

September 3, 2002

MEMORANDUM TO: Spent Fuel Project Office Staff

FROM: E. William Brach, Director  
Spent Fuel Project Office, NMSS

SUBJECT: ISSUANCE OF SFPO DIRECTOR'S POLICY AND  
PROCEDURES LETTER 02-001, "SFPO QUALIFICATION  
MANUAL"

Attached for your reference and use is Spent Fuel Project Office Policy and Procedures Letter 02-001, "SFPO Qualification Manual." This document was prepared to provide the minimum training requirements for a new staff member in SFPO. These requirements provide a basis of knowledge for: (1) performing technical reviews of various types of radioactive material package applications; (2) performing licensing for radioactive material package and spent fuel storage designs; (3) performing activities associated with the storage of spent fuel; and (4) performing inspections of entities engaged in the design, fabrication, and use of packages and installations for the transportation of radioactive materials and the storage of spent nuclear reactor fuel.

This qualification manual is considered a "living" document, and will be revised as warranted. If you have comments and/or suggestions, please contact your immediate supervisor.

Attachment: SFPO Policy and  
Procedures Letter 02-001, Rev. 0

CONTACT: Kirke Lathrop, NMSS/SFPO  
301-415-8553

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Distribution:  
SFPO r/f NMSS r/f PUBLIC

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| <b>NAME</b> | EEaston |  | JGuttmann |   | MTokar  |   | JMonninger |   | CMiller |  | WHodges |  | EWBrach |  |
| <b>DATE</b> | 8/27/02 |  | 8/29/02   |   | 8/29/02 |   | 8/29/02    |   | 8/29/02 |  | 8/29/02 |  | 9/3/02  |  |

OFFICIAL RECORD COPY

## SFPO Director's Policy and Procedures Letter 02-001

### SFPO Qualification Manual [Revision 0, August 2002]

#### Purpose:

This letter provides the minimum training requirements for a new staff member in SFPO. These requirements provide a basis of knowledge for: (1) performing technical reviews of various types of radioactive material package applications; (2) performing licensing for radioactive material package and spent fuel storage designs; (3) performing activities associated with the storage of spent fuel; and (4) performing inspections of entities engaged in the design, fabrication, and use of packages and installations for the transportation of radioactive materials and the storage of spent nuclear reactor fuel.

#### Discussion:

This manual is divided into four sections, with a qualification summary sheet indicating the satisfactory completion of the appropriate requirements. The first three sections are to be completed by each new staff member, irrespective of assigned work group. The fourth section is specific to the various work groups. The new staff member is expected to complete only that portion applicable to his/her assigned work group. It may not be necessary to complete every requirement. At the supervisor's discretion, requirements may be deleted, or other requirements added, depending on the new staff member's previous experience, training, etc.

This qualification manual incorporates several "checklists" currently used by supervisors and secretaries to assist in new staff member orientation and indoctrination. When appropriately completed, they should be included with this manual. The use and/or alteration of these checklists is at the discretion of appropriate supervisor or secretary.

The time necessary to complete this qualification manual will vary, depending upon the new staff member's previous experiences and education, but within one year is SFPO management's expectation. However, the availability of required training courses and the new staff member's assigned workload may adversely impact the time period.

The oral qualification board is the final step in the qualification process, and it is intended to confirm that the new staff member has attained the skills, competencies and knowledge needed to adequately perform his/her assigned tasks. The oral qualification board should be approached, planned, and conducted in a positive, non-adversarial, and open manner.

It is recognized that some of the formal training courses that may be required may not be immediately available. At his/her discretion, the supervisor may substitute an alternative course, provide another method to meet the requirement, or delete the requirement altogether. Any such change should be documented in the qualification manual.

At the discretion of the supervisor, an incoming staff member who is not qualified in his/her assigned work group will be assigned a mentor drawn from the appropriate SFPO staff. The mentor's function is to assist the new staff member in assimilating into the NRC, SFPO, and his/her assigned work group, and completing the applicable requirements of this qualification

manual in approximately one year. Note that the SFPO mentor/mentee relationship is not part of the formal NRC Mentoring Program administered by the Office of Small Business and Civil Rights, but its objectives and roles are similar.

Attached to this qualification manual is an Appendix, *Post-Qualification Recommended Training*, listing a number of training courses and reading material which is recommended for further professional development following qualification. While none of this material is required for initial qualification, SFPO staff may wish to include some of these items in their individual development plans.

Attachment: SFPO Qualification Manual

# **QUALIFICATION MANUAL**

**SPENT FUEL LICENSING SECTION**

**TECHNICAL REVIEW SECTIONS A & B**

**TRANSPORTATION AND STORAGE SAFETY  
AND INSPECTION SECTION**

**SPENT FUEL PROJECT OFFICE**

**OFFICE OF NUCLEAR MATERIAL SAFETY AND  
SAFEGUARDS**

(REVISION 0 - AUGUST 2002)

## **APPLICABILITY**

This Spent Fuel Project Office (SFPO) qualification manual has been developed to establish the minimum training requirements for a new staff member in SFPO. These requirements provide a basis of knowledge for: (1) performing technical reviews of various types of radioactive material package applications; (2) performing licensing for radioactive material package and spent fuel storage designs; (3) performing activities associated with the storage of spent fuel; and (4) performing inspections of entities engaged in the design, fabrication, and use of packages and installations for the transportation of radioactive materials and the storage of spent nuclear reactor fuel. However, depending on your experience, training, and education, it may not be necessary for you to complete this qualification manual prior to performing SFPO-related activities. That determination will be made by your supervisor, with the concurrence of the appropriate directorate deputy director (Licensing and Inspection Directorate - SLID / Technical Review Directorate - TRD), resulting in an interim qualification determination.

## **QUALIFICATION MANUAL**

This manual is divided into four sections, with a qualification summary sheet to be completed by your supervisor indicating the satisfactory completion of the appropriate requirements. The first three sections are to be completed by each employee, irrespective of assigned work group. The fourth section is specific to the various work groups. You are expected to complete only that portion applicable to your assigned work group. It may not be necessary for you to complete every requirement. At your supervisor's discretion, requirements may be deleted, or other requirements added, depending on your previous experience, training, etc.

You are expected to use the most current version or revision of each document cited in this manual. Consequently, revision numbers are not used. Most of the documentation is readily available either on the NRC's internal web site, the NRC's Agencywide Documents Access and Management System (ADAMS), or the SFPO library. Some hard copies may exist elsewhere within SFPO, but you are cautioned to verify that they are the current revisions before using them. Unless otherwise indicated, you are to initial and date each appropriate requirement sign-off.

This qualification manual incorporates several "checklists" currently used by supervisors and secretaries to assist in new staff member orientation and indoctrination. When appropriately completed, they should be included with this manual. The use and/or alteration of these checklists is at the discretion of your supervisor or secretary.

The time necessary to complete this qualification manual will vary, depending upon your previous experiences and education, but within one year is SFPO management's expectation. However, the availability of required training courses and your assigned workload may adversely impact the time period.

Attached to this qualification manual is an Appendix, *Post-Qualification Recommended Training*, listing a number of training courses and reading material which is recommended to you for further professional development following your qualification. While none of this material is required for you to qualify, you may wish to include some of these items in your individual development plan (IDP).

## **ORAL QUALIFICATION BOARD**

The oral qualification board is the final step in your qualification process, and it is intended to confirm that you have attained the skills, competencies and knowledge needed to adequately perform your assigned tasks. The oral qualification board should be approached, planned, and conducted in a positive, non-adversarial, and open manner.

The oral board should consist of at least three members reflecting a cross-section of technical and management positions. The board chairman should be an SFPO manager and the other board members either SFPO management or staff. You may request a specific individual for board chairman and other board members, however, board composition must be approved by your supervisor. At least one board member should be familiar with your specialty area.

After successfully completing your oral board, your qualification process will be considered complete and a qualification completion memo will be issued by SFPO management (Office Director or designee) documenting that you are certified to perform certain functions (e.g., project manager, technical reviewer in the criticality and thermal disciplines, transportation and storage safety inspector).

## **TRAINING COURSE AVAILABILITY**

It is recognized that some of the formal training courses that you may be required to take may not be immediately available. At his/her discretion, your supervisor may substitute an alternative course, provide another method to meet the requirement, or delete the requirement altogether. Any such change should be documented in this manual.

## **SFPO MENTORING PROGRAM**

It is anticipated, particularly for new staff members not familiar with the NRC or SFPO, that your supervisor will assign a mentor to assist you in completing this qualification manual in approximately one year. A brief description of the expectations for the assigned mentor follows. (Note that the SFPO mentor/mentee relationship is not part of the formal NRC Mentoring Program administered by the Office of Small Business and Civil Rights, but its objectives and roles are similar.)

At the discretion of the supervisor, an incoming staff member who is not qualified in his/her assigned work group will be assigned a mentor drawn from the appropriate SFPO staff. The mentor's function is to assist you in assimilating into the NRC, SFPO, and your work group, and completing the applicable requirements of this qualification manual.

There are a number of expectations regarding the mentor's role.

The mentor will:

- Provide guidance, suggestions, and advice on conducting technical reviews, required or desirable training, licensing document/package preparation, quality assurance inspections, performance of required job performance measures (JPMs), etc.

- Ask questions (e.g., “Have you considered...”).
- As necessary or requested, explain his views and techniques on various aspects of your job.
- Suggest additional resources to fill knowledge or performance gaps.
- As applicable, encourage your active participation in your technical specialty focus meetings, application team meetings and meetings with licensees/applicants.

The mentor will not:

- Perform the role of a supervisor (except when designated as “acting”).
- Tell you what to do (e.g., “You should do this...”).
- Assign work.
- Force his/her concept of how something should be done, or his/her opinions, on you.



1. **GENERAL ORIENTATION** *(all staff)*

- a. Welcoming Orientation completed \_\_\_\_\_
- b. Spent Fuel Project Office orientation completed \_\_\_\_\_  
Secretary      Date
- c. Supervisor's Checklist completed *(as appropriate)* \_\_\_\_\_  
Supervisor      Date
- d. Familiarization Reading

You should review the following documentation to develop a general understanding of the USNRC as an organization, from where its regulatory authority is derived, and the duties and responsibilities of its various offices. This information should be discussed with your mentor or supervisor.

- 1. Atomic Energy Act of 1954, as amended \_\_\_\_\_
- 2. Energy Reorganization Act of 1974, as amended \_\_\_\_\_
- 3. NUREG-0325, "USNRC Organizational Charts and Functional Statements" \_\_\_\_\_
- 4. NUREG-1350, "USNRC Information Digest" \_\_\_\_\_
- 5. NUREG/BR-0118, "The White Flint North Complex" \_\_\_\_\_
- 6. Nuclear Waste Policy Act of 1982, as amended \_\_\_\_\_
- e. Familiarization Training

*(As directed by your supervisor. Asterisked (\*) courses are self-study units available from the PDC. )*

- 1. NRC: What It Is and What It Does \_\_\_\_\_
- 2. Regulatory Process \_\_\_\_\_
- 3. H-100, "Site Access Training" \_\_\_\_\_
- OR**
- 4. H-102, "NMSS Radiation Worker Training" \_\_\_\_\_
- 5. \*Allegations \_\_\_\_\_
- 6. \*Handling Sensitive Material \_\_\_\_\_
- 7. \*Prevention of Sexual Harassment \_\_\_\_\_

- 8. \*Agencywide Documents Access and Management System (ADAMS) \_\_\_\_\_
- 9. \*Computer Security Awareness \_\_\_\_\_
- 10. \*PeopleSoft Human Resources Management System (STARFIRE or time and attendance)
- 11. Acquisition for Project Managers:
  - 1. Overview (3 hrs.) \_\_\_\_\_
  - 2. Developing an Independent Government Cost Estimate (3 hrs.) \_\_\_\_\_
  - 3. Preparing Statements of Work (6 hrs.) \_\_\_\_\_
  - 4. Organizational Conflicts of Interest (3 hrs.) \_\_\_\_\_
  - 5. Contract Administration (6 hrs.) \_\_\_\_\_
- f. P-400, "Introduction to Risk Assessment in NMSS" \_\_\_\_\_
- g. Attend one (1) each of the following meetings (time - about ½ day each):
  - Advisory Committee on Nuclear Waste (ACNW) \_\_\_\_\_
  - Commissioners' Meeting \_\_\_\_\_
- h. Tour the NRC Incident Response Center \_\_\_\_\_

**2. GENERAL READING** *(all staff)*

You should become familiar with the following NRC/SFPO policies and regulations, as directed by your supervisor. Significant issues discussed in the literature should be reviewed with your mentor, supervisor, or designated staff to ensure an adequate understanding.

a. NRC Management Directives:

- 2.7 "Personal Use of Information Technology" \_\_\_\_\_
- 3.1 "Freedom of Information Act" \_\_\_\_\_
- 3.2 "Privacy Act" \_\_\_\_\_
- 7.5 "Ethics Counseling and Training" \_\_\_\_\_
- 8.8 "Management of Allegations" \_\_\_\_\_
- 10.1 "Appointments, General Employment Issues, Details, and Position Changes" \_\_\_\_\_
- 10.14 "Employee Trial Period" \_\_\_\_\_
- 10.41 "Pay Administration" \_\_\_\_\_
- 10.42 "Hours of Work and Premium Pay" \_\_\_\_\_
- 10.43 "Time and Attendance Reporting" \_\_\_\_\_
- 10.62 "Leave Administration" \_\_\_\_\_
- 10.67 "Non-SES Performance Appraisal System" \_\_\_\_\_
- 10.77 "Employee Development and Training" \_\_\_\_\_
- 10.101 "Employee Grievances" \_\_\_\_\_
- 10.130 "Safety and Health Program Under the Occupational Safety and Health Act" \_\_\_\_\_
- 10.131 "Protection of NRC Employees Against Ionizing Radiation" \_\_\_\_\_
- 10.159 "Differing Professional Views or Opinions" \_\_\_\_\_

- 12.1 "NRC Facility Security Program" \_\_\_\_\_
- 13.4 "Transportation Management" \_\_\_\_\_
- 14.1 "Official Temporary Duty Travel" \_\_\_\_\_
- b. USNRC Emergency Protection Plan \_\_\_\_\_
- c. NUREG-1600, "General Statement of Policy and Procedure for NRC Enforcement Actions" \_\_\_\_\_
- d. NUREG/BR-0195, "NRC Enforcement Manual" \_\_\_\_\_
- e. NUREG/BR-0101, "Procedures for the Administration of Technical Assistance Contracts" \_\_\_\_\_
- f. NUREG-0383, "Directory of Certifications" (3 volumes) \_\_\_\_\_
- g. Title 10, Code of Federal Regulations (10 CFR):
  - Part 1, STATEMENTS OF ORGANIZATION AND GENERAL INFORMATION \_\_\_\_\_
  - Part 2, RULES OF PRACTICE FOR DOMESTIC LICENSING PROCEEDINGS AND ISSUANCE OF ORDERS \_\_\_\_\_
  - Part 9, PUBLIC RECORDS \_\_\_\_\_
  - Part 19, NOTICES, INSTRUCTIONS, AND REPORTS TO WORKERS: INSPECTION AND INVESTIGATIONS \_\_\_\_\_
  - Part 20, STANDARDS FOR PROTECTION AGAINST RADIATION \_\_\_\_\_
  - Part 21, REPORTING OF DEFECTS AND NONCOMPLIANCE \_\_\_\_\_
  - Part 25, ACCESS AUTHORIZATION FOR LICENSEE PERSONNEL \_\_\_\_\_
  - Part 26, FITNESS FOR DUTY PROGRAMS \_\_\_\_\_
  - Part 50, DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES \_\_\_\_\_
  - Part 51, ENVIRONMENTAL PROTECTION REGULATIONS FOR DOMESTIC LICENSING AND RELATED REGULATORY FUNCTIONS \_\_\_\_\_
  - Part 71, PACKAGING AND TRANSPORTATION OF RADIOACTIVE MATERIAL (Including the Statements of Consideration) \_\_\_\_\_

Part 72, LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED GREATER THAN CLASS C WASTE (*Including the Statements of Consideration*) \_\_\_\_\_

Part 73, PHYSICAL PROTECTION OF PLANTS AND MATERIALS \_\_\_\_\_

Part 170, FEES FOR FACILITIES, MATERIALS, IMPORT AND EXPORT LICENSES, AND OTHER REGULATORY SERVICES UNDER THE ATOMIC ENERGY ACT OF 1954, AS AMENDED \_\_\_\_\_

Part 171, ANNUAL FEES FOR REACTOR 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 THE NRC \_\_\_\_\_

- h. SFPO Director's Policy and Procedures Letter 00-001, "Guidance for Interim Staff Guidance Development and Implementation," May 23, 2000. \_\_\_\_\_
- i. IAEA Safety Standard No. TS-R-1, "Regulations for the Safe Transport of Radioactive Material" (*IAEA SS No. ST-1 may be substituted*) \_\_\_\_\_
- j. NUREG-1571, "Information Handbook on ISFSIs" \_\_\_\_\_
- k. NUREG-1919, "Directory of Certificates of Compliance for Dry Spent Fuel Storage Casks" \_\_\_\_\_
- l. NUREG-1614, "USNRC Strategic Plan" \_\_\_\_\_
- m. SFPO Operating Plan \_\_\_\_\_
- n. NMSS Policy and Procedure Guides (*as applicable*) \_\_\_\_\_
- o. SFPO Rules of Engagement \_\_\_\_\_
- p. US DOT/NRC Memorandum of Understanding, dated 7/02/79 (FRN 44FR38690) \_\_\_\_\_

**3. TECHNICAL READING** (*all staff*)

You should become familiar with the following technical documentation as required by your supervisor. You should discuss this information in detail with your mentor or supervisor.

1. Standard Review Plans (SRPs):
  - NUREG-1536, "SRP for Dry Cask Storage Systems" \_\_\_\_\_
  - NUREG-1567, "SRP for Spent Fuel Dry Storage Facilities" \_\_\_\_\_
  - NUREG-1609, "SRP for Transportation Packages for Radioactive Material" \_\_\_\_\_
  - NUREG-1617, "SRP for Transportation Packages for Spent Nuclear Fuel" \_\_\_\_\_
2. Interim Staff Guidance (ISG) memoranda (*all*) \_\_\_\_\_
3. NUREG/CR-5502, "Engineering Drawings for 10CFR71 Package Approvals" \_\_\_\_\_
4. Regulatory Guides (RGs):
  - 1.28 "Quality Assurance Requirements" \_\_\_\_\_
  - 1.74 "Quality Assurance Terms and Definitions" \_\_\_\_\_
  - 3.61 "Standard Format and Content for a Topical Safety Analysis Report for a Spent Fuel Dry Storage Cask" \_\_\_\_\_
  - 7.9 "Standard Format and Content of Part 71 Applications for Approval of Packaging of Type B, Large Quantity, and Fissile Radioactive Material" \_\_\_\_\_
  - 8.29 "Instruction Concerning Risks from Occupational Radiation Exposure" \_\_\_\_\_

**4. WORK GROUP SPECIALTY TRAINING** *(as designated)*

This section contains the specialty training requirement subsections for each Section in SFPO:

Spent Fuel Licensing Section (SFLS)  
Technical Review Sections A & B (TRA/B)  
Transportation and Storage Safety and Inspection Section (TSSI)

Each subsection may contain a mixture of reading and formal classroom instruction. Your supervisor has the discretion to modify the requirements as needed based on your previous experience, education, and course availability. Your supervisor may add, delete, or substitute with other material (e.g., from the Appendix), for course(s) which will not be available during your nominal one-year qualification period.

**SPENT FUEL LICENSING SECTION/WORK GROUP**

Job Performance Measures:

Perform one (1) licensing action as a project manager from the receipt of an licensing request (e.g., new package application, amendment request) to process completion (e.g., new certificate of compliance, amendment to an existing certificate of compliance), under the oversight of an experienced SFLS project manager.

\_\_\_\_\_   
SFLS Project Manager

Become familiar with the technical review process, including RAIs and SERs, under the oversight of your mentor, appropriate technical specialty team leader (STL), and/or supervisor, as appropriate, in your assigned technical discipline (selected based upon your experience and education). *This JPM is estimated to take approximately one week over a period of time to complete.*

\_\_\_\_\_   
Mentor/STL/Supervisor

Site visit to observe DSC loading/dry run activities \_\_\_\_\_

Reading:

Project Manager Handbook (ref. G:/PMHANDBOOK) \_\_\_\_\_

49 CFR Parts 171 - 177 (*familiarization*) \_\_\_\_\_

NUREG/CR-6407, "Classification of Transportation Packages and Dry Spent Fuel Storage System Components According to Importance to Safety" \_\_\_\_\_

Information Notices and Bulletins (ref. Section 4, TSSI Section/Work Group, Part II, Subsection B, "Specialized Reading") \_\_\_\_\_

Training Courses (all conducted via the PDC):

Communicating with the Public \_\_\_\_\_

Conducting and Participating in Meetings \_\_\_\_\_

Effective Briefing Techniques \_\_\_\_\_

Work Group Specialty Training - SFLS

Media Training Workshop

\_\_\_\_\_

Technical Writing for Supervisors and Their Staff

\_\_\_\_\_

**TECHNICAL REVIEW SECTIONS/WORK GROUPS A & B**

There are six technical specialty disciplines comprising the bulk of the technical evaluations performed by the technical review staff: (1) containment/confinement; (2) criticality; (3) materials; (4) shielding/radiological protection; (5) structural; and (6) thermal. Your supervisor will assign you to one or more technical specialty disciplines. Your supervisor, mentor, and/or the technical specialty team leader(s) (STLs) will determine what training within a technical specialty discipline is required based on the your educational background and experience. The technical specialty training listed here may not be all-inclusive, and may be adjusted as desired by your supervisor, mentor, or technical specialty team leader(s).

*(Note: Indicate assigned specialty group(s) by checking the box after group name.)*

All Disciplines

Job Performance Measures:

Perform one (1) technical review, including an RAI (if appropriate) and SER, under the oversight of your mentor, appropriate specialty team leader, and/or supervisor, in your assigned technical discipline.

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Mentor/STL/Supervisor

Become familiar with the licensing process from the receipt of an licensing request (e.g., new package application, amendment request) to process completion (e.g., new certificate of compliance, amendment to an existing certificate of compliance), by working with an experienced SFLS project manager. *This JPM is estimated to take approximately one week over a period of time to complete.*

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SFLS Project Manager

Work Group Specialty Training - TRA/B

Containment/Confinement [ ]

NUREG/CR-6487, "Containment Analysis for Type B Packages with Various Contents" \_\_\_\_\_

RG 7.4, "Leakage Tests on Packages for Shipment of Radioactive Material" \_\_\_\_\_

ANSI N14.5, "Leakage Tests on Packages for Shipment" \_\_\_\_\_

Work Group Specialty Training - TRA/B

Criticality [ ]

NUREG/CR-5661, "Recommendations for Preparing Criticality Safety Evaluations of Transportation Packages"

\_\_\_\_\_

NUREG/CR-6361, "Criticality Benchmark Guide for Light-Water Reactor Fuel in Transportation and Storage Packages"

\_\_\_\_\_

ANSI/ANS-8.1, "Nuclear Criticality Safety in Operations with Fissionable Material Outside Reactors"

\_\_\_\_\_

ANSI/ANS-8.15, "Nuclear Criticality Control of Special Actinide Elements"

\_\_\_\_\_

ANSI/ANS-8.17, "Handling, Storage, and Transport of LWR Fuel Outside Reactors"

\_\_\_\_\_

ANSI/ANS-8.21, "Fixed Neutron Absorbers"

\_\_\_\_\_

Work Group Specialty Training - TRA/B

Materials [ ]

ASME B&PVC, Section II, Part C, "Specifications for Welding Rods, Electrodes,  
and Filler Metals" \_\_\_\_\_

ASME B&PVC, Section II, Part D, "Material Properties" \_\_\_\_\_

ASTM Specifications (*general familiarization*) \_\_\_\_\_

Work Group Specialty Training - TRA/B

Shielding/Radiological Protection [ ]

49 CFR 173, Subpart I \_\_\_\_\_

10 CFR 835 \_\_\_\_\_

40 CFR 190 \_\_\_\_\_

40 CFR 191 \_\_\_\_\_

ANSI/ANS 6.1.1, "Flux to Dose Rate Conversion Factors" \_\_\_\_\_

ANSI N14.1, "UF6 Packages" \_\_\_\_\_

Reg Guide 8.8, "Information Relevant to Ensuring the Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Reasonably Achievable" \_\_\_\_\_

Reg Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Reasonably Achievable" \_\_\_\_\_

Work Group Specialty Training - TRA/B

Structural [ ]

RG 7.6, "Design Criteria for the Structural Analysis of Shipping Cask Containment Vessels"

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RG 7.8, "Load Combinations for the Structural Analysis of Shipping Casks for Radioactive Material"

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NUREG/CR-1815, "Recommendations for Protecting Against Failure by Brittle Fracture in Ferritic Steel Shipping Containers Up to Four Inches Thick"

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NUREG/CR-4554, "SCANS (Shipping Cask Analysis System) A Microcomputer Based Analysis System for Shipping Cask Design Review"

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NUREG/CR-6007, "Stress Analysis of Closure Bolts for Shipping Casks"

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Work Group Specialty Training - TRA/B

Thermal [ ]

RG 3.54, "Spent Fuel Heat Generation in an Independent Spent Fuel Storage Installation"

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ASTM Standard Practice for Thermal Qualification of Radioactive Material Packages"

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**TRANSPORTATION AND STORAGE SAFETY AND INSPECTION SECTION/WORK GROUP**

This subsection is in two parts. The first part (Part I) covers the specialty requirements for personnel who are *not qualifying as transportation and storage safety inspectors*. The second part (Part II) is for transportation and storage safety inspector candidates *only*. Part II is a condensation of the current NRC Inspection Manual Chapter 1246, Appendix A, Section VI, “NMSS Headquarters Transportation Packaging and Dry Storage System Safety Inspector,” qualification program with redundancies with other parts of the SFPO qualification manual removed (except as noted). Unnecessary and obsolete requirements have also been deleted. Consequently, the transportation and storage safety inspector candidates must complete sections 1, 2, 3, 4, and Parts I and II of this subsection of the SFPO qualification manual.

**PART I**

- 49 CFR Parts 171 - 177 (*familiarity*) \_\_\_\_\_
- 49 CFR Part 397, Subpart D \_\_\_\_\_
- NUREG-1608, “Categorizing and Transporting LSA and SCO” \_\_\_\_\_
- NUREG-1660, “US Specific Schedules of Regulations for Transport of Specified Types of Radioactive Materials Consignments” \_\_\_\_\_
- NUREG/BR-0024, “Working Safely in Gamma Radiography” \_\_\_\_\_
- RAMREG-001-98, “Radioactive Material Regulations Review” (USDOT) \_\_\_\_\_

Work Group Specialty Training - TSSI

PART II

| A. CORE TRAINING:                                     | <u>Initials</u> | <u>Date</u> |
|---|-----------------|-------------|
| Fundamentals of Inspection Course (G-101)             | _____           | _____       |
| Inspecting for Performance Course<br>(G-303 or G-304) | _____           | _____       |
| Effective Communications for<br>NRC Inspectors        | _____           | _____       |
| OSHA Indoctrination Course (G-111)                    | _____           | _____       |
| Site Access Training (H-100)                          | _____           | _____       |

B. SPECIALIZED READING:

Your supervisor should discuss these policies and practices with you to ensure that you have a full and complete understanding of the material. Note that there is some duplication with section 3 of this manual. You may signify completion of the requirement in either section, with a note so indicating in the other unsigned section.

Regulatory Guides

|      |  |       |
|------|--|-------|
| 1.28 | Quality Assurance Requirements (Design and Construction)   | _____ |
| 1.33 | Quality Assurance Program Requirements (Operation)   | _____ |
| 3.60 | Design of an Independent Spent Fuel Storage Installation (Dry Storage)                             | _____ |
| 3.61 | Standard Format and Content for a Topical Safety Analysis Report for a Spent Fuel Dry Storage Cask | _____ |

Work Group Specialty Training - TSSI

- 7.7 Administrative Guide for Verifying Compliance with Packaging Requirements for Shipments of Radioactive Materials
- 
- 7.9 Standard Format and Content of Part 71 Applications for Approval of Packaging of Type B, Large Quantity, and Fissile Radioactive Material
- 
- 7.10 Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material
- 
- 8.29 Instruction Concerning Risks from Occupational Radiation Exposure
- 

Information Notices (IN) and Bulletins (BL)

- IN 84-050 Clarification of Scope of Quality Assurance Programs for Transport Packages Pursuant to 10 CFR 50, Appendix B
- 
- IN 87-033 Applicability of 10 CFR Part 21 to Nonlicensees
- 
- IN 91-021 Inadequate Quality Assurance Program of Vendor Supplying Safety-Related Equipment
- 
- IN 91-039 Compliance with 10 CFR Part 21, "Reporting of Defects and Noncompliance"
- 
- IN 95-029 Oversight of Design and Fabrication Activities for Metal Components Used in Spent Fuel Dry Storage Systems
- 
- IN 96-040 Deficiencies in Material Dedication and Procurement Practices and in Audits of Vendors
- 
- IN 97-051 Problems Experienced Loading and Unloading Spent Nuclear Fuel Storage and Transportation Casks
-

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IN 97-057            Leak Testing of Packaging Used in the Transport of  
Radioactive Material

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IN 99-029            Authorized Contents of Spent Fuel Casks

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BL 96-04            Chemical, Galvanic, or Other Reactions in Spent Fuel  
Storage and Transportation Casks

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NUREGs

NUREG 1419        Directory of Certificates of Compliance for Dry Spent Fuel  
Storage Casks

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NUREG 1600        General Statement of Policy and Procedures for NRC  
Enforcement Actions: *(Electronic version only)*

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NUREG/CR-6314    Quality Assurance Inspections for Shipping and Storage  
Containers

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NUREG/CR-6407    Classification of Transportation Packaging and Dry Spent  
Fuel Storage System Components According to  
Importance to Safety

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NUREG/BR-0195    NRC Enforcement Manual

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Generic Letters (GL)

GL 91-05        Licensee Commercial-Grade Procurement and Dedication  
Programs

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NRC Inspection Manual Chapters (MC) and Inspection Procedures (IP)

MC 0102        Oversight and Objectivity of Inspectors and Examiners at Reactor  
Facilities

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MC 0300        Announced and Unannounced Inspections

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Work Group Specialty Training - TSSI

|          |  |       |
|----------|--|-------|
| MC 0610  | Inspection Reports   | _____ |
| MC0620   | Inspection Documents and Records   | _____ |
| MC 1330  | Response to Transportation Accidents Involving Radioactive Materials   | _____ |
| 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 2681  | Physical Protection and Transport of SNM and Irradiated Fuel Inspections of Fuel Facilities                              | _____ |
| MC 2690  | Inspection Program For Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations                 | _____ |
| MC 2700  | Vendor Inspection Program  | _____ |
| IP 60851 | Design Control of ISFSI Components   | _____ |
| IP 60852 | ISFSI Component Fabrication By Outside Fabricators   | _____ |
| IP 60853 | On-Site Fabrication of Components and Construction of an ISFSI   | _____ |
| IP 60854 | Preoperational Testing of an ISFSI   | _____ |
| IP 60855 | Operation of an ISFSI  | _____ |
| IP 60856 | Review of 10 CFR 72.212(b) Evaluations   | _____ |
| IP 60857 | Review of 10 CFR 72.48 Evaluations   | _____ |
| IP 86001 | Design, Fabrication, Testing, and Maintenance of Transportation Packagings   | _____ |

Work Group Specialty Training - TSSI

Industry Codes and Standards

American Society of Mechanical Engineers (ASME)/NQA-1, Quality Assurance Program Requirements for Nuclear Facilities

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ASME Boiler and Pressure Vessel Code (*applicable parts of Sections III, V, and IX*)

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C. INSPECTION ACCOMPANIMENTS:

1. You should accompany certified inspectors on at least four inspections. If possible, two of these inspections should be of 10 CFR Part 71 activities and two of 10 CFR Part 72 activities.
2. The following is a guide for material that you should study and discuss with the lead inspector during these inspection accompaniments. Your supervisor will discuss these items, as appropriate, following each inspection accompaniment.
  - a. The Inspection Program
  - b. Scheduling and Preparation for Inspections
  - c. Scope of Inspection
  - d. Entrance/Exit Interviews
  - e. Conduct of Inspection, Accumulation of Data
  - f. Post-inspection Activities of Inspectors
  - g. MC 0610 Inspection Reports

Record of Accompaniments

1. Location/Facility: \_\_\_\_\_  
Inspection Dates: \_\_\_\_\_  
Inspection Type (71/72): \_\_\_\_\_  
Successful Completion: \_\_\_\_\_  
Lead Inspector/Supervisor

Work Group Specialty Training - TSSI

2. Location/Facility: \_\_\_\_\_  
Inspection Dates: \_\_\_\_\_  
Inspection Type (71/72): \_\_\_\_\_  
Successful Completion: \_\_\_\_\_  
Lead Inspector/Supervisor
3. Location/Facility: \_\_\_\_\_  
Inspection Dates: \_\_\_\_\_  
Inspection Type (71/72): \_\_\_\_\_  
Successful Completion: \_\_\_\_\_  
Lead Inspector/Supervisor
4. Location/Facility: \_\_\_\_\_  
Inspection Dates: \_\_\_\_\_  
Inspection Type (71/72): \_\_\_\_\_  
Successful Completion: \_\_\_\_\_  
Lead Inspector/Supervisor

D. SAFETY ANALYSIS REPORTS:

1. You should become generally familiar with Safety Analysis Reports for the packaging or storage systems for which the NRC has issued a certificate of compliance and the independent spent fuel storage facilities for which the NRC has issued licenses.
2. You should review the appropriate sections of a facility's Technical Specifications and Updated Final Safety Analysis Report (USAR) with an emphasis on the application of Technical Specifications in the inspection program.
3. After you have reviewed a USAR, a facility Technical Specifications, and a Safety Analysis Report, you should be able to specifically address the application of the references to the inspection program. You may be asked to demonstrate your knowledge through discussions, interviews or quizzes. These discussion activities should be conducted by senior inspectors to illustrate recent application of regulatory guidance to the inspection program. Alternatively, discussions of a similar nature can be held with your supervisor. Completion of the discussion activities should be documented below.

Discussions completed: \_\_\_\_\_  
Supervisor Date

## APPENDIX

### Post-Qualification Recommended Training

The training courses and reading material included in this appendix are recommended to you for your professional development following your successful completion of your qualification program. Selected material could be included in your IDP or considered for continuing training on an annual basis. This list is not all-inclusive and you are encouraged to consider alternatives. This list follows the format of the required training sections.

#### GENERAL ORIENTATION

Acquisition for Project Managers:

Developing Proposal Evaluation Factors (3 hrs.)

Source Evaluation Panel Procedures (6 hrs.)

Negotiation of Project Terms and Conditions (6 hrs.)

Property Management (3 hrs.)

Closing Out the Contract (3 hrs.)

Attend the following meetings (time - about ½ day each):

Advisory Committee on Reactor Safeguards (ACRS)

Committee to Review Generic Requirements (CRGR)

#### WORK GROUP SPECIALTY TRAINING

Spent Fuel Licensing Section:

Training Courses (*all conducted via the PDC except as noted*):

Basic Health Physics Technology

Conflict Resolution

Ethics in Government

Managing Change

Small Group Dynamics

H-308, "Transportation of Radioactive Materials" (DOE)

## Technical Review Sections A/B:

### Criticality:

University of New Mexico, "Nuclear Criticality Safety" (short course)

LANL, "Basic Criticality Safety" (5-day course)

LANL, "Introduction to MCNP"

ORNL, "SCALE Criticality Safety (CSAS/KENO V.a)"

ORNL, "SCALE KENO VI Training Course"

AEA Technology, "Introduction to the MONK Code"

### Materials:

ASME/ASM Fracture Mechanics course

NACE Corrosion/Coatings course

ASME B&PVC, Section IX, "Welding and Brazing"

### Shielding/Radiological Protection

Computer Codes: SAS2H, MICROSIELD: ORIGEN 2.1, MCBEND, DORT/TORT, MCNP, SAS1, SAS4, ORIGENARP, ORIGENS.

H-117, "Introduction to Health Physics"

H-308, "Transportation of Radioactive Material"

ORNL, "SCALE Shielding & Source Terms"

Harvard School of Public Health, "Analyzing Risk: Science, Assessment, and Management"

Harvard School of Public Health, "Nuclear Emergency Planning"

Harvard School of Public Health, "Radioactivity in the Environment: Risk, Assessment, and Measurement"

EPA 410-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents"

Thermal:

“ANSYS Introduction” (*Part 1*) course

“ANSYS Heat Transfer” course

Transportation and Storage Safety and Inspection Section:

Part I:

H-308, “Transportation of Radioactive Material”