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DOE STANDARD

ENVIRONMENTAL COMPLIANCE FUNCTIONAL AREA QUALIFICATION 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 (DOE) 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.



Karen Boardman, Chairperson
Federal Technical Capability Panel

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ACKNOWLEDGMENT

The National Nuclear Security Administration (NNSA) is the sponsor for the Environmental Compliance Qualification Standard. The sponsor is responsible for coordinating the development and/or review of the Functional Area Qualification Standard (FAQS) by subject matter experts to ensure that the technical content of the standard is accurate and adequate for Department-wide application for those involved in environmental compliance work. 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 of this revised Qualification Standard:

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

Environmental Compliance

PURPOSE

DOE O 426.1, *Federal Technical Capability*, 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, interview questions, and other criteria associated with the recruitment, selection, and internal placement of technical personnel. The U.S. Office of Personnel Management (OPM) minimum qualifications standards will be greatly enhanced by application of appropriate materials from the technical FAQs.

The technical qualification standards are not intended to replace the OPM qualifications standards or other Departmental personnel standards, rules, plans, or processes. The primary purpose of the TQP is to ensure that employees have the requisite technical competency to support the mission of the Department. The TQP forms the basis for the development and assignment of DOE personnel responsible for ensuring the safe operation of defense nuclear facilities.

APPLICABILITY

The Environmental Compliance FAQs establishes common functional area competency requirements for all DOE environmental compliance personnel who provide assistance, or direction, guidance, oversight, or evaluation of contractor technical activities that could impact the safe operation of DOE's defense nuclear facilities. The technical FAQs has been developed as a tool to assist DOE program and field offices in the development and implementation of the TQP in their organization. For ease of transportability of qualifications between DOE elements, program and field offices are expected to use this technical FAQs without modification. Needed additional office-/site-/facility-specific technical competencies must be handled separately. Satisfactory and documented attainment of the competency requirements contained in this technical FAQs (see the Federal Technical Capability Program

[FTCP] Directives and Standards page at <http://www.hss.energy.gov/dep/ftcp/directives/directives.asp> for an example of the Environmental Compliance FAQs qualification card) ensures that personnel possess the minimum requisite competence to fulfill their functional area duties and responsibilities common to the DOE complex. Additionally, office-/site-/facility-specific qualification standards supplement this technical FAQs and establish unique operational competency requirements at the Headquarters or field element, site, or facility level.

The competencies of management and leadership, general technical knowledge, regulations, administrative capability, and assessment and oversight are all embodied in the competencies listed in this standard. All of these factors have a bearing on safety. Although the focus of this standard is technical competence, competencies such as good communication, recognized credibility, ability to listen and process information, and the ability to guide an effort to get it right the first time are recognized as important aspects of safety.

IMPLEMENTATION

This FAQs identifies the minimum technical competency requirements for DOE personnel. Although there are other competency requirements associated with the positions held by DOE personnel, this FAQs is limited to identifying the specific, common technical competencies required throughout all defense nuclear facilities. The competency requirements define the expected knowledge and/or skill that an individual must meet. Each of the competency requirements is further described by a listing of supporting knowledge and/or skill statements. The supporting knowledge and/or skill statements for each competency requirement are provided to challenge the employee in the breadth and depth of his/her understanding of the subject matter. In selected competencies, expected knowledge and/or skills have been designated as “mandatory performance activities.” In these competencies, the actions are not optional.

The term “must” denotes a mandatory requirement, “should” denotes a recommended practice that is not required, and “may” denotes an option in this standard.

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 recognize the need to seek and obtain appropriate expert advice (e.g., technical, legal, safety) or consult appropriate reference materials required to ensure the safety of DOE activities.

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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 DOE practices.

Headquarters and field elements must establish a program and process to ensure that DOE personnel possess the competencies required by their position, including the competencies identified in this technical FAQs. Documentation of the completion of the requirements of this standard must be included in the employees' training and qualification records. Satisfactory attainment of the competency requirements contained in this technical FAQs may be documented using the example Environmental Compliance FAQs qualification card that can be obtained from the Federal Technical Capability Program Directives and Standards page at <http://www.hss.energy.gov/dep/ftcp/directives/directives.asp>.

Equivalencies must 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 on objective evidence of previous education, training, certification, or experience. Objective evidence includes a combination of transcripts, certifications, and in some cases, a knowledge sampling obtained through written and/or oral examinations. Equivalencies must be granted in accordance with the TQP plan of the site/office/Headquarters organization qualifying the individual. The supporting knowledge and/or skill statements and mandatory performance activities must be considered before granting an equivalency for a competency.

Training must be provided to employees in the TQP who do not meet the competencies contained in this technical FAQs. 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 must be based on appropriate supporting knowledge and/or skill statements similar to the ones listed for each of the competency requirements. 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 FAQs competency requirements.

EVALUATION REQUIREMENTS

Attainment of the competencies listed in this technical FAQs must be documented in accordance with the TQP plan or policy of the site/office/Headquarters organization qualifying the individual and the requirements in DOE M 360.1-1B, *Federal Employee Training Manual*, and DOE O 426.1.

The qualifying official or immediate supervisor must ensure that the candidate meets the background and experience requirements of this FAQs. Unless stated otherwise within the program or site TQP plan, attainment of the competencies listed in the Environmental Compliance FAQs must be evaluated and documented by either a qualifying official or

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immediate supervisor (note: if the immediate supervisor is not an environmental compliance professional, it is expected that the supervisor consult with a qualified environmental compliance professional) using one or a combination of the following methods:

- Satisfactory completion of a written examination
- Satisfactory completion of an oral examination
- Satisfactory accomplishment of an observed task or activity directly related to a competency
- Documented evaluation of equivalencies (such as applicable experience in the field) without a written examination

Field element managers/Headquarters program managers must qualify candidates as possessing the basic technical knowledge, technical discipline competency, and position-specific knowledge, skills, and abilities required for their positions. Final qualification must be performed using one or a combination of the following methods:

- Satisfactory completion of a comprehensive written examination. The minimum passing grade must be 80 percent.
- Satisfactory completion of an oral examination by a qualified Senior Technical Safety Manager (STSM) or a qualification board of technically qualified personnel that includes at least one qualified STSM.
- Satisfactory completion of a walkthrough of a facility with a qualifying official for the purpose of verifying a candidate's knowledge and practical skills of selected key elements.

Guidance for oral interviews and written exams is contained in DOE-HDBK-1205-97, *Guide to Good Practices for the Design, Development, and Implementation of Examinations*, and DOE-HDBK-1080-97, *Guide to Good Practices for Oral Examinations*.

For oral examinations and walkthroughs, qualifying officials or board members should ask critical questions intended to integrate identified learning objectives during qualification. Field element managers/Headquarters program managers or designees should develop formal guidance for oral examinations and walkthroughs that includes:

- Standards for qualification
- Use of technical advisors by a board
- Questioning procedures or protocol
- Pass/fail criteria
- Board deliberations and voting authorization procedures
- Documentation process

INITIAL QUALIFICATION AND TRAINING

Qualification of environmental compliance personnel must be conducted in accordance with the requirements of DOE O 426.1.

DOE personnel must 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:

- DOE
- 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 activities and the requirements for the continuing education and training program for the Environmental Compliance FAQs 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 Environmental Compliance Functional Area:

- A. Maintain communication with Headquarters, field elements, regulatory agencies, the public and other stakeholders with regard to environmental regulatory and technical requirements and compliance status.
- B. Inform Department of Energy management of applicable environmental compliance project status, activities, and issues.
- C. Plan, observe and evaluate environmental compliance activities and contractor performance to ensure the adequacy and effectiveness of contractor programs such as:
 - Technical performance
 - Plans, policies, and procedures
 - Environmental Management Systems
 - Worker training and qualification programs

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- Occurrence Reporting and Corrective actions
 - Worker and public health and safety programs
 - Environmental protection and regulatory compliance
 - Environmental monitoring and surveillance
 - Waste treatment, storage and disposal facility (TSD) and transportation programs
 - National Environmental Policy Act (NEPA) support
- D. Develop, review, and assess environmental compliance documentation.
- E. Develop, manage, and assist in the negotiations for regulatory agreements and permits.
- F. Resolve or facilitate the resolution of environmental compliance issues.
- G. Develop, implement, and evaluate environmental compliance strategic, baseline, project, and program plans.
- H. Promote the sharing of information and technology.
- I. Conduct site-specific technology implementation evaluations.
- J. Evaluate the adequacy and effectiveness of Federal and contractor environmental compliance 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 environmental compliance 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 environmental compliance personnel is:

1. Education:

Bachelor's degree in engineering or science or meeting the alternative requirements specified for engineers or scientists in the Qualifications Standards Handbook.

2. Experience:

Industrial, military, Federal, State or other directly related background that has provided specialized experience in environmental compliance. Specialized experience can be

demonstrated through possession of the competencies outlined in this Standard.

REQUIRED TECHNICAL COMPETENCIES

The competencies contained in this standard are distinct from those competencies contained in the General Technical Base (GTB) Qualification Standard. All environmental compliance personnel must satisfy the competency requirements of the GTB Qualification Standard prior to or in parallel with the competency requirements contained in this standard. Each of the competency requirements defines the level of expected knowledge and/or skill that an individual must possess to meet the intent of this standard. Each of the competency requirements is further described by a listing of supporting knowledge and/or skill statements that describe the intent of the competency statements. In selected competencies, expected knowledge and/or skills have been designated as “mandatory performance activities.” In these competencies, the actions are not optional.

Note: When regulations, DOE directives, or other industry standards are referenced in the FAQs, the most recent revision must be used. It is recognized that some environmental compliance personnel may oversee facilities that utilize predecessor documents to those identified. In those cases, such documents must be included in local qualification standards via the TQP.

GENERAL TECHNICAL

Chemistry Fundamentals

1. **Environmental compliance personnel must demonstrate a familiarity level knowledge of chemistry and corrosion.**

Supporting Knowledge and/or Skills

- a. Define and discuss the following terms:
 - Mixture
 - Solvent
 - Solute
 - Solution
 - Solubility
 - Equilibrium
 - Acid, Base, and pH
 - Measures of concentration, e.g., milligrams/liter (mg/l) and parts per million (ppm)

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- Chlorine residual
 - Turbidity
 - Settleable Solids
 - Total coliforms
 - Volatile and semi-volatile organic compounds
 - Total Petroleum Hydrocarbons
- b. Discuss the following concepts of corrosion.
- The process of general corrosion of metal when exposed to water.
 - The two conditions that can cause galvanic corrosion

Water and Air Treatment Technologies

- 2. Environmental compliance personnel must demonstrate a familiarity level knowledge of water and air treatment processes and technologies.**

Supporting Knowledge and/or Skills

- a. Discuss examples of treatment technologies that may be required prior to discharge of wastewater or process water or for treatment of potable water.
- b. Discuss examples of best management practices used to control pollutants in storm water runoff.
- c. Discuss examples of air pollution abatement equipment and technologies that may be required to treat emissions.

Statistics and Measurements

- 3. Environmental compliance personnel must demonstrate a familiarity level knowledge of solving problems involving probability and simple statistics.**

Supporting Knowledge and/or Skills

- a. Discuss the following statistical terms:
- Mean
 - Variance
 - Standard deviation of the mean
 - Median
- b. Explain the importance of statistics and verifiable data in environmental decision making.

Hydrology

- 4. Environmental compliance personnel must demonstrate a familiarity level knowledge of the basic principles and concepts of hydrology.**

Supporting Knowledge and/or Skills

Describe the following processes:

- Infiltration and percolation
- Groundwater recharge
- Runoff
- Water and wind erosion
- Evapotranspiration
- The hydrologic cycle
- Contaminant movement in the soil

Meteorology

- 5. Environmental compliance personnel must demonstrate a familiarity level knowledge of the basic principles and concepts of meteorology.**

Supporting Knowledge and/or Skills

- a. Discuss aspects of meteorology that impact the dispersion of gaseous and particulate air pollutants into pathways that affect human health and the environment.
- b. Discuss the use of wind rose plots in predicting dispersion of gaseous and particulate air pollutants.
- c. Describe the meteorological aspects of modeling dispersion of radioactive air pollutants, including dispersion from an elevated stack versus a ground level area source.

Environmental Biology

- 6. Environmental compliance personnel must demonstrate a familiarity level knowledge of the basic terms and concepts of environmental biology.**

Supporting Knowledge and/or Skills

Discuss the following terms, including limitations in establishing direct cause and effect relationships between pollutants and their effects on the health of humans and biota:

- Ecosystem
- Habitat

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- Pathways analysis
- Bioaccumulation
- Bioconcentration
- Biototoxicity
- Biodiversity

Engineering Drawings

7. Environmental compliance personnel must demonstrate a familiarity level knowledge of engineering and construction drawings.

Supporting Knowledge and/or Skills

- a. Given an engineering or construction drawing, read and interpret the information contained in the title block, the notes and legend, the revision block, and the grid.
- b. Identify the symbols used on Piping and Instrumentation Diagrams (P&IDs) for:
 - Types of system components (valves, pumps, etc.)
 - Basic types of instrumentation and controllers
 - Types of lines (fluid, electrical, etc.)

Environmental Monitoring

8. Environmental compliance personnel must demonstrate a familiarity level knowledge of environmental monitoring techniques and equipment.

Supporting Knowledge and/or Skills

- a. Describe the types of equipment and techniques used to monitor a site for the following:
 - Ambient air quality
 - Stack emissions
 - Groundwater contamination
 - Meteorological factors
 - River and stream contamination
 - Sanitary sewer effluent
 - Storm water contamination
 - Soil and sediment contamination
 - Biota contamination
- b. Explain the reason for measuring emissions, meteorological factors and ambient air quality under various operation conditions (e.g., routine and emergency).
- c. Describe the purpose and limitations of the following air quality measurement

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instruments.

- High volume particulate sampler
- Liquid bubbler (e.g., for sulfur dioxide)
- Infrared spectrometer

d. Describe the types of material collected by the following sampling media:

- High efficiency glass fiber filter
- Activated charcoal cartridge
- Silica Gel

e. Describe the purpose for measuring each of the following parameters during field surveys of water quality:

- Temperature
- Dissolved oxygen
- Conductivity
- pH

f. Discuss types of sampling containers used for water sampling.

- Clear and colored glass bottles, jars, vials, dishes and tubes
- Aluminum or stainless steel bottles, jars and vials
- Clear, white, or colored plastic bottles, jars, vials, and tubes

Environmental Safety

9. Environmental compliance personnel must demonstrate a familiarity level knowledge of the safety-related requirements for hazardous substances.

Supporting Knowledge and/or Skills

- a. Describe the general safety precautions necessary for the handling, storage, and disposal of acids, corrosives, toxic compounds, PCBs, and radionuclides.
- b. Describe the criteria used to determine if a compound is a health hazard and discuss the methods by which toxic compounds may enter the body.
- c. Discuss the requirements for and use of Material Safety Data Sheets.
- d. Discuss the safety and health hazards associated with hazardous, solid, and mixed waste operations.

REGULATORY

10. Environmental compliance personnel must demonstrate a familiarity level knowledge of regulatory requirements related to the collection and analysis of environmental monitoring and surveillance samples and analysis of data.

Supporting Knowledge and/or Skills

- a. Describe the requirements of the following documents as they relate to environmental monitoring:
 - DOE Orders 436.1 and 458.1
 - 40 CFR 61, Subpart H, National Emission Standards for Hazardous Air Pollutants (NESHAP) for DOE Facilities
 - American National Standards Institute (ANSI) N13.1-1999, Guide to Sampling Airborne Radioactive Materials in Stacks and Ducts
 - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
 - Resource Conservation and Recovery Act (RCRA)
 - 40 CFR 122, National Pollutant Discharge Elimination System (NPDES)
 - 40 CFR 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants
 - Standard Methods for the Examination of Water and Wastewater (current edition)
- b. Describe the various quality assurance and quality control programs used to ensure data quality, i.e., the EPA Data Quality Objectives Process, as described in EPA QA/G-4, Guidance on Systematic Planning Using the Data Quality Objectives Process. Include in your discussion programs both internal and external to the Department, including DOE Order 414.1D, Quality Assurance.

11. Environmental compliance personnel must demonstrate a working level knowledge of the negotiation and management of regulatory agreements and permits.

Supporting Knowledge and/or Skills:

- a. Discuss the basic negotiation techniques that can be used in negotiating environmental permits, compliance agreements, grants, and other environmental compliance documents.
- b. Describe the requirements and responsibilities involved with the management of the following documents:
 - National Pollutant Discharge Elimination System Permit
 - Sanitary sewer discharge permits
 - Air permits
 - Federal Facility Agreement

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- Consent Orders & Settlement Agreements
 - Resource Conservation and Recovery Act Part B Permit
 - Site Treatment Plan
- c. Discuss the potential benefits of use of Environmental Conflict Resolution or Alternate Dispute Resolution in resolving environmental disputes.

12. Environmental compliance personnel must demonstrate a familiarity level knowledge of how environmental laws and regulations are enforced.

Supporting Knowledge and/or Skills:

- a. Discuss the interrelationship between the following:
- The United States Code
 - The Code of Federal Regulations
 - State Laws and Regulations
- b. Describe the organization, mission, and enforcement authorities of the Environmental Protection Agency (EPA) and state counterparts for your site.
- c. Discuss the potential liabilities of the Department of Energy and its contractors inherent in the enforcement of environmental regulations (i.e., CERCLA joint and several liability, compliance orders, enforcement actions, fines and penalties, and provisions for civil suits).
- d. Discuss the role of the Department's legal counsel in environmental compliance activities.
- e. Discuss the enforcement of environmental statutes under civil and criminal authorities.
- f. Discuss the applicability of the following legal mandates in regulatory negotiations:
- Supremacy Clause of the U.S. Constitution
 - Commerce Clause of the U.S. Constitution
 - The Anti-Deficiency Act

13. Environmental compliance personnel must demonstrate a familiarity level knowledge of the Clean Air Act (CAA) and implementing regulations.

Supporting Knowledge and/or Skills

- a. Discuss the general application of the Clean Air Act to the Department of Energy and its facilities.

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- b. Discuss the National Ambient Air Quality Standards (primary and secondary) and the NESHAP.
- c. Discuss the requirements for permitting prescribed in the regulations that implement Title V of the Clean Air Act.
- d. Discuss the prevention of significant deterioration (PSD) requirements established by the Clean Air Act.
- e. Identify the criteria pollutants defined in the Clean Air Act.
- f. Discuss the New Source Performance Standards (40 CFR 60).
- g. Discuss the Clean Air Act, Title V, Stratospheric Ozone Protection concern.
- h. Discuss permitting and other requirements for the Greenhouse Gas (GHG) emissions rule.
- i. Describe the basic monitoring and reporting requirements for radionuclides in 40 CFR 61, Subpart H, and state the dose limit.

14. Environmental compliance personnel must demonstrate a familiarity level knowledge of the following laws and regulations as related to the environmental medium of water:

- Clean Water Act (CWA)
- Safe Drinking Water Act (SDWA)
- Oil Pollution Act of 1990 (OPA)

Supporting Knowledge and/or Skills

- a. Discuss the application of the above laws and regulations to the Department of Energy and its facilities.
- b. Discuss water quality criteria and stream use classification identified in the CWA.
- c. Discuss the CWA permitting requirements including monitoring and reporting. Include in the discussion the National Pollutant Discharge Elimination System (NPDES) Program, including point source and the various types of storm water permits.
- d. Discuss the storm water management aspects of the NPDES program.
- e. Discuss the U.S Army Corps of Engineers Section 404 Nationwide Permit Program (NWP), including requirements for discharge of dredged or fill material into waters of the United States.
- f. Discuss the standards for maximum contaminant levels (primary and secondary)

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contained in the SDWA.

- g. Discuss the SDWA Underground Injection Control Program.
- h. Discuss the SDWA monitoring and reporting requirements.
- i. Explain the spill prevention and control requirements of the CWA (40 CFR 109-114).
- j. Discuss the primary purpose of the OPA and its applicability to the Department.

15. Environmental compliance personnel must demonstrate a familiarity level knowledge of the National Environmental Policy Act (NEPA) and its implementation requirements in the Department of Energy.

Supporting Knowledge and/or Skills

Discuss the following regarding the Act:

- Its objective
- What are the implementing regulations to comply with the Act for the DOE?
- To whom does the Act apply?
- What might trigger compliance with the Act?
- When must a NEPA review be performed on a proposed federal action?

For NEPA Compliance Officers only:

- a. Discuss the relationship between the Council on Environmental Quality (CEQ) and DOE implementing regulations.
- b. What is the DOE NEPA compliance program Order number and what is its purpose?
- c. Describe public participation in the NEPA process.
- d. Discuss the scope of the DOE NEPA Order.
- e. Briefly discuss the integration of consultation requirements with other environmental legislation.

16. Environmental compliance personnel must demonstrate a familiarity level knowledge of documents prepared from the NEPA review of a DOE federal action and their implications to DOE's operations.

Supporting Knowledge and/or Skills

- a. Discuss the document types that may result from a DOE NEPA review.

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- b. In general, what are the implications to a DOE proposed action from preparing each of these document types?
- c. What are the two decision documents and how do they affect the proposed federal action resulting from a NEPA review?

For NEPA Compliance Officers only:

- d. Discuss selecting the appropriate level of DOE NEPA documentation.
- e. Demonstrate past performance with EISs, EAs, and CXs.
- f. What documents are required to be posted on the HQ NEPA Web and are there time constraints?

17. Environmental compliance personnel must demonstrate a familiarity level knowledge of the following laws, regulations, and Department of Energy Orders as related to radiation protection of the public and environment:

- Atomic Energy Act, including the Price-Anderson Act Amendments
- DOE O 458.1, Radiation Protection of the Public and the Environment

Supporting Knowledge and/or Skills:

- a. Discuss liability related issues of the Department and its contractors under the Price-Anderson Act.
- b. Discuss the Department's policy and objectives regarding the protection of the public and the environment from radiation as contained in DOE O 458.1.
- c. Discuss the DOE public dose limit and its applicability, including the general DOE radiological release procedures for property.
- d. List and discuss the factors that must be considered pertaining to the release of materials and equipment having residual radioactive material.

18. Environmental compliance personnel must demonstrate a familiarity level knowledge of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Superfund Amendments and Reauthorization Act (SARA) regulations.

Supporting Knowledge and/or Skills

- a. Discuss the history and purpose of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/Superfund Amendments and

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Reauthorization Act (SARA).

- b. Discuss the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and how it is implemented, including:
 - How releases are reported
 - How the Reportable Quantities (RQ) specified by CERCLA are applied
- c. Discuss the general requirements for the response actions taken pursuant to CERCLA.
 - Removal Actions
 - Remedial Actions
 - i. Preliminary Assessment/Site Inspection (PA/SI)
 - ii. National Priority List (NPL) Process
 - iii. Remedial Investigation/Feasibility Study (RI/FS)
 - iv. Record of Decision (ROD)
 - v. Remedial Design Remedial Action (RD/RA)
 - vi. Construction Completion
 - vii. Post Construction Completion activities
 - viii. NPL Deletion
- d. Discuss the interface/coordination on Natural Resource Damages required by CERCLA
- e. Discuss the requirements for public involvement required by CERCLA.

19. Environmental compliance personnel must demonstrate a familiarity level knowledge of the supporting environmental laws and regulations including:

- Pollution Prevention Act of 1990 (PPA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- Toxic Substances Control Act (TSCA)
- Endangered Species Act (ESA)
- Emergency Planning and Community Right-to-Know Act (EPCRA)
- Federal Facility Compliance Act (FFCA)

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Supporting Knowledge and/or Skills:

- a. Identify the areas in which the Pollution Prevention Act applies.
- b. Describe the general impacts to the Department and its contractors from the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).
- c. Discuss the marking of polychlorinated biphenyls (PCBs) and PCB items, and PCB waste management requirements of the Toxic Substances Control Act.
- d. Discuss the Endangered Species Act consultation requirements.
- e. Discuss the reporting requirements of the Emergency Planning and Community Right-to-Know Act.
- f. Describe how the Federal Facilities Compliance Act impacts Department compliance actions.

20. Environmental compliance personnel must demonstrate a familiarity level knowledge of the requirements for quality assurance, and managing and reporting of environmental compliance data.

Supporting Knowledge and/or Skills

- a. Describe the quality assurance and records management requirements of the following:
 - DOE O 414.1D, Quality Assurance
 - DOE G 1324.5B, Implementation Guide for 36 CFR Chapter XII
 - DOE O 458.1, Radiation Protection of the Public and the Environment
 - Uniform Federal Policy for Quality Assurance Project Plans
 - Uniform Federal Policy for Implementing Environmental Quality Systems (DOE/EH-0667)
- b. Discuss the quality assurance aspects for environmental monitoring and data management and validation, including:
 - Sample collection quality assurance measures
 - Laboratory quality control requirements
 - The DOE Consolidated Audit Program (DOECAP)
 - Data validation procedures
- c. Describe the program administered by the Department's Environmental Measurements Laboratory to assess the quality of environmental data reported to the Department.
- d. Discuss the environmental compliance reporting requirements of DOE O 231.1A,

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Environmental Safety and Health Reporting.

21. Environmental Compliance personnel must demonstrate familiarity level knowledge of hazardous waste as described in 40 CFR, Resource Conservation and Recovery Act and state authorized RCRA programs.

Supporting Knowledge and/or Skills

- a. Describe the difference between listed and characteristic hazardous waste.
- b. Discuss the relationship between RCRA solid waste and hazardous waste and identify the applicable RCRA regulations for each.
- c. Discuss generator, transporter, and treatment, storage, and disposal requirements.
- d. Discuss the methods of disposing of hazardous wastes.
- e. Discuss the relationship between RCRA and the Federal Facilities Compliance Act (FFCA).
- f. Describe the types of facilities that need RCRA permits, and discuss general RCRA permitting requirements found at 40 CFR 264.
- g. Describe how to determine if a material is a solid waste. Given a material that is a solid waste, describe how to determine if it is a hazardous or a mixed waste.
- h. Discuss the Land Disposal Restrictions, including the different types of treatment standards, the dilution prohibition, the storage prohibition, and different types of variances and exemptions.
- i. Discuss the regulatory requirements applicable to Federal facility solid waste landfills (including RCRA Subtitle D).
- j. Discuss the Resource Conservation and Recovery Act underground storage tank regulations (Subtitle I).
- k. Define the term "mixed waste".
- l. Identify the applicable regulations and DOE Order for managing mixed low-level radioactive waste. Describe the system for classifying mixed waste and the general requirements for treatment, storage and disposal.

22. Environmental Compliance personnel must demonstrate familiarity level knowledge of the requirements for management of radioactive waste as described in:

- DOE O 435.1, Radioactive Waste Management

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- DOE M 435.1, Radioactive Waste Management Manual

Supporting Knowledge and/or Skills

- a. Discuss the requirements identified in DOE O 435.1, Radioactive Waste Management, for the following types of waste:
 - Low-level
 - High-level
 - Transuranic
- b. Discuss the Department's performance objectives and performance assessment for disposal of low-level radioactive waste as outlined in DOE M 435.1, Radioactive Waste Management.
- c. Discuss the low-level waste characterization requirements.
- d. Describe the Department's low-level radioactive waste acceptance criteria.
- e. Discuss the basic requirements for a low-level disposal site closure and for post closure operations.
- f. Define the following terms and their implications for regulation in the Department of Energy:
 - Source material
 - Special nuclear material
 - Byproduct material
 - Naturally occurring or accelerator-produced radioactive material
 - Spent nuclear fuel
 - Uranium mine and mill tailings
- g. Discuss the process the National Defense Authorization Act for FY2005 Section 3116 established to evaluate whether a specific waste can be managed as other than high-level radioactive waste.

MANAGEMENT, ASSESSMENT, AND OVERSIGHT

23. Environmental compliance personnel must demonstrate a working level knowledge of the requirements for and elements of Environmental Management Systems.

Supporting Knowledge and/or Skills

- a. Discuss the requirements for implementation of an EMS in accordance with DOE O 436.1.

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- b. Discuss the elements of an EMS as described by International Organization for Standardization (ISO) 14001.
- c. Discuss requirements of Executive Orders 13423 and 13514 relative to EMS and environmental sustainability and the methods of their implementation, including how they are incorporated into contracts.
- d. Discuss how an EMS integrates with the requirements of the above Executive Orders as well as Integrated Safety Management Systems.
- e. Discuss the purpose of DOE's Strategic Sustainability Performance Plan (SSPP), and how it is implemented at the site level using Site Sustainability Plans (SSPs).

24. Environmental compliance personnel must demonstrate the ability to appraise the contractor's program(s) and/or permits to assess compliance with environmental regulatory requirements.

Supporting Knowledge and/or Skills

- a. Discuss the general process of preparing for and performing an environmental compliance audit.
- b. Discuss how to evaluate a permit application to determine its adequacy for submittal to the relevant agency.

Mandatory Performance Activity

- a. Demonstrate the ability to assess compliance with a permit. Present evidence of such an assessment performed in the past, such as audit plans, lines of inquiry, assessment notes, and a final assessment report. If this hasn't been performed previously, perform a mock assessment that demonstrates an assessment of a contractor's plans and procedures for implementation of a permit's requirements.

APPENDIX A

CONTINUING EDUCATION, TRAINING AND PROFICIENCY PROGRAM

Headquarters or Field Element Managers must ensure the following:

1. Establish performance expectations related to the performance of duties and responsibilities in this FAQS, considering regulatory and/or contractual requirements as appropriate.
2. Identify specific continuing training requirements in the site/office/position specific qualification standard(s) or procedures.
3. Approve all established continuing training requirements related to defense nuclear facility safety oversight as determined for their office or site.

Environmental Compliance personnel must complete continuing technical education and/or training covering topics directly related to the Environmental Compliance area as determined by the appropriate Headquarters or Field Element Managers as follows:

1. Address changes to DOE Directives, guides, standards, policies, and rules since the last qualification was completed.
2. Perform practical factor exercises as appropriate, especially those that are mandatory and others as required by the associated FAQS.
3. Attend seminars, symposia, or technical meetings related to environmental compliance as resources are available.

Note: Continuing technical education and/or training may include courses/training provided by Department of Energy, other government agencies, outside vendors, or local educational institutions. Continuing training topics should also address identified weaknesses in the knowledge or skills of the individual personnel, and current technical issues related to the Associated FAQS. Where continuing education is mandatory for maintaining professional registration (e.g. professional Engineer) or professional certification (e.g. Certified Health

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Physicist), this will normally be sufficient, and only need to be augmented by DOE directives reviews and any site specific requirements (e.g. new/revised DSAs).

CONCLUDING MATERIAL

Review Activity:

EM
NNSA
NE
SC

Preparing Activity:

NA-SC

Project Number:

TRNG-0077

Field and Operations Offices:

CBFO
CH
ID
OH
ORP
RFFO
RL
SR

Site Offices:

Argonne Site Office
Brookhaven Site Office
Fermi Site Office
Kansas City Site Office
Livermore Site Office
Los Alamos Site Office
Nevada Site Office
Pantex Site Office
Savannah River Site Office
Sandia Site Office
Y-12 Site Office