U.S. DEPARTMENT OF ENERGY

OAK RIDGE OPERATIONS

OFFICE OF ASSISTANT MANAGER for ENVIRONMENT, SAFETY, HEALTH, and EMERGENCY MANAGEMENT

OFFICE/FACILITY-SPECIFIC QUALIFICATION STANDARD

OCTOBER 2001
REVISION 0

CONCURRENCE AND APPROVAL

The Department of Energy (DOE) Oak Ridge Operations (ORO) Office of Assistant Manager for Environment, Safety, Health, and Emergency Management (AMESH) is the sponsor for this AMESH Office/Facility-Specific Qualification Standard. The AMESH management team is responsible for reviewing the qualification standard to ensure that the technical content is accurate and adequate for its intended application and for ensuring that the qualification standard is maintained current. Concurrence with this qualification standard by the AMESH management team is indicated by the signatures below.

The Training and Development Group (TDG) Team Leader coordinates implementation of the technical qualification program and assists line managers in the development of ORO office/facility-specific qualification standards. Concurrence with this qualification standard by the TDG Team Leader is indicated by signature below. The ORO AMESH is the approval authority for this qualification standard.

CONCURRENCE:

Robert Dempsey, Deputy Assistant Manager for Environment, Safety, Health, and Emergency Management

Jeffrey Cravens, Director, Assessment and Emergency Management Division

for Harold Monroe, Director, Operations Division

Martin McBride, Director, Nuclear Safety Division

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APPROVAL:

Robert W. Poe, Assistant Manager for Environment, Safety, Health, and Emergency Management

Date 12/13/01

ABOUT THIS STANDARD:

The AMESH Office/Facility-Specific Qualification Standard is part of the Technical Qualification Program (TQP) required by DOE O 360.1A, *Federal Employee Training,* and DOE M 360.1A-1, *Federal Employee Training Manual*, and supplements the department-wide General Technical Base and functional area qualification standards. It contains the competency requirements that AMESH staff assigned to the Technical Qualification Program need in order to perform assigned activities. Documented satisfactory completion of the competencies contained in this qualification standard ensures that the AMESH staff enrolled in the TQP are qualified to fulfill their duties and responsibilities.

The competency statements define the expected capabilities that an individual must possess. Each of the competency statements is followed by a listing of supporting knowledge and skill statements that further amplify and describe the intent of the competency. The supporting knowledge and skill statements are not additional requirements and do not necessarily have to be fulfilled to meet the intent of the competency.

The competencies identify a familiarity level or a working level of required knowledge, or they require the individual to demonstrate the ability to perform a task or activity.

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

COMPLETION OF COMPETENCIES

The competencies listed in this standard represent the diverse knowledge and skills necessary for the AMESH range of functional areas. All AMESH TQP participants must complete the Core Competencies (competencies 1 through 24). The remaining competencies are grouped by job/topic area. Participants are required to complete only those competencies that are a part of their job responsibilities or fall within their area of expertise. Individual areas of expertise may be documented using the form in Appendix A to identify the AMESH TQP competencies applicable to the employee's duties and responsibilities.

NOTE: Emergency Management personnel should complete the first 25 competencies in this standard and the Emergency Management Program Office standard.

Equivalencies may be granted for individual competencies based upon an objective evaluation of the employee's prior education, training, and/or experience. Documentation of equivalencies indicates how the competency requirements have been met. The supporting knowledge and skill statements should be considered when evaluating an employee's ability with respect to each competency requirement.

Verifying and documenting that the competencies have been met may be accomplished by a qualifying official, a member of the AMESH management team, or by a subject matter expert (SME) designated by the AMESH management team. Although the evaluation may be documented (e.g., evaluator notes, certificates of course completion, test reports, etc.), the supervisor's signature on the Technical Qualification Record is necessary to show completion of the competency.

Any of the following methods may be used to fulfill incumbent competency. Each fulfillment method is required to be documented.

- Formal education (college courses and academic degrees)
- Training (DOE, DOE contractor, other agency, vendor)
- DOE experience
- Equivalencies for prior experience, education, and training
- Documented oral evaluation
- Documented observation of performance
- Documented results of a written examination

AMESH CORE COMPETENCIES

1. AMESH personnel shall demonstrate a familiarity level knowledge of the basic operations and processes for DOE, ORO, and NNSA (if applicable to job duties) programs and facilities.

Supporting Knowledge and Skills

a. Discuss the primary mission(s) of ORO facilities (e.g., NNSA Y-12 plant, ORNL TJNAF, ETTP, Paducah and Portsmouth Plants, and Weldon Springs).
b. Discuss the major nuclear safety risks to workers and the public resulting from operations at ORO facilities.
c. Discuss the major non-nuclear hazards associated with operations at ORO facilities.

2. AMESH personnel shall demonstrate a familiarity level knowledge of the contents and application of ORO AMESH procedures and manuals.

Supporting Knowledge and Skills

a. Describe the purpose and objectives of AMESH procedures and manuals.
b. Describe the guidelines provided in these documents.

3. AMESH personnel shall demonstrate a familiarity level knowledge of ORO program guidance, requirements, and budgeting process, related to AMESH programs/activities to ensure adequacy to implement established program goals, to meet environmental, safety, and health (ES&H) regulations, and to coordinate resolution of program/budget disconnects.

Supporting Knowledge and Skills

a. Describe AMESH input to the budgeting process.
b. Discuss AMESH's role in budget execution and funds control related to AMESH activities.
c. Discuss AMESH's input to the ORO ES&H Management Plan process.

4. AMESH personnel shall demonstrate a familiarity level knowledge of the ORO employee concerns program as it relates to personnel and facility safety.

Supporting Knowledge and Skills

a. Describe the purpose, scope, and importance of the Department's Employee Concerns Program.

b. Describe the responsibilities of the following in implementing DOE O 442.1, *Department of Energy Employee Concerns Program*:
- Headquarters and Field Office Managers,
- Employee Concerns Manager.

c. Describe how employee concerns are reported, processed, and documented as stated in DOE O 442.1, *Department of Energy Employee Concerns Program,* and the DOE G 442.1-1, *Department of Energy Employee Concerns Program Guide*.

d. Describe the criteria for designating and processing occupational health and safety concerns.

5. AMESH personnel shall demonstrate a familiarity level knowledge of problem-solving and decision-making in order to manage ORO activities and ensure issues are identified and appropriate actions taken to resolve and close them.

Supporting Knowledge and Skills

a. Explain the importance of problem identification and the use of occurrence reports, trending, and lessons learned for preventive and predictive actions.
b. Explain the necessity of root cause determination in problem solving.
c. Describe methods of root cause determination.
d. Describe progress monitoring and verification methods for closure of activities.

6. AMESH personnel shall demonstrate the ability to communicate effectively (both oral and written), when working or interfacing with departmental elements, regulatory agencies, contractors, stakeholders, and internal/external entities as a representative of ORO.

Supporting Knowledge and Skills

a. Demonstrate written and verbal communication skills in the development of:
- Assessment and evaluation reports
- Technical reports.

b. Discuss effective and appropriate communication skills when providing specific work or task directions to contractors.
c. Demonstrate effective organizational and presentation skills in conducting assessment activities, technical presentations, and instruction.
d. Describe the ORO protocols for communicating with regulatory agencies.
e. Demonstrate facilitation skills to generate productive meeting and team-building to address programmatic problems.
f. Discuss use of effective negotiation skills used in technical personal and group communications.

g. Discuss the benefits to safety management of promoting effective communication and exchange across the Department including:
   - Focused sharing of information
   - Interaction and resolution of issues
   - Use of lessons learned.

h. Describe how the following expectations are effectively communicated within an organization to build a continuous improvement culture:
   - Development and exploration of new ideas are encouraged,
   - Process quality and safety responsibilities within the organization are understood,
   - Individuals know how their work contributes to safety objectives and strategic goals,
   - Unsafe practices, nonconforming items and potential areas for improvement are readily identified,
   - Enhanced product and process safety and reliability are emphasized.

7. AMESH personnel shall demonstrate a familiarity level knowledge of the principles associated with ORO project management and strategic planning.

Supporting Knowledge and Skills

a. Demonstrate knowledge of ORO and AMESH Mission Implementation Plans.
b. Demonstrate knowledge of ORO and AMESH goals.
c. Demonstrate knowledge of ORO and AMESH objectives and performance measures.
d. Demonstrate knowledge of ORO and AMESH Mission Implementation Plan timelines.

8. AMESH personnel shall demonstrate a familiarity level knowledge of the following issues within DOE and ORO:
- **DNFSB Recommendation 95-2, Integrated Safety Management.**
- **Price-Anderson Amendments Act**
- **Work Smart Standards**
- **Standards/Requirements Identification Documents (S/RIDs)**.

Supporting Knowledge and Skills

a. Describe safety management initiatives resulting from DNFSB Recommendation 95-2, Integrated Safety Management.
b. Describe the Price-Anderson Amendments Act and its effect on DOE and its contractors.
c. Describe ORO's use of the Work Smart Standards approach.
d. Discuss ORO's use of the Standards/Requirements Identification Documents (S/RIDs).
e. Describe AMESH's role in implementing ORO FRAM (II).

9. AMESH personnel shall demonstrate a familiarity level knowledge of the following laws and their applicability to ORO activities:
- **Davis-Bacon Act**
- **Service Contract Act**.

Supporting Knowledge and Skills

a. Describe the purpose of the Acts and general ORO requirements for implementation.

10. AMESH personnel shall demonstrate a familiarity level knowledge of Federal Acquisition Requirements (FAR) and Department of Energy Acquisition Requirements (DEAR) clauses as they pertain to ES&H at ORO.

Supporting Knowledge and Skills

a. Describe purpose of FAR and DEAR clauses and basic requirements.

11. AMESH personnel shall demonstrate a familiarity level knowledge of ORO's roles and responsibilities for the integrated safety management system and the Department's philosophy and approach to implementing Integrated Safety Management at ORO.

Supporting Knowledge and Skills

a. Describe the overall objective of the Department-wide Functions and Responsibilities Manual and the similar lower-tier organization-level manuals developed by Headquarters Offices and Field Elements.
b. Give an example of a circumstance that might make it necessary or reasonable to deviate from the responsibilities and authorities identified in the Functions and Responsibilities Manual and describe the exemption process in DOE 251.1, *Directives System Manual*.
c. Explain the objective of Integrated Safety Management.
d. Describe how the eight Guiding Principles in the ORO Integrated Safety Management Systems are used to implement an integrated safety management philosophy.
e. Describe the five core safety management functions in the Integrated Safety Management Plan and discuss how they provide the necessary structure for work activities.
f. Identify and discuss existing Department programs and initiatives that lead to successful implementation of Integrated Safety Management such as:
    - Standards/Requirements Identification Documents (S/RIDs) and Work Smart Standards
    - Contract reform and performance-based contracting
    - Research and Development Laboratory activities related to safety management
    - Operational Readiness Reviews (ORR)

- Nuclear Explosive Safety and Surety Program
- Enhanced Work Planning
- Voluntary Protection Program
- ISO 14000.

g. Discuss the purpose, content, and application of DOE P 450.4, *Safety Management System Policy*.
h. Explain the basis upon which the safety management functions could differ from facility to facility, and basis to be used for applying ISM on a graded approach.

12. AMESH personnel shall demonstrate a familiarity level knowledge of DOE O 5480.21, *Unreviewed Safety Questions,* and its application at ORO.

Supporting Knowledge and Skills

a. Describe the reasons for performing an unreviewed safety question determination.
b. Define the following terms:
   - Accident analyses
   - Safety evaluation
   - Technical safety requirements.
c. Describe the situations which require a safety evaluation to be performed.
d. Describe the conditions for an unreviewed safety question.
e. Describe the responsibilities of contractors authorized to operate defense nuclear facilities for the performance of safety evaluations.
f. Describe the action(s) to be taken by a contractor upon identifying information that indicates a potential inadequacy of previous safety analyses or a possible reduction in the margin of safety as defined in the technical safety requirements.
g. Describe the action(s) to be taken if it is determined that an unreviewed safety question is involved.
h. Describe the qualification and training requirements for personnel who perform safety evaluations.

13. AMESH personnel shall demonstrate a familiarity level knowledge of ORO safety requirements, programs, and responsibilities for the oversight of its contractors.

Supporting Knowledge and Skills

a. Describe the role of the ORO Facility Representative in contractor operational oversight.
b. Describe the actions required of ORO personnel when, in their opinion, contractor operations or activities may result in an undue nuclear criticality safety risk or an undue risk to the environment or the health/safety of workers or public.
c. Describe how DOE and ORO use the operational readiness review (ORR) process to validate safety systems capabilities, component and equipment operation, procedures,

processes, and personnel readiness.

14. AMESH personnel shall demonstrate a familiarity level knowledge of the application of worker protection standards for ORO.

Supporting Knowledge and Skills

a. Describe the interrelationship between the following:
   - Occupational safety and health laws
   - Statuary construction
   - The United States Code
   - The Code of Federal Regulations
   - State Laws and Regulations.

b. Describe the organization, mission, and enforcement authorities of the Occupational Safety and Health Administration (OSHA).
c. Describe the following programs and their relevance to the Department:
   - Voluntary Protection Program (VPP)
   - Responsible Care Program.

d. Describe the role(s) the contractor plays in implementing occupational safety and health regulations.
e. Describe the Standards/Requirements Identification Documents (S/RIDs) and Work Smart Standards as they relate to worker protection standards.

15. AMESH personnel shall demonstrate a familiarity level knowledge of the requirements and processes of the ORO emergency management system, the OR Emergency Operations Center, and the Oak Ridge Operations Center.

Supporting Knowledge and Skills

a. Describe the objectives and responsibilities established in DOE Order 151.1, *Comprehensive Emergency Management System*, and ORO Order 150, *Emergency Management and Planning*.
b. Describe the following terms:
   - Emergency planning
   - Emergency response
   - Readiness assurance
   - Emergency preparedness
   - Recovery
   - Operational emergency.

c. Outline the sequence of events and the actions taken by ORO, Headquarters, and local groups, in response to the following conditions:
   - Operational emergency response
   - Energy emergency response

- Emergency assistance response.

d. Describe the composition and function of the ORO Technical Operations Cadre.
e. Describe the scope, purpose, and objectives of ORO emergency response drills and exercise.
f. Describe the emergency communications capabilities at ORO for notification, emergency response, and information distribution for use during emergencies.

16. AMESH personnel shall demonstrate a familiarity level knowledge of the components and scope of a building protection and emergency notification system at ORO.

Supporting Knowledge and Skills

a. Describe the use and function of the following building protection and emergency notification system components:
   - Building alarm
   - Public address system
   - Sprinkler system
   - Fire doors
   - Emergency instruction placards.
b. Explain the function of the Facility Emergency Organization (FEO).
c. Describe the duties and responsibilities of a FEO evacuation monitor.
d. State, and explain the actions to be taken by building occupants during the following emergency actions:
   - Evacuation
   - Sheltering.

17. AMESH personnel shall demonstrate a familiarity level knowledge of safety precautions and hazards associated with chemicals, compounds, and compressed gases used at ORO facilities.

Supporting Knowledge and Skills

a. Describe the hazards associated with the use of corrosives (acids and alkalies).
b. Describe the general safety precautions necessary for the handling, storage, and disposal of corrosives. Include use and donning of applicable protective clothing.
c. Describe the general safety precautions for toxic compounds used in ORO facilities.
d. Describe the safety precautions for working with cryogenic liquids.
e. Describe the general safety precautions regarding the use, handling, and storage of flammable and combustible materials and explain why these precautions are necessary.
f. Describe the requirements for safe storage and use of the following compressed gases (include flammability and cryogenic considerations):
   - Oxygen
   - Acetylene

- Hydrogen
- Nitrogen
- Halon
- Argon.

18. AMESH personnel shall demonstrate a familiarity level knowledge of General Employee Training (GET) as it applies to ORO sites.

19. AMESH personnel shall demonstrate a familiarity level knowledge of Radiological Worker Training as it applies to ORO sites.

Supporting Knowledge and Skills

a. Knowledge of Rad Worker I and/or (depending on job responsibilities) II training requirements.

20. AMESH personnel shall demonstrate a familiarity level knowledge of the Defense Nuclear Facilities Safety Board (DNFSB) and recommendations affecting ORO.

Supporting Knowledge and Skills

a. Describe the Board's enabling legislation.
b. Describe recent Board recommendations.
c. Sufficient knowledge of nuclear facility safety to respond DNFSB staff inquiries related to ORO facilities.
d. Describe guidelines and ORO practices for handling formal and informal correspondence and communication with DNFSB and their staff.

21. AMESH personnel shall demonstrate a familiarity level knowledge of DOE Order 440.1, including safety in ORO construction activities, and other appropriate safety management initiatives at ORO facilities.

Supporting Knowledge and Skills

a. Describe the purpose of project planning and analysis related to personnel safety.
b. Describe the purpose and application of appropriate preliminary and activity hazard analysis.
c. Describe construction safety hazards related to:
   - Excavation and trenching
   - Confined spaces
   - Electrical
   - Hoisting and rigging
   - Fall protection

- Housekeeping
- Obstructions
- Use of ladder.

d. Describe general personnel protective equipment requirements for construction safety.
e. Describe hazards and identify appropriate controls associated with construction equipment and operations (e.g., power tools, heavy equipment, chemicals, radiation).
f. Describe common industrial and maintenance operations (e.g., welding, material handling, machining, cleaning, coating) and the safety interfaces necessary to protect workers.

22. AMESH personnel shall demonstrate a familiarity level knowledge of the ORO quality assurance requirements that is sufficient to identify problems, to evaluate solutions, and to monitor technical progress.

Supporting Knowledge and Skills

a. Knowledge of the Quality Assurance policies and procedures applicable to ORO.
b. Describe Corrective Actions and Issues Management Program for ORO sites.
c. Describe the purpose and the content of the CATS and FITS databases and how they are utilized at ORO.

23. AMESH personnel shall demonstrate a familiarity level knowledge of the technical safety requirements as described in the relevant DOE Order on Technical Safety Requirements and general applicability to ORO facilities.

Supporting Knowledge and Skills

a. Describe the purpose of technical safety requirements.
b. Describe the responsibilities of contractors authorized to operate defense nuclear facilities for technical safety requirements.
c. Describe the following terms and discuss the purpose of each:
   - Safety limits
   - Limiting control settings
   - Limiting conditions for operation
   - Surveillance requirements.
d. Describe the possible source documents that may be used in developing technical safety requirements.

24. AMESH personnel shall demonstrate a familiarity level knowledge of DOE Orders Standards, and ORO-specific procedures related to assessment techniques and processes for use in performing technical assessments of ORO facilities and program elements.

Supporting Knowledge and Skills

a. Describe DOE O 425.1B, including purpose, scope, and basic process for conducting an

operational readiness review.
b. Describe DOE O 225.1A and purpose, scope and basic process for conducting an accident investigation.
c. Describe DOE O 414.1A, including purpose, scope and basic process for conducting management self-assessments.
d. Describe DOE O 450 and P. 450.4, Safety Management Systems.

Job-Specific Competencies:

Assessment

25. AMESH personnel shall demonstrate a familiarity level knowledge of DOE Orders, standards, and ORO-specific procedures related to the start-up and restart of nuclear and non-nuclear facilities. This shall focus on the knowledge of the assessment and oversight requirements for restart.

Supporting Knowledge and Skills

a. Describe DOE Order 425.1B and DOE Standard (STD) 3006-2000, *Planning a Conduct of Operational Readiness Review* (ORR), and accompanying ORO requirements sufficient to participate in Operational Readiness Reviews for ORO facilities.
b. Describe the purpose, scope, and basic process for conducting an ORR.

26. AMESH personnel shall demonstrate a familiarity level knowledge of problem analysis principles and techniques necessary to identify problems, determine potential causes of problems, and identify corrective action(s) at ORO facilities.

27. AMESH personnel shall demonstrate a working level knowledge of Federal and DOE and ORO policies and procedures sufficient to conduct ORO accident investigations and oversee the process.

28. AMESH personnel shall demonstrate a working level knowledge of Federal and DOE and ORO policies and procedures sufficient to investigate ORO complaints and employee concerns or to oversee the process.

29. AMESH personnel shall demonstrate a familiarity level knowledge of the ORO Self-Assessment Program.

Supporting Knowledge and Skills

a. Discuss the purpose, scope, and applicability of self-assessments within ORO.

b. Describe how Quality Assurance principles and practices that are applied in the conduct of self-assessments.
c. Describe how self-assessments improve safety and provide lessons-learned.
d. Demonstrate an understanding of the way in which strengths, weaknesses, and improvement areas are identified and documented during self-assessment activities.
e. Describe how ORO can use feedback from self-assessments to plan work process improvements or take other actions to eliminate nonconformance.
f. Describe the results and significance of ORO and AMESH performance measures.

30. AMESH personnel shall demonstrate a familiarity level knowledge of the requirements and good practices related to ORO's Facility Representative Programs.

Supporting Knowledge and Skills

a. Knowledge of DOE-STD-1063-2000, "Facility Representatives."
b. Knowledge of the DOE-Wide Facility Representative Qualification Standard, October 26, 1994.

Environmental and Waste Management

31. AMESH personnel shall demonstrate a familiarity level knowledge of ORO environmental and waste management programs.

Supporting Knowledge and Skills

a. Describe the need to consider waste as a product of ORO facility operations.
b. Describe the waste certification processes at ORO.
c. Describe ORO's major waste streams from generation to disposal.
d. Describe ORO's integration of pollution prevention and waste reduction into all aspects of operations.
e. Describe the new or alternative technologies employed, or planned for, at ORO to expedite environmental cleanup and reduce risks to the environment and the public.

32. AMESH personnel shall demonstrate a familiarity level knowledge of Environmental Management Systems and implementation at ORO that is sufficient to identify problems, to evaluate solutions, and to assess contractor's performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of ORO Contractors' Environmental Management Systems and how they interface with the other contractor programs.

b. Basic knowledge of the environmental infrastructure at ORO sites and how Environmental Programs are implemented throughout the organizations.
c. Basic knowledge of applicable DOE standards and ISO 14001 elements.

33. AMESH personnel shall demonstrate a familiarity level knowledge of the DOE, state, and local regulations, including Federal Facilities Agreements (FFAs) and citizen's advisory boards applicable to ORO.

Supporting Knowledge and Skills

a. Identify the applicable DOE, state, tribal, and local regulations.
b. Describe the relationship between the DOE, state, tribal, and local regulations.
c. State the purpose and applicability of the identified regulations.
d. Compare the roles of the contractor and DOE personnel with regard to each of the above regulations.

34. AMESH personnel shall demonstrate a working level knowledge of the principles of streamlining and maximizing cost-effectiveness in environmental management for ORO.

Supporting Knowledge and Skills

a. Define and discuss the following terms:
   - early response action
   - problem statement
   - uncertainty
   - data needs
   - core team
   - expedited site characterization.
b. Discuss what should precede the development of a sampling and analysis plan.
c. Discuss the composition and role of a core team for environmental restoration projects.
d. Discuss uncertainty as it is associated with characterization, and the ways in which it can be managed.
e. Discuss the importance of a concise problem statement for environmental management projects.
f. Define the following terms:
   - Risk-Based Concentration (RBC)
   - Maximum Contaminant Level (MCL)
   - Remedial Goal Option (RGO)
   - background
   - action level
   - data quality objectives.

35. AMESH personnel shall demonstrate a working level knowledge of the following Department of Energy (DOE) Orders and their use and application for ORO facilities.

- **DOE P 450.1, *General Environmental Protection Program***
- **DOE O 231.1, *Environmental Safety and Health Reporting***

Supporting and Knowledge and Skills

a. Describe the relationship between Comprehensive Environmental Response, Compensation, and Liability Act and DOE P 450.1, *General Environmental Protection Program,* as applicable to ORO facilities.
b. Explain the environmental compliance issue reporting requirements as outlined in DOE O 231.1, *Environmental Safety and Health Reporting,* as applicable to ORO facilities.

36. AMESH personnel shall demonstrate a working level knowledge of the purpose and processes required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as outlined in the National Contingency Plan as applicable to ORO facilities.

Supporting Knowledge and Skills

a. Discuss the general purpose of CERCLA as it applies to risks to human health and the environment resulting from releases or threatened releases of hazardous substances into the environment.
b. Identify what constitutes a hazardous substance under CERCLA in ORO facilities.
c. Explain the intent of the Hazardous Substance Response Trust Fund.
d. Describe the National Oil and Hazardous Substance Response Trust Fund.
e. Describe when a hazardous substance release is subject to CERCLA reporting requirements.
f. Describe the objectives of the National Priorities List and Hazard Ranking System as it pertains to ORO facilities.
g. List the processes associated with the Hazardous Substance Response Process.
h. Discuss the Department's CERCLA policies and procedures.

37. AMESH personnel shall demonstrate a working level knowledge of the following document development, review and assessment under CERCLA as it applies to ORO facilities.

- **Remedial Investigation Feasibility Study Work Plan**
- **Investigative Work Plan Report**
- **Permits**
- **Records of Decision**
- **Remedial Action Work Plan**

- **Consent Order and Settlement Agreement**
- **Proposed Plan**
- **Applicable, Relevant and Appropriate Requirements (ARARs)**

Supporting Knowledge and Skills

a. Describe the process for developing the elements of the above listed documents.
b. Discuss the format that is to be used and the guidance available for developing each document.
c. Discuss the requirements set forth for each document and describe the process for reviewing these documents.
d. Conduct a review or assessment of at least three of the above listed documents.

38. AMESH personnel shall demonstrate a working level knowledge of the Clean Air Act (CAA) and implementing regulations at ORO facilities.

Supporting Knowledge and Skills

a. Discuss the application of the Clean Air Act to the Department of Energy and ORO facilities.
b. Identify the National Ambient Air Quality Standards (primary and secondary) and the National Emission Standards for Hazardous Air Pollutants (NESHAP).
c. Describe, in general, the purpose and function of various pollution abatement equipment/technologies and describe scope of use and application in ORO facilities
   - Cyclones
   - Baghouse
   - Electrostatic precipitator
   - Thermal oxidizer
   - Scrubber
   - Absorption.

39. AMESH personnel shall demonstrate the ability to appraise ORO's contractor's program(s) and/or permits to assess compliance with the requirements for the environmental medium of air.

Supporting Knowledge and Skills

a. Given a proposed permit application, evaluate the requirements, including monitoring and reporting, established by the regulations that implement the Clean Air Act.
b. Given an existing or proposed permit application, verify compliance with requirements in the regulations that implement the Clean Air Act for the prevention of significant deterioration (PSD).

c. Given a permitted source, conduct an assessment to verify compliance with the emission limitations per the Clean Air Act, Title 1.
d. Given an air permit, verify that the administrative controls are in place/planned to establish acceptable limits of air quality.
e. Given an air permit or a permit application, evaluate the source against the operating conditions in the permit or the permit application.
f. Given an existing permitted source, evaluate the source's future operating requirements in terms of the constraints imposed by their current permit.
g. Given a proposed source, evaluate the source for all present applicable Federal and state regulations.
h. Conduct an appraisal to assess compliance with polychlorinated biphenyls (PCB) waste management activities according to the Toxic Substances Compliance Act (TSCA).

40. AMESH personnel shall demonstrate a familiarity level of knowledge of the following laws and regulations and their applicability to ORO facilities/activities as related to the environmental medium of water:

- **Clean Water Act (CWA)**
- **Safe Drinking Water Act (SDWA)**
- **Resource Conservation and Recovery Act (RCRA) (groundwater provisions)**
- **National Groundwater Protection Policy (NGPP)**
- **Oil Pollution Act**
- **Rivers and Harbors Act (RHA)**.

Supporting Knowledge and Skills

a. Describe the purpose and application in ORO facilities.

41. AMESH personnel shall demonstrate a familiarity level knowledge of the implementation of the regulations and requirements of the National Environmental Policy Act (NEPA) for ORO sites and facilities.

Supporting Knowledge and Skills

a. Explain the purpose and scope of the Council on Environmental Quality regulations implementing the National Environmental Policy Act (40 CFR 1500-1508).
b. Discuss the purpose and scope of DOE O 451.1A, *National Environmental Policy Act Compliance Program*.
c. Describe the public participation process for ORO sites and facilities.
d. Discuss the integration of consultation requirements under other environmental legislation (e.g., National Environmental Policy Act and Endangered Species Act and Fish and Wildlife Coordination Act).
e. Discuss the content and procedures specified by the Department implementing

regulations 10 CFR 1021, *Compliance with the National Environmental Policy Act and Secretarial Policy on the National Environmental Policy,* June 13, 1994.

f. Describe the ORO process for preparation of the documents listed below:
   - Environmental Impact Statement (EIS)
   - Environmental Assessment (EA)
   - Finding of No Significant Impact (FONSI)
   - Categorical Exclusion (CX)
   - Record of Decision (ROD).

g. Discuss the potential liabilities of ORO and its contractors inherent in the enforcement of environmental regulations (i.e., compliance orders, enforcement actions, fines and penalties, and provisions for civil suits).

42. AMESH personnel shall demonstrate the ability to review and assess the following National Environmental Policy Act documentation as it applies to ORO facilities/activities:
- **Environmental Impact Statement (EIS)**
- **Environmental Assessment**
- **Finding of No Significant Impact (FONSI)**
- **Categorical Exclusion (CX)**
- **Record of Decision (ROD)**.

Supporting Knowledge and Skills

a. Discuss the requirements for each document and describe the process for reviewing the above listed documents.
b. Describe the process for performing an assessment of the above listed documents and discuss criteria that could be used during an assessment.
c. Perform a written review/assessment of each of the above listed documents.
d. Discuss the relationship between 40 CFR 1500, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, and DOE O 451.1A, *National Environmental Policy Act Compliance Program*.

Fire Protection

43. AMESH personnel shall demonstrate a working level knowledge of ORO Fire Protection Programs sufficient to identify problems, to evaluate solutions, and to monitor technical progress.

Supporting Knowledge and Skills

a. Describe the policies, procedures, and organizational structure of ORO facilities Fire

Protection Programs.
b. Describe fire protection properties of materials and assemblies used at ORO facilities such as fire doors, fire barriers, insulating materials, etc., including their use in construction and governing codes and standards.
c. Describe ORO facilities design features that are associated with the detection and suppression of plant fires, inclusive of the operability requirements for these systems.
d. Describe hazardous materials at ORO facilities which present an unusual explosion or fire risk.
e. Describe wildfire issues and control methods at ORO sites and environs.

Nuclear/Facility Safety

44. AMESH personnel shall demonstrate a familiarity level knowledge of DOE Order 5480.24, *Nuclear Criticality Safety,* with respect to its impact on ORO nuclear safety.

Supporting Knowledge and Skills

a. Discuss the purpose and policy associated with DOE Order 5480.24, *Nuclear Criticality Safety*.
b. Define the following terms associated with criticality safety:
   - Criticality incident
   - Double contingency principle
   - Geometry control
   - Nuclear criticality safety
   - Significant quantity of fissionable material
   - Temporary exemption.

45. AMESH personnel shall demonstrate a working level knowledge of the ORO criticality safety programs, procedures, and key guides on nuclear criticality safety to assess the contractor's criticality safety program.

46. AMESH personnel shall demonstrate a working level knowledge of the site's Criticality Safety Programs (in accordance with DOE Order 5480.24, *Nuclear Criticality Safety,*) applicable to ORO sites and facilities that is sufficient to identify problems, to evaluate solutions, and to assess contractor's performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of the Criticality Safety Programs applicable to ORO facilities.
b. Knowledge of key guides on nuclear safety utilized by ORO.

c. Knowledge of ORO facilities Operational Safety Requirements (OSRs) and Technical Safety Requirements (TSRs) and how they relate to criticality safety.

47. AMESH personnel shall demonstrate a working level knowledge of the Facility Safety Program implementation at applicable ORO facilities (in accordance with DOE Orders 5480.22, *Technical Safety Requirements*, and 5480.23, *Nuclear Safety Analysis Reports*) that is sufficient to identify problems, to evaluate solutions, and to assess the contractor's performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of Nuclear Facility Safety Programs for all ORO facilities.
b. Knowledge of the ORO facilities OSR/TSR requirements and how they relate to facility safety.
c. Knowledgeable of ORO implementation plans for meeting Unreviewed Safety Question Determination (USQD) requirements.

48. AMESH personnel shall demonstrate a working level knowledge of the ORO nuclear facility safety analyses, surveillances, and procedures for the site, systems, structures and components to assess the contractor's facility safety analysis program.

49. AMESH personnel shall demonstrate a working level knowledge of analysis techniques (fault tree, consequence analysis, PRA, etc.) and DOE and ORO orders sufficient to review ORO contractor Safety Analysis Reports (SARs) and recommend for approval as appropriate.

50. AMESH personnel shall demonstrate a working level knowledge of the basic operations and processes for DOE ORO defense nuclear facilities.

Supporting Knowledge and Skills

a. Describe the primary mission(s) of ORO defense nuclear facilities (e.g., Y-12, ORNL Building 3019, K-25, and Paducah and Portsmouth gaseous diffusion plants).
b. Describe some of the key operations processes performed at ORO defense nuclear facilities.
c. Describe the major nuclear safety risks to workers and the public resulting from the operations at ORO defense nuclear facilities.
d. Describe the major non-nuclear hazards associated with ORO defense nuclear facility operations.
e. Describe some of the nuclear facility protection features at ORO defense nuclear facilities for preventing or mitigating operational accidents.

51. AMESH personnel shall demonstrate a familiarity level knowledge of nuclear materials control and accountability (MC&A) requirements, including measurement programs, and safeguard programs, sufficient to identify problems, evaluate solutions, and assess ORO contractor performance.

Supporting Knowledge and Skills

a. Knowledge of the major elements of ORO's Safeguards and Security Program.
b. Knowledge of applicable ORO and Y-12 Plant MC&A Program authorities and responsibilities, documentation, and key components needed to achieve implementation, including program evaluation requirements, as stated in DOE Order 5633.3B, *Control and Accountability Nuclear Standard*.
c. Knowledge of accountability measurements inclusive of verification and confirmatory techniques used in MC&A.

52. AMESH personnel shall demonstrate a familiarity level knowledge of ORO facilities Chemical Processing systems sufficient to assess the contractor's operation and maintenance of these processes.

Supporting Knowledge and Skills

a. Basic knowledge of the DOE Order(s), Federal Codes, or requirements that relate to ORO facilities processing systems to ensure compliance.
b. Basic knowledge of associated procedures or technical documents that relate to the chemical processing systems.
c. Basic knowledge of the major components, safety features (if any) and hazards associated with chemical processing systems, both during normal and abnormal operations, and during shutdown periods.
d. Basic knowledge of Nuclear Safety requirements that may exist on all or part of chemical processing systems, including OSRs, TSRs, and BIO.

53. AMESH personnel shall demonstrate a familiarity level knowledge of the Authorization Basis, the nuclear hazards, the chemical hazards for ORO facilities.

Supporting Knowledge and Skills

a. Discuss the nuclear and chemical hazards in relevant ORO facilities.

54. AMESH personnel shall demonstrate a familiarity level knowledge of nuclear safety management standards for nuclear safety authorization basis applicable to ORO facilities.

Supporting Knowledge and Skills

a. Describe the purpose and scope, as appropriate to the position, of the following safety management standards for nuclear facility safety authorization basis:
   - DOE Order 5480.21, *Unreviewed Safety Questions*
   - DOE Order 5480.22, *Technical Safety Requirements*
   - DOE Order 5480.23, *Nuclear Safety Analysis Reports*
   - DOE Order 420.1, *Facility Safety*
   - DOE Order 425.1, *Startup and Restart of Nuclear Facilities*
   - DOE-STD-1027-92, *Guidance on Preliminary Hazard Classification and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*
   - DOE-STD-3006-95, *Planning and Conduct of Operational Readiness Reviews (ORR)*
   - DOE-STD-3009-94, P*reparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports*
   - DOE-STD-3011-94, *Guidance for Preparation of DOE Order 5480.22 (TSR)* and DOE Order 5480.23 *(SAR) Implementation Plans*
   - DOE P 410.1A, *Promulgating Nuclear Safety Requirements*

55. AMESH personnel shall demonstrate a familiarity level knowledge of ORO facilities' HVAC systems sufficient to assess the contractor's operation and maintenance of these processes.

Supporting Knowledge and Skills

a. Basic knowledge of the DOE Order(s), Federal Codes, or requirements that relate to ORO facilities' HVAC systems to ensure compliance.
b. Basic knowledge of associated procedures and technical documents that relate to the HVAC systems.
c. Knowledge of the major components, safety features (if any) and hazards associated with HVAC systems, both during normal and abnormal operations, and during shutdown periods.

Occupational Safety/ Industrial Hygiene

56. AMESH personnel shall demonstrate a familiarity level knowledge of the requirements for ORO contractor safety program plan acceptance, including identification of potential safety and health hazards and sufficient controls to effectively control any harmful effects to the public, workers, or the environment.

57. AMESH personnel shall demonstrate a working level knowledge of the factors associated with the effective control of industrial hazards through the use of ventilation systems in ORO facilities.

58. AMESH personnel shall demonstrate a working level knowledge of the Industrial Hygiene Programs at ORO sites and facilities that is sufficient to identify problems, to evaluate solutions, and to assess contractor performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of Industrial Hygiene Programs at ORO sites.
b. Knowledge of the various workplace health hazards that are unique to ORO sites and facilities.
c. Knowledge of the types of monitoring equipment and their applications that are used in ORO Industrial Hygiene Programs.

59. AMESH personnel shall demonstrate a working level knowledge of the Occupational Medicine Programs and the Health Services at ORO sites that is sufficient to identify problems, to evaluate solutions, and to assess contractor's performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of Occupational Medicine Programs at ORO sites.
b. Knowledge of the scheduling and tracking methods for past occupational medical appraisals and deficiencies and formal concern/complaint investigations applicable to ORO sites.

60. AMESH personnel shall demonstrate a working level knowledge of the Industrial Safety and Construction Safety Programs at the ORO sites that is sufficient to identify problems, to evaluate solutions, and to assess contractor performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of ORO Industrial Safety and Construction Safety Programs.
b. Knowledge of statistical techniques used for reporting, recording, and monitoring injury and illness rates at ORO facilities.
c. Knowledge of the various work-place hazards that are unique to ORO facilities including the identification, the elimination, and control of such hazards.

Quality Systems

61. AMESH personnel shall demonstrate a working level knowledge of ORO occurrence reporting requirements, root cause analysis, and corrective action technical evaluation sufficient to review occurrence reports for accuracy and adequacy.

62. AMESH personnel shall demonstrate a working level knowledge of DOE O 232.1A, *Occurrence Reporting and Processing of Operations Information,* and related ORO processes and procedures.

Radiation Protection

63. AMESH personnel shall demonstrate a working level knowledge of 10 CFR 835 as applicable to ORO facilities.

Supporting Knowledge and Skills

a. Describe purpose, scope and major provisions of 10 CFR 835, *Occupational Radiation Protection*, and discuss the DOE Standard of Radiological Control and DOE Environmental Radiation Protection Standards and their applicability to ORO facilities and sites.

64. AMESH personnel shall demonstrate a working level knowledge of ORO Site Radiological Control Programs for which the employee provides support.

Supporting Knowledge and Skills

a. Knowledge of goals and objectives of ORO Radiological Worker I and II training.
b. Discuss Radiological Control programs supported at ORO sites.
c. Discuss methods for ensuring individual radiation exposure is maintained as low as

reasonably allowable at ORO facilities.

Transportation Safety

65. AMESH personnel shall demonstrate a working level knowledge of ORO sites packaging and transportation requirements that is sufficient to identify problems, to evaluate solutions, and assess contractor's performance.

Supporting Knowledge and Skills

a. Knowledge of the policies, procedures, and organizational structure of ORO facilities Packaging and Transportation Program.
b. Knowledge of applicable Federal regulations, DOE Orders, and Standards affecting ORO facilities packaging and Transportation Program.

CONTINUING TRAINING

AMESH personnel shall participate in continuing training as necessary to improve their performance and ensure they stay current with changing technology and new requirements. This may include courses or training in:

- State, tribal, and local initiatives
- Federal and DOE initiatives
- Emerging environmental and waste management processes and technology
- Management and administrative systems
- Safety and health initiatives
- Emergency Management initiatives
- Information Systems
- Radiation Protection
- Nuclear Safety/ Facility Safety initiatives
- Quality initiatives
- Assessment and investigation initiatives
- Transportation Safety initiatives.

Appendix A

AMESH Technical Qualification Program
Required Office-Specific Competencies

Participant's Name: _____ Group/Team: _____

Participant's Concurrence: _____ Date: _____

Supervisor's Concurrence: _____ Date: _____

Mark an X by each Competency Number that is applicable to your job.
(Competencies 1 through 24 are required for all participants.)

Assessment Team	25	26	27	28	29	30						
Emergency Management	Please refer to the Emergency Management Program Office qualification standard.											
Environmental & Waste Management	31	32	33	34	35	36	37	38	39	40	41	42
Fire Protection	43											
Nuclear/Facility Safety	44	45	46	47	48	49	50	51	52	53	54	55
Occupational Safety/Industrial Hygiene	56	57	58	59	60	61	62					
Quality Systems	61	62										
Radiation Protection	63	64										
Transportation Safety	65											

October 2001