



REGULATORY GUIDE

OFFICE OF NUCLEAR REGULATORY RESEARCH

REGULATORY GUIDE 3.69 (Draft was DG-3009)

TOPICAL GUIDELINES FOR THE LICENSING SUPPORT SYSTEM

A. INTRODUCTION

Subpart J, "Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository" (10 CFR 2.1000 to 2.1027), of 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," sets forth procedures for an adjudicatory proceeding on the application for a license to receive and possess high-level nuclear waste at a geologic repository under 10 CFR Part 60, "Disposal of High-Level Radioactive Wastes in Geologic Repositories." Pursuant to these regulations, the Licensing Support System (LSS), an electronic information management system, is being designed and implemented to provide for the entry of and access to potentially relevant licensing information.

This regulatory guide defines the scope of documentary material that should be included in the LSS. Interim topical guidelines, drafted by the High-Level Waste Licensing Support System Advisory Review Panel (LSSARP), were adopted by the U.S. Nuclear Regulatory Commission with the statement that the topical guidelines would later be revised and set forth as a regulatory guide by the NRC staff (see 54 FR 14925, dated April 14, 1989). The interim topical guidelines were partially modeled after the environmental assessments prepared in connection with the U.S. Department of Energy's (DOE's) site selection process.

Document is defined in 10 CFR 2.1001 as "...any written, printed, recorded, magnetic, graphic matter, or other documentary material, regardless of form or characteristic." In addition, 10 CFR 2.1001 defines documentary material as "...any material or other information that is relevant to, or likely to lead to the discovery of information that is relevant to, the licensing of the likely candidate site for a geologic repository. The scope of documentary material shall be guided by the topical guidelines in the applicable NRC Regulatory Guide." The forms of these materials are listed in Appendix A to this guide, a non-exhaustive list of types of documents that may be included in the LSS.

In developing this final regulatory guide, the interim topical guidelines, Draft Regulatory Guide DG-3003, "Format and Content of the License Application for the High-Level Waste Repository," and comments from the public and LSSARP (which strongly advocates expanding the LSS topical guidelines to all relevant information) were considered. Topics for information entered into the LSS will not only be consistent with information that is needed for the license application but also will contain additional information related to DOE's Environmental Impact Statement.

The information collections contained in this regulatory guide are covered by the requirements of 10 CFR Part 2, which were approved by the Office of Management and Budget, approval number

USNRC REGULATORY GUIDES

Regulatory Guides are issued to describe and make available to the public such information as methods acceptable to the NRC staff for implementing specific parts of the Commission's regulations, techniques used by the staff in evaluating specific problems or postulated accidents, and data needed by the NRC staff in its review of applications for permits and licenses. Regulatory guides are not substitutes for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission.

This guide was issued after consideration of comments received from the public. Comments and suggestions for improvements in these guides are encouraged at all times, and guides will be revised, as appropriate, to accommodate comments and to reflect new information or experience.

Written comments may be submitted to the Rules Review and Directives Branch, DFIPS, ADM, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

The guides are issued in the following ten broad divisions:

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| 1. Power Reactors | 6. Products |
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| 5. Materials and Plant Protection | 10. General |

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3150-0136. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

B. DISCUSSION

Purpose of the Regulatory Guide

The purpose of this regulatory guide is to provide a list of the topics (Section C) for which LSS participants should submit documentary materials for entry into the LSS under 10 CFR 2.1003. The topical guidelines are designed to be broad enough to encompass all potential licensing issues.

This regulatory guide will also be used by the Pre-License Application Presiding Officer for evaluating petitions for access to the LSS during the pre-license application phase under 10 CFR 2.1008.

This regulatory guide will not be used as the detailed topical index for documentary evidence contained in the LSS. It will neither be used to establish standing in the high-level waste licensing proceeding nor serve to determine the scope of contentions that may be offered in the application proceeding under 10 CFR 2.1014.

Use of the Regulatory Guide

To the extent practicable, the regulatory guide format follows the repository systems and conforms to the approach taken in other generic NRC licensing documents for the high-level waste repository program. The actual format of the documents submitted is not specified in this regulatory guide. Further guidance regarding format is being developed in Draft Regulatory Guide DG-3003, "Format and Content for the License Application for the High-Level Waste Repository."

Section C of this regulatory guide lists the topics of documents to be placed in the LSS. Appendix A to this regulatory guide contains a nonexhaustive list of the types of documents to which the topical guidelines in Section C should be applied. Documents not included in Appendix A should also be included in the LSS if they are related to a topic in Section C of this regulatory guide.

Because the topical guidelines of Section C have been kept broad and at a fairly high level of detail, the user should consider each topic to be inclusive rather than exclusive. For instance, in 10 CFR Part 60, Subpart F requires a performance confirmation program for the various components of the repository system. However, performance confirmation is not listed as a topic in this regulatory guide. Rather, information pertinent to performance confirmation for any particular

component of the repository system would be considered to be within the topic designating that particular system. (Performance confirmation relevant to geologic processes would be considered topical information under the appropriate heading for the "Natural System.")

Each topical guideline of Section C should be considered all-inclusive with regard to all documents germane to that topic for the site. For example, much of the information that supports the licensing proceeding will be based on the use of methodologies, computer codes, and models. It is appropriate for such information to be included in the LSS. As stated above, Draft Regulatory Guide DG-3003 is being developed to provide guidance on the information that should be submitted in the license application and on the types of information that should be included in the LSS.

To ensure that socioeconomic issues would be covered, the subcategories "Environmental," "Socioeconomic," and "Transportation" are included under Topical Guideline 12, "Information for Preparation of a Geologic Repository Environmental Impact Statement." Only information on transportation of high-level waste from a reactor, from an independent spent fuel storage facility, or from a monitored retrievable storage facility to a repository should be included under the transportation topical guideline.

C. TOPICAL GUIDELINES

1. General Information

- 1.1 General Facility Description
- 1.2 Basis for Licensing Authority
- 1.3 Schedules Relevant to the NRC/DOE Repository Programs
- 1.4 Any Publicly Available Information on Certification of Safeguards
- 1.5 Any Publicly Available Information on the Physical Security Plan
- 1.6 Site Characterization
- 1.7 License Specifications (those variables, conditions, or other items that DOE determines to be probable subjects of license specifications)
- 1.8 Information Relevant to NRC Findings Regarding Compliance with Statutes [other than (a) The Atomic Energy Act, as amended, (b) the Energy Reorganization Act of 1974, and (c) the Nuclear Waste Policy Act, as amended] that Federal agencies must take cognizance of in licensing actions (e.g., American Indian Religious Freedom Act, Endangered Species Act of 1973, or the National Environmental Policy Act).

2. The Natural Systems of the Geologic Setting
 - 2.1 Geologic System
 - 2.1.1 Regional Geology
 - 2.1.2 Site Geology
 - 2.1.3 Future Variations in Geologic Processes
 - 2.2 Hydrologic System
 - 2.2.1 Surface Water Hydrology
 - 2.2.2 Regional Hydrogeology
 - 2.2.3 Site Hydrogeology
 - 2.3 Geochemical System
 - 2.3.1 Regional Geochemistry
 - 2.3.2 Site Geochemistry
 - 2.4 Climatological and Meteorological Systems
 - 2.4.1 Present Climate and Meteorology
 - 2.4.2 Paleoclimatology
 - 2.4.3 Future Climatic Variation
 - 2.5 Integrated Natural System Response to the Maximum Design Thermal Loading
 - 2.6 Processes and Events (anticipated and unanticipated, potentially disruptive)
 - 2.7 Effectiveness of Natural Barriers Against the Release of Radioactive Material to the Environment (information relevant to the performance objectives of 10 CFR 60.113)
3. Geologic Repository Operations Area (GROA): Physical Facilities
 - 3.1 Surface Facilities
 - 3.1.1 Waste Handling System, Buildings, or Equipment (Including Hot Cell)
 - 3.1.2 Onsite Radioactive Waste Management System
 - 3.1.3 Fire and Explosion Protection Systems
 - 3.1.4 Emergency Systems
 - 3.1.5 Communication Systems
 - 3.1.6 Utility Systems
 - 3.1.7 Instrumentation and Control Systems
 - 3.1.8 Onsite Transportation System
 - 3.1.9 Ventilation Systems
 - 3.1.10 Operations Support Systems
 - 3.1.11 Plans for the Decommissioning System
 - 3.1.12 Other Surface Systems
 - 3.2 Shafts/Ramps
 - 3.2.1 Waste Shaft/Ramp
 - 3.2.2 Muck Shaft/Ramp
 - 3.2.3 Ventilation Intake Shafts
 - 3.2.4 Ventilation Exhaust Shafts
 - 3.2.5 Personnel and Materials Shafts
 - 3.2.6 Plans for the Decommissioning System
 - 3.2.7 Other Shaft/Ramp Systems
 - 3.3 Underground Facility
 - 3.3.1 Excavation and Ground Support Systems
 - 3.3.2 Muck Handling System
 - 3.3.3 Ventilation System
 - 3.3.4 Waste Emplacement System
 - 3.3.5 Waste Retrieval System
 - 3.3.6 Emergency Systems
 - 3.3.7 Communication System
 - 3.3.8 Operations Support System
 - 3.3.9 Plans for the Decommissioning System
 - 3.3.10 Other Underground Systems
 - 3.4 Interface of Structures, Systems, and Components
 - 3.5 Retrievability of Waste
 - 3.6 Effectiveness of the GROA against the Release of Radioactive Materials to the Environment (Information relevant to the performance objectives of 10 CFR 60.111)
4. Engineered Barrier Systems
 - 4.1 Waste Package
 - 4.2 Waste Form
 - 4.3 Underground Facility
 - 4.4 Engineered Barrier System Waste Package Emplacement Environment
 - 4.5 Engineered Barrier System Alternative Design Features
 - 4.6 Effectiveness of Engineered Barriers Against the Release of Radioactive Material to the Environment (Information relevant to the performance objectives of 10 CFR 60.113)
5. Overall System Performance Assessment
 - 5.1 Basic Approach
 - 5.2 System Description
 - 5.2.1 Conceptual Models
 - 5.2.2 Processes and Events (Potentially Disruptive)

- 5.2.3 Processes and Events (Undisturbed Performance)
- 5.3 Cumulative Release of Radioactive Materials
 - 5.3.1 Screening of Processes and Events
 - 5.3.2 Scenario Development and Screening
 - 5.3.3 Consequence Analyses: Estimates of Cumulative Releases
 - 5.3.4 Probability Estimates
 - 5.3.5 Model and Code Validation
- 5.4 Undisturbed Performance
 - 5.4.1 Individual Protection Requirements
 - 5.4.2 Ground Water Protection Requirements
 - 5.4.3 Model and Code Validation
- 6. Conduct of Repository Operations
 - 6.1 Maintenance
 - 6.2 Organization
 - 6.3 Personnel
 - 6.4 Records/Reports
 - 6.5 Training Programs
 - 6.6 Schedules
 - 6.7 Identification of Operating Controls and Limits
 - 6.8 Preservation of Records
 - 6.9 Site Markers
- 7. Land Ownership and Control
 - 7.1 Plans for Restricting Controlled Area Access
 - 7.1.1 Identification of Controlled Area
 - 7.1.2 Identification of Existing Legal Interests
 - 7.1.3 Identification of Legal Interests To Be Obtained
 - 7.1.4 Water Rights
 - 7.2 Plans for Regulating Land Use Outside the Controlled Area
 - 7.2.1 Identification of Adjacent Areas of Concern
 - 7.2.2 Identification of Existing Legal Interests
 - 7.2.3 Identification of Legal Interests To Be Obtained
 - 7.3 Plans for Regulating Land Use at the GROA
 - 7.4 Other Types of Legal Interests
- 8. Quality Assurance (QA) Records
 - 8.1 QA Records for Site Characterization
 - 8.2 QA Records for Design and Construction
 - 8.3 QA Records Including Records Covering Operations, Permanent Closure, Decontamination, and Decommissioning
 - 8.4 QA Records for All Relevant Research Activities
- 9. Emergency Planning
- 10. Radiation Protection
 - 10.1 Ensuring that Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA)
 - 10.2 Radiation Sources
 - 10.3 Radiation Protection Design Features
 - 10.4 Estimated Onsite Dose Assessment
 - 10.5 Health Physics Program
 - 10.6 Estimated Offsite Dose Assessment
- 11. Any Alternatives Considered (e.g., design interpretations, models)
- 12. Information for Preparation of a Geologic Repository Environmental Impact Statement
 - 12.1 Environmental
 - 12.2 Socioeconomic
 - 12.3 Transportation [Transport of high-level waste from a reactor, from an independent spent fuel storage facility, or from a monitored retrievable storage facility to the proposed repository]

APPENDIX A

TYPES OF DOCUMENTS TO BE INCLUDED IN THE LICENSING SUPPORT SYSTEM

This appendix contains a nonexhaustive list of the types of documents that should be included in the Licensing Support System.

1. Technical reports and analyses by all participants (including those developed by contractors). Note that this applies only to final technical reports and does not include preliminary drafts (including predecisional and other internal review drafts) other than "circulated drafts," as defined in 10 CFR Part 2, Subpart J (Item 6 below). See 10 CFR 2.1019(i)(2), which states that preliminary drafts, although subject to derivative discovery, are excluded from entry in the LSS.
2. Quality assurance records
3. External correspondence
4. Internal memoranda
5. Meeting minutes/transcripts
6. Draft documents on which a nonconurrence has been registered
7. Congressional questions and answers
8. Other documents (for 8.1 through 8.9, include references to other data bases)
 - 8.1 Draft and final environmental assessment for the site characterized
 - 8.2 Site characterization plan
 - 8.3 Site characterization study plans
 - 8.4 Site characterization progress reports
 - 8.5 Issue-resolution reports
 - 8.6 License application
 - 8.7 Topical reports, data, and data analyses
 - 8.8 The U.S. Department of Energy (DOE) Environmental Impact Statement
 - 8.9 Recommendation report to the President of the United States (notice of disapproval, if submitted)
 - 8.10 Any publicly available information on rulemakings
 - 8.11 Public and agency comments on documents
 - 8.12 Response to comments
 - 8.13 NRC technical positions
 - 8.14 NRC regulatory guides
 - 8.15 The DOE project-decision schedules
 - 8.16 DOE program-management documents

APPENDIX B

EXCLUDED AND PRIVILEGED INFORMATION

In 10 CFR 2.1005, "Exclusions," the types of information excluded from the Licensing Support System (LSS) are listed. Discovery privileges are discussed in 10 CFR 2.1006(a), (b), and (c). These sections of 10 CFR are reproduced below.

10 CFR 2.1005 Exclusions.

The following material is excluded from entry into the Licensing Support System, either through initial entry pursuant to § 2.1003 of this subpart, or through derivative discovery pursuant to § 2.1019(i) of this subpart—

- (a) Official notice materials;
- (b) Reference books and text books;
- (c) Material pertaining exclusively to administration, such as material related to budgets, financial management, personnel, office space, general distribution memoranda, or procurement, except for the scope of work on a procurement related to repository siting, construction, or operation, or to the transportation of spent nuclear fuel or high-level waste;
- (d) Press clippings and press releases;
- (e) Junk mail;
- (f) Preferences [sic] [References] cited in contractor reports that are readily available;
- (g) Classified material subject to Subpart I of this Part.

10 CFR 2.1006 Privilege.

- (a) Subject to the requirements in § 2.1003(d) of this subpart, the traditional discovery privileges recog-

nized in NRC adjudicatory proceedings and the exceptions from disclosure in § 2.790 of this part may be asserted by potential parties, interested governmental participants, and parties. In addition to Federal agencies, the deliberative process privilege may also be asserted by State and local government entities and Indian Tribes.

- (b) Any document for which a claim of privilege is asserted, but is denied in whole or in part by the Pre-License Application Presiding Officer or the Presiding Officer, must be submitted by the party, interested governmental participant, or potential party that asserted the claim to—
 - (1) The LSS Administrator for entry into the LSS into an open access file; or
 - (2) [To] the LSS Administrator or to the Pre-License Application Presiding Officer or to the Presiding Officer, for entry into a Protective Order file, if the Pre-License Application Presiding Officer or the Presiding Officer so directs under § 2.1010(b) or § 2.1018(c) of this subpart.
- (c) Notwithstanding any availability of the deliberative process privilege under paragraph (a) of this section, circulated drafts not otherwise privileged shall be submitted for entry into the LSS pursuant to §§ 2.1003(a) and 2.1003(b) of this subpart.

REGULATORY ANALYSIS

A separate regulatory analysis was not prepared for this regulatory guide. The regulatory analysis prepared for Draft Regulatory Guide DG-3003, "Format and Content for the License Application for the High-Level Waste Repository," provides the regulatory basis for this regulatory guide as well. A copy of the regulato-

ry analysis is available, in the file for DG-3009, for inspection and copying for a fee at the NRC Public Document Room, 2120 L Street NW., Washington, DC. The Public Document Room's mailing address is Mail Stop LL-6, Washington, DC 20555; phone (202) 634-3273; fax (202) 634-3343.



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