

**Regulatory Guide Number: 3.53, Revision 1**

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

**Office/Division/Branch:** **NMSS/DSFM/IOB**

**Technical Lead:** **Haile Lindsay**

**SUBJECT:** **Basis for Withdrawal**

**1. What regulation(s) did the Regulatory Guide support?**

Regulatory Guide (RG) 3.53 was published in July 1982 to describe the applicability of existing regulatory guides that would aid in the design, construction, and operation of an independent spent fuel storage installation (ISFSI) to meet the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High Level Radioactive Waste, and Reactor-Related Greater than Class C Waste."

**2. What was the purpose of the Regulatory Guide?**

The purpose of RG 3.53 was to identify a series of guides applicable to the storage of spent fuel in ISFSIs and the extent of their applicability. The staff issued this guide in 1982 to convey to the public, the industry, and the staff the applicability of existing guidance to licensing applications for the storage of spent fuel in an ISFSI. At the time, there were no precedents for applications for ISFSIs, there was not a consolidated set of guidance, and information technology did not exist to provide guidance electronically for ISFSIs. The staff issued RG 3.53 to expedite the staff's reviews of anticipated applications for ISFSIs.

**3. How was the Regulatory Guide used?**

In 1982 the staff determined that the experience with licensing applications and regulatory guidance applicable to ISFSIs was not comparable to that for nuclear reactors. Therefore, the issuance of this guide was a major step toward identifying the appropriate guidance for the licensing of ISFSIs. At the time the staff expected that applications for spent fuel storage in an ISFSI would be received in increasing numbers, and the guidance provided in RG 3.53 would expedite the NRC staff's evaluation of the applications.

The regulatory guide was also used by applicants to determine which other regulatory guides contained useful information for particular ISFSI applications.

**4. Why is the Regulatory Guide no longer needed?**

RG 3.53 is no longer needed because the staff has established significant licensing precedent since 1982 from significant regulatory experience, including the review of numerous applications for spent fuel storage in an ISFSI. In addition, the current information technology available today makes the numerous RGs in the areas of design, construction, and operation of an ISFSI readily available electronically on the NRC's

public website, and it is therefore easy for applicants to navigate and identify these guides without the need for a resource like RG 3.53. Finally, many of the guidance documents and regulatory positions listed in the RG have been withdrawn or superseded by more current guidance.

In particular, the staff has issued new or revised guidance for ISFSIs in 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),” RG 3.50, “Standard Format and Content for a Specific License Application for An Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Facility,” RG 3.60, “Design of an Independent Spent Fuel 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.” The staff has incorporated many subsequent lessons learned from the ISFSI licensing process in these RGs.

**5. What guidance is available once the Regulatory Guide is withdrawn?**

A variety of RGs provide licensees with acceptable guidance on the design, construction, and operation of an ISFSI and they are readily available electronically. These guides are listed in the Attachment.

In particular, guides such as RG 3.48, RG 3.50, RG 3.60, and RG 3.62 are available and provide guidance appropriate for the reviews of ISFSIs.

**6. Is the Regulatory Guide referenced in other documents and what are the “ripple effects” on these documents if it is withdrawn?**

The staff performed a search of the NRC’s website and in the public domain and did not identify any documents referencing RG 3.53. Therefore, the staff believes that there will be minimal impact if RG 3.53 is withdrawn.

**7. What is the basis for believing that no guidance similar to that in Regulatory Guide will ever be needed?**

Other guidance like the RGs listed in the Attachment are readily available electronically to provide licensees with acceptable guidance on the design, construction, and operation of an ISFSI. In addition, the NRC staff has established licensing precedent from significant regulatory experience, including the review of numerous ISFSI license applications since 1982.

**8. Will generic guidance still be needed?**

Generic guidance for designing, constructing, and operating an ISFSI is still needed, but a separate guidance document that only provides an outdated list of other applicable guidance does not need to be maintained as an RG, since these documents are available in the NRC’s website and it is easy to navigate and find them.

**9. What is the rationale for withdrawing this Regulatory Guide instead of revising it?**

RG 3.53 is being withdrawn because an outdated list of applicable guidance does not need to be maintained as an RG since these documents are readily available electronically on the NRC's website. Therefore, the RG is not necessary.

**10. Do other agencies rely upon the Regulatory Guide, e.g., the Agreement States, National Aeronautical and Space Administration, Department of Energy?**

The staff is unaware of any other agency that uses or relies on the guidance in RG 3.53.

## Attachment

- RG 1.21, “Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants”
- RG 1.22, “Periodic Testing of Protection System Actuation Functions (Safety Guide 22)”
- RG 1.25, “Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors (Safety Guide 25)”
- RG 1.28, “Quality Assurance Program Requirements (Design and Construction)”
- RG 1.29, “Seismic Design Classification”
- RG 1.33, “Quality Assurance Program Requirements (Operation)”
- RG 1.59, “Design Basis Floods for Nuclear Power Plants”
- RG 1.60, “Design Response Spectra for Seismic Design of Nuclear Power Plants”
- RG 1.61, “Damping Values for Seismic Design of Nuclear Power Plants”
- RG 1.69, “Concrete Radiation Shields and Generic Shield Testing for Nuclear Power Plants”
- RG 1.76, “Design Basis Tornado for Nuclear Power Plants”
- RG 1.78, “Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release”
- RG 1.91, “Evaluations of Explosions Postulated To Occur on Transportation Routes Near Nuclear Power Plants”
- RG 1.92, “Combining Modal Responses and Spatial Components in Seismic Response Analysis”
- RG 1.102, “Flood Protection for Nuclear Power Plants”
- RG 1.109, “Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I”
- RG 1.111, “Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors”
- RG 1.113, “Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I”

- RG 1.122, “Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components”
- RG 1.125, “Physical Models for Design and Operation of Hydraulic Structures and Systems for Nuclear Power Plants”
- RG 1.132, “Site Investigations for Foundations of Nuclear Power Plants”
- RG 1.138, “Laboratory Investigations of Soils for Engineering Analysis and Design of Nuclear Power Plants”
- RG 1.140, “Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Normal Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants”
- RG 1.142, “Safety-Related Concrete Structures for Nuclear Power Plants (Other than Reactor Vessels and Containments)”
- RG 1.143, “Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants”
- RG 1.145, “Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants”
- RG 1.166, “Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Postearthquake Actions”
- RG 1.167, “Restart of a Nuclear Power Plant Shut Down by a Seismic Event”
- RG 1.198, “Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites”
- RG 1.199, “Anchoring Components and Structural Supports in Concrete”
- RG 1.208, “A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion”
- RG 1.221, “Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants”
- 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)”
- RG 3.50, “Standard Format and Content for a License Application to Store Spent Fuel and High-Level Radioactive Waste”
- RG 3.60, “Design of an Independent Spent Fuel Storage Installation”

- RG 3.62, “Standard Format and Content for the Safety Analysis Report for Onsite Storage of Spent Fuel Storage Casks”
- RG 3.71, “Nuclear Criticality Safety Standards for Fuels and Material Facilities”
- RG 3.73, “Site Evaluations and Design Earthquake Ground Motion for Dry Cask Independent Spent Fuel Storage and Monitored Retrievable Storage Installations”
- RG 4.1, “Radiological Environmental Monitoring for Nuclear Power Plants”
- RG 4.13, “Performance, Testing, and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications”
- RG 4.15, “Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination)-Effluent Streams and the Environment”
- RG 4.16, “Monitoring and Reporting Radioactive Materials in Liquid and Gaseous Effluents from Nuclear Fuel Cycle Facilities”
- RG 5.14, “Use of Observation (Visual Surveillance) Techniques in Material Access Areas”
- RG 8.4, “Personnel Monitoring Device – Direct Reading Pocket Dosimeters”
- RG 8.8, “Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable”
- RG 8.9, “Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program”
- RG 8.10, “Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable”
- RG 8.25, “Air Sampling in the Workplace”
- RG 8.26, “Applications of Bioassay for Fission and Activation Products”
- RG 8.28, “Audible-Alarm Dosimeters”
- RG 8.34, “Monitoring Criteria and Methods to Calculate Occupational Radiation Doses”
- RG 8.38, Revision 1, “Control of Access to High and Very High Radiation Areas of Nuclear Plants”