REGULATORY ANALYSIS

DRAFT REGULATORY GUIDE (DG-8030)
"INSTRUCTIONS FOR RECORDING AND REPORTING OCCUPATIONAL RADIATION DOSE DATA"

(Proposed Revision 3 of Regulatory Guide 8.7, dated November 2005)

1. Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) is considering revising Regulatory Guide (RG) 8.7, "Instructions for Recording and Reporting Occupational Radiation Dose Data," to describe methods and procedures that the staff at NRC considers acceptable for the preparation, retention, and reporting of records of occupational radiation doses. In addition, it includes versions of NRC Form 4, "Cumulative Occupational Dose History," and NRC Form 5 "Occupational Dose Record for a Monitoring Period," as well as detailed instructions for completing these forms. It applies to both reactor and materials NRC and Agreement State licensees under Title 10 of the *Code of Federal Regulations* (10 CFR) part 20, "Standards for Protection Against Radiation."

On December 4, 2007, the NRC published a *Federal Register* notice (72 FR 68043) that made changes to the definition of total effective dose equivalent (TEDE) in 10 CFR parts 20 and 50, and in 10 CFR Part 19.13 regarding notifications and reports to individuals. Therefore, RG 8.7 has been updated to provide guidance based on the revised regulations and changes made to the NRC Form 4 and NRC Form 5, as well as detailed instructions for completing these forms. Therefore, RG 8.7 has been updated to provide guidance based on the revised regulations as stated below:

- A revision to 10 CFR 19.13(b) that requires licensees to provide an annual occupational dose report to each individual whose occupational dose exceeds 100 millirem (mrem) (1 mSv) TEDE or committed dose equivalent (CDE) and to each individual requesting their annual dose report.

- A revision to the TEDE definition in 10 CFR 20.1003 and 10 CFR 50.2, that replaced the deep dose equivalent (DDE) with the effective dose equivalent (for external exposures) to determine TEDE values.

- Removal of the requirement in 10 CFR 20.2104(a)(2) for licensees to attempt to obtain the records of cumulative occupational radiation dose for all workers, except for those workers involved in a planned special exposure.

The changes in these regulations that became effective on January 3, 2008, the TEDE was redefined as the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (CEDE) (for internal exposures). Although 10 CFR 20.1003 does not contain an acronym for the effective dose equivalent (for external exposures), the acronym EDEX is used to denote this term.

The revised TEDE definition also impacted the content of NRC Forms 4 and 5 in that the EDEX is now a quantity to be recorded when monitoring external dose. Therefore, the proposed revision provides the updated Form 4 and Form 5 to incorporate the EDEX quantity, and to provide instructions on the summation of the EDEX and CEDE to determine the TEDE. Also, the term "total organ dose equivalent" (TODE) has also been added in the forms to denote the sum of the DDE and the CDE to the organ receiving the highest dose, to be consistent with the regulations described in 10 CFR 20.2106(a)(6) although this regulation does not include the acronym TODE for "total organ dose equivalent."

2. Objective

The objective of this regulatory action is to provide guidance related to the recording and reporting to NRC occupational doses as required under 10 CFR part 19 and 10 CFR part 20.

3. Alternative Approaches

The NRC staff considered the following alternative approaches:

1. Not to revise RG 8.7.

2. Revise RG 8.7.

Alternative 1: Not to revise Regulatory Guide 8.7

Under this alternative, the NRC would not issue additional guidance. If the NRC does not take action, there would be a cost associated with using the new approved forms without NRC guidance. Additional costs will be accumulated by submitting incorrect data to NRC. In addition, some licensees would continue to modify outdated Forms 4 and 5 and submitting them without relief from regulatory guidance.

Alternative 2: Revise Regulatory Guide 8.7

Under this alternative, the NRC would revise RG 8.7 and initiate the use of the revised Forms 4 and 5 when this guide will be issued. The licensee, in turn, would follow the revised guide and the forms at the same time affording a streamlined approach to modify existing databases and providing consistent direction.

4. Comparison of Alternatives

For Alternative 1, the benefit would be that no agency resources would be committed to revising the RG. Licensees would continue to use guidance with which many licensees are already familiar but is technically non compatible to existing regulations. Also, they would not incur any costs needed to revise their methods of implementing the guidance. However, RG 8.7 would not reflect the updated regulatory interpretation by the NRC staff on meeting the reporting requirements of 10 CFR part 19 and 10 CFR part 20 for licensee operations as currently promulgated. This would result in additional interactions and submittals by licensees and could lead to continued increased costs to licensees.

For Alternative 2, revising the guide could be done at very modest cost and will provide clarification regarding ongoing interpretations of NRC regulations. Thus revising RG 8.7, the content of future reporting by licensees would be consistent with existing regulations.

5. Conclusion

Based on this regulatory analysis, the NRC staff concludes that revision of RG 8.7 is warranted. The proposed action will enhance the licensee's understanding of the NRC's expectations for adequate and consistent recording and reporting requirements for occupational radiation doses. It could also lead to cost savings for the industry, especially with regard to reducing manpower, and reducing the potential need for licensees to make multiple submittals to achieve and maintain NRC's requirements.