

### TRAINING REQUIREMENTS AND QUALIFICATION JOURNAL FOR INTERNATIONAL SAFEGUARDS ANALYSTS, NUCLEAR MATERIALS MANAGEMENT AND SAFEGUARDS SYSTEM (NMMSS) ANALYSTS, AND IMPORT/EXPORT ANALYSTS

Effective Date: 06/27/2016

#### TRAINING REQUIREMENTS

##### Applicability

The training described below is required for all International Safeguards Analysts, Nuclear Materials Management and Safeguards System (NMMSS) Analysts, and Import/Export Analysts.

##### Training

1. Required Training. This training and qualification plan provides lists of resources that can be used to obtain the requisite levels of knowledge for qualification. The training activities to be performed to qualify for the relevant analyst position should be determined and agreed with the Chief of the Material Control and Accounting Branch (MCAB).
  - a. Initial Training
    - i. Agency-Level Knowledge
    - ii. Office-Level Knowledge
    - iii. Ethics, Objectivity, and Professional Conduct
    - iv. Differing Professional Views and Staff Diversity
  - b. Core Training
    - i. Policy Roles and Responsibilities (General)
    - ii. Nonproliferation Policy
    - iii. Interagency Roles and Responsibilities
    - iv. International Nonproliferation Obligations
    - v. Technical Roles and Responsibilities (General)Nuclear Facilities
    - vi. NRC Regulations
    - vii. Nuclear Material Control and Accounting
    - viii. International Atomic Energy Agency (IAEA) Safeguards Implementation
    - ix. Compliance with Safeguards Obligations
    - x. Export Licensing
    - xi. Foreign Obligations and Obligation Tracking
    - xiii. NMMSS Database

2. Continual Training. Knowledge acquisition and transfer is expected to be a continual activity to enable the analysts to grow their expertise and to stay current with evolving United States (U.S.) and international policies, concepts, and procedures. Knowledge acquisition activities will be reviewed by management on a case-by-case basis.

## QUALIFICATION JOURNAL

### Purpose

This Qualification Journal establishes the minimum training requirements for personnel assigned as International Safeguards Analysts, NMMSS Analysts, or Import/Export Analysts.

The document 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. It establishes the minimum knowledge levels or areas of study that must be completed for each signature card. These signature cards provide traceable documentation to show that minimum requirements are met for each International Safeguards Analyst, NMMSS Analyst, or Import/Export Analyst.

### Journal Format

The Qualification Cards are divided into the following three sub-sections:

1. Evaluation Criteria
2. Tasks
3. Supervisor Approval

The tasks must be initialed by the supervisor or the proctor approved by the supervisor. The tasks will be labeled with a review tag to help identify the amount of effort the individual is expected to undertake. The review level may be adjusted by the individual's supervisor on a case-by-case basis.

### Review Levels:

Basic = B:

Scan the information, but do not read word for word. Become knowledgeable of the purpose and general content. Be aware that the information exists, know where it can be accessed, and know how it is used. Expect Qualification Questions regarding awareness of the information and where to find it. (Example Question: What U.S. Nuclear Regulatory Commission (NRC) offices have non-proliferation related licensing and oversight responsibilities?)

Intermediate = I:

Review the entire body of information. Understand how the information correlates to the roles, responsibilities, and assignments of the position. Expect Qualification Questions to be drawn from key concepts in the material. Be prepared to give basic examples of how the information would be used on the job. (Example Question: What role does Title 10 of the Code of Federal Regulations (10 CFR) Part 75 play in the implementation of IAEA safeguards?)

Comprehensive = C

Study the entire body of information thoroughly. Be prepared to explain the basic steps needed to complete key tasks associated with the subject. Understand and be able to describe the process, the regulatory basis, and the importance of applicable guidance. (Example Question: Describe the process for making a facility eligible for IAEA safeguards implementation.)

### Proctors

In order to support the “On the Job Training” requirements, the reviewer's immediate supervisor will identify several characteristic activities of an International Safeguards Analyst, NMMSS Analyst, or Import/Export Analyst. The reviewer will work under the direction of a Senior International Safeguards Analyst to complete the required training. Any qualified member of the staff, as approved by the supervisor, may review and initial specific items on the qualification cards. The qualification board should seek to tailor the qualification process to the experience and training level of the reviewer and to meet the needs of the NRC.

### Qualification Journal Notebook

The qualification program involves two major tasks. First, the individual must review the material specified in the Qualification Cards listed below. Once the material has been reviewed to the satisfaction of the individual's First Line Supervisor, the appropriate box below must be initialed. Second, after the qualification cards have been signed, the individual must appear before a Qualification Board. After the successful completion of this Board review, the Second Line Supervisor, a Senior Executive Service (SES) manager, must provide the approval signatures. To complete your qualification, you are to complete the 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 Qualification Journal.

Additional guidance, including sample oral board questions, is provided in the Knowledge Management Center at

<http://nrcknowledgecenter.nrc.gov/CommunityBrowser.aspx?id=1546&lang=en-US>.

### New Employees

New employees to the NRC who are hired to the Office of Nuclear Material Safety and Safeguards (NMSS) shall complete the “New Employee Orientation Checklist”. The NMSS “New Employee Orientation Checklist” generally includes activities that a new NMSS employee would encounter in the first few weeks of employment. For activities that require more than the first few weeks of employment, employees can finish the activities in parallel with a qualification plan. The New Employee Orientation Checklist can be found in

<http://www.internal.nrc.gov/HR/pdf/orientation-checklist.pdf>.

INTERNATIONAL SAFEGUARDS ANALYST – NMMSS ANALYST – IMPORT/EXPORT  
ANALYST QUALIFICATION JOURNAL NOTEBOOK

Name: \_\_\_\_\_

Position: International Safeguards Analyst, NMMSS Analyst, or Import/Export Analyst

Branch: Material Control and Accounting Branch

Individual Education, Training and Experience (insert or attach description):

Beginning Date of Training and Qualification: \_\_\_\_\_

Proposed Completion Date of Training and Qualification: \_\_\_\_\_  
(not to exceed 2 years from beginning date)

Acceptance of Training Plan

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Branch Chief Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Completion of All Qualification Requirements except Oral Board

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Branch Chief Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Successful Completion of Oral Board

SES Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## PART 1: INITIAL TRAINING

### Qualification Guide 1 Agency-Level Knowledge

PURPOSE. The purpose of this activity is to familiarize the employee with the structure of the NRC and some impacts from regulatory history on the regulatory framework under which today's NRC staff functions. Employees should gain an understanding of how the agency was formed and how it contributes as an independent agency.

### EVALUATION CRITERIA.

1. Describe the statutes authorizing NRC activities.
2. Describe the history of the NRC.
3. Describe the NRC's Strategic Plan.
4. Describe how the NRC regulates.
5. Describe the organization and functions of NRC offices.
6. Describe the License Fee Program.
7. Describe major document collections including the general topic and the intended audience of each.
8. Describe how the Commission operates.
9. Describe how the staff communicates with the Commission.

### TASKS.

1. Statutes – Locate the discussion of statutory authority on the public website. (Select "About NRC," then select "Governing Legislation".)
  - a. In general, what is the purpose of the Atomic Energy Act (AEA) of 1954?
  - b. What are "source material" and "special nuclear material"? (See AEA Section 11 - Definitions.)
  - c. What is "Restricted Data"? (See AEA Section 11 - Definitions.)
  - d. What AEA section specifies how policies contained in international arrangements are to be addressed? (See AEA Chapter 11 – International Activities.)
  - e. What AEA chapter states the requirements for the control and classification of information? (See AEA Chapter 12 – Control of Information.)
  - f. What AEA section gives the public the right to know about significant actions and the right to request a hearing (e.g., to participate in the regulatory process)? (See AEA Chapter 16 - Judicial Review.)
  - g. When the Commission establishes an Agreement with a State, is the Commission's authority delegated or discontinued? (See AEA Section 274 - Cooperation with States.)
  - h. Agreements with States are limited to what material? (See AEA Section 274.)
  - i. In general, what is the purpose of the Energy Reorganization Act (ERA) of 1974?
  - j. Does the NRC belong to a Branch of the Federal Government, or is it an independent agency? (See ERA Section 201.)
  - k. What NRC Offices are defined by the ERA? (See ERA Title II.)
  - l. In general, what is the purpose of the Administrative Procedures Act? (See NUREG-0280, Vol. 2, Section 3, Part A, or summary on NRC public web site.)

- m. In general, what is the purpose of the National Environmental Policy Act of 1969? (See NUREG-0280, Vol. 2, Section 9, Part C or summary on NRC public web site.)
  - n. In general, what is the purpose of the Energy Policy Act of 1992? (See NUREG-0980, Vol. 1, Section 6, Part B, or summary on internet.)
  - o. In general, what is the purpose of the Energy Policy Act of 2005? What security requirements did it impose? (See NUREG-0980, Vol. 1, Section 6, Part D, or summary on internet.)
2. History – Review incidents in NRC history that affected regulatory development. (On the NRC public website select "About Us," then select "History of the NRC". Also see NUREG/BR-0175.)
- a. In general, what was the concern that led to re-organizing the Atomic Energy Commission (AEC) and creating NRC?
  - b. What happened at the NUMEC Plant in Apollo, Pennsylvania? What are the possible causes and what was the impact on nuclear material control and accounting requirements?
  - c. How did NRC's regulatory approach change after the accident at Three Mile Island?
  - d. What was the impact on NRC of the 2011 terrorist attack on the World Trade Center in New York City?
  - e. How was NRC's regulatory approach affected by the accident in Fukushima, Japan?
  - f. In general, describe some major issues that have been addressed regarding nuclear materials safety and safeguards.
3. Strategic Plan – Locate the discussion of the Strategic Plan on the public website. (Select "About Us," then select "Strategic Plan.")
- a. What are the key elements of the Strategic Plan?
  - b. What is the Mission of the NRC?
  - c. What are the Values of the NRC?
  - d. What are the Strategic Goals of the NRC?
  - e. Scan the Strategic Outcomes and Safety Goal Strategies. Know where to find them.
4. How We Regulate – Locate the discussion of regulations on the public website. (Select "About NRC," then select "How We Regulate.") Describe the key elements of our regulatory system.
5. Organization – Locate the discussion of the NRC organizational structure on the public website. (Select "About NRC," then select "Organization and Functions.")
- a. Note which offices report directly to the Commission and which offices report to the Executive Director of Operations (EDO). Know where to find the information.
  - b. Who is serving on the Commission currently?
  - c. What is the function of the Office of the EDO? Which Deputy EDO is responsible for NMSS?
  - d. Which Congressional Oversight Committees does the Office of Congressional Affairs keep informed?
  - e. Which Assistant General Counsel handles fuel cycle issues?
  - f. What kind of licenses does the Office of International Programs issue?

- g. Which office codifies Commission decisions in memoranda to the staff?
  - h. Which office investigates charges of criminal activity by NRC staff?
  - i. Which office investigates charges of criminal activity by licensees?
  - j. Which office is responsible for the Agreement State Program?
  - k. Which office manages the NRC Operations Center?
  - l. Which Region implements the Fuel Facility Inspection Program?
  - m. Which office is responsible for the Agencywide Document Access and Management System (ADAMS)?
  - n. Which office implements the Employee Mentoring Program?
  - o. Which office has oversight of safety and security culture issues?
6. License Fee Program – Locate the discussion of fees on the public website. (Select "About NRC," then select "How We Regulate," then select "Licensing," under "Licensing Decommissioning and Certification," then select "License Fees.")
- a. Why does the NRC charge fees for licensing actions?
  - b. Which parts of NRC regulations establish the fees licensees must pay?
  - c. Which office is responsible for the NRC Fee Policy?
7. How the Commission Operates – Locate discussion on public web site (Go to "About NRC," select "Organization & Functions," select "The Commission," select "Direction-Setting and Policymaking Activities.")
- a. What is a SECY paper?
  - b. What is a Commission Action Memoranda?
  - c. What is a Staff Requirements Memoranda?
  - d. What is a Commission Voting Record?
8. Major Document Collections – Locate document collections on the internal website. (Under "Topics" select "Information Resources" and then select the "Collection of Interest.")
- a. What are the purpose and the audience for Management Directives (See Management Directive (MD) 1.1)?
  - b. What is a NUREG? (See brief statement on NUREG home page. Note different types of NUREGs.)
  - c. What is the purpose and audience for a Regulatory Guide? (See brief statement on Regulatory Guide home page. Note different divisions of guides.)
  - d. What is the purpose and audience of a Standard Review Plan (SRP)? SRP's are issued as what type of document?
  - e. What types of documents are provided for inspectors in the Inspection Manual? (See Inspection Manual Chapter 0040, Sections 07.01 - 07.04.)
  - f. What is the purpose of the Enforcement Policy (not the Enforcement Manual)? In what form is the policy being maintained currently? (Select "Enforcement" in the "Document Collections" section of the web page.)
9. Communications with the Commission – Locate the "Offices" section on the internal website and select "OEDO." Select "Info for the Commission" and then select "Procedures."

- a. What is the purpose of a Drop-In Briefing Package? Know where to find the guidance.
- b. What is the purpose of a Commissioners' Assistants Note? Know where to find the guidance.
- c. What is the purpose of a Daily Note and a One Week Look Ahead? Know where to find the guidance.
- d. Skim the last several EDO Updates to identify topics of interest to senior managers.  
(From the OEDO home page select "News from the EDO.")
- e. If possible, attend a Commission All-Hands Meeting.

### Qualification Guide 1

#### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

B NRC Statutory Authority

B NRC History

B Organization and Function of Offices

B License Fee Program

B Document Collections

B How the Commission Operates

B Communications with the Commission

I How NRC Regulates

C NRC Strategic Plan

Initials	Date
Initials	Date
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Qualification Guide 2  
Office-Level Knowledge

PURPOSE. The purpose of this activity is to familiarize the employee with the structure, procedures and functions of the Office of Nuclear Material Safety and Safeguards.

EVALUATION CRITERIA.

1. Describe the NMSS Mission, Goals, and Values.
2. Describe the NMSS organization and functions.
3. Describe NMSS Office Letters (location and general topics).
4. Describe the various coordinators in NMSS.
5. Describe the NMSS Delegation of Authority.
6. Describe how to use the NMSS Ticket Tracking System.

TASKS.

1. Mission, Goals and Values – Locate on internal website (Find "Offices," click on "NMSS," then scroll down and click on "Mission, Goals and Values.")
  - a. Do the NMSS goals match the agency goals?
  - b. In general, describe the NMSS values and some aspects of those values.
2. Organization and Functions – Locate on internal website (Under "Offices," click on "NMSS," then scroll down and click on information needed.)
  - a. Who are the current Office Director and Deputy Office Director?
  - b. In general, describe the function of each division.
  - c. If you had a question about criticality safety, which Branch Chief would you call?
  - d. If you had a question about an enrichment plant, which Branch Chief would you call?
  - e. If you had a question about an Agreement State, which Branch Chief would you call?
  - f. If you had a question about uranium mining or concentration, which Branch Chief would you call?
  - g. If you had a question about the high-level waste repository, which Branch Chief would you call?
3. Office Letters – Locate the NMSS Policy and Procedures (P&P).
  - a. What is the policy for radiation protection of staff? In addition to the responsibilities of all staff, what special responsibilities do female staff have? How do you obtain a dosimeter?
  - b. Where do find guidance on withholding information from the public? Is OGC concurrence required on routine withholding determinations?
  - c. Where do you find guidelines for voice mail and e-mail?
  - d. Where do you find HRMS codes you can use to charge your time?
4. Office Coordinators – Locate on internal website (Find "Offices," click on "NMSS," then scroll down and click on "Staff by Function.")
  - a. Who is the Event Coordinator that can help you find an event report?

- b. Who is the Allegation Coordinator that can help you follow-up on a phone call regarding discrimination by a licensee?
  - c. Who is the Enforcement Coordinator that can help you prepare for an enforcement panel?
  - d. Who is the Generic Communications Coordinator that can help you write an Information Notice?
  - e. Who is the Inspection Manual Coordinator that can help you revise an Inspection Procedure?
  - f. Who is the Radiation Safety Officer who can help you get a dosimeter?
5. Delegation of Authority - Locate on internal website (Find "Offices," click on "NMSS," then scroll down to "Policy and Procedures" and click on "Delegation of Authority.")
  - a. Note the actions that must be signed by the Office Director.
  - b. Under the Division of Fuel Cycle Safety, Safeguards, and Environmental Review, who can approve licensing actions (amendments, reviews, renewals, and new applications)?
  - c. Who can approve travel?
  - d. What can a Project Manager approve?
6. Ticket Tracking System - Locate on internal website (Find "Offices," click on "NMSS," then scroll down and click on "Ticket Status.")
  - a. Run a report on all open tickets due in the next 30 days. Note the type of actions being tracked.
  - b. Open a ticket. What do the Special Instructions say? Who has the lead? Are other people assigned to provide input? When is input due? When is the final product due?
7. Read the most recent "Director's Greeting" and "Deputy Director's Corner." Attend an NMSS All-Hands Meeting.

## Qualification Guide 2

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

C NMSS Mission, Goals, and Values

I Organization and Functions

B NMSS Office Letters

B Office Coordinators

B Delegation of Authority

B Ticket Tracking System

B Director Messages and All Hands Meeting

Initials	Date
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Initials	Date

Qualification Guide 3  
Ethics, Objectivity and Professional Conduct

**PURPOSE.** The purpose of this activity is to acquaint employees with the NRC's expectations of employee conduct, protocol, and professionalism. Employee conduct is a vital component of the NRC's credibility as an effective regulator. Employees represent the NRC in interactions with licensee management and workers, local officials, media, and the public. This activity will assist employees to understand NRC procedures, policies, and expectations related to Headquarters employee conduct. This activity will also help employees enhance their professional conduct that is needed to be an effective employee.

**EVALUATION CRITERIA.**

1. Describe the behavior expected of NRC employees at work.
2. In general, describe the principles of ethical conduct.
3. Describe the behavior expected when NRC employees interact with other parties.
4. Describe the behavior expected when NRC employees visit other locations.
5. Describe what the "appearance of impartiality or impropriety" means.

**TASKS.**

1. Behavior at Work – Locate ethics information on the internal website. (Under Offices, select "OGC," then select "Ethics." Complete the online training if not completed already. Review the resource information provided. If the answer cannot be found, call one of the OGC contacts listed or consult your supervisor.)
  - a. With regard to alcohol and illegal drugs?
  - b. With regard to official business and personal relationships?
  - c. With regard to business partnerships with licensees?
  - d. With regard to work habits and professional demeanor?
2. Appearance of Impartiality – Complete the online ethics training.
3. OGC Standards of Conduct regarding the following – Complete the online ethics training:
  - a. Gifts from outside sources.
  - b. Gifts between employees.
  - c. Conflicting financial interests.
  - d. Seeking other employment.
  - e. Misuse of power.
  - f. Outside activities.
4. Interaction with Other Parties – Complete the online ethics training. Review the NRC Principles of Good Regulation and NMSS Values (Go to public website, select "About NRC," then select "Values.")
  - a. Personnel of licensees, vendors or applicants.
  - b. Other NRC employees.
  - c. Members of the general public; another resource is the Office of Public Affairs.

- d. Public interest groups - Another resource is the Office of Public Affairs.
  - e. Allegers and concerned citizens - Another resource is the NMSS Allegation Coordinator.
5. Conduct at other Locations – Complete the online ethics training. Review the NRC Principles of Good Regulation and NMSS Values (Go to public website, select “About NRC,” then select “Values.”)
- a. The site of licensees, vendors or applicants.
  - b. Headquarters, regional office or training center.
  - c. Public meetings.
  - d. Conferences.

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

C Behavior at Work

C Appearance of Impartiality

B Standard of Conduct

I Interaction with Other Parties

I Conduct at Other Locations

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

Qualification Guide 4  
Differing Professional Opinions and Staff Diversity

**PURPOSE.** The purpose of the activity is to become familiar with the informal and formal processes for pursuing resolution of Differing Professional Opinions (DPO). It is the policy of the NRC and the responsibility of all NRC supervisory and managerial personnel to maintain a working environment that encourages each employee to make known his/her best professional judgment even though that judgment may differ from the prevailing staff view, disagree with a management decision or policy position or take issue with proposed or established agency practices.

The purpose of the activity is also to promote the informal and formal processes for encouraging diversity in opinions and staffing. Our workforce represents diversity in gender, ethnicity, occupation, and age, and that diversity makes us stronger.

**EVALUATION CRITERIA.**

1. In general, describe the DPO program.
2. Describe the NRC non-concurrence process.
3. Describe an open collaborative work environment.
4. Describe the open door policy.
5. Describe the grievance process.
6. In general, describe how the NRC supports diversity in the staff.

**TASKS.**

1. DPO Program – Locate MD 10.159, “The NRC Differing Professional Opinions Program.” In addition, locate information on DPOs on the internal website (Under "Topics" select "Employee Resources," scroll down to "Employee Concerns" and select "Differing Professional Opinions Program.")
  - a. What is the DPO policy?
  - b. What are the objectives of the program?
  - c. In general, how is a DPO submitted?
2. Non-Concurrence Process – Locate MD 10.158, "NRC Non-Concurrence Process." In addition, locate information on Non-Concurrence Process on the internal website (Under "Topics" select "Employee Resources," scroll down to "Employee Concerns" and select "Non-Concurrence Process.")
  - a. What is the Non-Concurrence Process policy?
  - b. What are the objectives of the program?
  - c. In general, how does the process work?
3. Open Collaborative Work Environment – On the internal website, look under <http://www.internal.nrc.gov/HR/ocwe/>.
  - a. What is an Open Collaborative Work Environment?
  - b. What does it mean to be a "Team Player"?

- c. Describe the different ways to raise a concern.
4. Open Door Policy – Locate MD 10.160, "Open Door Policy." In addition, locate information on the Open Door Policy on the internal website under <http://www.internal.nrc.gov/HR/ocwe/>.
  - a. What is the Open Door Policy?
  - b. What are the objectives of the program?
  - c. In general, how does the process work?
5. Grievance Process – Locate the grievance procedures in the Collective Bargaining Agreement. (On the internal website, select "Topics," then select "Employee Resources," scroll down to "Union" and select "Collective Bargaining Agreement." In the agreement, go to Article 51 – "Grievance Procedures.")
  - a. What is considered a grievance?
  - b. What matters are excluded from the process?
  - c. Know how to contact the union office for more information.
6. Diversity – Locate NUREG/BR-0316, "Comprehensive Diversity Management Plan." (On the internal website, select "Topics." Under "Document Collections" select "NUREG-Series Publications." Select "Brochures Prepared by NRC Staff"; locate NUREG/BR-0316.)
  - a. What are the goals of the Diversity Management Program?
  - b. What is the role of an employee in the program?
  - c. If possible, attend an EEO Commission briefing.

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

- B DPO Program
- B Non-Concurrence Process
- C Open Collaborative Work Environment
- B Open Door Policy
- B Grievance Process
- B Diversity

Initials	Date
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Initials	Date

## PART 2: CORE TRAINING

### Qualification Guide 5 Policy Roles and Responsibilities (General)

**PURPOSE.** An International Safeguards Analyst, NMMSS Analyst, or Import/Export Analyst is to represent NRC and U.S. interests in domestic and international meetings on nonproliferation issues.

#### **EVALUATION CRITERIA.**

To complete this qualification guide, you should have the ability to perform the following:

1. Develop, present, and defend NRC positions (both verbally and in writing).
2. Provide relevant technical expertise to discussions.
3. Understand other Federal agency responsibilities.
4. Understand IAEA interests and motivations.
5. Understand other countries or groups of countries interests and motivations.
6. Differentiate policy and technical perspectives in discussions and provide options to meet both needs.

#### **TASKS.**

Suggested reading:

- a. NRC Strategic Plan.
- b. Commission Papers (SECY) on nonproliferation related issues.
- c. Executive Branch statements on nonproliferation policy.
- d. IAEA Board of Governors proceedings (GOV/OR) and reports.
- e. United Nations Security Council Resolutions.

Training courses and conferences:

- a. U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) Nuclear Nonproliferation Seminars.
- b. NNSA Next Generation Safeguards Initiative: International Safeguards Workshops.
- c. Lawrence Livermore National Laboratory (LLNL) Safeguards Course at Monterey Institute (<http://www.nonproliferation.org/education/courses/international-nuclear-safeguards/>).
- d. Pacific Northwest National Laboratory (PNNL) Summer Safeguards Course (<http://nationalsecuritytrainingdev.pnl.gov>).
- e. Nuclear Safeguards and Security Education and Training (<http://www.nusasec.org/>).

On-the-job training:

- a. Discussions with senior staff.
- b. Support preparation of Commissioner Assistant Notes and Commission papers.
- c. Observe interagency meetings.

## QUALIFICATION QUESTIONS:

1. Ability to develop, present, and defend NRC positions (both verbally and in writing).
  - a. What strategic goal addresses the NRC's nonproliferation responsibilities?
  - b. What are NRC's nonproliferation responsibilities and how does it implement them?
  - c. How are activities of domestic safeguards and security, international safeguards, and export controls coordinated?
  - d. Who determines the NRC's nonproliferation policy positions?
  - e. How does the NRC implement its nonproliferation responsibilities?
2. Ability to provide relevant technical expertise to discussions.
  - a. What background/expertise is needed for IAEA safeguards oversight?
  - b. What background/expertise is needed for NMSS database oversight?
  - c. What background/expertise is needed for import/export approval oversight?
3. Ability to differentiate policy and technical perspectives in discussions and provide options to meet both needs.
  - a. Describe the policy aspects of international safeguards and nonproliferation.
  - b. Describe the technical aspects of international safeguards and nonproliferation.
4. Ability to understand other Federal agency responsibilities.
  - a. How is U.S. Government international safeguards policy developed?
  - b. What is the nonproliferation position of the U.S.?
  - c. What is the nonproliferation mission of the U.S. Department of State and what are its interests and motivations with respect to nonproliferation issues?
  - d. What is the nonproliferation mission of the NNSA and what are its interests and motivations with respect to nonproliferation issues?
  - e. What is the nonproliferation mission of the U.S. Department of Defense and what are its interests and motivations with respect to nonproliferation issues?
  - f. What is the nonproliferation mission of the U.S. Department of Commerce and what are its interests and motivations with respect to nonproliferation issues?
  - g. What is the nonproliferation mission of the U.S. Intelligence Community and what are its interests and motivations with respect to nonproliferation issues?
  - h. What is the nonproliferation mission of the U.S. Department of Homeland Security and what are its interests and motivations with respect to nonproliferation issues?
  - i. What is the IAEA safeguards implementation role of each Federal agency?
5. Ability to understand IAEA interests and motivations.
  - a. What are the IAEA's role and responsibilities with regards to nonproliferation?
  - b. What Department(s) of the IAEA is responsible for nonproliferation?
  - c. Who is the IAEA, the IAEA Secretariat, and the IAEA Inspectorate?
  - d. What are the IAEA's interests for selecting a facility in the U.S.?
  - e. Which IAEA division is responsible for receiving and processing reports submitted by the U.S.?



- f. Which IAEA division is responsible for developing and maintaining measurement equipment in support of IAEA inspections?
- g. Which IAEA division is responsible for performing destructive assay and environmental sample measurements?
- h. Which IAEA division is responsible for developing and maintaining containment, surveillance, and monitoring equipment?
- i. What is the IAEA's authority for enforcement of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and safeguards agreements?
- j. Who in the IAEA has nuclear nonproliferation enforcement responsibility?
- k. What is the difference between IAEA effectiveness and IAEA efficiency, and what is the need for balancing them together?

6. Ability to understand other countries or groups of countries interests and motivations.

- a. For what IAEA Member States is technical cooperation a priority?
- b. For what IAEA Member States is disarmament of Nuclear Weapon States the priority?
- c. For what IAEA Member States is effective nuclear verification and monitoring a priority?
- d. For what IAEA Member States is cost efficiency of safeguards activities and IAEA budget control a higher priority than effectiveness?
- e. What is the nonproliferation position of Brazil and Egypt, among others?
- f. What appears to be the nonproliferation position of Russia?
- g. What has been the international safeguards position of Germany, Belgium, Japan, and Brazil, among others with respect to safeguards implementation in the nuclear weapon States?
- h. What is the European Atomic Energy Community (EURATOM) and how does EURATOM's authority differ from that of the IAEA?
- i. What is the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) and how does ABACC's authority differ from that of the IAEA?

Qualification Guide 5

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

Completed agreed training activities

- I Develop, present, and defend NRC positions
- I Provide acknowledged technical expertise to discussions
- I Differentiate policy and technical perspectives
- B Understand other Federal agency interests and motivations
- B Understand IAEA safeguards interests and motivations
- B Understand other countries interests and motivations

Initials	Date
Initials	Date
Initials	Date
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Qualification Guide 6  
Nuclear Nonproliferation Policy

**PURPOSE.** Understand U.S. and international nuclear nonproliferation policy and objectives and the history of their implementation.

**EVALUATION CRITERIA.**

To complete this qualification guide, you should have a clear understanding of the following:

1. The NPT and international perspectives on its content.
2. The IAEA's statute, structure and operations, including the structure and practices of the Department of Safeguards.
3. Agreements that establish safeguards obligations, such as safeguards agreements, agreements for peaceful nuclear cooperation, and nuclear weapon free zones.
4. The routine bilateral, multilateral, and international (e.g., IAEA Board of Governors and IAEA General Conference) coordination meetings.
5. IAEA safeguards implementation at NRC-licensed facilities.
6. IAEA safeguards implementation at DOE facilities.
7. IAEA safeguards implementation during the AEC.

**TASKS.**

Suggested reading:

- a. IAEA Statute
- b. NPT
- c. IAEA Safeguards Textbook (Michael Rosenthal et. al.)
- d. Nuclearpedia (Michael Rosenthal)
- e. Foundation of International Safeguards ([cgs.pnnl.gov/fois/default.stm](http://cgs.pnnl.gov/fois/default.stm))
- f. History of the IAEA: The First 40 Years (David Fischer)
- g. Unleashing the Nuclear Watchdog (Trevor Findlay)
- h. Institute of Nuclear Materials Management (INMM) Annual Meeting Reports on safeguards implementation at U.S. facilities
- i. Technical papers presented by policy makers at INMM meetings
- j. P3+3-Iran Joint Comprehensive Plan of Action

Training courses and conferences:

- a. NNSA Nuclear Nonproliferation Seminars
- b. American Nuclear Society (ANS), INMM, and European Safeguards Research and Development Association (ESARDA) working groups, seminars, and annual meetings
- c. Carnegie Endowment Seminars

On-the-job training:

- a. Participate in international technical meetings.
- b. Observe international bilateral meetings in Washington, DC.

- c. Observe IAEA Board of Governors meetings.
- d. Involvement in professional society activities related to nonproliferation and international safeguards.

### QUALIFICATION QUESTIONS:

1. Knowledge of the NPT and international perspectives on its content.
  - a. What are the three “pillars” of the NPT?
  - b. Who is required to implement a safeguards agreement?
  - c. On what is peaceful nuclear cooperation contingent?
  - d. What are the obligations of a non-nuclear weapon State?
  - e. What is the obligation of the nuclear weapon States?
  - f. Who are the nuclear weapons States and how were they defined?
2. Knowledge of the IAEA’s statute, structure and operations, including the structure and practices of the Department of Safeguards.
  - a. What IAEA responsibilities are defined in the statute with respect to the NPT?
  - b. What are the Departments of the IAEA?
  - c. How is the Department of Safeguards different from the other Departments?
  - d. What are the Divisions of the Department of Safeguards and what are their roles?
  - e. What Section in what Division is responsible for IAEA safeguards implementation in the U.S.?
3. Knowledge of agreements that establish safeguards obligations, such as safeguards agreements, nuclear cooperation agreements, and nuclear weapon free zones.
  - a. What distinguishes IAEA Information Circular (INFCIRC)/66 safeguards agreement requirements from INFCIRC/153 safeguards agreement requirements?
  - b. What is a nuclear cooperation agreement and what requirements does it typically place on the partner country?
  - c. What is a nuclear weapon free zone and what are examples?
  - d. Are any parts of the U.S. in a nuclear weapon free zone?
  - e. What distinguishes U.N. Security Council Resolutions from IAEA safeguards agreements?
4. Knowledge of the routine bilateral, multilateral, and international (e.g., IAEA Board of Governors and IAEA General Conference) coordination meetings.
  - a. What is the typical purpose of a bilateral meeting with another State or the IAEA?
  - b. What is the typical purpose of a multilateral meeting with other States?
  - c. What is the purpose of an IAEA consultants or working group meeting?
  - d. What is the purpose of the IAEA Board of Governors meeting and of the IAEA General Conference?
5. Knowledge of IAEA safeguards implementation at NRC-licensed facilities.
  - a. Why does the IAEA implement safeguards in the U.S.?
  - b. What are the U.S. objectives for implementation of IAEA safeguards in NRC facilities?

- c. What are the IAEA objectives when implementing safeguards at NRC facilities?
  - d. What NRC facilities have been inspected by the IAEA?
  - e. What NRC facilities are currently reporting under the reporting protocol?
  - f. What branch in what office in the NRC is responsible for facilitating IAEA safeguards implementation at the NRC licensees?
6. Knowledge of IAEA safeguards implementation at DOE facilities.
- a. What has been the U.S. objective for encouraging IAEA to select DOE facilities since about 1990?
  - b. What types of DOE facilities have been inspected by IAEA?
  - c. What DOE facility(ies) was (were) inspected before 1990?
  - d. What DOE facility(ies) is (are) currently selected by the IAEA?
7. Knowledge of IAEA safeguards implementation in the U.S. during the AEC.
- a. What were the U.S. objectives for IAEA safeguards implementation?
  - b. What types of facilities were inspected by the IAEA?

#### Qualification Guide 6

##### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

Completed agreed training activities

C U.S.-IAEA safeguards agreements and protocols

I Nuclear Nonproliferation Treaty

I IAEA's statute, structure and operations

I Agreements that establish safeguards obligations

I Bilateral, multilateral, and international coordination meetings

B IAEA safeguards implementation at NRC-licensed facilities

B IAEA safeguards implementation at DOE facilities

B IAEA safeguards implementation during the AEC

Initials	Date
Initials	Date
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Initials	Date
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Initials	Date

Qualification Guide 7  
Interagency Roles and Responsibilities

PURPOSE. Understand interagency roles and responsibilities.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. The roles of the interagency coordination committees – Subgroup on Implementing IAEA Safeguards in the U.S. (SISUS), Subgroup on Safeguards Technical Support (SSTS), Subcommittee on International Safeguards and Monitoring (SISM), IAEA Steering Committee (ISC), International Policy Sub-committee (Sub-IPC).
2. The role of the U.S. Program of Technical Assistance to IAEA Safeguards (POTAS).
3. The DOE national laboratories, and other major DOE facilities (e.g., Savannah River) and their roles in supporting nonproliferation and international safeguards activities.

TASKS.

Suggested reading:

- a. Federal Register Vol 63, No. 28, Public Notice 2722 (Interagency Safeguards Committees)
- b. Federal Agency Websites on nonproliferation and safeguards responsibilities

Training courses and conferences:

- a. NNSA Non-proliferation site visits
- b. INMM and ANS Technical Meetings

On-the-job training:

- a. Observe SISUS meeting.
- b. Observe SSTS meeting.
- c. Assist preparations for SISM, ISC, or Sub-IPC Meeting.

QUALIFICATION QUESTIONS:

1. Knowledge of the roles of the interagency coordination committees – SISUS, SSTS, SISM, ISC, SUB-IPC.
  - a. Which Federal agency chairs each of the committees?
  - b. What is the international safeguards role of each committee?
2. The role of the POTAS.
  - a. What interagency committee oversees POTAS?
  - b. What organization manages/coordinates POTAS activities?
  - c. How is POTAS funded?

3. Knowledge of the DOE national laboratories and other major DOE facilities (e.g., Savannah River) and their roles in supporting nonproliferation and international safeguards activities.
  - a. What are the DOE national laboratories that support international safeguards and what is the expertise of each?
  - b. What are the other major DOE sites and what is the expertise of each?

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

Completed agreed training activities

I Roles of the interagency coordination committees

I Role of POTAS

I DOE national laboratories and other major DOE facilities

Initials	Date
Initials	Date
Initials	Date
Initials	Date

Qualification Guide 8  
International Nonproliferation Obligations

PURPOSE. Understand international nonproliferation obligations.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. The model safeguards agreements (INFCIRC/66, 153, 540).
2. International export control guidance (INFCIRC/207 and 254).
3. IAEA guidance for State compliance with safeguards obligations (IAEA Service Series 21 and associated Safeguards Implementation Practice guides).
4. The Hexapartite Agreement and bilateral agreements for the import of enrichment technology to the U.S. (Uranium Enrichment Company (URENCO) States and Australia).
5. P3+3-Iran Joint Comprehensive Plan of Action (JCPOA).

TASKS.

Suggested reading:

- a. IAEA Safeguards Glossary
- b. INFCIRC/66/Rev 2
- c. INFCIRC/153 (corrected)
- d. INFCIRC/540 (corrected)
- e. INFCIRC/207 – Nuclear Materials Export
- f. INFCIRC/225/Rev 5 – Physical Protection of Nuclear Material
- g. INFCIRC/254 – Nuclear Suppliers Group Equipment Guidance
- h. GC(XXXVII)/1073 – Strengthening the Effectiveness and Improving the Efficiency of Safeguards (1993)
- i. GOV/2588 and GOV/2629 – Voluntary Reporting on Exports, Imports, and Inventories of Nuclear Material for Peaceful Nuclear Purposes
- j. GOV/2589 and GOV/2629 – Voluntary Reporting on Exports and Imports of Certain Equipment and Non-nuclear Material for Peaceful Nuclear Purposes
- k. GOV/2554/Attachment 2/Revision 2 (1992) / GC(37)-1073 – Early Provision of Design Information
- l. GOV/1998/61 and GOV/1999/19/Rev. 2 – Alternate Nuclear Material
- m. IAEA Service Series 21 – States with comprehensive Safeguards Agreements (CSA) and Additional Protocols (AP)
- n. IAEA Service Series 22 – States with Small Quantities Protocol (SQP)
- o. IAEA Service Series 30 – Facilitating Verification
- p. IAEA Service Series 31 – Safeguards Infrastructure
- q. IAEA Service Series XX – Providing Information
- r. IAEA Service Series YY – Collaborative Implementation
- s. U.S.- United Kingdom (UK)/ Germany/Netherlands/ URENCO “Treaty of Washington”
- t. U.S.-Australia “SILEX Treaty”
- u. Hexapartite Agreement (Enrichment Plant Safeguards)
- v. IAEA Service Series 11 – AP declarations
- w. IAEA Service Series 13 – Advisory Missions

- x. IAEA Service Series 15 – Accounting Handbook
- y. IAEA Annual Report

Training courses and conferences:

- a. International State Systems of Accounting for and Control of Nuclear Material (SSAC) Training Course
- b. Safeguards Implementation Procedure workshop
- c. IAEA Safeguards Symposium

On-the-job training:

- a. Assist preparations for SISM, ISC, or Sub-IPC Meeting.

### QUALIFICATION QUESTIONS:

1. Knowledge of the model safeguards agreements (INFCIRC/66, 153, 540).
  - a. What is the primary difference between INFCIRC/66 and INFCIRC/153?
  - b. What countries are required to bring an INFCIRC/153 agreement into force? What countries may bring an INFCIRC/153 agreement into force?
  - c. What countries are required to bring an INFCIRC/540 AP into force? What countries may bring an AP into force?
  - d. What does comprehensive safeguards mean?
  - e. What is the international standard for safeguards agreements?
  - f. What does it mean when the safeguards agreements require States to cooperate for IAEA safeguards?
  - g. When are States required to accept new safeguards technologies for IAEA safeguards?
  - h. What information can States withhold from the IAEA?
2. Knowledge of international export control guidance (INFCIRC/207 and 254).
  - a. What imports and exports are the U.S. required to report to the IAEA?
  - b. How frequently is the U.S. required to report nuclear-related equipment export licensing information to the IAEA?
3. Knowledge of IAEA guidance for State compliance with safeguards obligations (IAEA Service Series 21 and associated Safeguards Implementation Practice guides).
  - a. On what does IAEA Service Series 21 provide guidance?
  - b. What is the role of the Safeguards Implementation Practice documents?
  - c. What safeguards topics are currently covered by the IAEA Service Series?
4. Knowledge of the Hexapartite Agreement and bilateral agreements for the import of enrichment technology to the U.S. (URENCO States and Australia).
  - a. What was established by the Hexapartite Agreement?
  - b. What are the Treaty of Almelo, Treaty of Cardiff, and Washington Treaty?



- c. What are the international safeguards related requirements of the U.S. and Australia on the transfer of SILEX technology?

5. Knowledge of the JCPOA.

- a. What does the JCPOA require of Iran?
- b. What does the JCPOA require of the U.S.?
- c. How might the JCPOA affect the NRC and its licensees?

Qualification Guide 8

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

International Safeguards Analysts:

Completed agreed training activities

C Model safeguards agreements

I Export control guidance

B Compliance with safeguards obligations

B Hexapartite Agreement and enrichment technology agreements

B P3+3/Iran Joint Comprehensive Plan of Action

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

NMMSS Analysts and Import Export Analysts:

Completed agreed training activities

B Model safeguards agreements

C Export control guidance

B Compliance with safeguards obligations

B Hexapartite Agreement and enrichment technology agreements

B Joint Comprehensive Plan of Action

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

Qualification Guide 9  
Technical Roles and Responsibilities (General)

PURPOSE. Ensure NRC-licensees comply with international treaties and agreements.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. U.S.-specific safeguards agreements (INFCIRC/288, INFCIRC/288/Add. 1, INFCIRC/366), protocols to the agreements, subsidiary arrangements, and facility attachments.
2. The resulting rights and obligations that affect NRC licensees.
3. The regulations impacting international safeguards implementation (e.g., 10 CFR 75 and 810).
4. Licensee facilities and operations to determine effective, efficient, and practical means to meet the international obligations.

TASKS.

Suggested reading:

- a. NUREG-0980, Volume 3
  - i. INFCIRC/288
  - ii. U.S. Senate Resolution consenting to the ratification of the U.S. IAEA Safeguards Agreement (INFCIRC/288)
  - iii. U.S. - IAEA Additional Protocol (INFCIRC/288/Add. 1)
  - iv. United States Additional Protocol Implementation Act (PL 109-401 of 2006)
- b. 10 CFR 75
- c. U.S. – IAEA Caribbean Territories Safeguards Agreement (INFCIRC/366)
- d. U.S. Subsidiary Arrangements, General Part
- e. Facility Attachments – Archive versions
- f. Transitional Facility Attachments
- g. 10 CFR 810

Training courses and conferences:

- a. F-201 Nuclear Fuel Cycle Processes

On-the-job training:

- a. Facility visits

QUALIFICATION QUESTIONS:

1. Knowledge of U.S.-specific safeguards agreements (INFCIRC/288, 288/Add. 1, 366), protocols to the agreements, subsidiary arrangements, and facility attachments.

- a. What safeguards agreements has the U.S. brought into force with the IAEA?
  - b. What is the relationship between a safeguards agreement, protocol to an agreement, subsidiary arrangement, and a facility attachment?
  - c. What is the difference in scope between INFCIRC/288 and INFCIRC/366?
  - d. To what U.S. entities do each of INFCIRC/288 and INFCIRC/366 apply?
  - e. What are the protocols to those agreements and how do the protocols modify the agreements?
  - f. What holders of nuclear material are not subject to IAEA safeguards under INFCIRC/288 and INFCIRC/366?
  - g. What types of locations are covered by the Additional Protocol that are not covered by INFCIRC/288?
  - h. What requirements are held in abeyance by the modified Small Quantities Protocol?
  - i. What is the Eligible Facilities List?
  - j. How does the "Protocol Additional to INFCIRC/288" differ from the Model Additional Protocol (INFCIRC/540)?
2. Knowledge of the resulting obligations that affect NRC licensees.
- a. What licensees must comply with the requirements of INFCIRC/288?
  - b. What licensees must comply with the requirements of INFCIRC/366?
  - c. Who is required to facilitate the implementation of IAEA safeguards requirements?
  - d. What is the process for providing licensee information to the IAEA?
  - e. What is the process for reporting licensee information to the IAEA?
  - f. Where are NRC-licensed facility rights and obligations identified for IAEA safeguards implementation?
3. Knowledge of regulations impacting international safeguards implementation (e.g., 10 CFR Parts 75 and 810).
- a. What regulation requires a licensee to provide site, facility, or location access to the IAEA?
  - b. What regulation contains the requirements concerning providing classified information to the IAEA?
  - c. What regulation contains the requirements concerning IAEA access to sensitive nuclear technology?
  - d. What regulation permits the NRC to withhold information from the IAEA?
  - e. If some information cannot be made available for the IAEA at IAEA offices, how can it be made available?
  - f. What is "complementary access" and what does "managed access" provide?
4. Knowledge of licensee facilities and operations to determine effective, efficient, and practical means to meet the international obligations.
- a. Why did the U.S. bring a safeguards agreement and additional protocol into force?
  - b. What are the dominant IAEA interests for implementing safeguards in the U.S.?
  - c. What types of facilities has the IAEA selected for safeguards in the U.S.?
  - d. What are the dominant licensee interests regarding IAEA safeguards implementation?
  - e. What is the NRC role with respect to the licensee and IAEA?

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

International Safeguards Analysts:

- Completed agreed training activities
- C U.S.-specific safeguards agreements
- C Obligations that affect NRC licensees
- C Regulations impacting international safeguards implementation
- I Implement obligations at licensee facilities

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

NMMSS Analysts and Import/Export Analysts:

- Completed agreed training activities
- B U.S.-specific safeguards agreements
- I Obligations that affect NRC licensees
- I Regulations impacting international safeguards implementation
- B Implement obligations at licensee facilities

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

Qualification Guide 10  
Nuclear Facilities

PURPOSE. Understand the design and operations of reactors and other nuclear fuel cycle facilities.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. Nuclear facility operations and processes.
2. Classified, sensitive and proprietary aspects of fuel cycle processes.
3. How fuel cycle processes could be misused for proliferation purposes.
4. The global nuclear fuel cycle and nuclear trade.

TASKS.

Suggested reading:

- a. An Introduction to the Nuclear Fuel Cycle and Nuclear Safeguards, Donald R. Joy, JAI Corporation, Fairfax, VA

Training courses and conferences:

- a. F-201 Nuclear Fuel Cycle Processes
- b. F-204 Uranium Enrichment Processes
- c. NNSA: Alternate Nuclear Materials
- d. NNSA/Savannah River Plant: Tritium and Heavy Water Production
- e. NNSA/Oak Ridge National Laboratory (ORNL): Nuclear Fuel Cycle Operations
- f. NNSA/ORNL: Enrichment Technology
- g. DOE, Analytical Management Program, Training, and Education webinars ([wipp.energy.gov/namp/en\\_content-3—trainingedu.html](http://wipp.energy.gov/namp/en_content-3—trainingedu.html))
- h. NNSA Non-Proliferation Site visits

On-the-job training:

- a. Facility visits

QUALIFICATION QUESTIONS:

1. Knowledge of how all types of nuclear operations and processes.
  - a. Describe the nuclear fuel cycle?
  - b. What is a typical sequence by which a country develops a peaceful nuclear fuel cycle?
  - c. What are the primary processes that produce uranium ore concentrates?
  - d. What are the different types of uranium conversion?
  - e. What processes are capable of producing direct use nuclear material?
  - f. Why are research reactors of safeguards interest?

- g. What components of the nuclear fuel cycle are not of safeguards interest?
  - h. What fuel cycles are proliferation resistant?
2. Knowledge of classified, sensitive and proprietary aspects of fuel cycle processes.
- a. What is the difference between Restricted Data and Sensitive Nuclear Technology and proprietary information?
  - b. What is the difference between National Security Information and Safeguards Information?
  - c. Who regulates each type of classified or controlled information?
  - d. Who determines what information is proprietary?
  - e. What types of information can be provided to the IAEA? What are the conditions for providing the information?
3. Knowledge of how fuel cycle processes could be misused for proliferation purposes.
- a. What are the proliferation concerns with each type of nuclear facility?
  - b. How could each type of nuclear facility be misused as part of a nuclear explosives acquisition path?
4. Knowledge of the global nuclear fuel cycle and nuclear trade.
- a. Summarize the global nuclear fuel industry?
  - b. What countries have uranium enrichment capability?
  - c. What countries have used fuel reprocessing or irradiated target processing capability?
  - d. What countries have uranium deposits? What countries produce uranium ore concentrates?

## Qualification Guide 10

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

### International Safeguards Analyst:

Completed agreed training activities

I Nuclear facility operations

I Classified, sensitive and proprietary aspects of fuel cycle processes

I Misuse of fuel cycle processes

B Global nuclear trade

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

### NMMSS Analyst and Import/Export Analyst:

Completed agreed training activities

B Nuclear facility operations

B Classified, sensitive and proprietary aspects of fuel cycle processes

B Misuse of fuel cycle processes

B Global nuclear trade

Initials	Date
Initials	Date
Initials	Date
Initials	Date
Initials	Date

Qualification Guide 11  
NRC Regulations

PURPOSE. Understand NRC's safety, physical security, and information security requirements for licensing nuclear facilities

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following: \

1. Atomic Energy Act of 1954 (as amended) and ERA of 1974 (as amended).
2. NRC licensing requirements for reactors (10 CFR Part 50), fuel cycle facilities (10 CFR Parts 35, 40, 70, 72, and 76), Agreement States (10 CFR Part 150), and physical security (10 CFR Part 73).
3. Classified and sensitive technology protection (10 CFR Parts 95, 810).

TASKS.

Suggested reading:

- a. Atomic Energy Act of 1954 (as amended, Chapters 10-12
- b. Energy Reorganization Act of 1974 (as amended), Title II
- c. Presidential Directives
- d. Derivative classifier training
- e. National Security Information (NSI) Classification Guide -General
- f. 10 CFR Part 50
- g. 10 CFR Part 40
- h. 10 CFR Part 70
- i. 10 CFR Part 95
- j. 10 CFR Part 150
- k. 10 CFR Part 810
- l. 10 CFR Part 35
- m. 10 CFR Part 72
- n. 10 CFR Part 73
- o. 10 CFR Part 76

Training courses and conferences:

- a. The NRC: An Agency Overview
- b. NRC and its Environment/Congressional Operations Seminar
- c. NMSS Project Managers Handbook for Fuel Cycle Licensees
- d. Regulatory Information Conference (RIC)
- e. Fuel Cycle Information Exchange (FCIX)
- f. World Institute of Nuclear Security (WINS)

On-the-job training:

- a. Observe safety, physical security, information security, and material control and accounting (MC&A) inspections of a fuel cycle facility



### QUALIFICATION QUESTIONS:

1. Knowledge of Atomic Energy Act of 1954 (as amended) and ERA of 1974 (as amended).
  - a. What paragraph requires NRC and DOE to implement international treaties and agreements?
  - b. What paragraph addresses exports of nuclear material, equipment, and technology?
  - c. What paragraph addresses information security?
  - d. What defines the roles of NRC and DOE?
2. Knowledge of NRC licensing requirements for reactors (10 CFR Part 50), fuel cycle facilities (10 CFR Parts 35, 40, 70, 72, and 76), Agreement States (10 CFR Part 150), and physical security (10 CFR Part 73).
  - a. What regulations reference the international safeguards requirements?
  - b. What regulations reference material accounting reporting requirements?
  - c. What are the requirements on facilities in Agreement States with respect to international safeguards?
3. Knowledge of classified and sensitive technology protection (10 CFR Parts 95 and 810).
  - a. Who determines what information is Restricted Data? How do you determine what information associated with an activity may be Restricted Data?
  - b. Who determines what information is Sensitive Nuclear Technology (SNT)? What is the basic guidance regarding SNT?
  - c. What types of information can be shown to IAEA inspectors? What are the conditions for providing information?
  - d. What types of information can be withheld from the IAEA?
  - e. What types of information can be stored by the IAEA under seal at a facility?

### Qualification Guide 11

#### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

Completed agreed training activities

B Atomic Energy Act and Energy Reorganization Act

B Safety and security licensing requirements

I Information security requirements

Initials	Date
Initials	Date
Initials	Date
Initials	Date

Qualification Guide 12  
Nuclear MC&A

PURPOSE. Understand nuclear MC&A.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. Nuclear MC&A concepts.
2. NRC regulations for MC&A (10 CFR Part 74).
3. The content and structure of a fundamental nuclear material control (FNMC) plan.
4. Nuclear material measurements and statistical evaluations.
5. Developing a conceptual nuclear materials accounting system for a facility.

TASKS.

Suggested reading:

- a. 10 CFR Part 74
- b. NUREG-1280
- c. Regulatory Guides – MC&A
- d. IAEA Nuclear Security Series No. 25-G – Use of Nuclear Material Accounting and Control for Nuclear Security Purposes at Facilities
- e. World Institute for Nuclear Security Best Practice Guide 4.4

Training courses and conferences:

- a. MCA-101DC – Introduction to NMC&A
- b. MCA-104DB – Measurement Programs
- c. MCA-110 – Nuclear Material Accounting Basics
- d. MCA-120 – Nuclear Material Control Basics
- e. NNSA nondestructive assay (NDA) Training at Los Alamos National Laboratory (LANL) ([safeguards-training@lanl.gov](mailto:safeguards-training@lanl.gov))

On-the-job training:

- a. Support review of FNMC plan
- b. Support MC&A inspection

QUALIFICATION QUESTIONS:

1. Knowledge of nuclear MC&A concepts.
  - a. What is a material balance area?
  - b. What are the components that must be considered in drawing a material balance?
  - c. What is material unaccounted for (MUF)? What is inventory difference (ID)?
  - d. What is a shipper-receiver difference (S-RD)?
  - e. What is limit of error or standard error?

2. Knowledge of NRC regulations for MC&A (10 CFR Part 74).
  - a. What are the MC&A objectives for a uranium enrichment plant?
  - b. What are the performance requirements for a Category I Strategic Special Material (SSNM) facility?
  - c. What are the requirements with respect to nuclear material measurements?
  - d. What are the requirements for program management and program auditing?
3. Knowledge of the content and structure of a FNMC plan.
  - a. Of what larger document is the FNMC plan a part?
  - b. Who prepares the FNMC plan for a facility? When is it prepared?
  - c. What Regulatory Guide provides guidance with respect to the content of an FNMC plan?
  - d. What is the role of an FNMC plan?
  - e. Who reviews the FNMC plan?
4. Knowledge of nuclear material measurements and statistical evaluations.
  - a. What are the basic measurement types needed to establish the quantity of fissile material?
  - b. What are the basic types of bulk measurements?
  - c. What types of destructive analysis measurements are typically used for uranium accounting?
  - d. What types of NDA measurements are typically used for nuclear material accounting?
  - e. What does it mean when two values are stated to be statistically different?
  - f. What is the purpose of a measurement control program?
5. Able to develop a conceptual nuclear materials accounting system for a facility.
  - a. What is the concept used in designing material balance areas (MBAs)?
  - b. How does one determine how many MBAs are needed for a facility?
  - c. What are key measurement points?
  - d. What are other strategic points?

## Qualification Guide 12

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

### International Safeguards Analyst:

Completed agreed training activities

C Nuclear materials control and accounting concepts

C NRC regulations for material control and accounting

I Content and structure of a fundamental nuclear material control plan

I Nuclear material measurements and statistical evaluations

I Conceptual nuclear materials accounting system

Initials	Date
Initials	Date
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Initials	Date

### NMMSS Analysts:

Completed agreed training activities

I Nuclear materials control and accounting concepts

I NRC regulations for material control and accounting

B Content and structure of a fundamental nuclear material control plan

B Nuclear material measurements and statistical evaluations

B Conceptual nuclear materials accounting system

Initials	Date
Initials	Date
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## Qualification Guide 12

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

### Import/Export Analysts

Completed agreed training activities

- I Nuclear materials control and accounting concepts
- B NRC regulations for material control and accounting
- B Content and structure of a fundamental nuclear material control plan
- B Nuclear material measurements and statistical evaluations
- B Conceptual nuclear materials accounting system

Initials	Date
Initials	Date
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Qualification Guide 13  
IAEA Safeguards Implementation

PURPOSE. Understand concepts of IAEA safeguards implementation.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. State-level concept for IAEA safeguards implementation.
2. Additional protocol content and related guidance.
3. IAEA model safeguards approaches for each type of fuel cycle facility.
4. Safeguards verification procedures, techniques and equipment.
5. The safeguards-by-design concept.

TASKS.

Suggested reading:

- a. GOV/INF/2000/26 – The Development of Integrated Safeguards
- b. GOV/2002/8 – The Conceptual Framework for Integrated Safeguards
- c. GOV/2013/38 – The Conceptualization and Development of Safeguards Implementation at the State Level
- d. GOV/2014/41 –Supplementary Document to the report on Conceptualization and Development of Safeguards Implementation at the State Level
- e. IAEA Glossary (International Nuclear Verification Series No. 3)
- f. Safeguards Implementation Report
- g. INFCIRC/288 Paragraph 89(a) and 89(b) reports under the US-IAEA Safeguards Agreement
- h. Safeguards-by-Design guidance for nuclear facilities

Training courses and conferences:

- a. NNSA Pre-inspector training

On-the-job training:

- a. Observe SISUS Meeting
- b. Observe SSTS Meeting

QUALIFICATION QUESTIONS:

1. Knowledge of State-level concept for IAEA safeguards implementation.
  - a. What is the safeguards objective for a State with a CSA? With an INFCIRC/66-type agreement? With a Voluntary Offer Agreement?
  - b. What are the generic State-level objectives for a State with a CSA?
  - c. Describe the “safeguards wheel” for developing and implementing a safeguards approach.
  - d. Who prepares the State-level approach for each country? Who reviews and approves the approach?

2. Knowledge of additional protocol content and related guidance.
  - a. What is the purpose of an AP versus a CSA?
  - b. What licensees are subject to/affected by the AP?
  - c. Who must provide annual reports? Quarterly reports?
  - d. Who compiles the U.S. declarations for transmittal to the IAEA?
  - e. What is a complementary access?
  - f. What are the conditions for implementing “managed access”?
3. Knowledge of IAEA model safeguards approaches for each type of fuel cycle facility.
  - a. What is an effective kilogram for each nuclear material type?
  - b. What is a significant quantity for each nuclear material type?
  - c. What are key measurement points?
  - d. What are strategic points?
  - e. What are the safeguards implementation requirements for mines and concentration plants?
  - f. How frequently are inspections performed at a fuel fabrication facility under integrated safeguards? Traditional safeguards?
  - g. What is a limited frequency unannounced access inspection? At what type of facility is it used?
  - h. Where is receipts/input accounting performed at a reprocessing plant?
  - i. How is a near-real time material balance performed?
4. Knowledge of safeguards verification procedures, techniques and equipment
  - a. What is the primary function of a seal?
  - b. When are surveillance cameras used?
  - c. When is destructive analysis used versus nondestructive analysis?
  - d. When are unattended monitoring and remote monitoring used?
5. Knowledge of the safeguards by design concept.
  - a. What is safeguards by design?
  - b. Why is safeguards by design important in the safeguards system?
  - c. What is the barrier to using safeguards by design at U.S. facilities?

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

International Safeguards Analysts

Completed agreed training activities

I State-level concept for IAEA safeguards implementation

C Additional protocol content and related guidance.

I IAEA model safeguards approaches

I Safeguards verification procedures, techniques and equipment.

B Safeguards by design concept

Initials	Date
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NMMSS Analysts and Import/Export Analysts

Completed agreed training activities

B State-level concept for IAEA safeguards implementation

B Additional protocol content and related guidance.

B IAEA model safeguards approaches

B Safeguards verification procedures, techniques and equipment.

B Safeguards by design concept

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Qualification Guide 14  
Ensuring Compliance with Safeguards Obligations

**PURPOSE.** Understand and be able to implement actions that must be undertaken by NRC and licensee facilities to ensure compliance with IAEA safeguards obligations.

**EVALUATION CRITERIA.**

To complete this qualification guide, you should have the ability to perform the following:

1. Add or remove a licensee facility from the Eligible Facilities List (EFL).
2. Compile and submit annual and quarterly additional protocol declarations on licensee sites and locations.
3. Review and advise licensees on completion of design information questionnaire (DIQ) and additional protocol declarations.
4. Facilitate access to licensee installations under both safeguards agreement and additional protocol (e.g., design information verification, scheduled inspection, random inspection, or complementary access).
5. Coordinate interagency actions associated with a design information verification (DIV), inspection or complementary access at a licensee installation.
6. Perform acquisition or diversion path analysis for a nuclear facility.
7. Determine safeguards objectives at facility and State levels.
8. Develop safeguards verification options for a facility.
9. Assess effectiveness and efficiency of safeguards approach and the associated safeguards measures.

**TASKS.**

Suggested reading:

- a. BWXT lessons learned reports
- b. EFL update procedure
- c. Additional protocol reporting procedure
- d. DIQ preparation guidance
- e. IAEA access facilitation procedure

Training courses and conferences:

- a. International Safeguards Outline
- b. IAEA Service Series 31 workshop

On-the-job training:

- a. Assist collection and reporting Additional Protocol (AP) declarations.
- b. Assist updating EFL.
- c. Review nuclear material accounting declarations.
- d. Review draft DIQ.
- e. Assist review of transit matching reports.
- f. Assist review of U.S. Book Inventory Report.

- g. Observe or support facilitation of IAEA inspection, DIV, or complementary access (CA).
- h. Support development or review of proposed international safeguards approach.

#### QUALIFICATION QUESTIONS:

1. Able to add or remove a licensee facility from the EFL.
  - a. What is the EFL?
  - b. What is the process for identifying installations to be placed on the list?
  - c. Who reviews and approves proposed additions to the list?
  - d. How frequently is the EFL reviewed for being updated?
  - e. What installations are excluded from the EFL?
2. Able to compile and submit annual and quarterly AP declarations on licensee sites and locations.
  - a. What is the process for collecting AP declarations?
  - b. To whom do the licensees initially submit their declarations?
  - c. Who reviews and approves the proposed AP declarations?
3. Able to review and advise licensees on completion of DIQ and AP declarations.
  - a. Who is required by INFCIRC/288 and INFCIRC/366 to submit a preliminary and full DIQ to the IAEA?
  - b. When is design information required to be submitted to the IAEA?
  - c. What installations are required to prepare a DIQ?
  - d. Who is required by the INFCIRC/288/Add1 (AP) to submit declarations to the IAEA?
  - e. What sites, facilities, and locations are required to report AP information?
  - f. What NRC actions are taken to facilitate DIV and AP report preparation?
4. Able to facilitate access to licensee installations under both safeguards agreement and AP (e.g., design information verification, scheduled inspection, random inspection, or complementary access).
  - a. What is the route by which an IAEA request for access to a licensee facility comes to the NRC?
  - b. When the request is received who needs to be notified and when?
  - c. When must NRC staff participate in an IAEA access?
  - d. What actions does the NRC typically take during an IAEA access?
  - e. What actions are to be undertaken by the staff member travelling for a complementary access?
  - f. What actions are to be undertaken by the supporting staff member remaining at Headquarters?
5. Able to coordinate interagency actions associated with a DIV, inspection or complementary access at a licensee installation.
  - a. When and how should the NRC notify the other Federal agencies of a planned or proposed IAEA access?

- b. Which Federal agencies should be informed?
  - c. How are procedures for coordinating interagency actions agreed upon?
- 6. Able to perform acquisition/diversion path analysis for a nuclear facility.
  - a. What is an acquisition path analysis?
  - b. What does an acquisition/diversion path analysis identify?
  - c. How does an acquisition path analysis differ from a diversion path analysis? Which is applicable to the U.S. under INFCIRC/288?
  - d. What factors must be considered in performing an acquisition path analysis?
  - e. What is the outcome of an IAEA acquisition path analysis for a State?
  - f. Describe potential acquisition paths for a country with a research reactor that produces medical isotopes.
- 7. Able to determine safeguards objectives at facility and State levels.
  - a. What are the generic safeguards objectives at the State level for a country with a comprehensive safeguards agreement?
  - b. What are the generic safeguards objectives at the facility level?
  - c. What is the relationship between technical safeguards objectives and acquisition paths?
- 8. Able to develop safeguards verification options for a facility.
  - a. What is the role of performance targets?
  - b. How are safeguards measures combined in order to meet performance targets?
  - c. Give a technical safeguards example of different measures to achieve the same objective.
- 9. Able to assess effectiveness and efficiency of safeguards approach and the associated safeguards measures.
  - a. How is the effectiveness of safeguards approach options assessed?
  - b. How is the efficiency of safeguards approach options assessed?
  - c. Which is more important effectiveness or efficiency? Why?
  - d. How can efficiency be enhanced without reducing effectiveness?
  - e. Which is more important to reduce with respect to an IAEA safeguards approach, operator effort or IAEA effort?

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

International Safeguards Analysts:

- Completed agreed training activities
- C Annual and quarterly AP declarations
- C Complementary access
- C Eligible Facilities List
- C Nuclear material accounting declarations
- C Design information questionnaire
- C Facilitate access to licensee installations
- I Acquisition/diversion path analysis
- I Safeguards objectives at facility and State levels
- I Safeguards verification options for a facility
- I Effectiveness and efficiency of safeguards approach

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## Qualification Guide 14

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

### NMMSS Analysts:

- Completed agreed training activities
- B Annual and quarterly AP declarations
- B Complementary access
- B Eligible Facilities List
- C Nuclear material accounting declarations
- I Design information questionnaire
- B Facilitate access to licensee installations
- B Acquisition/diversion path analysis
- B Safeguards objectives at facility and State levels
- B Safeguards verification options for a facility
- B Effectiveness and efficiency of safeguards approach

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SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

Import/Export Analysts:

- Completed agreed training activities
- B Annual and quarterly AP declarations
- B Complementary access
- B Eligible Facilities List
- B Nuclear material accounting declarations
- B Design information questionnaire
- B Facilitate access to licensee installations
- B Acquisition/diversion path analysis
- B Safeguards objectives at facility and State levels
- B Safeguards verification options for a facility
- B Effectiveness and efficiency of safeguards approach

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Qualification Guide 15  
Export Licensing

PURPOSE. Understand NRC's requirements for licensing exports of nuclear equipment and material.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. Export and import licensing requirements and review processes.
2. Performance of export license reviews.

TASKS.

Suggested reading:

- a. Atomic Energy Act of 1954 (as amended), Section 123
- b. 10 CFR Part 110
- c. 10 CFR Part 810
- d. INFCIRC/207 – Nuclear Material Exports
- e. INFCIRC/254 – Nuclear Suppliers Group Equipment Export Guidance
- f. U.S. Agreements for Peaceful Nuclear Cooperation ("123 Agreement")
- g. Congressional Research Service Nuclear Cooperation with Other Countries: A Primer
- h. INFCIRC/539 – Nuclear Suppliers Group Origins, Roles, and Activities
- i. INFCIRC/540, Article 2.a(x) and Appendix II

Training courses and conferences:

- a. MCAB export licensing knowledge management videos
- b. Complying with U.S. Export Controls, Department of Commerce
- c. Nuclear Export Control Symposium, Electric Utilities Consultants, Inc. (EUCI, Denver)

On-the-job training:

- a. Support export license review

QUALIFICATION QUESTIONS:

1. Knowledge of export and import licensing requirements and review processes.
  - a. In what Part of 10 CFR are the regulations for an NRC export license located?
  - b. Which NRC office is responsible for issuing NRC export licenses?
  - c. What are the three types of NRC export licenses specified in 10 CFR Part 110?
  - d. What is the interagency process for approving export licenses?
  - e. What is the interagency process for providing assurances regarding imports subject to the Nuclear Suppliers Group Guidelines or "123 Agreement" terms and conditions?

- f. How does the NRC provide assurance that export license requirements are met (e.g., that the licensee does not ship more than the amount authorized and only ships foreign obligated material with the necessary approvals)?
2. Ability to perform export license review, including using Congressional Research Service Reports
    - a. What are the license criteria for the export of special nuclear material?
    - b. What are the license criteria for the export of nuclear equipment and components?
    - c. What is the role of NRC in the approval of exports of nuclear technology?
    - d. Where are these export license criteria located in regulations?
    - e. What official source of information can be used to verify that the IAEA is applying safeguards to a nuclear facility in another country?
    - f. What other resources – official and public – can be used to evaluate the regulatory status and nuclear industry of a proposed recipient country?

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

Import/Export Analysts:

- Completed agreed training activities
- C Export and import licensing requirements
- C Export license review
- I Requirements of foreign regulatory agencies

Initials	Date
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Initials	Date

NMMSS Analysts:

- Completed agreed training activities
- I Export and import licensing requirements
- I Export license review
- B Requirements of foreign regulatory agencies

Initials	Date
Initials	Date
Initials	Date
Initials	Date



## Qualification Guide 15

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

### International Safeguards Analysts:

Completed agreed training activities

B Export and import licensing requirements

B Export license review

B Requirements of foreign regulatory agencies

Initials	Date
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Initials	Date
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Qualification Guide 16  
Foreign Obligations and Obligation Tracking

PURPOSE. Understand foreign obligations and obligation tracking.

EVALUATION CRITERIA.

To complete this qualification guide, you should have a clear understanding of the following:

1. The foreign obligation reporting requirements (transaction and inventory) applicable to licensees and DOE sites.
2. The NMMSS actions to track foreign obligations.
3. Current agreements for cooperation and associated administrative arrangements.
4. The Government-to-Government exchange process for establishing foreign obligations.
5. The NMMSS actions that go into the preparation of the annual inventory of foreign-obligated nuclear materials in the U.S.

TASKS.

Suggested reading:

- a. NUREG/BR-0006
- b. NUREG/BR-0007
- c. Agreements for Peaceful Nuclear Cooperation (listed in MCAB SharePoint)

Training courses and conferences:

- a. NMMSS-1 training course
- b. Annual NMMSS Users and Training Meeting

On-the-job training:

- a. Support reporting of obligated material to foreign countries

QUALIFICATION QUESTIONS:

1. Knowledge of the foreign obligation reporting requirements (transaction and inventory) applicable to licensees and DOE sites.
  - a. How does the U.S. Government (USG) come to agreement with another Government that nuclear material will be considered as "Foreign Obligated" when the material is located within the U.S.?
  - b. Name six countries for which the USG is required to track nuclear materials in the U.S. as "foreign obligated?"
  - c. What "foreign obligated" nuclear equipment or components are typically found in the U.S.?
  - d. What is the basis for foreign obligation tracking?
  - e. What is the notification process for foreign obligation tracking (e.g., who initiates it, who must be informed, and what is NRC's role?)

2. Knowledge of the NMMSS actions to track foreign obligations.
  - a. Who in a facility is responsible for identifying nuclear material in their possession as “foreign obligated” and for reporting such information to NMMSS?
  - b. Who notifies NMMSS that nuclear material from a new country is to be tracked as “foreign obligated”? What determines whether nuclear material from a new country is to be tracked and reported as “foreign obligated”?
3. Knowledge of current agreements for cooperation and associated administrative arrangements.
  - a. Where is the listing of the current Agreements for Cooperation in force with the U.S. located?
  - b. Who maintains and updates the listing?
4. Knowledge of the Government-to-Government exchange process for establishing foreign obligations.
  - a. How are agreements reached that nuclear material entering the U.S. will be “foreign obligated”?
  - b. What is NRC’s role in the Government-to-Government exchange process that may result in imported nuclear material becoming “foreign obligated”?
5. Knowledge of the NMMSS actions that go into the preparation of the annual inventory of foreign-obligated nuclear materials in the U.S.
  - a. To which foreign Government does the U.S. normally provide an inventory of their “foreign obligated” nuclear material located in the U.S.?
  - b. What support does NMMSS provide to preparing the annual inventory of “foreign obligated” nuclear material?
  - c. What role do the NRC-licensees play in preparing the annual inventory of “foreign obligated” nuclear material?

## Qualification Guide 16

### SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

### NMMSS Analysts and Import/Export Analysts:

Completed agreed training activities

C Foreign obligation reporting requirements

C NMMSS actions to track foreign obligations

C Agreements for cooperation and administrative arrangements

I Process for establishing foreign obligations

I Annual inventory of foreign obligated nuclear materials

Initials	Date
Initials	Date
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Initials	Date

### International Safeguards Analysts:

Completed agreed training activities

I Foreign obligation reporting requirements

B NMMSS actions to track foreign obligations

B Agreements for cooperation and administrative arrangements

B Process for establishing foreign obligations

B Annual inventory of foreign obligated nuclear materials

Initials	Date
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Qualification Guide 17  
Manage NMMSS Database

**PURPOSE.** Understand and be able to manage NMMSS database to ensure completeness and correctness of U.S. nuclear material accounting reports for NRC licensees.

**EVALUATION CRITERIA.**

To complete this qualification guide, you should have a clear understanding of the following:

1. The domestic and international reporting requirements in 10 CFR (e.g., in Parts 40, 50, 62, 70, 72, 74, 75, 76, and 150).
2. Code 10 of the U.S. Subsidiary Arrangements.
3. NMMSS processes for receiving and reviewing material accounting reports.
4. The requirements for a Contracting Officer Representative (trained and certified).
5. Reviewing for correctness and completeness of U.S. accounting declarations to the IAEA.
6. Reconciling differences between IAEA and U.S. data.

**TASKS.**

Suggested reading:

- a. NUREG/BR-0006
- b. NUREG/BR-0007
- c. NUREG/CR-1528
- d. Personal Computer Data Input for NRC Licensees (D-24)
- e. INMM, ANS, ESARDA Technical reports

Training courses and conferences:

- a. Contracting Officer
- b. NMMSS-1
- c. NMMSS Annual Users Meeting

On-the-job training:

- a. Make topical presentations at NMMSS Annual Meetings.
- b. Support NMMSS-IAEA/Division of Safeguards Information Management (SGIM) meeting on U.S. reporting.
- c. Review NMMSS report on licensed quantities exported (TJ-110).
- d. Review weekly obligations reports, IAEA reports, and annual country reports.

**QUALIFICATION QUESTIONS:**

1. Knowledge of the domestic and international reporting requirements in 10 CFR (e.g., in Parts 40, 50, 62, 70, 72, 74, 75, 76, and 150).
  - a. Where in the regulations are the domestic NMMSS reporting requirements for source materials?

- b. Where in the regulations are the domestic NMMSS reporting requirements for enriched uranium?
  - c. Where in the regulations are the NMMSS reporting requirements for the import and export of source material?
- 2. Knowledge of Code 10 of the U.S. Subsidiary Arrangements.
  - a. How are the domestic NMMSS reporting requirements different from the IAEA reporting requirements for enriched uranium? Where in the regulations are the NRC requirements for an IAEA selected facility?
  - b. If enriched uranium arrives at an NRC licensed facility on January 10<sup>th</sup> when is the US report of the import due to the IAEA?
  - c. The NMMSS operator prepares routine reports, pursuant to Code-10, for NRC review and approval. What are the NMMSS generated routine reports and what information do they contain?
- 3. Knowledge of NMMSS processes for receiving and reviewing material accounting reports.
  - a. Every month, the NMMSS operator “closes” the NMMSS books. Approximately when do the NMMSS books get “closed” for the months of March, July, and September?
  - b. At what interval does the NMMSS operator normally perform a “closure” of the database?
- 4. Trained and certified as Contracting Officer Representative (COR)
  - a. As the NRC COR for the DOE/NRC Interagency Agreement for NMMSS, do you have the authority to direct NMMSS staff to perform work?
  - b. As the NRC COR, who would you contact at DOE for clarity on an Intra-Government Payment and Collection (IPAC) bill for NMMSS work?
- 5. Able to review correctness and completeness of U.S. accounting declarations to the IAEA.
  - a. Who at the NRC normally reviews and approves the NMMSS reports to be sent to the IAEA?
  - b. What should be checked in a NMMSS report, when it arrives for NRC review and approval?
  - c. The NMMSS staff routinely generate and provide to the NRC the “Inventory Change Reports (ICR)” and “207” reports for review and clearance. How do these reports differ?
- 6. Ability to lead reconciliation of differences between IAEA and U.S. data.
  - a. Why do some imports of enriched uranium, contained in a 30b cylinder, by a fuel fabrication plant and reported by the USG not reconcile with IAEA data?
  - b. Provide an example of an IAEA transit matching case and describe apparent causes of the discrepancy?

SUPERVISOR APPROVAL:

Basic = B, Intermediate = I, Comprehensive = C

NMMSS Analysts:

Completed agreed training activities

C Domestic and international reporting requirements

I Code 10 of the U.S. Subsidiary Arrangements

C Receiving and reviewing material accounting reports

C Contracting Officer Representative

C U.S. accounting declarations to the IAEA

C Reconciliation of differences between IAEA and U.S. data

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International Safeguards Analysts:

Completed agreed training activities

I Domestic and international reporting requirements

I Code 10 of the U.S. Subsidiary Arrangements

B Receiving and reviewing material accounting reports

B Contracting Officer Representative

I U.S. accounting declarations to the IAEA

I Reconciliation of differences between IAEA and U.S. data

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## Qualification Guide 17

### Import/Export Analysts

Completed agreed training activities

B Domestic and international reporting requirements

B Code 10 of the U.S. Subsidiary Arrangements

B Receiving and reviewing material accounting reports

B Contracting Officer Representative

B U.S. accounting declarations to the IAEA

B Reconciliation of differences between IAEA and U.S. data

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Attachment 1  
Revision History for IMC 1246, Appendix C5

Commitment Tracking Number	Accession Number Issue Date Change Notice	Description of Change	Description of Training Required and Completion Date	Comment and Feedback Resolution Accession Number (Pre-Decisional, Non-Public Information)
N/A	ML16035A147 06/27/16 CN 16-014	Initial issuance. Researched commitments for the last four years and found none.	None	N/A