

APPENDIX D1

TRAINING REQUIREMENTS AND QUALIFICATION JOURNAL FOR HIGH-LEVEL WASTE REPOSITORY LICENSE TECHNICAL REVIEWER

I. TRAINING REQUIREMENTS

A. Applicability

The training described below is required for all staff assigned to perform and or project-manage aspects of High-Level Waste (HLW) Program license reviews.

B. Training

1. Required Initial Training.

a) Self-Study and On-The-Job Training:

- (1) NRC Orientation.
- (2) Code of Federal Regulations.
- (3) Office Instructions.
- (4) Regulatory Guidance.
- (5) Industry Codes and Standards.
- (6) NRC Inspection Manual.
- (7) Inspection/Audit/Observation Audit Accompaniments.
- (8) NRC Management Directives.

b) Core Training. These courses establish minimum formal classroom training requirements. Refer to Section 1246-09 for exceptions to these requirements.

- (1) NRC and What It Does or NRC and Its Environment
- (2) High Level Waste (HLW) Repository Health Physics Course (H-403)
- (3) Risk Assessment for Applications in Nuclear Materials and Waste (P400 or P401)
- (4) Quantitative Risk Analysis (P403)
- (5) Licensing and Evaluation of HLW Repository (H-415)

c) Specialized Training. Depending on the employee's previous work experience and planned activities, additional courses may be required to gain knowledge necessary for specialized inspection or licensing activities. Management will make this determination on an individual basis.

- (1) NRC Observation Audits (Center for Nuclear Waste Regulatory Analyses)
- (2) Fundamentals of Inspection Course (G101)
- (3) Environmental Monitoring for Radioactivity (H-111)
- (4) General Underground Training (GUT), including First Aid and Cardiopulmonary Resuscitation (CPR)

- (5) General Employee Radiological Training (GERT)
- (6) General Employee Training (GET)

NOTE: GUT, GERT, and GET Training are presently provided to NRC employees by DOE at the Yucca Mountain Site under mutual agreement between NRC and DOE. They are required for site visits.

2. Supplemental Training. Additional training beyond that identified as Core Training. This training will be determined by the supervisor and will depend on the individual's previous work experience and planned licensing activities in specific areas [e.g., "Environmental Transport" (including groundwater transport)] (Form 368).
3. Refresher Training. Refresher training will be conducted every 3 years after initial certification. Refresher training will include other courses, as determined by management.

II. QUALIFICATION JOURNAL

Applicability

This NRC Technical Reviewer (TR) Qualification Journal implements NRC Manual Chapter 1246, by establishing the minimum training requirements for personnel assigned to perform HLW licensing activities for a High-Level Waste (HLW) Repository. The Qualification Journal must provide traceable documentation to show that minimum requirements are met for each TR.

The NRC Technical Reviewer Qualification Journal consists of a series of qualification guides and signature cards. Each signature card is used to document task completion, as indicated by the appropriate signature blocks. Each signature card has a corresponding qualification guide that establishes the minimum knowledge levels or areas of study that must be completed for each signature card. Most of the qualification guides are divided into sections. The review sections of the qualification guides will identify references with general application to the TR's qualification. The TR is expected to have a general familiarity with these references. Other sections of the qualification guides will identify specific references that have direct application to a licensing discipline. The TR is expected to demonstrate detailed knowledge of the licensing discipline-specific references.

To support the review of upper-tier documents, programs, and policies, the TR's First Line Supervisor may assign one or more specific non-HLW waste facilities and/or disposal sites as reference facilities. The selection of a reference facility is intended to provide the TR's management with the ability to tailor the qualification process to the experience and training level of the TR, and to meet the needs of NRC. The use of specific real-world material will reinforce the qualification process.

TECHNICAL/LICENSE REVIEWER QUALIFICATION JOURNAL
High-Level Waste Repository License Technical Reviewer

Name	Title	Branch	Section
------	-------	--------	---------

To complete your qualification as a HLW TR you are to complete the following signature cards. All sign-offs shall include the signature of the responsible reviewer and the date. Maintain these cards in a notebook, along with any background or written material required by the program. This notebook will comprise your HLW TR Qualification Journal.

	Signature When Complete	Date
1. NRC Orientation	_____ Supervisor	_____
2. Code of Federal Regulations	_____ Supervisor	_____
3. Office Instructions	_____ Supervisor	_____
4. Regulatory Guidance	_____ Supervisor	_____
5. Industry Codes and Standards	_____ Supervisor	_____
6. Inspection/Audits/Observation/Audit Accompaniments*	_____ Supervisor	_____
7. NRC Management Directives	_____ Supervisor	_____
8. Formal Training	_____ Supervisor	_____

* These portions of the journal are applicable to TRs whose work activities include inspections, audits, or observation audits, as may be applicable

Qualification Board Requirement Met

Second Level
Supervisor

Recommendation as a qualified Technical
Reviewer

Branch Chief

Certification Memo Issued

Branch Chief

Qualification Card 1
NRC Orientation

Initials Date

A. Site Orientation

Employee

Facility tour and
introduction to HLW staff

Supervisor

B. NRC Organization

1. Review of NRC
Headquarters, Office of
Nuclear Materials Safety
(NMSS), Division of Waste
Management (DWM), and
HLW organization

Employee

2. Discussion of NRC,
NMSS, DWM and HLW
organization

Supervisor

Qualification Card 2
Code of Federal Regulations (CFR)

Initials

Date

A. Familiarization with selected
CFR parts completed

Employee

B. Discussion completed on
CFR parts related to waste
management

Supervisor

Qualification Card 3
Office Instructions

Initials Date

A. Familiarization with
NMSS/DWM Office policies
and procedures completed

Employee

B. Discussion completed on
NMSS/DWM Office policies
and procedures

Supervisor

Qualification Card 4
Regulatory Guidance

Initials

Date

A. Review of regulatory guidance

1. Regulatory Guides

Employee

2. NUREGs

Employee

3. Generic Letters

Employee

4. SECY Papers

Employee

B. Discussion of regulatory
guidance with application to
the DWM HLW program

Supervisor

Qualification Card 5
Industry Codes and Standards

Initials

Date

A. Review of selected codes
and standards completed

Employee

B. Discussion of the application
of codes and standards
related to HLW storage,
transportation and disposal
in the DWM HLW program

Supervisor

This qualification card is applicable to TRs whose work activities include inspections, audits or observation audits as may be applicable

Qualification Card 6
Inspection Accompaniments

Initials

Date

A. Inspection/Audit/Observation Audit completed

_____ Facility _____ Employee _____

B. Review and discussion by the Supervisor of the inspection/audit/observation audit and employee's role in the DWM HLW program.

_____ Facility _____ Supervisor _____

Qualification Card 7
NRC Management Directives

Initials Date

A. Review of selected portions
of the NRC Management
Directives completed

Employee

B. Discussion of the application
of the NRC Management
Directives with the HLW
Technical Reviewer

Supervisor

Qualification Card 8
Formal Training

A. CORE TRAINING

	Initials	Date		
1. NRC and What It Does or NRC and Its Environment	_____	_____	Training Coordinator	
2. High-Level Waste (HLW) Repository Health Physics Course (H-403)	_____	_____	Training Coordinator	
3. Risk Assessment for Application in NMSS (P400/P401, P403)	_____	_____	Training Coordinator	
4. Licensing and Evaluation of HLW Repository (DWM, in development) or Completion of DWM's HLW Training Modules given in year 2002/2003	_____	_____	Training Coordinator	
_____	_____	_____	Supervisor	Training Coordinator
_____	_____	_____	Supervisor	Training Coordinator

B. SPECIALIZED TRAINING

Other specialized training courses required for license reviewers performing licensing activities in specific areas:

Course Title	Course #	Initials	Initials	Date
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____

Qualification Guide 1 NRC Orientation

A. Site Orientation

The Supervisor should orient the qualifying individual to the facility as follows:

1. Tour the facility and introduce the qualifying individual to the staff.
2. Indicate to the qualifying individual the location of controlled documents, reference material, supplies, office equipment, etc.

B. NRC Organization

1. The qualifying individual should review and become familiar with NRC organization and responsibility.
 - a. Organizational charts of region, NMSS, and headquarters and overall NRC organization. Check NRC Public Web Site for organization chart and responsibility.
 - b. The U.S. Nuclear Regulatory Commission and How It Works, NUREG/BR - 0256
 - c. NRC - Regulator of Nuclear Safety, NUREG/BR - 0164
 - d. NRC Information Digest, NUREG - 1350

The Supervisor should discuss NRC organization and role with the qualifying individual to ensure that the qualifying individual has an adequate understanding of NRC's organization and mission. The qualifying individual should review and become familiar with:

- a. DWM Organization charts
- b. DOE Headquarters and Yucca Mountain Office organizational charts
- c. "Repository Safety Strategy: U.S. Department of Energy's Strategy to Protect Public Health and Safety After Closure of a Yucca Mountain Repository (Latest Edition)", U.S. DOE, OCRWM
- d. U.S. NRC, Strategic Plan, NUREG – 1614
- e. Risk-Informed White Paper
- f. HLW/DWM, Operations Plan
- g. Center for Nuclear Regulatory Analyses Operations Plan
- h. HLW Web Page and DOE's YMP Web Page

Qualification Guide 2
Code of Federal Regulations (CFR)

- A. The Supervisor should select currently applicable CFR Parts. The selection should include the references listed below as appropriate and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study quizzes, briefings, or discussions.
1. 10 CFR Part 1 Statement of organization and general information
 2. 10 CFR Part 2 Rules of practice for domestic licensing proceedings and issuance of orders
 3. 10 CFR Part 9 Public Records
 4. 10 CFR Part 20 Standards for protection against radiation (includes selected questions and answers, Qs & As)
 5. 10 CFR Part 51 Environmental protection regulations for domestic licensing and related regulatory functions
 6. 10 CFR Part 63 : Disposal of High-Level radioactive wastes in a proposed geologic repository at Yucca Mountain, Nevada
 7. 10 CFR 71 Packing and transportation of radioactive material
 8. 10 CFR Part 72 Licensing requirements for the independent storage of spent nuclear fuel and High-Level radioactive waste
 9. 40 CFR Part 197 : Environmental Radiation Protection Standards for Yucca Mountain, Nevada
- B. After the qualifying individual finishes studying the listed CFR Parts, the Supervisor will discuss these parts with the qualifying individual. To the extent practicable, the supervisor should emphasize recent applications of various sections, new regulatory initiatives, and current industry issues.

Qualification Guide 3
Office Instructions

A. NMSS Office Policies and Procedures

1. Read the NMSS Policy and Procedures Letters:
 - 1-8 Differing Professional Views and Opinions (MD 10.159)
 - 1-11 Communications with Licensees
 - 1-22 Quality Assurance
 - 1-23 Open Meetings
 - 1-27 Management of Allegations
 - 1-37 NMSS Participation in ACNW Reviews
 - 1-38 Interface with Commissioners' Offices
 - 1-48 Procedures for Preparing Environmental Assessments
 - 1-50 Environmental Justice in NEPA Documents
 - 1-52 Guidance on Making NRC Electronic Information Available to the Public
- DWM Policy
- a. Trip and Meeting Reports (Jan. 23, 1995)
 - b. Control of and Response to Incoming Correspondence (01/03/95)
 - c. Use and Documentation of Phone Calls (03/29/96)

Agreement Between DOE OCRWM and NRC/NMSS Regarding Prelicensing Interaction (1999)

The qualifying individual should review the NMSS policies and practices on:

- a. Telephone use
- b. Use of government equipment, including computers (ADAMS) and Management Directive 13.1, Property Management
- c. Communications outside NRC
- d. Policies on outside employment and acceptance of gifts
- e. Ordering of documents (e.g NUREGs)
- f. Employee appraisal system and Individual Development Plan (IDP)

B. The Supervisor should discuss these policies and practices with the qualifying individual to ensure that the qualifying individual completely understands them.

Qualification Guide 4 Regulatory Guidance

A. The Supervisor should select currently applicable regulatory guidance. These references should include those listed below as appropriate and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The qualifying individual can accomplish studying this by study-quizzes, briefings, or discussions. Study of corresponding and sub-tier codes and standards is recommended.

1. Regulatory Guides as determined by Supervisor

Reg. Guide 3.69 Topical Guidelines for the Licensing Support Network (latest Rev.)

2. NUREGs (latest revision, where applicable).

The following is a list of recommended references:

NUREG 1804 Yucca Mountain Review Plan

NUREG 1762 Integrated Issue Resolution Status Report

NUREG 1297 Generic Technical Position on Peer-Review for High-Level Nuclear Waste Repositories (1988)

NUREG 1298 Qualification of Existing Data for HLW Repositories (February 1988)

NUREG 1318 Items and Activities in the High-Level Waste Geologic Repository Program Subject to Quality Assurance Requirements (April 1988)

NUREG 1563 Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program (1996)

NUREG/BR-0167 Software Quality Assurance Program and Guidelines (February 1993)

NUREG/CR-4369 QA Plan for Computer Software Supporting the U.S. NRC's HLW Management Program (January 1986)

NUREG/CR-4640 Handbook of Software Quality Assurance Techniques Applicable to the Nuclear Industry (August 1987)

Others as selected by the supervisor

3. Generic Letters (GL)

GL 83-007 The Nuclear Waste Policy Act of 1982

Others as selected by the Supervisor

4. SECY Papers

98-237 Final Rule, Part 2, Subpart J, Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository

99-074 Staff Review of U.S. Department of Energy Viability Assessment for a High-Level Radioactive Waste Repository at Yucca Mountain, Nevada

99-186 Staff Plan for Clarifying How Defense-in-Depth Applies to the Regulation of a Possible Geologic Repository at Yucca Mountain, Nevada

00-0047 Draft Regulatory Guide Providing Guidance and Examples for Identifying 10 CFR 50.2 Design Bases

B. The Supervisor will hold discussions, interviews, or oral quizzes to assess that the qualifying individual has adequate knowledge and understanding of the selected references to the HLW program.

Qualification Guide 5
Industry Codes and Standards

- A. The Supervisor should select currently applicable industry codes and standards. The qualifying individual should be expected to have a general knowledge of the Codes and Standards. He/she may review these by studying, study quizzes, briefings, or discussions. The Supervisor should document the selected standards.

- B. The Supervisor should evaluate the qualifying individual's knowledge of application of these codes and standards to the HLW TR program by discussions, interviews, or oral quizzes.

This qualification card is applicable to TRs whose work activities include inspections, audits or observation audits as may be applicable

Qualification Guide 6
Inspection/Audit/Observation Audit Accompaniments

- A. Each TR being certified to perform work related to inspection/audit/observation audit should accompany certified inspectors on at least one inspection/audit/observation audit.
- B. The following is a guide for material that should be studied and discussed with the team lead or inspector in charge during these inspection/audit/observation accompaniments. The Supervisor will discuss these items, as appropriate, after each inspection accompaniment.
 - 1. The Inspection/Audit/Observation Audit Program
 - 2. Scheduling and Preparation for Inspections
 - MC 0300 Announced and Unannounced Inspections
 - 3. Scope of Inspection
 - 4. Entrance/Exit Interviews
 - 5. Conduct of Inspection/Audit/Observation Audit, Accumulation of Data
 - MC 2410 Conduct of Observation Audits
 - 6. Post-inspection Activities of Inspectors
 - MC 0610 Inspection Reports
 - MC 0620 Inspection Documents and Records
 - MC 1100 Notification of Significant Meetings
 - 7. Morning Reports
 - MC 0230 Morning Report
 - 8. Non-routine Licensee Events
 - MC 1110 Potential Abnormal Occurrences
 - IP 90714 Non-routine Reporting Program
 - Management Directive 8.3 NRC Incident Investigation Program
 - Management Directive 8.9 Accident Investigation
 - 9. Preliminary Notification
 - MC 1120 Preliminary Notifications
 - 10. Bulletins/Information Notices
 - MC 0720 NRC Bulletins and Information Notices
 - 11. Use of Consultants of NRC
 - 12. Allegations and Investigations
 - 13. Communication outside NRC
 - Management Directive 5.5 Public Affairs Program
 - Management Directive 3.6, Distribution of Unclassified NRC Staff/Contractor-Generated Reports

Qualification Guide 7
NRC Management Directives

- A. The Supervisor should select currently applicable NRC Management Directive (MD) references. These references should include those listed below as appropriate and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. He/she may learn the information by self-study, briefings, or discussions. The selection should include:
1. NRC MD 9.1 Organization Management
 2. NRC MD 9.29 Organization and Function of Regional Offices
 3. NUREG 0325 USNRC Functional Organization Chart
 4. NRC MD 3.2 Privacy Act
 5. NRC MD 3.1 Freedom of Information Act
 6. NRC MD 10.130 Safety and Health Program Under the Occupational Safety and Health Act
 7. NRC MD 10.131 Protection of NRC Employees Against Ionizing Radiation
 8. NRC MD 10.159 Differing Professional Views or Opinions
 9. NRC MD 8.3 NRC Incident Investigation Program
 10. NRC MD 8.8 Management of Allegations
 11. NRC MD 5.1 Intergovernmental Consultation
 12. NRC MD 5.5 Public Affairs Program
 13. NRC MD 8.11 Review Process for 10 CFR 2.206 Petitions
 14. NRC MD 10.160 Open Door Policy
- B. The First Line Supervisor will discuss application of the selected NRC Management Directives with the qualifying individual to evaluate his/her knowledge.

Qualification Guide 8
Formal (Core & Specialized) Training

The standards for each Training Course are provided in the NRC Technical Training Course Catalog and will not be duplicated in the Qualification Guide.

Attachment 1
Revision History for IMC 1246, Appendix D1

Commitment Tracking Number	Document Accession Number and Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	ML11230B347 10/26/11 CN 11-022	Revision history sheet added. Combined Appendix A15 with Appendix B15 and renamed as Appendix D1. Added "training requirements" section from Appendix A15.	None	N/A	ML11235A917