

**OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
RESULTS OF PERIODIC REVIEW OF REGULATORY GUIDES**

*(This review was conducted in May 2018, and reflects the staff's plans as of that date.
These plans are tentative and are subject to change)*

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.52, Revision 2**

Title: **Standard Format and Content for the Health & Safety Sections of License Renewal Applications for Uranium Processing and Fuel Fabrication**

Office/Division/Branch: **NMSS/FCSE/FMB**

Technical Lead: **Nick Baker**

NRC Staff Action Decided: **Reviewed with issues identified for future consideration**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in 2009 and provides guidance on the evaluation and verification of the safety basis for the licensing of special nuclear material (SNM) based on the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 70, "Domestic Licensing of Special Nuclear Material."

This RG endorses the methods and procedures for evaluation and verification of the licensing of SNM detailed in NUREG-1520, "Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility." However, NUREG-1520 (Standard Review Plan) has been updated twice since the last publication of RG 3.52.

As a result, the RG does not include the current methods and procedures for the evaluation and verification of SNM and clarification of the guidance contained in certain sections of the NUREG. This RG should be updated to include the latest guidance developed by the staff.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

The U.S. Nuclear Regulatory Commission (NRC) staff does not expect any renewal application for major SNM licensees under 10 CFR Part 70 within the next 5 years. Therefore, there is no impact for the known issues on internal and external stakeholders.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

An estimate of the effort needed to correct the identified issues is about 0.1 FTE.

- 4. Based on the answers to the questions above, what is the NRC staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Reviewed with issues identified for future consideration.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

There are no plans to update this RG in the near future since the identified issues have no impact on applicants and licensees.

NOTE: This review was conducted in May 2018 and reflects the NRC staff plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.53, Revision 0**

Title: **Applicability of Existing Regulatory Guides to the Design and Operation of an Independent Spent Fuel Storage Installation**

Office/Division/Branch: **NMSS/DSFM/IOB**
Technical Lead: **Haile Lindsay**

Recommended Staff Action: **Withdraw**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in July 1982 and identifies RGs that may be applicable, in whole or in part, to the design and operation of an Independent Spent Fuel Storage Installation (ISFSI) based on the requirements of Title 10 of the *Code of Federal Regulations* Part 72, "Licensing Requirements for the Storage of Spent Fuel in an Independent Spent Fuel Storage Installation."

Since 1982, however, some of these guides have been withdrawn and others revised and new RGs have been developed that may be applicable to RG 3.53.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

The U.S. Nuclear Regulatory Commission (NRC) staff continues to safely license and regulate the design and operation of ISFSIs. The staff maintains appropriate guidance on its website that is available to applicants and staff related to the design and operation of an ISFSI. This RG is simply a list of RGs, which are outdated. However, it does not contain any new or additional guidance. Therefore, the NRC staff believes the impact of withdrawing this RG is insignificant.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contract dollars?

An estimate of the effort needed to withdraw this RG is between 0.1 FTE and 0.2 FTE.

4. Based on the answers to the questions above, what is the recommended staff action for this RG (Revise, Review, Administrative Change, or Withdraw)?

Withdraw.

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

The NRC staff is developing a plan to withdraw this RG.

NOTE: This review was conducted in May 2018 and reflects the NRC staff plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.55, Revision 0**

Title: **Standard Format and Content for the Health and Safety Sections of License Renewal Applications for Uranium Hexafluoride Production**

Office/Division/Branch: **NMSS/FCSE/ECB**
Technical Lead: **Mollie Semmes**

Staff Action Decided: **Reviewed with issues identified for future consideration**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in April 1985, and provides guidance on how to prepare and submit the health and safety sections of renewal applications for uranium hexafluoride processing facilities.

There is currently only one operating facility for which this RG is applicable. The facility has submitted a renewal application in an updated and more informative format than the one used in this RG. This RG should be updated to incorporate the improved format.

Guidance exists in NUREG 1520, "Standard Review Plan for Fuel Cycle Facilities License Applications," and NUREG-1513, "Integrated Safety Analysis Guidance Document," on how to implement the ISA requirements. This guidance should be referenced in the RG.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

There is no impact on internal and external stakeholders or licensing and inspection for the known issues, since the only facility for which this RG is applicable recently submitted a license renewal application in 2017.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

The estimate level of effort needed to address the identified issues is between 0.1 and 0.2 FTE.

4. Based on the answers to the questions above, what is the staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?

Reviewed with issues identified for future consideration.

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

The staff will consider the identified issues at the next periodic review. Also, if another uranium hexafluoride processing facility would apply for a license, then the staff would re-evaluate whether a revision to this RG would be necessary.

NOTE: This review was conducted in May 2018 and reflects the U.S. Nuclear Regulatory Commission staff plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.56, Revision 0**

Title: **General Guidance for Designing, Testing, Operating, And Maintaining Emission Control Devices at Uranium Mills**

Office/Division/Branch: **NMSS/DUWP/URLB**
Technical Lead: **Anthony Huffert**

NRC Staff Action Decided: **Revise**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

RG 3.56 was issued in May 1986. Since 1986, Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20, "Standards for Protection Against Radiation," has been revised and consequently some of the citations to the regulations are incorrect in RG 3.56. Other references in the RG should be updated as well.

This RG does not include the changes in yellowcake low-temperature vacuum dryer technology and more recent uranium milling technologies. Components of air effluent controls on low-temperature vacuum dryers that are not addressed in RG 3.56 include condensers, vacuum pumps, and seal water separators.

In addition, the RG should include a discussion of emission control devices used for more recent uranium mill technologies, such as in-situ recovery, heap leach, and ablation, and an updated reference section.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

This RG has been used by the U.S. Nuclear Regulatory Commission (NRC) and Agreement State regulatory staff and applicants for implementing the requirements of 10 CFR 40, Appendix A, "Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material From Ores Processed Primarily for their Source Material Content," Criterion 8. The RG is referenced in NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications," for evaluating license applications, renewals and amendments.

There is no impact on NRC licensing reviews since the NRC staff does not anticipate any new or renewal applications in the next several years. However, if an application is received for technical review by an Agreement State in the next several years, a potential impact is that a lack of an updated guidance on effluent control systems could result in the expenditure of additional resources by the regulatory agency and the applicant to obtain information needed for the technical review.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contractor resources?

The estimate level of effort needed to address the identified issues is between 0.1 and 0.2 FTE.

4. Based on the answers to the questions above, what is the NRC staff action for this guide (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?

Revise.

5. Provide a conceptual plan and timeframe to address the issues identified during the review.

The conceptual plan is to develop a draft guide for publication by the 4th quarter of Calendar Year 2019, as resources permit, and should be submitted to the Office of Nuclear Regulatory Research for processing by May 2019.

The revision of RG 3.56 will begin after the revisions of RG 8.30, "Health Physics Surveys in Uranium Recovery Facilities," and RG 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills," are initiated.

NOTE: This review was conducted in May 2018 and reflects the NRC staff plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.60, Revision 0**

Title: **Design of an Independent Spent Fuel Storage Installation (Dry Storage)**

Office/Division/Branch: **NMSS/DSFM/SFLB**
Technical Lead: **John McKirgan**

Recommended Staff Action: **Reviewed with issues identified for future consideration**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in 1987 to provide guidance in the design of a dry storage based on requirements of Title 10 of the *Code of Federal Regulations* Part 72, "Licensing Requirements for the Storage of Spent Fuel in an Independent Spent Fuel Storage Installation (ISFSI). The RG establishes a number of regulatory positions with respect to certain sections of the American National Standards Institute/American Nuclear Society (ANS) 57.9, "Design of Spent Fuel Storage Installations."

This RG may benefit from being updated to reference more current standards.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

The staff is not anticipating new licensing actions that would benefit from this RG update. Applications of ISFSIs will be reviewed on a case by case basis. The impact on NRC licensing and inspection activities will be minimal as the expenditure of marginally additional resources by the regulators and the applicants to reference newer standards for the technical reviews.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contract dollars?

The estimate level of effort needed to address the identified issues is between 0.2 and 0.4 FTE.

4. Based on the answers to the questions above, what is the recommended staff action for this RG (Revise, Review, Administrative Change, or Withdraw)?

Reviewed with issues identified for future consideration.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

This RG should be reviewed during the next periodic update.

NOTE: This review was conducted in May 2018 and reflects the NRC staff plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.61, Revision 0**

Title: **Standard Format and Content for a Topical Safety Analysis Report for a Spent Fuel Dry Storage Cask**

Office/Division/Branch: **NMSS/DSFM/IOB**
Technical Lead: **Haile Lindsay**

Recommended Staff Action: **Revise**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in 1989 to provide guidance for a safety analysis report that is included with an application for a license under Title 10 of the *Code of Federal Regulations* Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste."

Significant changes to staff guidance have been made since the publication of the initial RG, including combining NUREG-1536, "Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility — Final Report," and NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities" into a single standard review plan, NUREG-2215, "Standard Review Plan for Spent Fuel Dry Storage Systems and Facilities." Thus, the RG information is inconsistent with current staff expectations for applications for cask certificates of compliance (CoCs) and storage facility licenses.

Information which is not reflected in the initial RG version (Revision 0) includes: 1) the addition to the staff's review guidance of a materials chapter and information regarding storage of non-fuel hardware, 2) the condition of the spent fuel contents, 3) off-site dose evaluations for the radiation protection chapter, 4) off-normal conditions and accident conditions evaluations in the thermal chapter, and 5) off-normal conditions evaluations for the confinement chapter.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

The staff anticipates a number of new amendments to the existing dry cask storage certificates of compliance each year for the next five years and more than a dozen new renewals over that time period.

The staff's has estimated that the guidance in NUREG-2215 will become publicly available within the 4th quarter of Calendar Year 2018. This guidance explains how the staff reviews applications for cask CoCs and storage facility licenses. Holders of, and applicants for, storage facility licenses and storage cask CoCs, could refer to the new NUREG-2215 for the required submitted information.

However, the guidance information for CoCs applications, in the initial RG 3.61 is inconsistent with NUREG-2215. This could cause confusion and lead to incomplete or inadequate CoCs applications, thus affecting licensing activities. This in turn can mean lengthier reviews and increased resource expenditures for the staff and the applicant.

3. What is an estimate of the level of effort needed to address identified issues in terms of full-time equivalent (FTE) and contract dollars?

Approximately 2.0 FTE total will be required to complete the review, update, and combine the RG as described in the response to question five. No contract funding is needed.

4. Based on the answers to the questions above, what is the recommended staff action for this RG (Revise, Review, Administrative Change, or Withdraw)?

Revise.

5. If a RG should be revised, provide a conceptual plan and timeframe to accomplish this.

The staff is planning to combine RG 3.61 with RG 3.48, "Standard Format and Content for the Safety Analysis Report for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Installation (Dry Storage)," and RG 3.62, "Standard Format and Content for the Safety Analysis Report for Onsite Storage of Spent Fuel Storage Casks," and include the updated guidance. The staff will develop a schedule for these actions after finalizing NUREG-2215.

NOTE: This review was conducted in May 2018 and reflects the U.S. Nuclear Regulatory Commission staff plans as of that date. These plans are tentative and are subject to change.

Regulatory Guide Periodic Review

Regulatory Guide Number: **3.62, Revision 0**

Title: **Standard Format and Content for the Safety Analysis Report for Onsite Storage of Spent Fuel Storage Casks**

Office/Division/Branch: **NMSS/DSFM/IOB**
Technical Lead: **Haile Lindsay**

Recommended Staff Action: **Revise**

1. What are the known technical or regulatory issues with the current version of the Regulatory Guide (RG)?

This RG was issued in 1989 to provide guidance for a safety analysis report that is included with an application for a license under Title 10 of the *Code of Federal Regulations* Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste."

Significant changes to staff guidance have been made since the publication of the initial RG, including combining NUREG-1536, "Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility — Final Report," and NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities" into a single standard review plan, NUREG-2215, "Standard Review Plan for Spent Fuel Dry Storage Systems and Facilities." Thus, the RG information is inconsistent with current staff expectations for applications for cask certificates of compliance (CoCs) and storage facility licenses.

Information which is not reflected in the initial RG version (Revision 0) includes: 1) the addition to the staff's review guidance of a materials chapter and information regarding storage of non-fuel hardware, 2) the condition of the spent fuel contents, 3) off-site dose evaluations for the radiation protection chapter, 4) off-normal conditions and accident conditions evaluations in the thermal chapter, and 5) off-normal conditions evaluations for the confinement chapter.

2. What is the impact on internal and external stakeholders of not updating the RG for the known issues, in terms of anticipated numbers of licensing and inspection activities over the next several years?

The staff anticipates several new amendments to existing dry cask storage certificates of compliance each year for the next five years and more than a dozen new renewals over that time period.

The staff's has estimated that the guidance in NUREG-2215 will become publicly available within the 4th quarter of Calendar Year 2018. This guidance explains how the staff reviews applications for cask CoCs and storage facility licenses. Holders of, and applicants for, storage facility licenses and storage cask CoCs, could refer to the new NUREG-2215 for the required submitted information.

However, the guidance information for CoCs applications in the initial RG 3.62 is inconsistent with NUREG-2215. This could cause confusion and lead to incomplete or inadequate CoCs applications, thus affecting licensing activities. This in turn can mean lengthier reviews and increased resource expenditures for the staff and the applicant.

- 3. What is an estimate of the level of effort needed to address the identified issues in terms of full time equivalent (FTE) and contract dollars?**

Approximately 2.0 FTE total will be required to complete the review, update, and combine of the RG as described in the response to question five. No contract funding is needed.

- 4. Based on the answers to the questions above, what is the staff action for this RG (Reviewed with no issues identified, Reviewed with issues identified for future consideration, Revise, or Withdraw)?**

Revise.

- 5. Provide a conceptual plan and timeframe to address the issues identified during the review.**

The staff is planning to combine RG 3.62 with RG 3.48, "Standard Format and Content for the Safety Analysis Report for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Installation (Dry Storage)," and RG 3.61, "Standard Format and Content for a Topical Safety Analysis Report for a Spent Fuel Dry Storage Cask," and include the updated guidance. The staff will develop a schedule for these actions after finalizing NUREG-2215.

NOTE: This review was conducted in May 2018 and reflects the U.S. Nuclear Regulatory Commission staff plans as of that date. These plans are tentative and are subject to change.