



Facts About...

February 2012

Weighting Factor Policy Requirements for the Use of the Alternative Effective Dose Methodologies

TO: All State Licensed Private Inspectors and Hospitals
FROM: Roland G. Fletcher, Manager IV, Radiological Health Program

Effective January 1, 2012, this memo supersedes the memo dated April 5, 2001 entitled "Guidelines for Evaluating ALARA Programs for Use of Alternative Effective Dose Methodologies."

The following procedures are to be followed by interventional radiology, cardiac catheterization, vascular surgery, electrophysiology, and pain management facilities deciding to use a weighting factor instead of the existing 1.0 factor when calculating the whole body effective dose equivalent for occupational workers. The following sets forth alternative methodologies for calculating the effective dose equivalents.

1. For an individual monitoring device (badge) worn at the collar, the weighting factor shall be 0.3; or
2. For individual monitoring devices worn under the protective apron at the waist and outside the protective apron at the neck, the effective dose equivalent for external radiation shall be the value of the sum of the deep dose equivalent reported by the individual monitoring device located at the waist under the apron multiplied by 1.5 and the deep dose equivalent reported for the individual monitoring device located at the neck outside the protective apron multiplied by 0.04.

Compliance with these procedures provides a registrant with continuing automatic approval for such usage. When an individual's external (collar) badge exceeds 25% (1.25 REM) of the 5 REM annual limit, a facility can automatically apply one of the alternative methodologies for calculating the effective dose equivalents.

However, once an individual's effective dose equivalent has reached 80 percent (4 REM) of the annual effective dose equivalent limit, the registrant will notify the Department, provide the information listed below and continue to apply the alternative methodology for calculating the effective dose equivalent. The Department will inform the facility within two weeks of receipt of the documentation whether the information submitted by the registrant is deficient and, therefore, does not support continued approval for use of the weighting factor. In the event of such notification, the registrant shall immediately cease use of the weighting factor and continue to do so until the deficiencies are corrected. If the registrant is not notified that the information submitted is deficient within that two week period, the individual can continue to utilize the alternative methodology for calculating the effective dose equivalent for the remainder of the calendar year or until the 5 REM effective dose annual limit is met, whichever occurs earlier.

In order not to be found deficient, the registrant must submit to the Department the following:

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410-537-3000 | 800-633-6101 | TTY Users: 800-735-2258

Martin O'Malley, *Governor* | Anthony G. Brown, *Lt. Governor* | Robert M. Summers, Ph.D., *Secretary*



1. A copy of the two most recent Radiation Safety Committee Meeting minutes that discuss issues identified in radiation safety involving occupational workers and the practice of achieving the “as low as reasonably achievable (ALARA)” principle and corrective actions taken for issues identified. The meeting notes need to be detailed in regard to the film badge program, which can be satisfied by including the following information:

- A. Individuals are wearing their badges correctly.
- B. Badges are being returned on time and handed out promptly at least 90% of the time.
- C. Badges are being worn by everyone before the start of a procedure at least 90% of the time.
- D. Appropriate radiation protective tools, lead or lead equivalent protection are being utilized.
- E. For any individual who reached or exceeded 80% of the effective annual dose limit, the badge information is being reviewed to detect any anomalies in the film badge pattern of use, such as if the individual had a zero or very low reading if a fluoroscopic machine was utilized and a high number of fluoroscopic minutes identified. The badge readings are to be expedited so the registrant can effectively monitor the readings to ensure that the occupational worker does not exceed the annual dose limit.

2. A notification to the Department of the next Radiation Safety Committee Meeting so Radiological Health Program representative(s) may attend to observe that safety is a priority.