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# DOE STANDARD

## SAFEGUARDS AND SECURITY FUNCTIONAL AREA STANDARD

DOE Defense Nuclear Facilities Technical Personnel



**U.S. Department of Energy**  
**Washington, D.C. 20585**

**AREA TRNG**

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## APPROVAL

The Federal Technical Capability Panel consists of senior U.S. Department of Energy managers responsible for overseeing the Federal Technical Capability Program. This Panel is responsible for reviewing and approving the Qualification Standard for Department-wide application.

Approval of this Qualification Standard by the Federal Technical Capability Panel is indicated by signature below.

  
Roy J. Schepens  
Chairman  
Federal Technical Capability Panel

DOE-STD-1171-2003

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## ACKNOWLEDGMENT

The Office of Nuclear Safeguards and Security Programs is the Sponsor for the Safeguards and Security Qualification Standard. The Sponsor is responsible for coordinating the development and/or review of the Functional Area Qualification Standard by subject matter experts to ensure that the technical content is accurate and adequate for Department-wide application for those involved in the Safeguards and Security Program. The Sponsor, in coordination with the Federal Technical Capability Panel, is also responsible for ensuring that the Functional Area Qualification Standard is maintained current.

The following subject matter experts (SMEs) participated in the development and/or review of this Qualification Standard:

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## U.S. DEPARTMENT OF ENERGY FUNCTIONAL AREA QUALIFICATION STANDARD

### Safeguards and Security

#### PURPOSE

DOE M 426.1-1, Federal Technical Capability Manual, commits the Department to continuously strive for technical excellence. The Technical Qualification Program (TQP), along with the supporting Technical Qualification Standards, complements the personnel processes that support the Department's drive for technical excellence. In support of this goal, the competency requirements defined in the Technical Qualification Standards should be aligned with and integrated into the recruitment and staffing processes for technical positions. The Technical Qualification Standards should form the primary basis for developing vacancy announcements, qualification requirements, crediting plans, interviewing questions, and other criteria associated with the recruitment, selection, and internal placement of technical personnel. Office of Personnel Management minimum qualifications standards will be greatly enhanced by application of appropriate materials from the technical Functional Area Qualification Standards.

The Technical Qualification Standards are not intended to replace the Office of Personnel Management (OPM) Qualifications Standards nor other Departmental personnel standards, rules, plans, or processes. The primary purpose of the Technical Qualification Program is to ensure that employees have the requisite technical competency to support the mission of the Department. The Technical Qualification Program forms the basis for the development and assignment of DOE personnel responsible for ensuring the safe operation of defense nuclear facilities.

#### APPLICABILITY

The Safeguards and Security (S&S) Functional Area Qualification Standard establishes common functional area competency requirements for Department of Energy personnel who provide assistance, direction, guidance, oversight, or evaluation of contractor technical activities that could impact the safe operation of DOE's defense nuclear facilities. The technical Functional Area Qualification Standard has been developed as a tool to assist DOE Program and Field offices in the development and implementation of the Technical Qualification Program in their organization. For ease of transportability of qualifications between DOE elements, Program and Field offices are expected to use this technical Functional Area Qualification Standard without modification or additions. Needed additional office/site/facility specific technical competencies should be handled separately. Satisfactory and documented attainment of the competency requirements contained in this technical Functional Area Qualification Standard ensures that personnel possess the requisite competence to fulfill their functional area duties and responsibilities. Office/Facility-Specific Qualification Standards supplement this technical Functional Area Qualification Standard and establish unique operational competency requirements at the Headquarters or Field element, site, or facility level.

## IMPLEMENTATION

This technical Functional Area Qualification Standard identifies the minimum technical competency requirements for Department of Energy personnel. Although there are other competency requirements associated with the positions held by DOE personnel, this Functional Area Qualification Standard is limited to identifying the specific technical competencies. The competency statements define the expected knowledge and/or skill that an individual must meet. Each of the competency statements is further explained by a listing of supporting knowledge and/or skill statements.

The competencies identify a familiarity level, a working level, or an expert level of knowledge; or they require the individual to demonstrate the ability to perform a task or activity. These levels are defined as follows:

**Familiarity level** is defined as basic knowledge of or exposure to the subject or process adequate to discuss the subject or process with individuals of greater knowledge.

**Working level** is defined as the knowledge required to monitor and assess operations/activities, to apply standards of acceptable performance, and to reference appropriate materials and/or expert advice as required to ensure the safety of Departmental activities.

**Expert level** is defined as a comprehensive, intensive knowledge of the subject or process sufficient to provide advice in the absence of procedural guidance.

**Demonstrate the ability** is defined as the actual performance of a task or activity in accordance with policy, procedures, guidelines, and/or accepted industry or Department practices.

Headquarters and Field elements shall establish a program and process to ensure that DOE personnel possess the competencies required of their position. That includes the competencies identified in this technical Functional Area Qualification Standard. Documentation of the completion of the requirements of the Standard shall be included in the employee's training and qualification record.

Equivalencies should be used sparingly and with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP. Equivalencies may be granted for individual competencies based upon objective evidence of previous education, training, certification, or experience. Objective evidence includes a combination of transcripts, certifications, and, in some cases, a knowledge sampling through a written and/or oral examination. Equivalencies shall be granted in accordance with the Technical Qualification Program Plan of the office qualifying the individual. The supporting knowledge and/or skill statements, while not requirements, should be considered before granting equivalency for a competency.

Training shall be provided to employees in the Technical Qualification Program who do not meet the competencies contained in the technical Functional Area Qualification Standard. Training may include, but is not limited to, formal classroom and computer-based courses, self-study, mentoring, on the job training, and special assignments. Departmental training will be based upon appropriate supporting knowledge and/or skill statements similar to the ones listed for each of the competency statements. Headquarters and Field elements should use the supporting knowledge and/or skill statements as a basis for evaluating the content of any

training used to provide individuals with the requisite knowledge and/or skill required to meet the technical Functional Area Qualification Standard competency statements.

## EVALUATION REQUIREMENTS

Attainment of the competencies listed in this technical Functional Area Qualification Standard should be documented by a qualifying official, immediate supervisor, or the team leader of personnel in accordance with the Technical Qualification Program Plan of the office qualifying the individual.

## CONTINUING EDUCATION, TRAINING AND PROFICIENCY

DOE personnel shall participate in continuing education and training as necessary to improve their performance and proficiency and ensure that they stay up-to-date on changing technology and new requirements. This may include courses and/or training provided by:

- Department of Energy
- Other government agencies
- Outside vendors
- Educational institutions

Beyond formal classroom or computer-based courses, continuing training may include

- Self Study
- Attendance at symposia, seminars, exhibitions
- Special assignments
- On-the-job experience

A description of suggested learning proficiency activities, and the requirements for the continuing education and training program for safeguards and security personnel are included in Appendix A of this document.

## DUTIES AND RESPONSIBILITIES

The following are the typical duties and responsibilities expected of personnel assigned to the Safeguards and Security Functional Area:

1. Maintain communication with Headquarters, field elements, regulatory agencies, the public and other stakeholders.
2. Inform Department of Energy management of applicable safeguards and security project status, activities, and issues.
3. Plan, observe and evaluate safeguards and security activities and contractor performance to ensure the adequacy and effectiveness of contractor programs such as:

- Technical performance
  - Plans, policies, and procedures
  - Management controls.
  - Worker training and qualification programs
  - Occurrence Reporting and Corrective actions
  - Worker and public health and safety programs
  - Environmental protection and regulatory compliance
  - Waste treatment, storage, and disposal programs and transportation programs
4. Develop, review, and assess safeguards and security documentation.
  5. Develop, manage, and assist in the negotiations for regulatory agreements and permits.
  6. Resolve or facilitate the resolution of safeguards and security issues.
  7. Develop, implement, and evaluate safeguards and security strategic, baseline, project, and program plans.
  8. Promote the sharing of information and technology.
  9. Conduct site-specific technology implementation evaluations.
  10. Evaluate the adequacy and effectiveness of contractor safeguards and security programs to ensure program compliance with Department Orders, standards, guides; Federal regulations, statutes, codes; and applicable state and/or local regulations.

Position-specific duties and responsibilities for safeguards and security personnel are contained in their Office/Facility-Specific Qualification Standard or Position Description.

## BACKGROUND AND EXPERIENCE

The U. S. Office of Personnel Management's Qualification Standards Handbook establishes *minimum* education, training, experience, or other relevant requirements applicable to a particular occupational series/grade level, as well as alternatives to meeting specified requirements.

The preferred education and experience for safeguards and security personnel is:

1. Education:

Successful completion of a 4-year course of study in a field leading to a Bachelor's degree from an accredited college, or meeting the alternative requirements specified in the U.S. Office of Personnel Management's Qualification Standards Handbook.

2. Experience:

Industrial, military, Federal, State or other directly related background that has provided specialized experience in decommissioning. Specialized experience can be demonstrated through possession of the competencies outlined in this Standard.

## REQUIRED TECHNICAL COMPETENCIES

Due to the specialized nature of the Safeguards and Security Functional Area, safeguards and security personnel shall complete the appropriate competency statements as determined by line management consistent with assigned specialties. These competency statements correspond to Physical Security (1-8); Personnel Security (9-13); Material Control and Accountability (14-22); and, Information Security (23-32). All safeguards and security personnel shall complete the remaining competency statements (33-57) of this Standard.

**NOTE:** When U.S. Department of Energy (DOE) directives are cited in the qualification standard, the most recent revision should be used.

### PHYSICAL SECURITY

**1. Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of physical protection systems.**

Supporting Knowledge and Skills

- a. Describe the three primary functions of a physical protection system.
- b. Describe the characteristics of an effective physical protection system.
- c. Describe the fundamental characteristics of
  - Exterior intrusion sensors
  - Interior intrusion sensors
- d. Using a list of exterior and interior sensors, describe the classification that should be assigned to each type of sensor.
- e. Describe the types of exterior and interior sensors used within the Department.
- f. Describe the components of a comprehensive entry control system.
- g. Describe the types of entry control systems used within the Department.
- h. Describe the purpose of access delay in a physical protection system.
- i. Describe the type of access delay mechanisms used within the Department.
- j. Discuss the following terms:
  - Probability of detection
  - Delay time
- k. Demonstrate the modeling of a physical protection system using an adversary sequence diagram.

**2. Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of protective force operation.**

Supporting Knowledge and Skills

- a. Describe the levels and associated responsibilities of protective force personnel within the DOE.
- b. Describe the role of a special response team.
- c. Discuss the following terms:
  - Interdiction
  - Interruption
  - Neutralization
  - Recapture
  - Denial
- d. Describe typical examples of Federal or state authority granted to Protective Force personnel.

**3. Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of protection program operations as described in DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests, and DOE M 471.2-1, Classified Matter Protection and Control Manual.**

Supporting Knowledge and Skills

- a. Describe the five elements of protection and control planning:
  - Site-specific characteristics
  - Threat
  - Protection strategy
  - Planning
  - Graded protection
- b. Describe how the design basis threat is used in safeguards and security program planning.
- c. Describe the method used to identify and characterize the range of potential adversary threats.
- d. Discuss the denial strategy used to protect safeguards and security interests.
- e. Describe the containment strategy for Category I and II special nuclear material.

- f. Discuss the recapture/recovery or pursuit strategy should containment fail.
- g. Discuss the programs designed to mitigate radiological/toxicological sabotage.
- h. Describe the methods for protection and control of classified matter.
- i. Describe the requirements for the protection of unclassified irradiated reactor fuel while it is in transit.
- j. Discuss the graded approach in relation to the protection of safeguards and security interests.
- k. Discuss the requirements of the following protection elements:
  - Intrusion detection and assessment systems
  - Access control and entry/exit inspections
  - Barriers and locks
  - Secure storage
  - Communications
  - Acceptance and validation testing
  - Maintenance
  - Posting notices
  - Security badges and credentials

**4. Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of the protection of special nuclear material as described in DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.1C - 1, Manual for Protection and Control of Safeguards and Security Interests.**

Supporting Knowledge and Skills

- a. Describe access procedures to storage repositories.
- b. Describe procedures to prevent and detect unauthorized access to a storage repository.
- c. Describe the procedures for investigating and reporting abnormal conditions.
- d. Describe the protective responsibilities when special nuclear material is out of the vault.
- e. Describe the protective responsibilities when special nuclear material is in transit.
- f. Describe escort responsibilities when special nuclear material is in transit.
- g. Discuss the protection provided to vital equipment.

**5. Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of security areas as described in DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests.**

Supporting Knowledge and Skills

- a. Describe the different security areas.
- b. Discuss controls to detect, assess, deter, and prevent unauthorized access to Security Areas.
- c. Describe when random entry/exit inspections are permitted and give reasons for those inspections.
- d. Describe the articles prohibited from Security Areas cited in 10 CFR part 860 Trespassing on Administration Property and Title 41 CFR Part 101 Federal Property Management Regulations.
- e. List the types of privately owned articles prohibited from a security area.
- f. Describe the level of protection given to a property protection area.
- g. Describe the level of protection, access requirements, and storage requirements for a limited area.
- h. Describe the level of protection, access requirements and storage requirements for an exclusion area.
- i. Describe the level of protection for a Protected Area.
- j. Discuss function and performance of personnel entry/exit and vehicle entry inspections for those entering a protected area.
- k. Describe the response to an intrusion alarm within a protected area.
- l. Describe the level of protection and access requirements for a Vital Area.
- m. Describe the level of protection for a material access area.
- n. Discuss the entry/exit inspections required for a Material Access Area.
- o. Describe the response to an intrusion alarm within a material access area.
- p. Describe the level of protection for Sensitive Compartmented Information Facilities.

**6. Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of security areas as described in DOE Order 473.2, Protective Force Programs.**

Supporting Knowledge and Skills

- a. Describe the requirements for an armed protective force.
- b. Discuss how responsibilities identified in a protective force job analysis relate to proficiency in the skills and abilities necessary to perform job tasks.
- c. Discuss specific laws regarding property of the United States and provisions of the Atomic Energy Act, as described in 10 CFR 1047 Defense Programs; Limited Arrest Authority and Use of Force by Protective Force Officers and 1049 Limited Arrest Authority and Use of Force by Protective Force Officers of the Strategic Petroleum Reserve.
- d. Discuss the Departmental policy on the use of deadly force and limited arrest authority as set forth in 10 CFR 1047 Defense Programs; Limited Arrest Authority and Use of Force by Protective Force Officers and 1049 Limited Arrest Authority and Use of Force by Protective Force Officers of the Strategic Petroleum Reserve.
- e. Discuss firearms safety procedures related to issue duty weapons.
- f. Discuss firearms qualification requirements for all issued duty weapons.
- g. Discuss application of the authorization to carry firearms and make arrests without a warrant while performing official duties.
- h. Describe the situations in which fresh pursuit guidelines and site-specific guidelines for fresh pursuit of criminals are invoked.
- i. Describe safety procedures in fresh pursuit.
- j. Describe the difference between a misdemeanor and a felony.

**7. Safeguards and security personnel acting in physical security shall demonstrate the ability to review the contractor's protection program for approval as described in DOE O 470.1, Chapter III, Performance Assurance Program.**

Supporting Knowledge and Skills

- a. Conduct an assessment of the contents and accuracy of the contractor's protection and control planning.
- b. Assess the contractor's methods for protecting special nuclear material and vital equipment.
- c. Assess the contractor's program for protecting and controlling classified matter.

- d. Review and approve the contractor's program for protecting and controlling unclassified irradiated reactor fuel in transit.
- e. Assess the contractor's program for establishing, controlling, and maintaining security and restricted access areas.
- f. Assess and approve the following protection elements established by the contractor:
  - Intrusion detection and assessment systems
  - Control and entry/exit inspections
  - Barriers and locks
  - Secure storage
  - Communications
  - Acceptance and validation testing
  - Maintenance
  - Posting notices
  - Security badges and credentials
- g. Review for approval the contractor's protective force orders plans, and procedures.

**8. Safeguards and security personnel acting in physical security shall demonstrate the ability to assess the contractor's protection program operations in accordance with DOE Order 473.2, Protective Force Programs.**

Supporting Knowledge and Skills

- a. Assist in designing and evaluating a force-on-force performance test.
- b. Assist in designing and evaluating an emergency management performance test.
- c. Assist in designing and evaluating a limited scope performance test of protective forces.

**PERSONNEL SECURITY**

**9. Safeguards and security personnel acting in personnel security shall demonstrate a working level knowledge of the access authorization (security clearance) process.**

Supporting Knowledge and Skills

- a. Discuss the following terms:
  - Derogatory information

- Access authorization
  - Single scope background investigation
  - Suspension
- b. Discuss the process for screening reports of investigation for initial Q and L access authorizations.
- c. Explain the relevance in terms of risk assessment of the clearance criteria in 10 CFR 710, Subpart A, General Criteria and Procedures for Determining Eligibility for Access to Classified Matter or Special Nuclear Material.
- d. Explain the purpose of the personnel security interview.

**10. Safeguards and security personnel acting in personnel security shall demonstrate a familiarity level knowledge of security awareness activities.**

Supporting Knowledge and Skills

- a. Discuss the purposes for conducting the following types of briefings:
- Initial
  - Comprehensive
  - Refresher
  - Termination
- b. Identify the topics that should be included in an initial briefing.

**11. Safeguards and security personnel acting in personnel security shall demonstrate a familiarity level knowledge of classified visit activities.**

Supporting Knowledge and Skills

- a. Discuss the security principle that serves as a basis for the Control of Classified Visits Program.
- b. Describe the process by which a Department of Defense (DoD) employee is approved to visit a DOE contractor site when the visit involves an exchange of secret restricted data and weapon data.

**12. Safeguards and security personnel acting in personnel security shall demonstrate a working level knowledge of the programs described in the following DOE orders and manual:**

- DOE O 470.1, Chapter IV, Safeguards and Security Awareness Program
- DOE O 470.1, Chapter VIII, Control of Classified Visits Program
- DOE O 472.1C, Personnel Security Activities
- DOE M 472.1-1B, Personnel Security Program Manual

Supporting Knowledge and Skills

- a. Describe the general requirements for determining level of access authorization and investigative requirements.
  - b. Discuss the elements for processing personnel security cases.
  - c. Describe the processes used for screening and analysis of investigative results in personnel security cases and methods for determining access authorization eligibility.
  - d. Discuss the requirements for interim access authorizations.
  - e. Describe when a "Data Report on Spouse" form must be filed.
  - f. Describe the requirements and processes of access authorization for foreign nationals, dual citizens, and naturalized U.S. citizens.
  - g. Discuss the extensions, transfers, terminations, and reinstatements of access authorizations.
  - h. Describe the reinvestigation program.
  - i. Discuss the requirements for the Personnel Security Assurance Program.
  - j. Discuss the requirements of the Safeguards and Security Awareness Program.
  - k. Discuss the requirements of the Classified Visits Program.
- 13. Safeguards and security personnel acting in personnel security shall demonstrate the ability to assess the personnel security program as described in the following DOE orders and manual:**
- **DOE O 470.1, Chapter IV, Safeguards and Security Awareness Program**
  - **DOE O 470.1, Chapter VIII, Control of Classified Visits Program**
  - **DOE O 472.1C, Personnel Security Activities**
  - **DOE M 472.1-1B, Personnel Security Program Manual**

Supporting Knowledge and Skills

- a. Assess Department of Energy (DOE) or contractor strategies for maintaining the minimum number of access authorizations consistent with operational efficiency.
- b. Assess the effectiveness of management and operating contractor preprocessing checks conducted in accordance with Department of Energy Acquisition Regulations (DEAR).
- c. Assess contractor compliance with requirements for timely reporting of access authorization terminations to the Department of Energy (DOE).

- d. Assess DOE personnel security staff capability to effectively adjudicate information contained in reports of investigation, personnel security interviews, and Department sponsored mental evaluations.
- e. Assess DOE procedures for developing security investigation funding estimates in response to budget calls.
- f. Assess the completeness/compliance factors of Personnel Security Assurance Program plans approved by field office managers.
- g. Assess the effectiveness of procedures implemented by the DOE Headquarters and field offices to approve/process requests for classified visits.
- h. Assess DOE field office and Headquarters compliance with the intent of the requirements/guidance of the Safeguards and Security Awareness Program.

## **MATERIAL CONTROL AND ACCOUNTABILITY**

- 14. Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of nuclear materials within the Department of Energy.**

### Supporting Knowledge and Skills

- a. Using a list of nuclear materials, identify the classification (special nuclear material, source, or other) of the material.
- b. Describe the categories of nuclear materials within the DOE.
- c. Describe the attractiveness levels of nuclear materials within the DOE.

- 15. Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of nuclear material accountability practices.**

### Supporting Knowledge and Skills

- a. Discuss the purpose of the following material control and accountability measurements:
  - Accountability
  - Verification
  - Confirmatory
- b. Describe the three general types of measurement methods used to measure nuclear material.

- c. Discuss the following statistical terms:
  - Random sample
  - Standard deviation
  - Measurement bias
  - Random error
- d. Describe the key elements of a nuclear material accounting system.
- e. Describe the purpose for conducting the following physical inventories:
  - Periodic physical inventories
  - Special inventories
- f. Discuss the following physical inventory terms:
  - Inventory difference
  - Shipper/receiver difference

**16. Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of nuclear materials control within the DOE.**

Supporting Knowledge and Skills

- a. Describe the major containment areas required for nuclear materials within the Department.
- b. Discuss the function of each of the following nuclear material control programs:
  - Access Control
  - Surveillance
  - Detection/assessment
- c. Discuss the key elements of the above nuclear material control programs.

**17. Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of the basic requirements of Material Control and Accountability as described in DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.**

Supporting Knowledge and Skills

- a. Using the site material control and accountability plan, discuss the following requirements:

- Measurements and measurement control
  - Planning and management
  - Threat considerations
  - Performance criteria
  - Accounting system
  - Physical inventories
  - Control limits
  - Loss detection elements
  - Nuclear material alarms
  - Nuclear material access control
  - Containment
  - Surveillance
- b. Discuss the concept of defense-in-depth as it applies to material control and accountability.
- c. Discuss the material control and accountability aspects of the site and facility emergency plans.
- d. Explain the specific performance requirements for material control and accountability elements.
- e. Explain how nuclear materials are categorized using material type, attractiveness levels, and material quantities.
- f. Discuss how materials categorization relates to the graded safeguards principle.
- g. Discuss how vulnerability assessments, performance testing, and performance requirements serve as loss detection elements.
- h. Discuss the occurrence investigation and reporting requirements associated with material control and accountability.
- i. Discuss the administrative controls designed to prevent and detect material losses or diversions including internal reviews and assessment programs.
- 18. Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of materials accounting, as described in DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.**

Supporting Knowledge and Skills

- a. Discuss how material accounting relates to the overall protection of nuclear material.
  - b. Explain the specific requirements for the accounting system database, procedures, and accounts.
  - c. Describe the account structure for a facility.
  - d. Describe the required records and reports to be maintained by a facility.
  - e. Discuss the process of conducting, verifying, and reconciling physical inventories.
  - f. Discuss the minimum required frequencies and special requirements for physical inventories by material category.
  - g. Discuss the purpose and use of inventory verification/confirmation measurements.
  - h. Discuss the data quality assurance elements of the requirements for measurements and measurement control and how they are monitored to ensure continuing control of measurement errors.
  - i. Discuss the measurement control programs used at a facility.
  - j. Discuss the requirements for the external material transfer program including the measurements and their time frames.
  - k. Discuss the requirements for the internal material transfer program.
  - l. Discuss how material control indicators are analyzed and how an indicator is determined to be significant.
  - m. Discuss the sampling methods used to determine physical inventory values.
  - n. Describe the weighing techniques used to determine physical inventory values.
  - o. Describe the analytical methods used to determine physical inventory values.
- 19. Safeguards and security personnel acting in material control and accountability personnel shall demonstrate a working level knowledge of the material control processes as described in DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.**

Supporting Knowledge and Skills

- a. Discuss the requirements for controlling access to nuclear materials, data, and property.

- b. Discuss the requirements for each of the following containment boundaries including category considerations: protected areas, materials access areas; materials balance areas; storage repositories; and processing areas.
- c. Discuss the graded requirements for the materials surveillance program.
- d. Discuss how each of the detection/assessment elements listed in the order addresses the potential for theft or diversion of nuclear material.

**20. Safeguards and security personnel acting in material control and accountability shall demonstrate an expert level knowledge of the administrative controls required to ensure the integrity and quality of Material Control and Accountability systems and procedures as described in DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.**

Supporting Knowledge and Skills

- a. Describe the content, review and approval requirements for facility material control and accountability procedures.
- b. Assess the material control and accountability procedures for consistency with the approved material control and accountability plan.
- c. Describe the types of material control and accountability emergency procedures required.
- d. Assess the material control and accountability emergency procedures to ensure they are in compliance with DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.
- e. Assess the controls that limit access to the accounting system and nuclear materials accounting data.
- f. Describe the checks and balances required in the nuclear material accounting system.
- g. Assess the contractor's assessment program for integrity and quality of the material control and accountability system.
- h. Determine when a review is required of a new and existing facility.
- i. Discuss the periodicity of material control and accountability internal audits conducted by organizations independent of material control and accountability and the requirements for them.

21. **Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of the documentation and reporting requirements for the national database as described in DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials and DOE M 474.1-2, Manual for Nuclear Materials Management and Safeguards System Reporting and Data Submission.**

Supporting Knowledge and Skills

- a. Discuss the documentation requirements for nuclear material transactions.
- b. Describe content and reporting frequency for material balance reports.
- c. Discuss the inventory reporting requirements for nuclear materials.
- d. Describe the data processing procedures required for submitting data to the nuclear materials management and safeguards system.
- e. Assess the contractor's documentation and reporting of nuclear materials transactions.

22. **Safeguards and security personnel acting in materials control and accountability shall demonstrate the ability to assess a program as described in DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.**

Supporting Knowledge and Skills

- a. Participate in a vulnerability assessment designed to identify and assess the capability for detecting loss of a Category I quantity of Special Nuclear Material.
- b. Assess whether the contractor's performance testing program for material control and accountability meets the requirements of DOE O 470.1, Safeguards and Security Program.
- c. Assess the contractor's programs and processes for occurrence investigation and reporting of material control and accountability related incidents.
- d. Assess the facility's administrative controls that ensure the integrity and quality of systems and procedures for material control and accountability.
- e. Assess the facility's nuclear materials accountability system that tracks nuclear material inventories, documents nuclear material transactions, issues periodic reports, and assists in detecting unauthorized system access, data falsification, and material gains or losses.
- f. Audit the facility's physical inventory program for nuclear materials.

- g. Assess the facility's graded program for controlling personnel access to: nuclear materials; data for nuclear materials accountability, inventory, and measurement; data generating equipment; and, other items/equipment where misuse or tampering could lead to compromise of the safeguards system.
- h. Assess the contractor's graded surveillance program for monitoring nuclear materials, detecting unauthorized activities or anomalous conditions, and for reporting material and facility status.
- i. Assess the contractor's capability to detect and assess the unauthorized removal of nuclear materials.

## INFORMATION SECURITY

**23. Safeguards and security personnel acting in information security shall demonstrate a working level knowledge of information security systems.**

Supporting Knowledge and Skills

- a. Describe the classification levels and categories.
- b. Describe the function of the following information security programs:
  - Classified Matter Protection Control
  - Operations Security
  - Technical Surveillance Countermeasures
  - Automated Information Systems Security
  - Sensitive Unclassified Information
  - Sensitive Compartmented Information and Foreign Intelligence Information
  - Special Access Programs
- c. Discuss the Department's counterintelligence program and its relationship to the information security program.

**24. Safeguards and security personnel acting in information security shall demonstrate a working level knowledge of the classified computer security program as described in the DOE directives:**

- DOE O 471.2A, Information Security Program
- DOE M 471.2-2, Classified Information Security Systems Manual

Supporting Knowledge and Skills

- a. Discuss the onsite management and planning activities for automated information systems security.
  - b. Discuss the assignment of automated information systems security responsibilities, authorities, and accountability.
  - c. Discuss the required contents and maintenance of an automated information systems security plan.
  - d. Perform an evaluation of the automated information systems security plan to verify its currency and conformity with DOE orders.
  - e. Describe the local statement of threat to computing and information resources.
  - f. Describe how the automated information systems security organization interfaces with the configuration management and planning processes.
  - g. Describe how the automated information systems security organization interfaces with the site risk management program.
  - h. Describe the automated information systems security awareness program and the automated information systems security organization's responsibilities for that program.
  - i. Discuss the integration of TEMPEST considerations into automated information systems security planning.
  - j. Describe the local automated information systems security inspection/review program.
  - k. Describe the purpose and methodology of certification and accreditation of computing resources.
  - l. Describe the methods used to protect information assets on computing resources.
  - m. Describe the methods used to provide physical protection of computing resource assets.
  - n. Discuss the continuity and reliability of critical operations for computing resources.
- 25. Safeguards and security personnel acting in information security shall demonstrate a familiarity level knowledge of the requirements for information security as described in Department of Energy (DOE) Order 5639.8A, Security of Foreign Intelligence Information and Sensitive Compartmented Information.**

Supporting Knowledge and Skills

- a. Discuss the purpose and scope of DOE Order 5639.8A, Security of Foreign Intelligence Information and Sensitive Compartmented Information Facilities.
  - b. Describe the interrelationship of the following:
    - Foreign Intelligence Information
    - Sensitive Compartmented Information
    - Other information security programs
  - c. Discuss the contents and use of DOE Procedural Guide - Security of Foreign Intelligence Information and Sensitive Compartmented Information and Facilities.
  - d. Explain how Director of Central Intelligence Directives are utilized by Field elements.
  - e. Discuss the goals, direction, and related duties and responsibilities with respect to the national intelligence effort as set forth in Executive Order 12333, "United States Intelligence Activities."
  - f. Discuss the requirements for safeguarding National Security Information as described in Executive Order 12958, "National Security Information."
  - g. Describe the purpose, goals, and objectives of the Information Security Oversight office Directive No. 1 with regard to National Security Information.
- 26. Safeguards and security personnel acting in information security shall demonstrate an expert level knowledge of the requirements for control of Top Secret, Secret, and Confidential documents as described in the DOE orders listed below.**
- **DOE Order 471.2A, Information Security Program**
  - **DOE M 471.2-C, Classified Matter Protection and Control Manual**

Supporting Knowledge and Skills

- a. Discuss classification levels and categories and the degree of control required for each.
- b. Describe the appropriate clearance level for access to each classification level.
- c. Describe the proper storage of Top Secret matter not under personal control.
- d. Describe the protection requirements for Top Secret matter in storage.
- e. Describe the difference between the storage of Top Secret and Secret matter.
- f. Describe the differences between the storage of Secret and Confidential matter.

- g. Describe the responsibilities in the event that a repository or location containing classified matter is found unattended.
  - h. Describe responsibilities in response to an intrusion detection alarm on a repository or location containing classified matter.
  - i. Describe the procedures for receiving and transmitting classified matter.
  - j. Describe the procedures for packaging classified matter for transmission outside of the facility.
  - k. Discuss the procedures for transmitting classified matter outside of the security area.
  - l. Describe the different ways of transmitting classified matter.
  - m. Discuss the guidelines used for the reproduction of classified documents.
  - n. Describe the proper way to dispose of classified matter.
  - o. Describe the accountability records that must be maintained for accountable classified matter.
  - p. Describe the proper way to mark a classified document.
  - q. Describe the procedures for handling classified matter through the process of a contract termination or facility closeout.
  - r. Describe the process used to report, assign, and resolve the loss of classified matter.
- 27. Safeguards and security personnel acting in information security shall demonstrate a familiarity level knowledge of the program described in DOE O 471.2A, Information Security Program.**

Supporting Knowledge and Skills

- a. Describe the basic elements of a technical surveillance countermeasures program.
- 28. Safeguards and security personnel acting in information security shall demonstrate a familiarity level knowledge of the program outlined in DOE O 471.2A, Chapter II, Operations Security Program.**

Supporting Knowledge and Skills

- a. Differentiate between Critical Program Information, formerly known as Critical and Sensitive Information Lists and Indicators, formerly known as Essential Elements of Friendly Information.

- b. Discuss the basic principles of the Operations Security process:
  - Identify critical information
  - Analyze threat
  - Assess vulnerabilities
  - Perform risk analysis
  - Implement countermeasures
- c. Discuss the basic principles of the selection of countermeasures.
- d. Describe the methodology used to develop a site-specific threat statement.
- e. Describe the purpose and outcomes of a vulnerability assessment.

**29. Safeguards and security personnel acting in information security shall demonstrate an expert level knowledge of Department of Energy (DOE) Manual 475.1-1A, Identifying Classified Information.**

Supporting Knowledge and Skills

- a. Discuss the responsibilities and authorities of the heads of field elements, field element and contractor classification officers, responsible reviewers, and field element and contractor employees.
- b. Discuss the policies and objectives of the DOE classification program.
- c. Discuss the criteria for classification.
- d. Describe the classification levels, and categories, use of the term unclassified, and mosaic compilation.
- e. Discuss the classification authorities.
- f. Discuss the classification guidance available within the DOE.
- g. Describe the classification/security markings placed on a classified document.
- h. Discuss the authority and procedure to upgrade the classification of information and documents.
- i. Discuss the authority and procedure to reclassify information and documents.
- j. Discuss the classification status of research and development activities.
- k. Discuss the classification review of newly generated documents.
- l. Discuss the declassification and downgrading of classified information and documents.

- m. Discuss the policy, objectives, standards, and procedures for conducting classification appraisals.
- n. Explain the relationship between DOE Manual 475.1-1A, Identifying Classified Information; Executive Order 12958, National Security Information; 32 CFR 2001, National Security Information; and the Atomic Energy Act of 1954 as amended, with respect to classified information.

**30. Safeguards and security personnel acting in information security shall demonstrate the ability to assess the contractor's classified computer security programs in accordance with DOE Order 471.2A, Chapter III, Classified Information Systems Security, and DOE Manual 471.2-2, Manual of Security Requirements for the Classified Information System Security Program.**

Supporting Knowledge and Skills

- a. Assess the contractor's management and planning programs for computer security.
- b. Assess the contractor's program for the protection of information assets.
- c. Assess the contractor's programs for the physical protection of computing resource assets.
- d. Assess of the contractor's programs that ensure continuity and reliability of operations.

**31. Safeguards and security personnel acting in information security shall demonstrate the ability to assess the effectiveness and efficiency of the local organization's management program in meeting security objectives for information security.**

Supporting Knowledge and Skills

- a. Assess the contractor's procedures for document and material control.
- b. Assess the contractor's self-inspection program for information security.
- c. Perform a Foreign Ownership, Control, or Influence (FOCI) determination of a contractor.

**32. Safeguards and security personnel acting in information security shall demonstrate the ability to assess the contractor's control of Top Secret, Secret, and Confidential documents in accordance with Department of Energy (DOE) Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M 5632.1C -1, Manual for Protection and Control of Safeguards and Security Interests.**

Supporting Knowledge and Skills

- a. Assess the contractor's practices during all phases of the control and use of Secret and Confidential matter.
- b. Assess the contractor's practices during all phases of the control and use of Top Secret matter.
- c. Given a hypothetical security infraction, simulate the process of reporting and disposing of the infraction.

**ALL SAFEGUARDS AND SECURITY PERSONNEL**

**33. Safeguards and security personnel shall demonstrate a familiarity level knowledge of the DOE Safeguards and Security program.**

Supporting Knowledge and Skills

- a. Define the terms safeguards and security as they apply to the DOE. Provide examples of each.
- b. Describe the major safeguards and security objectives within the Department.
- c. Describe the major elements of the DOE's Safeguards and Security program.
- d. Describe the objective of Integrated Safeguards and Security Management (ISSM).
- e. Describe the levels of access authorization used within the DOE.
- f. Describe the graded approach policy.

**34. Safeguards and security personnel shall demonstrate a familiarity level knowledge of threat awareness.**

Supporting Knowledge and Skills

- a. Discuss the following terms:
  - Abrupt theft
  - Protracted theft
  - Diversion
  - Radiological sabotage
  - Toxicological sabotage
  - Industrial sabotage
  - Espionage
- b. Discuss the protection strategies of denial and containment.

- c. Discuss the basic adversary types recognized as a DOE threat.

**35. Safeguards and security personnel shall demonstrate a familiarity level knowledge of the Design Basis Threat Policy for the DOE Programs and Facilities.**

Supporting Knowledge and Skills

- a. Describe how the design basis threat is used in safeguards and security planning.
- b. Describe the method used to identify and characterize the range of potential adversary threats.
- c. Discuss the responsibilities of safeguards and security personnel of in the development of a design basis threat.

**36. Safeguards and security personnel shall demonstrate a familiarity level knowledge of the planning process described in DOE O 470.1, Safeguards and Security Program.**

Supporting Knowledge and Skills

- a. Discuss the contents of the Site-Specific Security Plan, Facility Descriptions and Operational Plans and the interrelationship between them.
- b. Discuss the processes for reviewing and validating site-specific security plans, facility descriptions and operational plans.
- c. Discuss the resources necessary to develop a site safeguards and security plan including necessary site documentation and on-call expertise.

**37. Safeguards and security personnel shall demonstrate a working level knowledge of DOE O 470.1, Safeguards and Security Program.**

Supporting Knowledge and Skills

- a. Assess the facility's acceptance and validation test for safeguards and security that validate functional requirements and effectiveness of safeguards and security elements that have been implemented and are operating as part of a total system.
- b. Assess the contractor's ability to identify and test critical system elements during acceptance and validation tests.
- c. Discuss the required frequency of performance testing.
- d. Describe the required sections of the safeguards and security acceptance and validation test program plan.

- e. Describe the required sections of the safeguards and security validation test plan.
- f. Discuss the required sections of the safeguards and security acceptance and validation test reports.
- g. Describe what determines unsatisfactory test results and how these are resolved.

**38. Safeguards and security personnel shall demonstrate a familiarity level knowledge of DOE O 470.1, Safeguards and Security Program and DOE G 470.1-2, Safeguards and Security Self-Assessment Guide.**

Supporting Knowledge and Skills

- a. Discuss the responsibilities and authorities of the heads of Field elements.
- b. Describe the facility importance rating and approval systems.
- c. Describe the general survey requirements.
- d. Describe the process for conducting safeguards and security surveys.
- e. Describe the actions systems for survey ratings and follow-up.

**39. Safeguards and security personnel shall demonstrate a familiarity level of knowledge of the programs outlined in DOE O 471.2A, Chapter II, Operations Security Program.**

Supporting Knowledge and Skills

- a. Describe the Department's Operations Security (OPSEC) program structure.
- b. Discuss the responsibilities of the OPSEC Manager.
- c. Discuss the activities, composition, and authorities of an OPSEC Working Group.

**40. Safeguards and security personnel shall demonstrate a familiarity level of knowledge of the classified computer security program as described in the following DOE directives:**

- **DOE O 471.2A, Information Security, Chapter III, Classified Information Systems Security**
- **DOE M 471.2-2, Classified Information Systems Security Manual**

Supporting Knowledge and Skills

- a. Describe the types of automated information system security activities that are classified.
- b. Discuss examples of classified automated information system security programs.

- c. Identify and describe the classified automated information system security standards, policies, procedures, and objectives related to safeguards and security.

**41. Safeguards and security personnel shall demonstrate a familiarity level knowledge of DOE O 474.1, Control and Accountability of Nuclear Materials and DOE M 474.1-1A, Manual for Control and Accountability of Nuclear Materials.**

Supporting Knowledge and Skills

- a. Discuss the basic requirements of material control and accountability.
- b. Describe in general how the material control and accountability materials accounting systems provides a complete audit trail of all nuclear material from receipt through disposition.
- c. Describe the general requirements of the material control and accountability physical inventory program for nuclear materials.
- d. Describe the general requirements and controls of the material control and accountability nuclear material transfer programs.
- e. Discuss in general the four functional performance areas of nuclear material control.

**42. Safeguards and security personnel shall demonstrate a working level knowledge of DOE M 475.1-1A, Identifying Classified Information.**

Supporting Knowledge and Skills

- a. Discuss the responsibilities of field elements and contractor employees in identifying classified information.
- b. Discuss the general policies and objectives of the DOE classification program.
- c. Discuss the criteria for classification.
- d. Describe the classification levels, use of the terms unclassified, and mosaic compilation.
- e. Discuss the availability of site classification guidance.
- f. Describe the classification/security markings placed on a classified document.

**43. Safeguards and security personnel shall demonstrate a familiarity level knowledge of the requirements for control of Top Secret, Secret, and Confidential documents as described in the DOE directives listed below:**

- **DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests**
- **DOE M 5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests**

Supporting Knowledge and Skills

- a. Discuss classification levels and the degree of control required for each of the above directives.
- b. Describe the appropriate clearance level for access to each classification level.

**44. Safeguards and security personnel shall demonstrate a working level knowledge of DOE Order 471.2A, Information Security Program.**

Supporting Knowledge and Skills

- a. Discuss the purpose and policy statements associated with the DOE's information security program.
- b. Describe the major elements of the information security program.
- c. Discuss the duties and responsibilities of the following positions as they pertain to the information security program:
  - Heads of departmental elements
  - Heads of field organization
  - Information security program operations managers
  - Procurement request originators
  - Contracting officers
- d. Describe the facility's chain of responsibility for information security.
- e. Discuss the facility's security organization program guidelines.
- f. Describe the process of dealing with classified matter that cannot be accounted for.
- g. Describe the process of dealing with the compromise of classified matter.
- h. Describe the process of making a damage assessment.
- i. Describe the process of determining, assigning, and reporting a security infraction of classified information.

**45. Safeguards and security personnel shall demonstrate a familiarity level knowledge of DOE O 470.1, Safeguards and Security Program.**

Supporting Knowledge and Skills

- a. Discuss the policy set forth in this order.
- b. Describe the purpose of safeguards and discuss the types of activities used to accomplish these purposes.
- c. Define security.
- d. Identify the key program elements of the safeguards and security program and describe the authorities and responsibilities of each.
- e. Discuss the use of risk analysis as it applies to safeguards and security programs.
- f. Discuss the purpose of independent assessments of safeguards and security programs.
- g. Discuss the purpose of alternative means and deviations including the following terms:
  - Variance
  - Waiver
  - Exception

**46. Safeguards and security personnel shall demonstrate a familiarity level knowledge of the Safeguards and Security-related aspects of DOE Order 420.1A, Facility Safety.**

Supporting Knowledge and Skills

- a. Discuss the purpose of this order.
- b. Discuss the policies and objectives of the order.
- c. Given a scenario involving the design, acquisition, or maintenance of a facility, identify the safeguards and security-related sections of the general design criteria.
- d. Safeguards and security personnel should have an understanding of the safety basis documents (such as Documented Safety Analysis, Safety Analyses Reports, Hazard Analysis Reports, and Fire Hazard Analysis).
- e. Safeguards and security personnel should be capable of integrating the results of the different functional area safety basis documents into safeguards and security planning documents.

- f. Safeguards and Security personnel should have an understanding of the impacts of their activities on facility safety, including the use of the Unreviewed Safety Question process whenever facility modifications are proposed as a result of deliberate act analysis or other safeguards and security requirements.

**47. Safeguards and security personnel shall demonstrate a working level knowledge of methods to maintain communication with Headquarters, Field elements, regulatory agencies, the public, and other stakeholders.**

Supporting Knowledge and Skills

- a. Describe the Department's organization and discuss the Department's procedures for communicating between elements.
- b. Describe the Department's procedures and policy for communicating with regulatory agencies.
- c. Demonstrate the ability to present technical ideas in general terms to the public.
- d. Define conflict and discuss the win-lose and win-win methods of conflict resolution.
- e. Discuss the purpose and describe the roles and responsibilities of safeguards and security personnel for the following DOE Orders:
  - DOE O 151.1A, Comprehensive Emergency Management System
  - DOE O 200.1, Information Management Program
- f. Identify the internal and external groups with which the safeguards and security personnel interface.
- g. Describe the different types of media that may be utilized to communicate with these groups and discuss the advantages and disadvantages of each.

**48. Safeguards and security personnel shall demonstrate a familiarity level knowledge of contract management and administration sufficient to appraise contractor organizations participating in the safeguards and security programs.**

Supporting Knowledge and Skills

- a. Discuss the key elements of the contractual relationship between the DOE and its contractors.
- b. Discuss the roles and responsibilities of safeguards and security personnel in the contract management and administration processes.

- 49. Safeguards and security personnel shall demonstrate a familiarity level knowledge of financial management to meet commitments to quality, cost, and schedule for safeguards and security.**

Supporting Knowledge and Skills

- a. Define and compare the terms "cost estimate" and "budget."
- b. Describe the process for preparing cost estimates and budget.
- c. Describe and compare labor and non-labor costs.
- d. Describe and compare direct and indirect costs.
- e. Discuss methods of reducing indirect costs.
- f. Discuss the types of projects and the methods for funding these projects.

- 50. Safeguards and security personnel shall demonstrate a working level knowledge of assessment techniques (such as planning and use of observations, interviews, and document reviews) to assess facility performance, report results of assessments, and follow-up on actions taken as the result of assessments.**

Supporting Knowledge and Skills

- a. Describe the role of safeguards and security personnel in overseeing government-owned contractor-operated facilities.
- b. Describe the assessment requirements and limitations associated with safeguards and security personnel's interface with contractor employees.
- c. Conduct an interview representative of one that would be conducted during an occurrence investigation.
- d. Explain the essential elements of a performance-based assessment including investigation, fact-finding, and reporting.
- e. Describe the contents of an assessment report.
- f. Explain the essential elements and processes associated with the following assessment activities:
  - Exit interviews
  - Closure process
  - Tracking to closure
  - Follow-up
  - Contractor corrective action implementation

- g. Describe the actions to be taken if the contractor challenges the assessment findings and explain how such challenges can be avoided.
- f. Participate in formal meetings between DOE management and senior contractor management to discuss results of safeguards and security assessments.

**51. Safeguards and security personnel shall demonstrate a working knowledge of problem analysis and techniques necessary to identify problems, determine potential causes of problems, and identify corrective action.**

Supporting Knowledge and Skills

- a. Describe and explain the application of problem analysis techniques including the following:
  - Root cause analysis
  - Causal factor analysis
  - Change analysis
  - Barrier analysis
  - Management oversight risk tree analysis
- b. Describe and explain the application of the following root cause analysis processes in the performance of occurrence investigations:
  - Events and causal factor charting
  - Root cause coding
  - Recommendation generation
- c. Describe the following types of investigations and discuss an example of the application of each:
  - Type A
  - Type B
  - Type C
- d. Compare and contrast immediate, short term, and long term actions taken as the result of problem identification or an occurrence.
- e. Describe various data gathering techniques and the use of trending/history when analyzing problems.

- 52. Safeguards and security personnel shall demonstrate the ability to apply problem analysis techniques necessary to identify problems, determine potential causes of problems, and identify corrective action.**

Supporting Knowledge and Skills

- a. Given event and occurrence data, apply problem analysis techniques and identify the problems and how they might have been avoided.
- b. Participate in a Type A, B, or C investigation.
- c. Participate in a contractor or DOE problem analysis and critique the findings and results.
- d. Using data, interpret two fault tree analyses.

- 53. Safeguards and security personnel shall demonstrate the ability to trend contractor performance related to safeguards and security in accordance with the following Department of Energy directives:**

- **DOE O 210.1, Performance Indicator and Analysis of Operations Information**
- **DOE O 231.1, Environmental, Safety, and Health Reporting**
- **DOE M 231.1-1, Environmental, Safety, and Health Reporting Manual**

Supporting Knowledge and Skills

- a. Discuss the key processes used in trending and analysis of safeguards and security information.
- b. Using an actual list of performance indicators, e.g., security infractions/violations, property loss, inventory deficiencies, determine what type of assessments should be performed and in what areas.
- c. Given a set of incident/occurrence report data for a specified period, analyze the information for safeguards and security performance, trends, or compliance problems.

- 54. Safeguards and security personnel shall demonstrate the ability to assess the contractor's ability to develop program plans in accordance with DOE O 470.1, Safeguards and Security Program.**

Supporting Knowledge and Skills

- a. Assess the contractor's Site Safeguards and Security Plan for inclusion of site-wide Master Safeguards and Security Agreements, Facility Descriptions and Operational Plans, and Resource Plans.
- b. Assess the contractor's facility descriptions and operational plans to ensure that the plans describe the site protection strategies, facility protection systems, and programs currently in place.

- c. Assess the contractor's ability to ensure that it presents a five-year projection of the upgrades and their associated costs in addressing the vulnerabilities and risks.
- d. Assess the contractor's ability to ensure that performance levels are based on performance indicators such as vulnerability assessments, system performance tests, surveys, inspections, evaluations, and training levels.
- e. Assess supporting documentation (vulnerability assessments, cost/benefit analyses, implementation procedures, guidelines, performance exercises, etc.).

**55. Safeguards and security personnel shall demonstrate a familiarity level knowledge of approvals and surveys in accordance with DOE Order 470.1, Chapter IX, Survey Program.**

Supporting Knowledge and Skills

- a. Describe the approval process of a new facility or interest at a Department facility.
- b. Discuss the safeguards and security survey process.
- c. Discuss the ratings given during a safeguards and security survey.
- d. Discuss the appropriate follow-up actions necessary for each type of survey rating.

**56. Safeguards and security personnel shall demonstrate a familiarity level knowledge of the general principles of project management as described in DOE Order 4700.1, Project Management System.**

Supporting Knowledge and Skills

- a. Discuss the purpose and requirements of the order.
- b. Discuss the responsibilities of safeguards and security personnel participating in the DOE project management system in terms of the administration and coordination of the safeguards and security programs.

**57. Safeguards and security personnel shall demonstrate a working level knowledge of effective negotiation skills.**

Supporting Knowledge and Skills

- a. Discuss the essential elements of effective negotiation.
- b. Describe how to develop and use strategies of negotiation.

- c. Describe how the following pre-negotiation elements are accomplished and developed:
  - Objectives/desired outcomes
  - Information gathering
  - Analysis of other party's objectives
  - Identify needs of both parties
  
- d. Participate in negotiation activities with peers, DOE management, and contractor personnel.

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## APPENDIX A CONTINUING EDUCATION, TRAINING AND PROFICIENCY PROGRAM

The following list represents suggested continuing education, training and other opportunities that are available for safeguards and security personnel after completion of the competency requirements in this technical functional area qualification standard. It is extremely important that personnel involved in safeguards and security maintain their proficiency through continuing education, training, reading, or other activities such as workshops, seminars, and conferences. The list of suggested activities was developed by the subject matter experts involved in the development of the functional area qualification standard and is not all-inclusive.

Based on the knowledge and experience of the Subject matter experts, it is suggested that the training activities outlined below are necessary to maintain proficiency in the Safeguards and Security Functional Area after completion of the competencies in the Standard and other requirements of the Technical Qualification Program.

### **LIST OF CONTINUING EDUCATION, TRAINING AND OTHER ACTIVITIES**

#### Advanced Development and Professional Training (ADAPT)

The Nonproliferation and National Security Institute (NNSI) offers the Advanced Development and Professional Training (ADAPT) program for individuals who have been assigned to a new job, or have had additional functions added to their assigned duties. ADAPT can also apply to those who wish to train for career enhancement and broaden their current knowledge and skills. ADAPT provides highly tailored job-specific training and draws from past education, training and certification to assist in evaluating individual training needs. For more information, log onto the NNSI home page at [WWW.NNSI.DOE.GOV](http://WWW.NNSI.DOE.GOV).

#### Professional Enhancement Program (PEP)

The NNSI also offers the Professional Enhancement Program (PEP). This program provides incentive for cross training and career broadening by formally recognizing achievement in safeguards and security (S&S) disciplines through a diploma program and provides a guide for qualification. PEP applies to those who have been working in an S&S discipline(s) and who want recognition for their education, training, and certification. By taking core technical and elective courses, participants may receive a professional diploma or a master diploma based on the level of training and experience within their chosen functional area. For more information, log onto the NNSI home page at [WWW.NNSI.DOE.GOV](http://WWW.NNSI.DOE.GOV).

### Training Approach

For both the ADAPT and PEP programs, NNSI uses a variety of training delivery methods to provide the students with a wide variety of training options. Some of the key delivery methods are NNSI campus classes, correspondence courses, field-conducted-training via mobile training teams, and several technology-based distance learning methods such as computer based training, interactive television, online training via the Internet, and audio and video assisted training. Test-out is also available in certain areas for more experienced personnel. Both ADAPT and PEP are, as much as practical, structured to accommodate the individuals work schedule by making extensive use of the distance learning training platforms, test-out, and accepting credit transfer from previous training, education and certification.

**CONCLUDING MATERIAL**

**Review Activity:**

**DOE**  
DP-NNSA  
EH  
EM  
NE  
NN-NNSA  
SC  
FE

**Field and Operations Offices**

AL  
CH  
ID  
Fernald  
NV  
OAK  
OH  
OR  
RF  
RL  
SF  
SR  
Carlsbad Field Office (CBFO)  
Office of River Protection

**Preparing Activity:**

DOE-EH-22

**Project Number:**

TRNG-0038

**Area Offices:**

Amarillo Area Office  
Argonne Area Office  
Brookhaven Area Office  
Fermi Area Office  
Kirtland Area Office  
Los Alamos Area Office  
Princeton Area Office  
Rocky Flats Area Office  
Y-12 Area Office