

## SECTION II

### MATERIALS HEALTH PHYSICS INSPECTOR NRC INSPECTOR QUALIFICATION JOURNAL

#### Applicability

This NRC Inspector Qualification Journal implements NRC Manual Chapter 1246, Appendix A, Section II, by establishing the minimum training requirements for personnel assigned to perform safety inspection activities at materials facilities.

The NRC Inspector Qualification Journal serves as a guideline for the development of a Regional Qualification Journal, and establishes the minimum training requirements consistent with NRC Manual Chapter (MC) 1246. The Regional Qualification Journal must provide traceable documentation to show that minimum requirements are met for each inspector.

The NRC Inspector 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. The corresponding qualification guide 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 identify references with general application to the inspector's qualification. The inspector is expected to have a general familiarity with these references. Other sections of the qualification guides identify specific references that have direct application to an inspection discipline. The inspector is expected to demonstrate detailed knowledge of the inspection discipline specific references.

In order to support the review of upper tier documents, programs, and policies, the inspector's first line supervisor will assign one or more specific fuel facilities as reference facilities. The selection of a reference facility is intended to provide the inspector's management with the ability to tailor the qualification process to the experience and training level of the inspector, and to meet the inspection needs of the NRC. The use of specific real world material will reinforce the qualification process.

INSPECTOR QUALIFICATION JOURNAL  
Materials Health Physics Inspector

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

To complete your qualification as a Materials Health Physics Inspector you are to complete the following signature cards. All signoffs 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 NRC Inspector Qualification Journal.

	<u>Signature When Complete</u>	<u>Date</u>
1. NRC Orientation	_____ First Line Supervisor	_____
2. Code of Federal Regulations	_____ First Line Supervisor	_____
3. Office Instructions/Regional Procedures	_____ First Line Supervisor	_____
4. Regulatory Guidance	_____ First Line Supervisor	_____
5. NRC Inspection Manual Chapters (MC)	_____ First Line Supervisor	_____
6. Industry Codes and Standards	_____ First Line Supervisor	_____
7. Inspection Accompaniments	_____ First Line Supervisor	_____
8. NRC Management Directives	_____ First Line Supervisor	_____
9. Review of significant events at materials licensees	_____ First Line Supervisor	_____
10. Directed review of selected inspection casework	_____ First Line Supervisor	_____
11. Formal Training	_____ First Line Supervisor	_____

Second Level Supervisor or  
Board Chairman

Second Level Supervisor

Second Level Supervisor

Qualification Card 1  
NRC Orientation

Initials

Date

A. Site Orientation

1. New employee processing  
package completed

\_\_\_\_\_  
Employee

\_\_\_\_\_

2. Facility tour and introduction

\_\_\_\_\_  
First Line Supervisor

\_\_\_\_\_

B. NRC Organization

1. Review of NRC headquarters  
and regional organization

\_\_\_\_\_  
Employee

\_\_\_\_\_

2. Discussion of NRC organization

\_\_\_\_\_  
First Line Supervisor

\_\_\_\_\_

Qualification Card 2  
Code of Federal Regulations (CFR)

|

	<u>Initials</u>	<u>Date</u>
A. Familiarization with selected CFR parts completed	<hr/> Employee	<hr/>
B. Discussion completed on CFR parts related to the materials inspection program	<hr/> First Line Supervisor	<hr/>

Qualification Card 3  
Office Instructions/Regional Procedures

Initials

Date

| A. Familiarization with office/  
| regional policies and procedures

\_\_\_\_\_  
Employee

\_\_\_\_\_

| B. Discussion completed on office/  
| regional policies and procedures

\_\_\_\_\_  
First Line Supervisor

Qualification Card 4  
Regulatory Guidance

Initials

Date

A. Review of regulatory guidance

1. Regulatory Guides

\_\_\_\_\_  
Employee

2. Information Notices  
/Bulletins

\_\_\_\_\_  
Employee

3. NUREGs

\_\_\_\_\_  
Employee

4. Generic Letters

\_\_\_\_\_  
Employee

5. Federal Register Notices

\_\_\_\_\_  
Employee

6. NRC Branch Technical Positions

\_\_\_\_\_  
Employee

7. Policy and Guidance Directives

\_\_\_\_\_  
Employee

8. Sealed Source and  
Device Registry

\_\_\_\_\_  
Employee

9. Technical Assistance Requests

\_\_\_\_\_  
Employee

B. Discussion of regulatory guidance  
with application to the materials  
inspection program

\_\_\_\_\_  
First Line Supervisor

Qualification Card 5  
NRC Inspection Manual Chapters(MC)

Initials

Date

- A. Review of appropriate NRC  
MCs completed

\_\_\_\_\_  
Employee

- B. Discussion of NRC MCs  
and their relation to the  
materials inspection program

\_\_\_\_\_  
First Line Supervisor



Qualification Card 6  
Industry Codes and Standards

Initials

Date

A. Review of selected codes  
and standards completed

\_\_\_\_\_  
Employee

B. Discussion of the application  
of codes and standards in the  
materials inspection program

\_\_\_\_\_  
First Line Supervisor

## Qualification Card 7

### Inspection Accompaniments

InitialsDate

A. Inspections completed

1. \_\_\_\_\_  
Facility

Employee

2 Facility

Employee

3 Facility

Employee

4. Facility

Employee

B. Discussion of inspection and employee's role

1. \_\_\_\_\_  
Facility

First Line Supervisor

2. Facility

First Line Supervisor

3. Facility

First Line Supervisor

4. Facility

First Line Supervisor

Qualification Card 8  
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  
to the materials inspection  
program

\_\_\_\_\_  
First line supervisor

Qualification Card 9  
Review of Significant Events at Materials Licensees

Initials

Date

- A. Review of selected significant  
historical materials events

\_\_\_\_\_  
Employee

- B. Discussion of the importance  
of these events and lessons learned

\_\_\_\_\_  
First Line Supervisor

Qualification Card 10  
Directed Review of Selected Inspection Casework

Initials

Date

- A. Review of selected inspection casework

\_\_\_\_\_  
Employee

- B. Discussion by first line supervisor of directed review of the selected casework and its relation to the materials inspection program

\_\_\_\_\_  
First Line Supervisor

Qualification Card 11  
Formal Training

A.	CORE TRAINING:	<u>Initials</u>	<u>Date</u>
1.	Fundamentals of Inspection Course (G-101) or Inspection Procedures Course (G-108)	_____	_____
		Training Coordinator	
2.	Root Cause/Incident Investigation Workshop (G-205)	_____	_____
		Training Coordinator	
3.	Inspecting for Performance Course - Materials Version (G-304)	_____	_____
		Training Coordinator	
4.	Effective Communications for NRC Inspectors	_____	_____
		Training Coordinator	
5.	OSHA Indoctrination Course (G-111)	_____	_____
		Training Coordinator	
6.	NMSS Radiation Worker Training (H-102)	_____	_____
		Training Coordinator	
7.	Health Physics Technology Course (H-201)	_____	_____
		Training Coordinator	
8.	Diagnostic and Therapeutic Nuclear Medicine Course (H-304)	_____	_____
		Training Coordinator	
9.	Safety Aspects of Industrial Radiography Course (H-305)	_____	_____
		Training Coordinator	
10.	Teletherapy and Brachytherapy Course (H-313)	_____	_____
		Training Coordinator	
11.	Transportation of Radioactive Materials Course (H-308)	_____	_____
		Training Coordinator	

B. SPECIALIZED TRAINING

Other specialized training courses required for inspectors performing inspection activities in specific areas:

<u>Course Title</u>	<u>Course #</u>	<u>Initials</u>	<u>Initials</u>	<u>Date</u>
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____

Qualification Guide 1  
NRC Orientation

A. Site Orientation

1. The qualifying individual should read and complete, as appropriate, the following forms for processing into the NRC:
  - a. Personnel information
  - b. Health insurance elections
  - c. Retirement plan elections
  - d. Savings elections (e.g. U.S. Savings Bonds, TSP, etc.)
  - e. Fitness for Duty requirements and physical examination
  - f. Any other forms which may be required by NRC Office of Human Resources
  - g. Forms for issuance of tagged, controlled NRC equipment
  - h. Payroll forms and time cards
  - i. Regulatory Information Tracking System (RITS)
2. The First Line Supervisor should orient the qualifying individual to the facility as follows:
  - a. Tour the facility and introduce the qualifying individual to the staff
  - b. 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:
  - a. Organizational charts of region, NMSS, and headquarters and overall NRC organization (NUREG 0325)
  - b. Role of Headquarters in policy and interpretation of regulations
  - c. Role of NRC General Counsel
  - d. Role of NRC Inspector General
  - e. Role of NRC Public Affairs
  - f. Role of NRC Office of Investigations
  - g. Role of NRC Office of Enforcement
  - h. Physical location of NRC offices and regions
  - i. Role of NRC as a regulatory agency



- (1) 10 CFR Part 1 (Organization)
- (2) Atomic Energy Act of 1954, as amended
- (3) Energy Reorganization Act of 1974, as amended
- (4) NRC Enforcement Policy (NUREG 1600)
- (5) Incident Response Plan (NUREGs 0728 and 0845)
- (6) Energy Policy Act of 1992

- 2. The First Line Supervisor should discuss NRC organization and role with the qualifying individual to ensure the qualifying individual has a full understanding of NRC's organization and mission and the role of the inspector in that mission.

Qualification Guide 2  
Code of Federal Regulations (CFR)

A. A selection of currently applicable CFR Parts should be made by the First Line Supervisor. The selection should include the references listed below 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 19  | Notices, instructions and reports to workers; inspections                                                  |
| 5.  | 10 CFR Part 20  | Standards for protection against radiation (includes selected Questions and Answers, Q & As)               |
| 6.  | 10 CFR Part 21  | Reporting of defects and noncompliance                                                                     |
| 7.  | 10 CFR Part 25  | Access authorization for licensee personnel                                                                |
| 8.  | 10 CFR Part 26  | Fitness for duty programs                                                                                  |
| 9.  | 10 CFR Part 30  | Rules of general applicability to domestic licensing of byproduct material                                 |
| 10. | 10 CFR Part 31  | General domestic licenses for byproduct material                                                           |
| 11. | 10 CFR Part 32  | Specific domestic licenses to manufacture or transfer certain items containing byproduct material          |
| 12. | 10 CFR Part 33  | Specific domestic licenses of broad scope for byproduct material                                           |
| 13. | 10 CFR Part 34  | Licenses for radiography and radiation safety requirements for radiographic operations                     |
| 14. | 10 CFR Part 35  | Medical use of byproduct material                                                                          |
| 15. | 10 CFR Part 36  | Licenses and radiation safety requirements for irradiators                                                 |
| 16. | 10 CFR Part 39  | Licenses and radiation safety requirements for well logging                                                |
| 17. | 10 CFR Part 40  | Domestic licensing of source material                                                                      |
| 18. | 10 CFR Part 61  | Licensing requirements for land disposal of radioactive waste                                              |
| 19. | 10 CFR Part 70  | Domestic licensing of special nuclear material                                                             |
| 20. | 10 CFR Part 71  | Packaging and transportation of radioactive material                                                       |
| 21. | 10 CFR Part 110 | Export and import of nuclear equipment and material                                                        |
| 22. | 10 CFR Part 150 | Exemptions and continued regulatory authority in agreement states and in offshore waters under section 274 |

23.	10 CFR Part 170	Fees for facilities, materials, import and export licenses and other regulatory services under the Atomic Energy Act of 1954, as amended	
24.	10 CFR Part 171	Annual fees for reactor operating licenses, and fuel cycle licenses and materials licenses, including holders of certificates of compliance, registrations, and quality assurance program approvals and government agencies licensed by NRC	
25.	29 CFR Part 1910	Occupational safety and health standards	
26.	40 CFR Part 61	National emission standards for hazardous air pollutants (emphasis on Subpart I)	
27.	40 CFR Part 190	Environmental radiation protection for nuclear power operations (uranium fuel cycle standards)	
28.	40 CFR Part 141	National primary drinking water regulations	
29.	49 CFR Parts 171 through 180	Transportation	

- B. Following completion of the qualifying individual's self study of the listed 10 CFR Parts, a discussion will be held with the qualifying inspector by the First Line Supervisor to test the qualifying inspector's knowledge of these Parts. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.

Qualification Guide 3  
Office Instructions/Regional Procedures

A. Office/Region Policies and Procedures

1. Read the Region Policy and Procedures Manual
2. The qualifying individual should review the Office/Regional policies and practices on:
  - a. Travel, including Management Directive 14.1 Official Temporary Duty Travel
  - b. Telephone use
  - c. Policies on use of annual leave and sick leave and excused leave, including Bulletin 4135, Leave Administration.
  - d. Work schedule, including NRC Appendix 4136, Hours of Work and Premium Pay
  - e. Use of government equipment, including computers(ADAMS & NUDOCS) and Management Directive 13.1, Property Management
  - f. Union activities, including Management Directive 10.102, Labor-Management Relations Program for Federal Employees
  - g. Communications outside NRC
  - h. Policies on outside employment and acceptance of gifts
  - i. Participation in political activities
  - j. Routing of mail and procedures for sending mail and materials (via U.S. Mail, Federal Express, etc.), including Management Directive 3.23, Mail Management
  - k. Ordering of documents (e.g NUREGs)
  - l. Region emergency and evacuation procedures
  - m. Employee appraisal system and Individual Development Plan (IDP)
    - (1) Employee trial period (Management Directive 10.14 Employment and Staffing)
    - (2) Employee appraisals (Management Directive 10.67, Non-SES Performance Appraisal System)
  - n. Differing Professional Views or Opinions (Management Directive 10.159, General Personnel Management Provisions)

B. The First Line Supervisor should discuss these policies and practices with the qualifying individual to ensure that the qualifying individual has a full and complete understanding.

Qualification Guide 4  
Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the First Line Supervisor. These references should include those listed below (documents marked by an asterisk must be included as a minimum) and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6. Study of corresponding and subtier codes and standards is recommended.

1. Regulatory Guides (use latest revision)

- |      |                                                                                                                                          |
|------|------------------------------------------------------------------------------------------------------------------------------------------|
| 4.6  | Measurements of Radionuclides in the Environment - Strontium-89 and Strontium-90 Analyses                                                |
| 4.13 | Performance, Testing and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications                          |
| 4.15 | Quality Assurance for Radiological Monitoring Programs                                                                                   |
| 4.20 | Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees other than Power Reactors.                     |
| *6.1 | Leak Testing Radioactive Brachytherapy Sources                                                                                           |
| 6.2  | Integrity and Test Specifications                                                                                                        |
| 6.3  | Design, Construction, and Use of Radioisotopic Power Generators for Certain Land and Sea Applications                                    |
| 6.4  | Classifications of Containment Properties of Sealed Radioactive Sources                                                                  |
| *6.5 | General Safety Standard for Installations Using Nonmedical Sealed Gamma Ray Sources                                                      |
| 6.6  | Acceptance Sampling Procedures for Exempted and Generally Licensed Items Containing Byproduct Material                                   |
| 6.7  | Preparation of an Environmental Report to Support a Rule Making Petition Seeking an Exemption for a Radionuclide-Containing Product      |
| *6.8 | Identification Plaque for Irretrievable Well-Logging Sources                                                                             |
| 6.9  | Establishing Quality Assurance Programs for the Manufacture and Distribution of Sealed Sources and Devices containing Byproduct Material |
| *7.1 | Administrative Guide for Packaging and Transporting Radioactive Material                                                                 |
| *7.2 | Packaging and Transportation of Radioactively Contaminated Biological Materials                                                          |
| *7.3 | Procedures for Picking Up and Receiving Packages of Radioactive Material                                                                 |
| *7.4 | Leakage Tests on Packages for Shipment of Radioactive Materials                                                                          |

7.5	Administrative Guide for Obtaining Exemptions from Certain NRC Requirements over Radioactive Material Shipments
*7.7	Administrative Guide for Verifying Compliance with Packaging Requirements for Shipments of Radioactive Materials
*7.10	Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material
*8.1	Radiation Symbol
*8.2	Guide for Administrative Practices in Radiation Monitoring
*8.4	Direct Reading and Indirect Reading Pocket Dosimeters
8.5	Criticality and Other Interior Evacuation Signals
8.6	Standard Test Procedure for Geiger Muller Counters
*8.7	Instructions for Recording and Reporting Occupational Radiation Exposure Data
*8.9	Acceptable Concepts, Models, Equations and Assumptions for a Bioassay Program
*8.10	Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable
8.11	Applications of Bioassay for Uranium
*8.13	Instruction Concerning Prenatal Radiation Exposure
*8.14	Personnel Neutron Dosimeters
*8.15	Acceptable Programs for Respiratory Protection
*8.18	Information Relevant to Ensuring that Occupational Radiation Exposures at Medical Institutions Will be As Low As Reasonably Achievable
*8.20	Applications of Bioassay for I-125 and I-131
*8.21	Health Physics Surveys for Byproduct Material at NRC Licensed Processing and Manufacturing Plants
8.22	Bioassay at Uranium Mills
*8.23	Radiation Safety Surveys at Medical Institutions
8.24	Health Physics Surveys During Enriched Uranium 235 Processing and Fuel Fabrication
*8.25	Air Sampling in the Workplace
8.26	Applications of Bioassay for Fission and Activation Products
*8.28	Audible Alarm Dosimeters

*8.29	Instruction Concerning Risks from Occupational Radiation Exposure	
8.30	Health Physics Surveys in Uranium Mills	
*8.31	Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills Will Be As Low As Reasonably Achievable	
*8.32	Criteria for Establishing a Tritium Bioassay Program	
*8.33	Quality Management Program	
*8.34	Monitoring Criteria and Methods to Calculate Occupational Radiation Doses	
*8.35	Planned Special Exposures	
*8.36	Radiation Doses to the Embryo/Fetus	
*8.37	ALARA Levels For Effluents From Materials Facilities	
*8.39	Release of Patients Administered Radioactive Materials	
*10.4	Guide for the Preparation of Applications for Licenses to Process Source Material	
10.12	Preparation of Petitions for Rulemaking Under 10 CFR 2.802 and Preparation and Submission of Proposals for Regulatory Guidance Documents	
2.	Information Notices (IN) and Bulletins (BL)	
IN 91-002	Brachytherapy Source Management	
IN 91-003	Management of Wastes Contaminated With Radioactive Materials ("Red Bag" Waste and Ordinary Trash)	
IN 91-014	Recent Safety-Related Incidents at Large Irradiators	
IN 91-023	Accidental Radiation Overexposures to Personnel Due to Industrial Radiography Accessory Equipment Malfunctions	
IN 91-030	Inadequate Calibration of TLDs Utilized to Monitor Extremity Dose at Uranium Processing and Fabrication Facilities	
IN 91-035	Labeling Requirements for Transporting Multi-Hazard Radioactive Materials	
IN 91-049	Enforcement of Safety Requirements for Radiographers	
IN 91-060	False Alarms of Alarm Ratemeters Because of Radiofrequency Interference	
IN 91-071	Training and Supervision of Individuals Supervised by an Authorized User	
IN 92-010	Brachytherapy Incidents Involving Iridium-192 Wire Used in Endobronchial Treatments	
IN 92-034	New Exposures Limits for Airborne Uranium and Thorium	

IN 92-062	Emergency Response Information Requirements for Radioactive Material Shipments
IN 92-072	Employee Training and Shipper Registration Requirements for Transporting Radioactive Materials
IN 92-084	Release of Patients Treated With Temporary Implants
IN 93-004	Investigation and Reporting of Misadministrations by the Radiation Safety Officer
IN 93-005	Locking of Radiography Exposure Devices
IN 93-006	Potential Bypass Leakage Paths Around Filters Installed in Ventilation Systems
IN 93-007	Classification of Transportation Emergencies
IN 93-010	Dose Calibrator Quality Control
IN 93-014	Clarification of 10 CFR 40.22, Small Quantities of Source Material
IN 93-018	Portable Moisture-Density Gauge User Responsibilities During Field Operations
IN 93-030	NRC Requirements for Evaluation of Wipe Test Results; Calibration of Count Rate Survey Instruments
IN 93-031	Training of Nurses Responsible for the Care of Patients With Brachytherapy Implants
IN 93-036	Notifications, Reports, and Records of Misadministrations
IN 93-060	Reporting Fuel Cycle and Materials Events to the NRC Operations Center
IN 93-069	Radiographic Events At Operating Power Reactors
IN 93-100	Reporting Requirements for Bankruptcy
IN 94-007	Solubility Criteria For Liquid Effluent Releases to Sanitary Sewerage Under the Revised 10 CFR Part 20
IN 94-009	Release of Patients With Residual Radioactivity From Medical Treatment and Control Areas ... Revised 10 CFR Part 20
IN 94-015	Radiation Exposures During an Event Involving a Fixed Nuclear Gauge
IN 94-016	Recent Incidents Resulting in Offsite Contamination
IN 94-017	Strontium-90 Eye Applicators: Submission of Quality Management Plan (QMP), Calibration, and Use
IN 94-037	Misadministration Caused By a Bent Interstitial Needle During Brachytherapy Procedure



IN 94-039	Identified Problems in Gamma Stereotactic Radiosurgery
IN 94-047	Accuracy of Information Provided to NRC During the Licensing Process
IN 94-065	Potential Error in Manual Brachytherapy Dose Calculations Generated Using a Computerized Treatment Planning System
IN 94-070	Issues Associated with the Use of Strontium-89 and Other Beta Emitting Radiopharmaceuticals
IN 94-074	Facility Management Responsibilities for Purchased or Contracted Services for Radiation Therapy Programs
IN 94-081	Accuracy of Bioassay and Environmental Sampling Results
IN 95-007	Radiopharmaceutical Vial Breakage During Preparation
IN 95-025	Valve Failure During Patient Treatment with Gamma Stereotactic Radiosurgery Unit
IN 95-039	Brachytherapy Incidents Involving Treatment Planning Errors
IN 95-039	Brachytherapy Incidents Involving Treatment Planning Errors
IN 95-050	Safety Defect in Gammamed 12I Bronchial Catheter Clamping Adapters
IN 95-051	Recent Incidents Involving Potential Loss of Control of Licensed Material
IN 96-004	Incident Reporting Requirements for Radiography Licensees
IN 96-035	Failure of Safety Systems on Self-Shielded Irradiators Because of Inadequate Maintenance and Training
IN 96-047	Recordkeeping, Decommissioning Notifications for Disposals of Radioactive Waste by Land Burial Authorized under Former 10 CFR 20.304, 20.302, and Current 20.2002
IN 96-057	Incident-reporting Requirements Involving Intakes During a 24-hour Period That May Cause a Total Effective Dose Equivalent in Excess of 0.05 SV (5 rems)
IN 96-066	Recent Misadministrations Caused by Incorrect Calibrations of Strontium-90 Eye Applicators
IN 96-072	Undetected Failures That May Occur During Patient Treatments with Teletherapy Devices
IN 97-030	Control of Licensed Material During Reorganizations, Employee-Management Disagreements, and Financial Crises
IN 97-042	Management Weaknesses Resulting in Failure to Comply With Shipping Requirements for Special Nuclear Material
IN 97-043	License Condition Compliance
IN 97-055	Calculation of Surface Activity for Contaminated Equipment

and Material

IN 97-065	Failures of High-Dose-Rate Remote Afterloading (HDR) Device Source Guide Tubes, Catheters, and Applicators
IN 97-075	Enforcement Sanctions Issued as a Result of Deliberate Violations of NRC Requirements
IN 97-091	Recent Failures of Control Cables Used on Amersham Model 660 Posilock Radiography Systems
IN 98-001	Thefts of Portable Gauges
IN 98-004	Enforcement Sanctions for Deliberate Violations of NRC Employee Protection Requirements
IN 98-005	Criminal History Record Information
IN 98-006	Unauthorized Use of License to Obtain Radioactive Materials, and its Implications under Expanded Title 18 of the U.S.Code
IN 98-010	Probable Misadministrations Occurring During Intravascular Brachytherapy with Novoste Beta-Cath System
IN 98-012	Licensee's Responsibilities Regarding Reporting and Follow-Up Requirements for Nuclear-Powered Pacemakers
IN 98-018	Recent Contamination Incidences Resulting From Failure to Perform Adequate Surveys
IN 99-004	Unplanned Radiation Exposures to Radiographers, Resulting from Failures to Follow Proper Radiation Safety Procedures
IN 99-009	Problems Encountered When Manually Editing Treatment Data on the Nucletron Microselectron-HDR (New) Model 105.999
IN 99-11	Incidents Involving the Use of Radioactive Iodine-131
IN 99-24	Broad-Scope Licensees' Responsibilities for Reviewing and Approving Unregistered Sealed Sources and Devices
IN 99-27	Malfunction of Source Retraction Mechanism in Cobalt-60 Teletherapy Treatment Units
BL 86-004	Defective Teletherapy Timer That May Not Terminate Treatment Dose
BL 88-006	Actions To Be Taken for the Transportation of Model No. SPEC 2-T Radiographic Exposure Device
BL 92-002	Safety Concerns Related to "End of Life" of Aging Theratronics Teletherapy Units
BL 92-003	Release of Patients After Brachytherapy
BL 93-001	Release of Patients After Brachytherapy Treatment With Remote Afterloading Devices
BL 95-001	Quality Assurance Program For Transportation of Radioactive Material

BL 97-001            Potential for Erroneous Calibration, Dose Rate, or Radiation Exposure Measurements with Certain Victoreen Model 530 and 530SIElectrometer/Dose-Meters

BL 97-002            Puncture Testing of Shipping Packages Under 10 CFR Part 71

Others as selected by the First Line Supervisor

3. NUREGs (latest revision, where applicable)

NUREG 1324           Proposed Method for Regulating Major Materials Licensees

NUREG 1400           Air Sampling in the Workplace

NUREG 1460           Guide to NRC Reporting and Recordkeeping Requirements

NUREG 1507           Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions

NUREG 1556           Consolidated Guidance About Materials Licenses

Vol. 1:   Program-Specific Guidance About Portable Gauge Licenses

Vol. 2:   Program-Specific Guidance About Industrial Radiography Licenses

Vol. 3:   Applications for Sealed Source and Device Evaluation and Registration

Vol. 4:   Program-Specific Guidance About Fixed Gauge Licenses

Vol. 5:   Program-Specific Guidance About Self-Shielded Irradiator Licenses

Vol. 6:   Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses

Vol. 7:   Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope

Vol. 8:   Program-Specific Guidance About Exempt Distribution Licenses

Vol. 9:   Program-Specific Guidance About Medical Use Licenses

Vol. 10: Program-Specific Guidance About Master Material Licenses

Vol. 11: Program-Specific Guidance About Licenses of Broad Scope

Vol. 12: Program-Specific Guidance About Possession Licenses for Manufacturing and Distribution

Vol. 13: Program-Specific Guidance About Commercial Radiopharmacy Licenses

Vol. 14: Program-Specific Guidance About Well Logging, Tracer, and Field Flood Study Licenses

Vol. 15: Program-Specific Guidance About Changes of Control and About Bankruptcy Involving Byproduct, Source, or Special Nuclear Material Licenses

Vol. 16: Program-Specific Guidance About Licenses Authorizing Distribution to General Licensees

Vol. 17: Program-Specific Guidance About Service Provider Licenses

Vol. 18: Program-Specific Guidance About Special Nuclear Material of Less than Critical Mass Licenses

Vol. 19: Guidance For Agreement State Licensees About NRC Form 241, Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters, and Guidance for NRC Licensees Proposing to Work in Agreement State Jurisdiction (Reciprocity)

Vol. 20: Program-Specific Guidance About Administrative Licensing Procedures

NUREG 1575 Multi-Agency Radiation Site Survey and Investigation Manual(MARSSIM)

NUREG 1600 General Statements of Policy and Procedures for NRC Enforcement Actions

NUREG/BR 0195 NRC Enforcement Manual

NUREG/BR 0216 Radioactive Waste: Production, Storage, Disposal

NUREG/BR 0240 Reporting Safety Concerns

NUREG/BR 0241 NMSS Handbook for Decommissioning Fuel Cycle and Materials Licenses

NUREG/CR 4884 Interpretation of Bioassay Measurements

NUREG/CR 5849 Manual for Conducting Radiological Surveys in Support of License Termination

Others as selected by the First Line Supervisor

#### 4. Generic Letters (GL)

GL 86-011 Distribution of Products Irradiated in Research Reactors

GL 88-004 Distribution of Gems Irradiated In Research Reactors

GL 94-004 Voluntary Reporting of Additional Occupational Radiation Exposure Data

GL 95-09 Monitoring and Training of Shippers and Carriers of Radioactive Material

GLI 99-001 Recent Nuclear Materials Safety and Safeguards Decision on Bundling Exempt Sources

Others as selected by the First Line Supervisor

#### 5. Federal Register Notices

U. S. Nuclear Regulatory Commission, "Decommissioning, Recordkeeping and License Termination: Documentation Additions - Final Rule," *Federal Register* 58 (No. 141), 39628-39635, July 26, 1993

U. S. Nuclear Regulatory Commission, "General Requirements for Decommissioning Nuclear Facilities - Final Rule, *Federal Register* 53 (No. 123), 24018-24056, June 27, 1988

Others as selected by the First Line Supervisor

6. NRC Branch Technical Positions

Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, April 1993

7. Policy and Guidance Directives

As selected by the First Line Supervisor

8. Sealed Source and Device Registry

9. Technical Assistance Requests

As selected by the First Line Supervisor

- B, The application of these guidance documents to the materials license review program should be studied in detail by the qualifying individual and covered by the First Line Supervisor in discussions, interviews, or oral quizzes.

Qualification Guide 5  
NRC Inspection Manual Chapters(MC)

- A. A selection of currently applicable NRC MC and Inspection Procedure (IP) references with direct application to the materials inspection program should be identified by the First Line Supervisor. The application of the specific references to the materials inspection program should be studied in detail by the qualifying individual.

1. REPORTS/COMMUNICATIONS/FOLLOW-UP

MC 0230	Morning Report
MC 0610	Inspection Reports
MC 0620	Inspection Documents and Records
MC 0720	NRC Bulletins and Information Notices
MC 0801	Inspector Feedback
MC 1120	Preliminary Notifications
IP 92701	Followup
IP 92703	Followup of Confirmatory Action Letters

2. INSPECTIONS

MC 0300	Announced and Unannounced Inspections
MC 0312	Technical Assistance for Radiation Safety Inspections at Nuclear Fuel Cycle Facilities and Materials Licensees' Sites
MC 1246	Formal Qualification Programs in Nuclear Material Safety and Safeguards Program Area
MC 2800	Materials Inspection Program (Inspection Priorities and Scheduling)

3. INTERACTIONS WITH OTHER FEDERAL AGENCIES

MC 1007	Interfacing Activities between Regional Offices of NRC and OSHA
IP 87102	Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA) [EPA] <sup>1</sup>

4. INCIDENT RESPONSE

MC 1300	Incident Response Actions - Responsibility and Authority
MC 1301	Response to Radioactive Material Incidents that Do Not Require Activation of the NRC Incident Response Plan
MC 1302	Action Levels for Radiation Exposures and Contamination Associated with Materials Events Involving Members of the Public
MC 1330	Response to Transportation Accidents Involving Radioactive Materials
MC 1360	Use of Physician and Scientific Consultants in the Medical Consultant Program
IP 87103	Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing

5. LOW-LEVEL WASTE/WASTE MANAGEMENT

MC 2401	Near-Surface Low-Level Radioactive Waste Disposal Facility Inspection Program
---------	-------------------------------------------------------------------------------

---

<sup>1</sup> Required for non-sealed source licensees .

IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 84850	Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61
IP 84900	Low-Level Radioactive Waste Storage

## 6. MATERIALS SAFETY PROGRAM

IMC 1220	Processing of NRC Form 241, Inspection of Agreement State Licensees Operating under the Reciprocity Provisions of 10 CFR 150.20
IMC 2800	Materials Inspection Program
IMC 2810	Materials Inspection Program Programs for Multisite, and Multiregional Broad Licensees
IMC 2815	Construction and Preoperational Inspection of Panoramic, Wet-Source Storage Gamma Irradiators
IP 87101	Performance Evaluation Factors
IP 87102	Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA)
IP 87103	Inspection of Material Licensees Involved in an Incident or Bankruptcy Filing
IP 87110	Industrial/Academic/Research Programs
IP 87111	Materials Processor/Manufacturer Programs
IP 87112	Irradiator Programs
IP 87113	Well Logging Programs
IP 87114	Fixed and Portable Gauge Programs
IP 87115	Nuclear Medicine Programs
IP 87116	Medical Teletherapy Programs
IP 87117	Radiopharmacy Programs
IP 87118	Brachytherapy Programs
IP 87119	Medical Broad-Scope Programs
IP 87120	Industrial Radiography Programs
IP 87250	Locating Missing Materials Licensees

## 7. RADIATION PROTECTION

MC 8300	Radiation Protection
IP 83726	Control of Radioactive Materials and Contamination, Surveys, and Monitoring
IP 83728	Maintaining Occupational Exposures ALARA
IP 83750	Occupational Radiation Exposure
IP 83822	Radiation Protection
IP 83890	Closeout Inspection and Survey
IP 83895	Radiation Protection - Followup on Expired Licenses

## 8. TRANSPORTATION

MC 1330	Response to Transportation Accidents Involving Radioactive Materials
IP 86721	Transportation (Basic)
IP 86740	Inspection of Transportation Activities
IP 86750	Solid Radioactive Waste Management and Transportation of Radioactive Materials

## 9. OTHER

MC 1010	Independent Assessment and Analysis
MC 1100	Notification of Significant Meetings
MC 1201	Conduct of Employees
MC 2900	Performance Appraisal Program

- B. The First Line Supervisor will hold discussions, interviews, or oral quizzes to test the qualifying individual's knowledge and understanding of the application of the selected references to the materials inspection program.



Qualification Guide 6  
Industry Codes and Standards

- A. A selection of currently applicable industry codes and standards should be identified by the First Line Supervisor. These references should include those listed below 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. American National Standards Institute (ANSI)

ANSI N13.1	Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities
ANSI N13.2	Guide for Administrative Practices in Radiation Monitoring
ANSI N13.5	Performance Specifications for Direct Reading and Indirect Reading Pocket Dosimeters for X and Gamma Radiation
ANSI N13.7	Criteria for Photographic Film Dosimeter Performance
ANSI N13.27	Performance Requirements for Pocket Sized Alarm Dosimeters and Alarm Ratemeters
ANSI N42.12	Calibration and Usage of Sodium Iodide Detection Systems
ANSI N42.13	Calibration and Usage of Dose Calibrator Ionization Chambers for the Assay of Radionuclides
ANSI N42.14	Calibration and Use of Germanium Spectrometers for the Measurement of Gamma Ray Emission Rates of Radionuclides
ANSI N42.15	Performance Verification of Liquid Scintillation Counting Systems
ANSI N43.3	General Radiation Safety - Installations Using Non-Medical X-Ray and Sealed Gamma-Ray Sources, Energies up to 10 MeV
ANSI 43.7	Safe Design and Use of Self Contained Dry Source Storage Gamma Irradiators (Category I)
ANSI N43.8	Classification of Industrial Ionizing Radiation Gaging Devices
ANSI N43.10	Safe Design and Use of Panoramic Wet Source Storage Gamma Irradiators (Category IV)
ANSI N44.1	Integrity and Test Specifications for Selected Brachytherapy Sources
ANSI N44.2	Leak Testing Radioactive Brachytherapy Sources
ANSI N44.3	Thyroid Radioiodine Uptake Measurements Using a

Neck Phantom

ANSI N319 Personnel Neutron Dosimeters

ANSI N322 Inspection and Test Specifications for Direct and Indirect Reading Quartz Fiber Pocket Dosimeters

ANSI N323 Radiation Protection Instrumentation Test and Calibration

ANSI N449 Guidelines for Maintaining Cobalt-60 and Cesium-137 Teletherapy Equipment

ANSI N449.1 Procedures for Periodic Inspection of Cobalt-60 and Cesium-137 Teletherapy Equipment

ANSI N542 Sealed Radioactive Sources Classification

ANSI Z88.2 Practices for Respiratory Protection

ANSI Standards as selected and documented by the First Line Supervisor

2. NRC Accepted HP Computer Codes

PC-DOSE  
Varskin  
RASCAL  
REMIT

3. National Council on Radiation Protection and Measurements (NCRP)

NCRP Reports No. 8, 30, 37, 40, 41, 47, 49, 50, 57, 58, 59, 61, 65, 69, 70, 71, 84, 87, 93, 94, 95, 99, 100, 101, 102, 105, 107, 110, 111, 112, 114, 115, 116, 117, 121, 122, 123, 124, 125, 127, 129

NCRP Commentaries No. 9, 11

4. International Commission on Radiological Protection (ICRP)

ICRP 19, 23, 25, 26, 27, 28, 30 and Supplements, 35, 44, 51, 52, 53, 54, 56, 60, 61

5. U.S. Environmental Protection Agency (EPA)

EPA Federal Guidance Report No.11

6. Committee on the Biological Effects of Ionizing Radiation (BEIR)

BEIR Reports (As selected by supervisor)

7. International Commission on Radiological Units (ICRU)

ICRU 12, 18, 20, 22, 24, 32, 38

8. International Atomic Energy Agency (IAEA)

Safety Series No. 1, 25, 33, 38

Technical Report Series No. 120, 133

- B. The First Line Supervisor should test the qualifying individual's knowledge of application of these codes and standards to the materials inspection program by discussions, interviews, or oral quizzes.

Qualification Guide 7  
Inspection Accompaniments

- A. Each inspector should accompany certified inspectors on at least four inspections.
  
- B. The following is a guide for material that should be studied and discussed with the inspector in charge during these inspection accompaniments. The First Line Supervisor will discuss these items, as appropriate, following each inspection accompaniment.
  - 1. The Inspection Program
    - | MC 2800 Materials Inspection 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, Accumulation of Data
  - 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
    - | Management Directive 8.3 NRC Incident Investigation Program
    - | Management Directive 8.10 NRC Medical Event Assessment 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

MC 1360 Use of Physician and Scientific Consultants in the Medical  
Consultant Program

Management Directive 10.6 Use of Consultants & Experts

12. Allegations and Investigations

Management Directive 8.8 Management of Allegations

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 8  
NRC Management Directives

A. A selection of currently applicable NRC Management Directive (MD) references should be identified by the First Line Supervisor. These references should include those listed below and be documented. The qualifying inspector 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. 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 14.1 Official Temporary Duty Travel
9. NRC MD 10.159 Differing Professional Views or Opinions
10. NRC MD 10.42 Hours of Work and Premium Pay
11. NRC MD 10.43 Time and Attendance Reporting
12. NRC MD 10.67 Non-SES Performance Appraisal System
13. NRC MD 10.101 Employee Grievances
14. NRC MD 8.3 NRC Incident Investigation Procedures
15. NRC MD 8.8 Management of Allegations
16. NRC MD 8.10 NRC Medical Event Assessment Program

B. Application of the selected NRC Management Directives to the materials inspection program will be discussed with the qualifying individual by the First Line Supervisor to test the qualifying individual's knowledge.

Qualification Guide 9  
Review of Significant Events at Materials Licensees

- A. A selection of significant historical materials related events should be identified by the First Line Supervisor. These events should be documented and studied in detail by the qualifying individual.
  
- B. The First Line Supervisor should discuss the selected events in detail with the qualifying inspector and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the overall materials inspection program should be stressed.

Qualification Guide 10  
Directed Review of Selected Inspection Case Work

- A. The First Line Supervisor will select documents from the file of a licensed facility and direct their review by the qualifying individual. The qualifying individual will study in detail the selected documents. The selection should be documented. Such documents would include:
  - 1. Initial license application and facility description
  - 2. Associated licensing correspondence (NRC staff comments and licensee responses)
  - 3. License renewal applications and associated NRC correspondence
  - 4. Copy of the license
  - 5. Inspection reports related to that licensee's activities
  
- B. The First Line Supervisor will discuss in detail with the qualifying individual the selected documents and their relation to the overall material inspection program.



## Qualification Guide 11 Formal Training

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