



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 06 1990

MEMORANDUM FOR: John C. Hoyle, Assistant Secretary
Office of the Secretary

FROM: Robert E. Browning, Director
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

SUBJECT: REVIEW OF DRAFT REGULATORY GUIDE: "TOPICAL GUIDELINES FOR
THE LICENSING SUPPORT SYSTEM"

The Executive Director for Operations (EDO) and the General Counsel, by memorandum dated January 12, 1990, informed the Commission that the staff and the Office of the General Counsel (OGC) would revise the interim topical guidelines for the Licensing Support System (LSS). In the memorandum, the EDO and the General Counsel directed that any recommendations be forwarded to the LSS Internal Steering Committee for comment, before they are presented to the Commission. A team of staff from the Division of High-Level Waste Management and OGC, with assistance from the Office of Nuclear Regulatory Research (RES) and the Center for Nuclear Waste Regulatory Analyses has prepared a draft Regulatory Guide which contains the recommended topical guidelines. This is contained in Enclosure 1. Enclosure 2 is a list of the team members.

These recommended topical guidelines differ in format and scope from the interim guidelines which were published in the Federal Register as supplementary information to the final LSS rule. The recommended topical guidelines are meant to encompass only potential high-level waste repository licensing issues. Transportation issues which are outside the scope of the high-level waste repository licensing process have been deleted. The recommended topical guidelines have removed the redundancy found in the interim guidelines. Also, topics related to environmental issues have had their scope limited to the repository licensing process as defined in 10 CFR Part 60. The format is designed to be compatible with the repository systems-based format of the draft Format and Content Regulatory Guide for the License Application for the High-Level Waste Repository (FCRG) which is currently being reviewed by RES and prepared for publication in the Federal Register for public comment in May 1990.

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After receipt and resolution of any comments from the LSS Internal Steering Committee, these recommendations will be presented to the Commission. Please provide the LSS Internal Steering Committee's comments to Mark Delligatti of my staff by April 20, 1990. If you have any questions, Mr. Delligatti can be reached on extension 20430.

RE Browning
Robert E. Browning, Director
Division of High-Level Waste Mangement
Office of Nuclear Material Safety
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Enclosures: As Stated

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Robert E. Browning, Director
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DRAFT REGULATORY GUIDE
TOPICAL GUIDELINES FOR THE LICENSING SUPPORT SYSTEM

ABSTRACT

This Regulatory Guide sets forth the topical guidelines for the Licensing Support System established in the Rules of Practice in 10 CFR 2 for the adjudicatory proceeding on the application for a license to receive and possess high-level radioactive waste at a geologic repository operations area pursuant to 10 CFR 60.

INTRODUCTION

10 CFR 2 Subpart J (§§ 2.1000 to 2.1023) 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 60. 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.

The topical guidelines define the scope of documentary material which should be included in the LSS. Interim topical guidelines, drafted by the High-Level Waste Licensing Support System Advisory Committee, were adopted by the U.S Nuclear Regulatory Commission (NRC) with the statement that the topical guidelines would later be revised and set forth as a Regulatory Guide by NRC staff (see 54 Fed. Reg. 14925 (1989)). The interim topical guidelines were partially modeled after the Environmental Assessments prepared in connection with the U.S. Department of Energy (DOE's) site selection process.

Document is defined in 10 CFR 2 as "...any written, printed, recorded, magnetic, graphic matter, or other documentary material, regardless of form or characteristic." 10 CFR 2 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 for a geologic repository. The scope of documentary material shall be guided by the topical guidelines in the applicable NRC Regulatory Guide."

This Regulatory Guide has been prepared using the interim topical guidelines in addition to the "Draft Format and Content Guide for the License Application for the High-Level Waste Repository", which sets forth the information that the NRC staff suggests should be submitted in the license application.

1. Purpose of the Regulatory Guide

The purpose of this Regulatory Guide is to provide a list of the topics 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 Licensing Board for evaluating petitions for access to the LSS during the pre-license application period under 10 CFR 2.1008.

This Regulatory Guide will not be used as the detailed topical index for documentary evidence contained in the LSS. Neither will it serve to determine the scope of contentions that may be offered in the application proceeding under 10 CFR 2.1014.

2. Use of the Regulatory Guide

To the extent practicable, the Regulatory Guide follows a repository systems-based format that conforms to the approach to be followed in other generic NRC licensing guidance documents for the high-level waste repository program. Topics are arranged according to repository-specific systems (natural system, geologic repository operations area, engineered barrier system) and non-system specific topics defined in 10 CFR 60 (e.g., quality assurance). Additional topics included in this Regulatory Guide cover other potential issues and actions required for repository licensing.

Because the topical guidelines 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, 10 CFR 60 Subpart J requires a performance confirmation program for the various components of the repository system. However, performance confirmation is not a topic in this Regulatory Guide. Rather, information which is pertinent to performance confirmation for any particular component of the repository system would be considered to fall under the particular topic which designates that particular system (performance confirmation relevant to geologic processes would be considered topical information under the appropriate heading for the Natural System). The topical guidelines are presented at between one and three levels of detail. Each guideline should be considered all inclusive with regard to all documents germane to that topic for the site.

CATEGORIES OF DOCUMENTS TO BE INCLUDED IN THE LICENSING SUPPORT SYSTEM

1. Technical Reports and Analyses by all participants (including those developed by contractors)
2. Quality Assurance Records
3. External Correspondence
4. Memoranda (including draft memoranda on which a nonconcurrency has been registered; excluding notes)
5. Meeting Minutes
6. Draft Documents on which a nonconcurrency has been registered
7. Congressional Questions and Answers (Q's and A's)
8. Documents Related to Site Selection and Siting of the High-Level Waste Repository (for a through i include data bases and references):
 - a. Draft and Final Environmental Assessment for the Site Characterized
 - b. Site Characterization Plan
 - c. Site Characterization Study Plans
 - d. Site Characterization Progress Reports
 - e. Issue Resolution Reports
 - f. License Application
 - g. Topical Reports, Data, and Data Analyses
 - h. The DOE Environmental Impact Statement
 - i. Recommendation Report to the President of the United States (Notice of Disapproval, if submitted)
 - j. Any Publicly Available Information on Rulemakings
 - k. Public and Agency Comments on Documents
 - l. Response to Comments
 - m. NRC Technical Positions
 - n. NRC Regulatory Guides
 - o. The DOE Project Decision Schedules
 - p. DOE Program Management Documents

TOPICAL GUIDELINES
FOR INCLUSION OF DOCUMENTS
IN THE LICENSING SUPPORT SYSTEM

I. General Information

1. General Facility Description
2. Basis for Licensing Authority
3. Schedules
4. Any Publically Available Information on Certification of Safeguards
5. Any Publically Available Information on the Physical Security Plan
6. Site Characterization
7. License Specifications (those variables, conditions, or other items which DOE determines to be probable subjects of license specifications)
8. Information Relevant to NRC Administration of Statutes other than Chapter 10 of the Code of Federal Regulations
9. Information Relevant to NRC adoption or modification of the DOE Environmental Impact Statement

II. The Natural Systems of the Geologic Setting

1. Geologic System
 - a. Regional Geology
 - b. Site Geology
 - c. Future Variations in Geologic Processes
2. Hydrologic System
 - a. Surface Water Hydrology
 - b. Regional Hydrogeology
 - c. Site Hydrogeology

3. Geochemical System
 - a. Regional Geochemistry
 - b. Site Geochemistry
4. Climatological and Meteorological Systems
 - a. Present Climate and Meteorology
 - b. Paleoclimatology
 - c. Future Climatic Variation
5. Integrated Natural System Response to the Maximum Design Thermal Loading
6. Processes and Events
(anticipated and unanticipated, potentially disruptive)
7. Effectiveness of Natural Barriers Against the Release of Radioactive Material to the Environment (Information relevant to the performance objective of 10 CFR 60.113)

III. Geologic Repository Operations Area (GROA): Physical Facilities

1. Surface Facilities
 - a. Waste Handling System/Building(s)/Equipment (Including Hot Cell)
 - b. On-Site Radioactive Waste Management System
 - c. Fire and Explosion Protection System(s)
 - d. Emergency Systems
 - e. Communication Systems
 - f. Utility Systems
 - g. Instrumentation and Control Systems
 - h. On-Site Transportation System
 - i. Ventilation System(s)
 - j. Operations Support System(s)
 - k. Plans for the Decommissioning System
 - l. Other Surface Systems
2. Shafts/Ramps
 - a. Waste Shaft/Ramp
 - b. Muck Shaft/Ramp
 - c. Ventilation Intake Shaft(s)
 - d. Ventilation Exhaust Shaft(s)
 - e. Men and Materials Shafts
 - f. Plans for the Decommissioning System
 - g. Other Shaft/Ramp Systems

3. **Underground Facility**
 - a. **Excavation and Ground Support Systems**
 - b. **Muck Handling System**
 - c. **Ventilation System**
 - d. **Waste Emplacement System**
 - e. **Waste Retrieval System**
 - f. **Emergency System(s)**
 - g. **Communication System**
 - h. **Operations Support System**
 - i. **Plans for the Decommissioning System**
 - j. **Other Underground Systems**
4. **Interface of Structures, Systems, and Components**
5. **Retrievability of Waste**
6. **Effectiveness of the GROA Against the Release of Radioactive Materials to the Environment (Information relevant to the performance objective of 10 CFR 60.111)**
- IV. **Engineered Barrier Systems**
 1. **Waste Package**
 2. **Waste Form**
 3. **Underground Facility**
 4. **Engineered Barrier System Waste Package Emplacement Environment**
 5. **Engineered Barrier System Alternate Design Features**
 6. **Effectiveness of Engineered Barriers Against the Release of Radioactive Material to the Environment (Information relevant to the performance objective of 10 CFR 60.113).**
- V. **Overall System Performance Assessment**
 1. **Basic Approach**
 2. **System Description**
 - a. **Conceptual Models**
 - b. **Processes and Events (Potentially Disruptive)**
 - c. **Processes and Events (Undisturbed Performance)**
 3. **Cumulative Release of Radioactive Materials**
 - a. **Screening of Processes and Events**
 - b. **Scenario Development and Screening**
 - c. **Consequence Analyses: Estimates of Cumulative Releases**
 - d. **Probability Estimates**
 - e. **Model and Code Validation**

4. Undisturbed Performance
 - a. Individual Protection Requirements
 - b. Groundwater Protection Requirements
 - c. Model and Code Validation

VI. Conduct of Repository Operations

1. Maintenance
2. Organizational Structure, Management and Administrative Control
 - a. Organization
 - b. Personnel Functions, Responsibilities and Authorities
 - c. Personnel Qualifications Requirements
3. Procedure Development
 - a. Requirements for Procedures
 - b. Procedure Generation Package
4. Records/Reports
5. Training Programs
6. Schedules
7. Identification of Operating Controls and Limits
8. Preservation of Records
9. Site Markers

VII. Land Ownership and Control

1. Plans for Restricting Controlled Area Access
 - a. Identification of Controlled Area
 - b. Identification of Existing Legal Interests
 - c. Identification of Legal Interests To Be Obtained
 - d. Water Rights
2. Plans for Regulating Land Use Outside the Controlled Area
 - a. Identification of Adjacent Areas of Concern
 - b. Identification of Existing Legal Interests
 - c. Identification of Legal Interests To Be Obtained
3. Plans for Regulating Land Use at the GROA

VIII. Quality Assurance (QA) Records

1. QA Records for Site Characterization
2. QA Records for Design and Construction

3. QA Records for Operations, Permanent Closure, Decontamination and Decommissioning
- IX. Emergency Planning
- X. Radiation Protection
 1. Ensuring that Radiation Exposures are As Low As Reasonably Achievable (ALARA)
 2. Radiation Sources
 3. Radiation Protection Design Features
 4. Estimated Onsite Dose Assessment
 5. Health Physics Program
 6. Estimated Offsite Dose Assessment
- XI. Any Alternatives Considered (e.g., design interpretations, models)

TOPICAL GUIDELINES REGULATORY GUIDE PREPARATION TEAM

Division of High-Level Waste Management

Mark Delligatti, Project Manager
Thomas Cardone
Kien Chang
James Conway
Robert Neel
Jeffrey Pohle
Naïem Tanious

Office of the General Counsel

Kathryn Winsberg
James Wolf

Office of Nuclear Regulatory Research

Janet Lambert

Center for Nuclear Waste Regulatory Analyses

Stephen Spector

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