

X-Ray Refresher Training

Pennsylvania Code Title 25 §221.11 (b) (Registrant responsibilities) states that an individual who operates an X-ray system shall be instructed adequately in the safe operating procedures and be competent in the safe use of the equipment. The instructions shall include items included in Appendix A (relating to determination of competence) and there shall be continuing education in radiation safety, biological effects of radiation, quality assurance, and quality control. The intent of the regulation is to promote awareness of the importance of continuing education and ensure operators performing X-ray medical procedures do so safely. The list of topics in Appendix A is as follows:

- | | |
|--|--------------------------------------|
| (1) Basic Properties of Radiation | (7) Imaging Recording and Processing |
| (2) Units of Measurement | (8) Patient Exposure and Positioning |
| (3) Sources of Radiation Exposure | (9) Procedures |
| (4) Methods of Radiation Protection | (10) Quality Assurance Program |
| (5) Biological Effects of Radiation Exposure | (11) Regulations |
| (6) X-ray Equipment | |

Training and Continuing Education Requirements

The Pennsylvania Department of Environmental Protection (DEP) regulations require an individual to be trained and competent in the general operation of the X-ray equipment in the above-listed subject areas and, as applicable, to the procedures performed and the specific equipment utilized as noted in § 221.16. The individual should also have routine continuing education in these subject areas.

The operator or the individual who supervises the operation of a high-risk procedure, that is, a procedure that could likely exceed skin doses of 200 rad (2.0 Gy), shall have additional instruction, including certification or registration in the applicable specialty by a professional organization recognized by DEP. Continuing education for high-risk procedures shall occur, at a minimum, every two years.

Continuing education for all other (low-risk) procedures shall occur, at a minimum, every four years. Documentation demonstrating compliance with continuing education shall be maintained for inspection by DEP.

Why is Training so Important?

According to the National Council on Radiation Protection and Measurements (NCRP) Report No. 134, *Operational Radiation Safety Training*, there are at least four important reasons for conducting such training:

- **First**, the development of worker skills through training enables the individual to perform tasks efficiently and with confidence;
- **Second**, when individuals are aware that there is some risk associated with the exposure (both to themselves and their patients), they can become active participants in the decision to accept and, where possible, reduce such risk;
- **Third**, the number and seriousness of accidents can be reduced through training; and
- **Fourth**, workers who are properly trained will be aware of the regulatory requirements associated with their activities that involve radiation exposure.

Based on these reasons and the regulatory requirements, generic materials for training for individuals who operate X-ray equipment have been developed for DEP by a Bloomsburg University professor of health physics to assist registrants in ensuring the requirements of the article are met in the operation of X-ray systems. This refresher training program is made available to X-ray equipment operators on DEP's website at www.dep.pa.gov (search term: "Refresher Training").

Note:

DEP does not solicit for any particular training resource but does ensure through facility record inspections that the course meets the requirements of the regulation and individuals are qualified to operate X-ray equipment.

For more information, visit www.dep.pa.gov.