



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON NUCLEAR WASTE AND MATERIALS  
WASHINGTON, D.C. 20555-0001

ACNWMR-0274

November 27, 2007

The Honorable Dale E. Klein  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUBJECT: REVIEW OF DRAFT REGULATORY GUIDE 4012

Dear Chairman Klein:

In SRM-M060111B, dated February 9, 2006, the Commission directed the Advisory Committee on Nuclear Waste and Materials (the Committee) to look for ways to improve design and operations to enable less costly and more environmentally friendly decommissioning. At its 179<sup>th</sup> meeting, the Committee heard a presentation from the NRC staff on Draft Regulatory Guide 4012 (DG-4012), "Minimization of Contamination and Radioactive Waste Generation in Support of Decommissioning." The Committee wrote a letter<sup>1</sup> to the Commission dated June 28, 2007, providing observations and recommendations on DG-4012.

The Executive Director for Operations (EDO) wrote an August 7, 2007, response<sup>2</sup> to the Committee explaining the revisions to DG-4012 made by the staff to address the Committee's recommendations. The staff issued DG-4012<sup>3</sup> for public comment on August 21, 2007. The Committee has reviewed both the letter from the EDO and DG-4012 issued for public comment.

The Committee continues to commend the staff for its efforts in using decommissioning lessons learned and for developing timely guidance to address new nuclear reactor applications. After reviewing the latest version of DG-4012, the Committee has the following observations and recommendations.

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<sup>1</sup> Letter Report, Michael T. Ryan, Advisory Committee on Nuclear Waste and Materials, to Dale E. Klein, Chairman, U.S. Nuclear Regulatory Commission, "Working Group Meeting on 10 CFR 20.1406, Minimization of Contamination, and Draft Regulatory Guide 4012," June 28, 2007.

<sup>2</sup> Letter, Luis A. Reyes, U.S. Nuclear Regulatory Commission, to Michael T. Ryan, Advisory Committee on Nuclear Waste and Materials, "Working Group Recommendations on Draft Regulatory Guide 4012 Regarding Implementation of 10 CFR 20.1406, *Minimization of Contamination*," August 7, 2007.

<sup>3</sup> U.S. Nuclear Regulatory Commission, Draft Regulatory Guide DG-4012, "Minimization of Contamination and Radioactive Waste Generation—Life-Cycle Planning," issued for public comment, August 21, 2007 (72 FR 41794).

## OBSERVATIONS

The Committee has the following observations:

- The Committee learned in its June 2007 working group that most of the suggested measures in DG-4012 come from lessons learned in the decommissioning of reactors, and that only a few of these measures would need to be implemented at facilities that handle radioactive materials with simpler activities and processes to meet the intent of Title 10, Section 20.1406, "Minimization of Contamination," of the *Code of Federal Regulations* (10 CFR 20.1406). The Committee recognizes the changes made by the staff in the latest version of DG-4012 which address the Committee's original recommendations but believes they do not provide sufficient guidance to the diverse community of licensees that are required to meet 10 CFR 20.1406, including fuel fabrication facilities, hospitals and universities, smaller materials users of instruments and gauges, uranium conversion facilities, and a wide variety of NRC and Agreement State licensees.
- The Committee notes that the revised DG-4012 continues to apply to reactor and nonreactor licensees.
- The Committee believes that legacy site rulemaking is likely to result in changes to 10 CFR 20.1406, especially for nonreactor licensees.
- The graded approach incorporated in the revised version of DG-4012 informs NRC or Agreement State licensees that they may have a high, moderate, or low likelihood of needing to use some or all of the measures offered in the guidance. This leaves the implementation of the guidance uncertain because the revised DG-4012 does not clearly identify what measures are applicable to each type of radioactive materials licensee (graded approach). The guidance still does not define what a licensee must do to comply with the requirements of 10 CFR 20.1406 (e.g., a performance measure) and does not provide a methodology to determine whether the compliance has been achieved.
- The Committee notes that many licensees are already obligated to comply with 10 CFR 20.1406 because they submitted license applications to the NRC or an Agreement State after August 20, 1997. Therefore, guidance for inspectors for each category of licensee is needed.
- The Committee questions the rationale for the grouping of facilities in Table 1 of DG-4012. For example, the Committee notes that reactors, fuel fabrication plants, enrichment plants, and reprocessing facilities have all been assigned to the highest category despite the fact that these facilities present a wide range of differing decommissioning challenges.

## RECOMMENDATIONS

The Committee makes the following recommendations:

- The staff should revise DG-4012 so that it is applicable only to reactor licensees. The revision should clearly address the applicability of the measures to reactor facilities and provide a discussion and a methodology for measuring compliance of the reactor facility with the requirements of 10 CFR 20.1406.
- The staff should provide additional guidance on complying with 10 CFR 20.1406 for radioactive materials users other than nuclear reactors. This guidance should address implementation of the measures in the guidance using a graded approach that clearly identifies what measures different types of facilities need to take, and provide a methodology for measuring compliance of the facilities with the requirements of 10 CFR 20.1406. The Committee suggests that this guidance could be complementary to the licensing guidance in the series under NUREG-1556, "Consolidated Guidance About Materials Licenses."
- The staff should coordinate with the regulatory programs of the Agreement States in developing appropriate guidance for nonreactor licensees, since the States license the majority of nonreactor facilities.

On October 17, 2007, the NRC staff briefed the Committee on the revisions proposed for 10 CFR 20.1406. The Committee provided recommendations on this proposed rulemaking in a letter to the Commission dated November 20, 2007. This letter should be considered for further revision of DG-4012.

The Committee looks forward to continued interactions with the staff on DG-4012.

Sincerely,

*/RA/*

Michael T. Ryan  
Chairman

**RECOMMENDATIONS**

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*/RA/*

Michael T. Ryan  
Chairman

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