

4731.6160 TRAINING.

Subpart 1. **Required instruction.** Before an individual is permitted to operate an irradiator without a supervisor present, the individual must be instructed in:

- A. the fundamentals of radiation protection applied to irradiators, including:
 - (1) the differences between external radiation and radioactive contamination;
 - (2) units of radiation dose;
 - (3) dose limits under this chapter;
 - (4) why large radiation doses must be avoided;
 - (5) how shielding and access controls prevent large doses;
 - (6) how an irradiator is designed to prevent contamination;
 - (7) the proper use of survey meters and personnel dosimeters;
 - (8) other radiation safety features of an irradiator; and
 - (9) the basic function of the irradiator;
- B. the requirements of parts 4731.1000 to 4731.1090 and 4731.6000 to 4731.6270 that are relevant to the irradiator;
- C. the operation of the irradiator;
- D. those operating and emergency procedures under part 4731.6170 that the individual is responsible for performing; and
- E. case histories of accidents or problems involving irradiators.

Subp. 2. **Required qualifications.** Before an individual is permitted to operate an irradiator without a supervisor present, the individual must:

- A. pass a written test on the instruction received consisting primarily of questions based on the licensee's operating and emergency procedures that the individual is responsible for performing and other operations necessary to safely operate the irradiator without supervision;
- B. have received on-the-job training or simulator training in the use of the irradiator as described in the license application; and
- C. demonstrate the ability to perform those portions of the operating and emergency procedures that the individual is to perform.

Subp. 3. **Safety reviews.** A licensee must conduct safety reviews for irradiator operators at least annually. The licensee must give each operator a brief written test on the information. Each safety review must include, to the extent appropriate:

- A. changes in operating and emergency procedures since the last review, if any;
- B. changes in rules and license conditions since the last review, if any;
- C. reports on recent accidents, mistakes, or problems that have occurred at irradiators, if any;
- D. relevant results of inspections of operator safety performance;
- E. relevant results of the facility's inspection and maintenance checks; and
- F. a drill to practice an emergency or abnormal event procedure.

Subp. 4. **Safety performance.** A licensee must evaluate the safety performance of each irradiator operator at least annually to ensure that rules, license conditions, and operating and emergency procedures are followed. The licensee must discuss the results of the evaluation with the operator and must instruct the operator on how to correct any mistakes or deficiencies observed.

Subp. 5. **Individuals with access.** Individuals who will be permitted unescorted access to the radiation room of an irradiator or the area around the pool of an underwater irradiator, but who have not received the training required for operators or radiation safety officers, must be instructed and tested in any precautions they should take to avoid radiation exposure, any procedures or parts of procedures under part 4731.6170 that they are expected to perform or comply with, and their proper response to alarms required under parts 4731.6000 to 4731.6270. Tests may be oral.

Subp. 6. **Response training.** Individuals who must be prepared to respond to alarms required under parts 4731.6060, subparts 1, item B, and 2, item D; 4731.6080; 4731.6090; and 4731.6200, subpart 2, must be trained and tested on how to respond. Each individual must be retested at least once a year. Tests may be oral.

Statutory Authority: *MS s 144.1202; 144.1203*

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