

## **Radiation Safety Practices for Non-medical Devices<sup>1</sup>**

1. Individuals under the age of 18 years are restricted to an occupational dose of 500 millirem per year.
2. Personnel monitoring devices shall be issued to any individual who is likely to receive more than 10% of the maximum permissible occupational dose per calendar quarter set forth in 12VAC5-481-640 A.
3. When protective shielding or devices are worn on portions of the body and a personnel monitoring device is required, at least one such monitoring device shall be utilized as follows:
  - a. When an apron is worn and only one personnel monitoring device is in use, the device shall be worn at the collar outside the apron.
  - b. The dose to the whole body or the maximum dose attributed to the most critical organ shall be recorded. If more than one device is used, each dose shall be recorded and identified with the area where the device was worn on the body.
  - c. The position on the body at which a particular personnel monitoring device is worn and used should not be changed during any calendar quarter.
  - d. Personnel monitoring devices should not be deceptively exposed to alter the reported dose delivered to an individual.
  - e. If the personnel monitoring device is lost or damaged, the worker shall cease work immediately until a replacement personnel monitoring device meeting the requirements of 12VAC5-481-1350 A is provided and the exposure is calculated for the time period from issuance to loss or damage of the personnel monitoring device. The results of the calculated exposure and the time period for which the personnel monitoring device was lost or damaged must be included in the records maintained in accordance with 12VAC5-481-1490.
  - f. Control badges provided with personnel monitoring devices are intended to determine background radiation exposure and should be kept as far apart from the x-ray unit(s) as possible. No control badge should be placed in an exam room.
4. Adhere to all recommended operating procedures provided by the manufacturer of the radiation producing equipment. A physical or digital copy of the operating procedures should be available for review by operators and made available to x-ray inspectors.
5. No physical or mechanical conditions or alterations shall be made to the x-ray unit that would make the unit unsafe to operate.
6. No unsafe acts should be committed while the x-ray unit is in operation. This includes, but is not limited to defeating safety interlocks, exposing any part of the body to the x-ray beam, or covering x-ray unit lights or warning signs.
7. Stop the operation of the x-ray unit if accidents or unsafe events occur and immediately notify the x-ray unit owner or designee of unsafe conditions or events.
8. Operators of a non-medical x-ray unit must complete the following:
  - a. Receive training, authorized by the x-ray unit owner or designee, on the safe operation of the x-ray unit for which they will operate.
  - b. Demonstrate their competence in the operation of the x-ray unit and understanding of safe operational procedures to the x-ray unit owner or designee.
  - c. Read and understand all applicable regulations contained within 12VAC5-481 corresponding to the non-medical x-ray unit for which they will operate.
  - d. Acknowledge that operators of an x-ray unit are responsible for carrying out their work in a safe manner to ensure the protection of themselves and others.

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## Revision History

Date	Summary of Changes
12/4/2020	Original document posted to Virginia Regulatory Town Hall.
7/5/2023	Document reviewed and amended. Minor edits to improve grammar and clarity.

## Contact

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<sup>i</sup> This guidance document is intended to emphasize select radiation safety practices that should be displayed for x-ray operators to view. Operators and owners of x-ray units are required to adhere to all regulatory requirements contained within the Virginia Radiation Protection Regulations (12VAC5-481). Page one of this document satisfies the posting requirement pursuant to 12VAC5-481-1591.