in use. Radiation doses outside this inspection zone should not exceed 2 micro-rem in any one (1) hour.
5. A declared pregnant woman shall be screened. The radiation dose delivered to a declared pregnant woman shall not exceed an accumulated effective dose of 125 micro sieverts (125 μ Sv) during the pregnancy. A staff member choosing to declare pregnancy shall be issued an individual fetal dosimeter that shall be worn at the waist.

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6. Individuals with a non-pregnancy medical condition that may receive adverse effects from WBI screening shall not be screened. Any individual with such status shall inform institutional staff prior to being screened and provide written medical documentation.
7. Scanning of children under the age of eighteen (18) shall only be completed on the lowest setting, single view.

C. Scheduled Maintenance

The Radiation Safety Coordinator shall supervise necessary device maintenance and repairs according to manufacturer specifications. Maintenance and radiation surveys shall be performed only by qualified individuals, preferably the manufacturer's representatives. The Maintenance Branch Supervisor or designee shall document and maintain all maintenance and repairs performed on the device.

D. Radiation Survey

1. The Radiation Safety Coordinator shall supervise the completion of all radiation surveys.
2. Radiation survey results shall include, at a minimum, subject dose, radiation leakage, inspection zone, and any other parameter required by the manufacturer.
3. Radiation surveys shall be performed at the following:
 - a. Upon installation;
 - b. At least once every twelve (12) months;
 - c. After any maintenance that affects the radiation shielding or X-ray production components;
 - d. After any incident that may have damaged the system in such a way that radiation leakage may occur; and
 - e. As required by the manufacturer.

E. Radiation Dosimeter

A radiation dosimeter shall be provided for WBI devices. The dosimeter shall be inspected quarterly. The Radiation Safety Coordinator accountable for WBI equipment shall schedule quarterly dosimeter inspections. Radiation dosimeter inspection results shall be made available to staff operating the WBI machines or X-ray property screening system upon request.

F. Training

1. The Radiation Safety Coordinator, in collaboration with the DOC Division

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of Corrections Training, shall ensure staff operating the WBI system and X-ray property screening system are trained to use the device in accordance with the manufacturer's specifications. Staff shall be expected to comply with the training requirements outlined in ANSI/HPS N43.17-2009 (as amended).

2. At a minimum, training shall include:
 - a. Radiation safety training, including:
 - (1) Types of radiation;
 - (2) Sources of magnitude of common exposures;
 - (3) Units of measurement; and
 - (4) Time, distance, and shielding;
 - b. Basic risk communication concepts;
 - c. Biological effects of radiation and radiation risks;
 - d. Pre-operational checks;
 - e. Subject positioning;
 - f. Image interpretation;
 - g. Threat and contraband recognition;
 - h. Operating and emergency procedures including response to warnings, malfunctions, or damage;
 - i. Safety hazards (e.g., unauthorized disassembly of the system);
 - j. Physical security procedures to prevent unauthorized use or access;
 - k. Operator awareness and control of inspection zones;
 - l. Maintenance;
 - m. Familiarity with the information being provided to the inmate;
 - n. Concept of As Low As Reasonably Achievable (ALARA);
 - o. Supervised practical operations;
 - p. Requests for medical accommodations and scan exclusion; and
 - q. Administrator training.
3. All employees who work around the WBI system or will be scanned by the system repetitively as a condition of employment shall be provided with the following training during new employee orientation:
 - a. Basic radiation awareness training;
 - b. Safety rules pertaining to radiation and other hazards; and
 - c. Promptly reporting any condition which may lead to the violation of this policy or any unnecessary exposure to radiation.
4. Refresher training shall be provided annually as a part of in-service training.
5. Periodic updates shall be provided if the WBI system or relevant threats change.
6. Operator training records, including the confidentiality acknowledgement

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form, shall be maintained by the institution and according to the Division of Corrections Training requirements.

7. Training records shall include at a minimum an outline of the training, an acknowledgement of understanding of the Radiation Safety Program, and attendance sheet with date and signatures of attendees.

G. Required Signage

1. Signs shall be conspicuously posted indicating that all members of the public shall stand behind designated locations during the scanning process.
2. The Radiation Safety Coordinator shall ensure the Cabinet for Health and Family Services form KR-441, Notice to Employees, and 902 KAR 100:019 and 100:165 are conspicuously posted with each machine within the institution.
3. The institution shall post conspicuous signage indicating where individuals shall stand in areas adjacent to WBI usage (signs indicating that subjects shall not proceed beyond “this point” while scanners are in use).
4. A sign shall be posted in an area visible to an individual immediately prior to being screened that compares the dose of a commonly known source of radiation to the dose to be delivered.
5. A sign shall be posted that advises pregnant and potentially pregnant females that they shall not be screened by a WBI and that they shall follow CPP 9.23, Whole Body Imaging.
6. Signs required by subsections 2–5 of this section shall be in English and Spanish.

H. Documentation

1. The Warden shall determine who shall retrieve and maintain all records concerning the Radiation Safety Program. The Radiation Safety Coordinator shall ensure that all required forms and notices are completed and forwarded to appropriate staff designated for recordkeeping. DOC staff shall be expected to comply with recordkeeping requirements outlined in ANSI/HPS N43.17-2009 (as amended), and the records retention schedule.
2. The Radiation Safety Coordinator or designee shall collect and maintain the records to show the dose limits outlined above are being met and the number of scans routinely conducted on staff and inmates does not exceed the ANSI Standard.

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3. The institutional Training Coordinator shall ensure each operator's training records are current and maintained, including sufficient information to show compliance with the training requirements in this policy.
4. The institutional Maintenance Supervisor or designee shall maintain any records of radiation surveys, upgrades, modifications, maintenance, and repair records for the life of the system.
5. Operator manuals shall be maintained with WBI devices and X-ray property screening systems.

Inmate Information Sheet on Whole Body Imaging Devices

Background:

The possession and use of weapons and other contraband by inmates seriously jeopardizes the overall safety and security of our institutions for both staff and inmates. The Whole Body Imaging System Program is being introduced to complement already existing procedures for contraband detection that include metal detectors, X-ray machines, alcohol and drug detection devices, etc. In some cases, inmates must submit to the Whole Body Imaging System as a requirement for working in certain areas.

Safety and Privacy:

The FDA has approved the use of these devices including those screening systems that use low-dose backscatter and transmission ionizing radiation technology. All these technologies have been proven to be safe and effective for screening members of the general public as well as safe for both operators and those in the vicinity of the operating device. People are exposed to ionizing radiation every day, much of it naturally occurring in the environment.

The same type of radiation is found in our food supplies and in many consumer products such as smoke detectors. Everyone who flies in an airplane receives ionizing radiation. For comparison, 50 scans from a typical whole body imaging device that uses ionizing radiation is the equivalent to about 2 hours of air travel at 39,000 ft.

How it works:

Inmates shall stand in front of the device with their legs spread slightly and arms extended away from their sides while the scan is taken, this takes approximately 8 seconds to process. The number of scans required at one screening is based on the technology deployed. Should the subject move during the scan, the scan will be repeated. For whole body imaging devices using ionizing radiation, several federal guidelines/standards such as ANSI Standard ANSI/HPS N43.17-2009 (as amended), NCRP Commentary No.16, and ISCORS Technical Report 2008-1 dated July 2008 all provide additional guidance.