



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

June 17, 2009

Mr. R. W. Borchardt
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: DRAFT FINAL REVISION 2 TO REGULATORY GUIDES 1.21, "MEASURING, EVALUATING AND REPORTING RADIOACTIVE MATERIAL IN LIQUID AND GASEOUS EFFLUENTS AND SOLID WASTE," AND 4.1, "RADIOLOGICAL ENVIRONMENTAL MONITORING FOR NUCLEAR POWER PLANTS"

Dear Mr. Borchardt:

During the 563rd meeting of the Advisory Committee on Reactor Safeguards, June 3-4, 2009, we reviewed the Draft Final Revision 2 of Regulatory Guide 1.21, "Measuring, Evaluating and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste," and Regulatory Guide 4.1, "Radiological Environmental Monitoring for Nuclear Power Plants." Our Radiation Protection and Nuclear Materials Subcommittee also reviewed these Guides during a meeting on May 5, 2009. During these reviews, we had the benefit of discussions with representatives of the NRC staff and the Nuclear Energy Institute. We also had the benefit of the documents referenced.

RECOMMENDATION

1. Revision 2 to Regulatory Guide 1.21 and Regulatory Guide 4.1 should be issued.

BACKGROUND

Regulatory Guide 1.21, Revision 2, describes an acceptable method for measuring, evaluating and reporting radioactivity in effluents and solid radioactive waste shipments. This Guide also provides guidance on determining and reporting the public dose from nuclear power plant (NPP) operations. The draft Regulatory Guide (DG-1186) was issued for public comment on November 4, 2008.

Regulatory Guide 4.1, Revision 2, describes an acceptable method for establishing and conducting baseline environmental monitoring at NPPs. To meet this objective, the Guide describes programs for preoperational and operational environmental monitoring, including both onsite and offsite environmental monitoring. The Guide also describes how information from the environmental monitoring program can be used to document information on residual and background radioactivity that may be useful during decommissioning. The draft Regulatory Guide (DG-4013) was issued for public comment on November 10, 2008.

DISCUSSION

During the May 5, 2009, meeting, our Subcommittee made a number of comments regarding these draft Regulatory Guides, including the following:

- A discussion of the relationship between monitoring and modeling of environmental systems and model validation should be included
- The difference between quantity of radionuclides vs. their risk significance should be clarified
- Appropriate use of the terms “principal radionuclides” and “bounding dose calculations” should be made clear
- Occupational dose assessment and licensee reporting requirements for low-level waste shipments should be clarified
- A discussion of the potential jurisdictional issues with the reporting requirements for States and the Environmental Protection Agency should be included
- A discussion of the inconsistencies noted between historical guidance documents and the proposed revisions to the Regulatory Guides should be included

The staff made changes to these draft Regulatory Guides to address the above comments. During our June meeting, we discussed the adequacy of the changes made by the staff and found them acceptable

We commend the staff for its effective interactions with stakeholders during the development of these Regulatory Guides.

Sincerely,

/RA/

Mario V. Bonaca
Chairman

References:

1. Draft Final Regulatory Guide 1.21, Revision 2, “Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste,” June 2009 (ML091170100)
2. Draft Final Regulatory Guide 4.1, Revision 2, “Radiological Environmental Monitoring for Nuclear Power Plants,” June 2009 (ML091310135)

3. Proposed Revision 2 to Regulatory Guide 1.21 (DG-1186), "Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste," October 2008 (ML080660617)
4. Proposed Revision 2 to Regulatory Guide 4.1 (DG-4013), "Radiological Environmental Monitoring for Nuclear Power Plants," November 2008 (ML080660608)

3. Proposed Revision 2 to Regulatory Guide 1.21 (DG-1186), "Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste," October 2008 (ML080660617)
4. Proposed Revision 2 to Regulatory Guide 4.1 (DG-4013), "Radiological Environmental Monitoring for Nuclear Power Plants," November 2008 (ML080660608)

Distribution:

ACRS Branch A
 ACRS Branch B
 E. Hackett
 H. Nourbakhsh
 J. Flack
 J. Riner
 C. Jaegers
 T. Bloomer
 B. Champ
 A. Bates
 S. McKelvin
 L. Mike
 J. Ridgely
 RidsSECYMailCenter
 RidsEDOMailCenter
 RidsNMSSOD
 RidsNSIROD
 RidsFSMEOD
 RidsRESOD
 RidsOIGMailCenter
 RidsOGCMailCenter
 RidsOCAAMailCenter
 RidsOCAMailCenter
 RidsNRROD
 RidsNROOD
 RidsOPAMail
 RidsRGN1MailCenter
 RidsRGN2MailCenter
 RidsRGN3MailCenter
 RidsRGN4MailCenter

Accession No: ML091560371 **Publicly Available (Y/N):** Y **Sensitive (Y/N):** N
If Sensitive, which category?
Viewing Rights: NRC Users or ACRS only or See restricted distribution

OFFICE	ACRS	SUNSI Review	ACRS	ACRS	ACRS
NAME	N. Coleman	N. Coleman	C. Santos/A. Dias	E. Hackett	E. Hackett for M. Bonaca
DATE	6/16/09	6/16/09	6/16/09	6/17/09	6/17/09

OFFICIAL RECORD COPY