REGULATORY ANALYSIS

REVISION 1 OF REGULATORY GUIDE 8.4, "PERSONNEL MONITORING DEVICE—DIRECT-READING POCKET DOSIMETERS."

(Draft was issued as DG-8036, dated April 2010)

Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) first issued Regulatory Guide 8.4, "Personnel Monitoring Device—Direct-Reading Pocket Dosimeters," in February 1973 to provide guidance for direct-reading and indirect-reading pocket dosimeters and to endorse American National Standards Institute (ANSI) N13.5-1972, "Performance Specifications for Direct Reading and Indirect Reading Pocket Dosimeters for X- and Gamma Radiation." ANSI considers this standard withdrawn. ANSI developed ANSI N322-1977, "American National Standard Inspection and Test Specifications for Direct and Indirect Reading Quartz Fiber Pocket Dosimeters," which was updated in 1997 as ANSI N322-1997, "Inspection, Test, Construction, and Performance Requirements for Direct Reading Electrostatic/Electroscope Type Dosimeters." Portions of these ANSI standards provide related guidance for direct-reading dosimeters; the staff endorses those recommendations as described in Section C of the draft revision to Regulatory Guide 8.4.

Also, since the February 1973 issuance of Regulatory Guide 8.4, the applicable NRC regulations (Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20, "Standards for Protection against Radiation," and 10 CFR Part 34, "Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations") have been amended. The draft revision to Regulatory Guide 8.4 conforms its regulatory citations to the current regulations. In addition, in August 1998, the NRC staff issued NUREG-1556, "Consolidated Guidance about Materials Licenses," Volume 2, "Program-Specific Guidance about Industrial Radiography Licenses," which includes information on the description and function of the pocket dosimeters and is referenced in this draft revision.

Objective

The objective of this regulatory action is to provide current guidance for the use of pocket dosimeters for personnel monitoring.

Alternative Approaches

The NRC staff considered the following alternative approaches:

Do not revise Regulatory Guide 8.4.
Revise Regulatory Guide 8.4.

Alternative 1: Do Not Revise Regulatory Guide 8.4

Under this alternative, the NRC would not revise the guidance, and the current guidance would be retained. This alternative is considered the baseline or "no-action" alternative and, as such, involves no value/impact considerations. However, this alternative would not address the current citations to the latest revisions of 10 CFR Part 20 and 10 CFR Part 34 and the guidance in NUREG-1556, Volume 2, and the outdated ANSI N13.5-1972.

Alternative 2: Revise Regulatory Guide 8.4

Under this alternative, the NRC would revise Regulatory Guide 8.4, taking into consideration current regulations, guidance, and practices.

One benefit of this action is that it would reflect current NRC requirements and would enhance the personnel monitoring program. The impact to the NRC would be the one-time cost associated with preparing and issuing the revised guide (which is expected to be relatively small), and licensees would incur little or no cost.

Conclusion

Based on this regulatory analysis, the staff recommends revision of Regulatory Guide 8.4. The staff concludes that revision of the current Regulatory Guide 8.4 will enhance good monitoring practices and reflect current citations to NRC regulations and other available guidance, such as NUREG-1556, Volume 2, and the applicable sections of ANSI N322-1977 and ANSI N322-1997.