

U.S. DEPARTMENT OF ENERGY
OFFICE/FACILITY-SPECIFIC
QUALIFICATION STANDARD

PADUCAH SITE OFFICE



OAK RIDGE OPERATIONS OFFICE

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REVISION 0

CONCURRENCE AND APPROVAL

The DOE-Oak Ridge Operations Office (ORO) Paducah Site Office (PGDP) Manager is the management sponsor for this PGDP Qualification Standard. As the management sponsor, the PGDP Manager 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 PGDP Manager is indicated by signature below.

The Training and Development Division (TDD) Director 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 TDD Director is indicated by signature below.

The ORO Assistant Manager for Enrichment Facilities (AMEF) is the approval authority for this qualification standard. Approval of this qualification standard by the AMEF is indicated by signature below.

CONCURRENCE:

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APPROVAL:

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PADUCAH SITE OFFICE

The Paducah Site Office (PGDP) is a Department of Energy Oak Ridge Operations Office (ORO) organization. PGDP includes technical and administrative personnel who are assigned the responsibility to ensure the protection of the health and safety of DOE and contractor employees and the public, and to ensure the protection of government and public property and the environment at the Paducah Gaseous Diffusion Plant. In this role, PGDP staff perform numerous tasks and activities for supporting line management's objective for: the planning, coordination, execution, and oversight of operations of the GDP to assess compliance with DOE nuclear safety, materials control and accountability, and safeguards and security requirements; environmental restoration, waste management, and capital projects; uranium enrichment facilities under the cognizance of DOE; and lease administration with the United States Enrichment Corporation (USEC).

PURPOSE

The PGDP Office/Facility-Specific Qualification Standard defines the qualification competencies required for carrying out the duties and responsibilities outlined above and detailed on pages 4 and 5. This standard is part of the Technical Qualification Program (TQP) required by DOE Order 360.1, Training, and supplements the department-wide General Technical Base and functional area qualification standards. It contains the competency requirements PGDP staff assigned to the Technical Qualification Program need (as a composite) in order to perform assigned activities. Documented satisfactory completion of the competencies contained in this qualification standard ensures that the PGDP staff are qualified to fulfill their duties and responsibilities.

QUALIFICATION STANDARD DEVELOPMENT

This qualification standard has been constructed using information from PGDP position descriptions, PGDP procedures, Regulatory Oversight Agreement (ROA) procedures, DOE and ORO orders, and interviews with PGDP staff. The format of this document follows the department-wide functional area qualification standards developed by DOE Human Resources' Office of the Technical Personnel Program Coordinator.

APPLICABILITY

This qualification standard applies to selected PGDP staff, and other Federal personnel temporarily assigned to PGDP, who provide management direction or technical oversight that could impact the safe operation of an ORO defense nuclear facility.

IMPLEMENTATION REQUIREMENTS

The competencies contained in the Standard are divided into the following categories:

1. General Technical
2. Administrative
3. Regulatory
4. Management and Assessment

Each of the categories contains one or more competency statements indicated by bold print. 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/or 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.

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

FAMILIARITY LEVEL is defined as basic knowledge of or exposure to the subject or process adequate to discuss the subject or process with individuals of greater knowledge.

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

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

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

This qualification standard contains a composite of all the competencies applicable to the PGDP staff as a group who are enrolled in the TQP. No one individual is expected to be

qualified on all the competencies. The PGDP Manager assigns to each participating PGDP member the specific competencies from this qualification standard that the participant is required to complete.

Exemptions are not used in this phase of the qualification program. Only those competencies assigned by management are required to be completed. The AMEF reviews the competencies selected for the PGDP Manager to complete.

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 shall indicate 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.

Competencies can be achieved in numerous ways including on-the-job training; formal training and education courses, on and off the job; self-study; rotational assignments; mentoring; etc. Classroom instruction, computer-based training, interactive television broadcasts, and self-study guides are available to individuals preparing to meet competencies in their qualification standards. Training courses used to acquire needed competencies should be selected with care so as to best satisfy the competencies.

DOE orders are frequently referenced as standards for competencies. Individuals assigned such competencies and those evaluating the performance must be aware that many DOE orders in the directive system are being deleted, consolidated, or phased out. When DOE orders and other documents are referenced in the qualification standard, the most recent approved revision should be used for study and evaluation.

TQP participants use this qualification standard in conjunction with their Technical Qualification Records to document implementation and completion of the office/facility-specific qualification requirements. Documented completion of the requirements of this qualification standard will be included in the employee's training record.

DUTIES AND RESPONSIBILITIES

The following duties and responsibilities may be assigned to PGDP staff whose position requires them to provide management direction or oversight that could impact the safe operation of a defense nuclear facility and who provide technical support to line management for review and assessment of management and operating (M&O) contractor programs.

1. Assure that United States Enrichment Corporation (USEC) maintains leased facilities in accordance with the most current approved lease between DOE and USEC and that operating contractor programs are consistent with DOE requirements.
2. Plan, direct, and conduct inspections at the GDP to ascertain whether Lockheed Martin Utility Systems (LMUS) and their contractors are complying with the provisions of the Regulatory Oversight Agreement (ROA) and other applicable regulations.
3. Facilitate safe and efficient transition of Paducah GDP from DOE contractor to USEC with Nuclear Regulatory Commission (NRC) oversight.
4. Identify shared site issues and work with other DOE-ORO site offices to address lessons learned for improvement.
5. Manage ORO assets in accordance with DOE Order 430.1, Life Cycle Asset Management.
6. Implement and support DOE Order 440.1, Worker Protection Management for DOE Federal and Contractor Employees.
7. Employ methods of performance-based contract management (PBCM) as it pertains to assigned Incentive Task Orders (ITO).
8. Employ methods of PBCM as it pertains to task order support contracts
9. Evaluate contractor performance and provide comprehensive input to performance evaluation committees for contractors operating in accordance with cost plus award fee (CPAF) contracts.
10. Review/assess changes and additions to regulatory requirements; evaluate and report potential impact of changes/additions on Paducah Site Office activities and projects.
11. Conduct pre-construction and pre-operational safety reviews, focusing on safety design considerations, procedures, training in the recognition of abnormal conditions, and the accuracy of operational and maintenance procedures.

12. Promote facility safety through such avenues as conducting surveillances and walk throughs and Safety Team of Paducah (STOP) activities.
13. Conduct self-assessments of Paducah Site Office processes, procedures, and practices. Identify and report accomplishments, strengths, weaknesses, and improvement areas.
14. Apply knowledge of current and emerging state-of-the-art technologies in assigned technical areas such as environmental restoration, uranium enrichment technology, safe industrial practices, and applicable codes and standards.
15. Evaluate Paducah GDP contractor performance in waste management, environmental compliance, and environmental restoration to ensure the adequacy and effectiveness of:
 - Technical performance
 - Plans, policies, and procedures
 - Management controls
 - Regulatory compliance
 - Worker and public health/safety programs
 - Environmental monitoring
 - Quality assurance programs
 - Pollution prevention
 - Waste minimization
16. Exchange Paducah GDP waste management, environmental compliance, and environmental restoration programs information between DOE-ORO and federal, state, and local governments.
17. Evaluate security programs at Paducah engaged in such activities as uranium enrichment, nuclear material control and accountability (MC&A), security lease management, international security protocol, non-proliferation, and counterintelligence investigations.
18. Coordinate with the Site, Field, and Headquarters in the overall administration, cultural assistance, permanent presence, security issues, procedures and notifications/reports, and overall logistical efforts related to Russian Transparency and the International Atomic Energy Agency (IAEA) at Paducah.
19. Serve as a member of the Site Emergency Cadre.

REQUIRED COMPETENCIES

The competencies contained in this qualification standard are distinct from those competencies contained in the General Technical Base Qualification Standard and the series of department-wide functional area qualification standards. Participating individuals must complete the competency requirements of the General Technical Base Qualification Standard and a primary functional area qualification standard prior to or in parallel with the completion of assigned competency requirements in this qualification standard.

Selected PGDP staff should complete training associated with the topics listed below as co-requisites to the requirements of this qualification standard. Most ORO sites have training requirements on these topics in order to access facilities to work. The specific training courses required for PGDP staff should be identified in Individual Development Plans.

- General Employee Training
- Radiation Worker I (or II) Training
- Nuclear Criticality Safety Training
- HAZWOPER Training

EVALUATION REQUIREMENTS

The evaluation process identified below serves as a measurement tool for assessing whether or not the participants have acquired the technical competencies in this qualification standard. The following requirements apply to the completion of this qualification standard.

Verifying and documenting that the competencies have been met may be accomplished by the PGDP Manager, or by a subject matter expert (SME) designated by the PGDP Manager. Any of the following methods may be used to evaluate incumbent competency. Each evaluation method is required to be documented.

- Formal education (college courses and academic degrees)
- Training (DOE, DOE contractor, other agency, vendor)
- DOE experience/on-the-job training
- Equivalencies for prior experience, education, and training
- Documented oral evaluation
- Documented observation of performance
- Written examination (including test out)

The PGDP Manager or SME performing the verification must provide some level of evaluation to confirm the participant's level of understanding when self study of DOE orders, Federal and state/local regulations, procedures, or required reading is used to satisfy a competency. In all cases the evaluation is documented by signature on the participant's Technical Qualification Record.

CONTINUING TRAINING AND PROFICIENCY REQUIREMENTS

Requalification on the competencies contained in this qualification standard is not required. PGDP staff should participate in continuing learning activities in order to maintain and improve previously acquired knowledge and skills and to acquire new knowledge and skills where necessary. Continuing training and education to maintain technical proficiency includes the following elements:

1. Technical education and/or training on topics directly related to PGDP duties and responsibilities.
2. Training on topics that address an individual's knowledge and/or skill deficiencies.
3. Training in areas added to the qualification standard since initial qualification.

Competencies added to the qualification standard are documented in the Technical Qualification Record and are addressed like other qualification standard competencies. Specific continuing training or education needs should be documented in Individual Development Plans.

1.0 GENERAL TECHNICAL COMPETENCIES

- 1.1 Paducah Site Office personnel shall demonstrate a familiarity level knowledge of the basic operations and processes for DOE-Oak Ridge Operations (ORO) defense nuclear facilities.

Supporting Knowledge and/or Skills

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

- 1.2 Paducah Site Office personnel shall demonstrate a familiarity level knowledge of the construction, operation, and basic theory of uranium enrichment as performed in the gaseous diffusion process.

Supporting Knowledge and/or Skills

- a. Given a one-line diagram of a typical "000" gaseous diffusion cell, or on a facility walk-through, identify the following components, describe their purpose, and discuss their interrelation:
 - Compressor
 - Electric motor
 - Converter
 - Gas cooler
 - Stage control valve
 - Stage
 - Cells
 - Cascade
- b. Discuss the similarities and differences in production capabilities between the Paducah Gaseous Diffusion Plant and the Portsmouth Gaseous Diffusion Plant.

- c. Discuss the differences in flow paths between the diffused gas stream and the undiffused gas stream.
- d. Describe the operating parameters maximum cascade power level and ^{235}U assay and why these two parameters are controlled.
- e. Describe the safety concerns associated with the process fluids, gases, and byproducts.
- f. Describe the basis for the technical safety requirements, operating limits, and other controls employed to protect workers, environment, and the public. Suggested items include:
 - Describe the accident scenarios that present the greatest risks (worse case scenarios) for the facility and the resulting safety concerns.
 - Describe the natural phenomena that were analyzed for safety of the plant and the results of the evaluations.
 - Describe the plausible significant chemical releases for the plant and the associated safety concerns.
 - Describe the gaseous diffusion plant (GDP) safety envelop and the controls implemented to ensure that the plant remains in a stable safe configuration.
 - Review the Limiting Conditions of Operation (LCOs) and perform the following:
 - ▶ Describe the required actions for having entered an LCO
 - ▶ Describe the required actions for violating an LCO
 - Identify the plant safety systems and specify why each system falls into this category.
- g. Discuss how the technical safety requirements, operating limits, and other safety controls are implemented to protect workers, environment, and the public.
- h. Describe the Cascade Improvement Program and the Cascade Upgrading Programs and the products of these efforts.
- i. Discuss the storage and handling requirements for the products of the enrichment process.

- 1.3 Paducah Site Office personnel shall demonstrate a working level knowledge of DOE Order 420.1, Nuclear Criticality Safety, with respect to Paducah plant nuclear safety.

Supporting Knowledge and/or Skills

- a. Explain the purpose, scope, and applicability of DOE Order 420.1, Nuclear Criticality Safety to PGDP.
 - b. Define the following terms associated with criticality safety and locate examples of their use in the facility:
 - Criticality incident
 - Double contingency principle
 - Geometry control
 - Nuclear criticality safety
 - Significant quantity of fissionable material
 - Temporary exemption
 - c. Distinguish the operating contractor responsibilities for the following in relation to criticality safety activities.
 - Criticality safety evaluations
 - Monitoring
 - Surveillance
 - Transportation
 - Storage
 - d. Describe the Paducah Site Office personnel responsibilities with respect to the implementation of the requirements of DOE Order 420.1, Nuclear Criticality Safety.
 - e. Locate and assess on-site examples of control measures taken to prevent nuclear criticality.
- 1.4 Paducah Site Office personnel shall demonstrate a working level knowledge of the basic requirements of material control and accountability.

Supporting Knowledge and/or Skills

- a. Explain the purpose, scope, and applicability to PGDP facilities of DOE Order 5633.3B, Control and Accountability of Nuclear Materials .

- b. Using the site Material Control and Accountability Plan, explain the following nuclear material control and accountability requirements for PGDP facilities:
 - Measurements and measurement control
 - Threat considerations
 - Physical inventories
 - Control limits
 - Loss of detection elements
 - Nuclear material alarms
 - Nuclear material access control
 - Containment
 - Surveillance
 - c. Discuss defense-in-depth as it relates to material control and accountability.
 - d. Explain the material control and accountability components of the PGDP facility(ies) emergency plans.
 - e. Locate the approved material control and accountability storage locations on the PGDP site.
 - f. Review and discuss the administrative controls designed to prevent and detect material losses and diversions (include documented reviews and assessments).
- 1.5 Paducah Site Office personnel shall demonstrate a familiarity level knowledge of the hierarchy and interrelation (integration and interface) of the following types of emergency plans:
- Site emergency plans
 - Facility emergency plans
 - Building emergency plans
 - Security emergency plans
 - Spill prevention, containment, and countermeasures
 - Fire prevention/suppression plans

Supporting Knowledge and/or Skills

- a. Describe the typical content and applicability of each of the emergency plans listed above.
- b. Describe the integration/interface of the listed plans.
- c. Describe the roles and responsibilities of the on-site and off-site emergency response organizations identified in the above emergency plans.

- 1.6 Paducah Site Office personnel shall demonstrate a working level knowledge of the Paducah waste vitrification project.

Supporting Knowledge and/or Skills

- a. Explain the purpose and scope of the Vortec waste vitrification project.
- b. Identify the major components and operation of the following subsystems:
 - Feed Preparation System
 - Blending System
 - Combustion and Melting System
 - Vitrified Product Handling System
 - Air Pollution Control System
 - Wastewater Treatment System
- c. Given the schematic prints for the process controls, perform the following:
 - Explain the operation of the overall system
 - Identify necessary safety interlock and control features
 - Explain the basis for the design safety features
- d. Oversee the planning and construction of the facility.
- e. Monitor for potential safety hazards associated with construction and operation of the facility. Document and notify contractor of anticipated problems.
- f. Track project development against established milestones. Document and notify contractor of anticipated problems.
- g. Identify the applicable regulations for safety, occupational health, worker protection, and emergency management required for this project.
- h. Describe the facility engineering designs necessary to obtain all air construction/operating permits in accordance with the Kentucky Division for Air Quality.
- i. Identify the scope and content of the reporting requirements for:
 - NESHAP standard for radionuclides
 - Kentucky Division of Water standards for wastewater
- j. Describe the applicable requirements for treatment of hazardous waste using innovative technologies found in CFR 270.65, Research, Development, and Demonstration Permits.

2.0 ADMINISTRATIVE COMPETENCIES

- 2.1 Paducah Site Office personnel shall demonstrate a working level knowledge of assessments of Paducah contractor and Federal employee safety and health related activities in accordance with identified requirements, including DOE Orders.

Supporting Knowledge and/or Skills

- a. Compose or review and comment on the criteria to be used as the basis for conducting a safety and health assessment.
- b. Participate in a contractor or Federal safety and health program assessment in a role that performs the following activities:
 - Interview personnel
 - Observe activities
 - Review records
 - Document findings, observations, improvement areas
- c. Evaluate the results of an assessment against the established criteria and determine if deficiencies exist. Communicate findings to the assessed organization.
- d. Document results of an assessment in a formal written report format that describes the status of meeting established criteria, identifies deficiencies and good practices and suggests recommendations for improvement.
- e. Describe how the assessment team resolves conflicting or inconclusive observations.
- f. Describe tasks performed by a DOE assessment team to close out an assessment.

- 2.2 Paducah Site Office personnel shall demonstrate a working level knowledge of the Price-Anderson Amendment Act of 1988 and its impact on Department of Energy Paducah activities.

Supporting Knowledge and/or Skills

- a. Discuss the purpose and scope of the Price-Anderson Amendment Act (PAAA).
- b. Interpret the PAAA's applicability to the ORO management activities.
- c. Summarize the civil and criminal penalties imposed on the Department, management and operating contractors, and subcontractors as the result of a violation of applicable rules and regulations related to ORO environmental restoration.

- d. Interpret the requirements associated with the topics below, as they are affected by the rule-making aspect of the PAAA:
 - Safety Analysis Reports
 - Unreviewed Safety Questions
 - Quality Assurance Requirements
 - Defect Identification and Reporting
 - Conduct of Operations at DOE Nuclear Facilities
 - Technical Safety Requirements
 - Training and Certification
 - Maintenance Management
 - Categorization, Notification, Reporting, and Processing of Operational Occurrences at DOE Nuclear Facilities
- e. Explain the role of Paducah Site Office personnel with respect to implementing the requirements of the PAAA.

- 2.3 Paducah Site Office personnel shall demonstrate a working level knowledge of the Russian Transparency agreement between the governments of the United States and the Russian Federation.

Supporting Knowledge and/or Skills

- a. Explain the scope and purpose of the agreement.
- b. Outline the duties and responsibilities of Paducah Site Office personnel in administering the agreement.
- c. Validate the measures taken at PGDP for the physical protection of low enriched uranium (LEU) subject to this agreement.
- d. Compare the requirements against the actual implementation process for the agreement annexes to demonstrate how the requirements are being satisfied.
- e. Review and assess the reports generated from Transparency monitoring activities.
- f. Describe the measures taken to control PGDP information in accordance with DOE Order 5650.4, Identification of Export Controlled Information.

- 2.4 Paducah Site Office personnel shall demonstrate a working level knowledge of the PGDP Final Safety Analysis Report (FSAR) and Technical Safety Requirements (TSRs).

Supporting Knowledge and/or Skills

- a. Discuss the scope and function of FSARs and TSRs.
- b. Describe the gaseous diffusion plant (GDP) safety envelop and the controls implemented to ensure that the plant remains in a stable safe configuration.
- c. Review the Limiting Conditions of Operation (LCOs) and perform the following:
 - Describe the required administrative actions for having entered an LCO
 - Describe the required administrative actions for violating an LCO
- d. Describe the response to having identified a plausible scenario that has not been previously analyzed in the FSARs.
- e. Describe the process to update the FSAR in event a modification is made to the facility.

- 2.5 Paducah Site Office personnel shall demonstrate a working level knowledge of performance-based contract management both within DOE in general and specifically at PGDP.

Supporting Knowledge and/or Skills

- a. Define performance-based contract management (PBCM) and discuss how it is being implemented at PGDP.
- b. Discuss how the Paducah Filed Office applies the following PBCM elements at PGDP to manage activities:
 - Results oriented statements of work
 - Objectives, measures, and expectations
 - Performance incentives
- c. Explain PBCM concepts as they pertain to Incentive Task Orders (ITOs) projects.
- d. Describe performance-based practices used to evaluate project management, cost estimating, maintenance, real estate, and utilities (as appropriate) under the Life Cycle Asset Management implementation process.
- e. Explain the PGDP staff's general duties and tasks in the contractor performance appraisal process.

- f. Participate in a contractor performance appraisal using appropriate site contractor performance objectives, measures, and expectations.

2.6 Paducah Site Office personnel shall demonstrate a working level knowledge of the contents and application of Paducah Site Office Administrative Policies and Procedures Manual.

Supporting Knowledge and/or Skills

- a. Discuss the requirements provided in these documents and describe the processes contained in the guidelines. Include steps taken to ensure the guidelines are followed in the day-to-day operation of Paducah Site Office.
- b. Describe the process for performing an assessment of these manuals and discuss the criteria that could be used during an assessment.
- c. Study each chapter of the Paducah Site Office Administrative Policies and Procedures Manual and summarize the chapter's impact on current work assignments.
- d. Discuss the relationship between the Paducah Site Office Administrative Policies and Procedures Manual and DOE Order 430.1, Life Cycle Asset Management.

3.0 REGULATORY COMPETENCIES

3.1 Paducah Site Office personnel shall demonstrate a familiarity level knowledge of regulatory issues within DOE.

Supporting Knowledge and/or Skills

- a. Describe safety management initiatives resulting from DNFSB Recommendation 95-2, Integrated Safety Management.
- b. Explain the impact of rule making on DOE and its contractors and the basic process of implementing rules.
- c. Discuss the Work Smart Standards approach as it relates to compliance.
- d. Discuss the Paducah Site Office use of the Standards/Requirements Identification Documents.

3.2 Paducah Site Office personnel shall demonstrate an expert level knowledge of the Regulatory Oversight Agreement (ROA) between the United States Department of Energy and the United States Enrichment Corporation (USEC).

Supporting Knowledge and/or Skills

- a. Describe in detail the scope and intent of the ROA.
- b. Explain the hierarchy of requirements established by the ROA and the Price-Anderson Amendments of 1988.
- c. Critique the following areas for each of the 19 operational requirements identified in the ROA:
 - Basic objective
 - Implementation requirements
 - How the requirements are met
 - Status of conformance
- d. Outline the programs for DOE oversight of turnover and operation of the Paducah GDP as identified in Appendix A, Chapter 4 of the ROA.
- e. Participate in an assessment of the plant nuclear safety and safeguards and security requirements as identified in the ROA.
- f. Review the most recent issue(s) of DOE Occurrence Reports and determine if the lessons learned may be of benefit to PGDP activities.

g. Document and notify USEC of nonconformances with the ROA

3.3 Paducah Site Office personnel shall demonstrate a working level knowledge of DOE Order 440.1, Worker Protection Management for DOE Federal and Contractor Employees.

Supporting Knowledge and/or Skills

- a. Explain the purpose, philosophy, and scope of the order, placing emphasis on the applicability to PGDP activities.
- b. Review and comment on the PGDP written policy, goals, and objectives for the worker protection program.
- c. Discuss with site contractor personnel the worker protection program goals, objectives, and performance measures and methods to identify and control hazards in the workplace.
- d. Explain the rights and responsibilities of workers under the PGDP worker protection program.
- e. Identify existing and potential workplace hazards and evaluate the risk of associated worker injury or illness.
- f. Discuss PGDP procedures for reporting and investigating accidents, injuries, and/or illnesses.
- g. Describe the PGDP counterfeit/suspect parts program.
- h. Review and assess the adequacy of the PGDP worker protection training program in accordance with the requirements of this order.
- i. Review the requirements of the American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, and compare the ACGIH Threshold Limit Values (TLVs) against OSHA Permissible Exposure Limits.
- j. Review and assess the adequacy of the PGDP firearms safety policies and procedures.

4.0 MANAGEMENT AND ASSESSMENT COMPETENCIES

- 4.1. Paducah Site Office personnel shall demonstrate a working level knowledge of the requirements for construction, startup, and restart of nuclear facilities and the conduct of preconstruction and Operational Readiness Reviews (ORRs).

Supporting Knowledge and/or Skills

- a. Discuss the criteria and process of facility categorization.
- b. Discuss the purpose of ORRs as outlined in DOE Order 425.1, Startup and Restart of Nuclear Facilities.
- c. List the conditions that require performance of a readiness review and circumstances when only readiness assessments would be allowable.
- d. For an actual or simulated ORR, perform the following:
 - Formulate the personnel qualification requirements and any limitations for serving on the team
 - Establish the minimum core requirements for developing the depth and breadth of the review
- f. Outline the responsibilities of the readiness review team members.
- g. Participate on a readiness review team, conduct work in preparation for a readiness review, or complete a readiness review training course.
- h. Review readiness review reports and discuss the relevant findings.

- 4.2 Paducah Site Office personnel shall demonstrate a working level knowledge of the Paducah Site Office Self-Assessment Program.

Supporting Knowledge and/or Skills

- a. Review and comment on PSD 92-3, DOE Paducah Site Office Directive and accompanying Self-Assessment Program for Gaseous Diffusion Plants at Paducah and Portsmouth.
- b. Evaluate the purpose, scope, and applicability of self-assessments within the Paducah Site Office.
- c. Explain how Quality Assurance principles and practices are applied in the conduct of PGDP self-assessments.

- d. Explain how self-assessments improve safety and provide examples of improvements.
- e. Conduct a self-assessment of an activity to determine status or acceptability.
- f. Document strengths, weaknesses, and improvement areas identified during self-assessment activities.
- g. Describe how PGDP uses feedback from self-assessments to plan work process improvements or take other actions to eliminate non-conformances.
- h. Discuss the purpose/value of using prescribed measures of performance.
- i. Participate in data gathering, analysis, measurement, and assessment of the information used to measure performance.
- j. Describe the results and significance of performance measures.

4.3 Paducah Site Office personnel shall demonstrate a working level knowledge of the management process to monitor contractor project activities.

Supporting Knowledge and/or Skills

- a. Describe Paducah Site Office responsibilities for monitoring contractors to ensure compliance with the technical, safety, and administrative requirements of the contract.
- b. Represent DOE to the contractor and identify contractor deliverables, objectives, timeliness, assumptions, constraints, and priorities.
- c. Read, interpret, and evaluate the following project control measures/tools.
 - Gantt (bar) charts
 - Critical path networking techniques
 - Labor schedules
 - Material equipment schedules
 - Finance schedules
- d. Discuss stop work authority and responsibility for site safety.
- e. Formulate, analyze, and approve or disapprove project plans and schedules.
- f. Describe Paducah Site Office responsibility to ensure continuity in performance and information exchange among project team participants.

- g. Discuss how DOE project managers ensure project costs, schedule and scope requirements are met.

4.4 Paducah Site Office personnel shall demonstrate a working level knowledge of managing the ORO condition of physical assets in accordance with DOE Order 430.1, Life Cycle Asset Management.

Supporting Knowledge and/or Skills

- a. Describe the role and responsibilities of the PGDP Contracting Officer Representative for site contracts and financial assistance agreements executed by ORO.
- b. Describe the process and conditions for acquiring approvals for projects from the sponsoring program office.
- c. Discuss the various categories of performance measures and expectations and how they are used by PGDP and the contractor to evaluate against project performance objectives.
- d. Define the following terms related to life cycle asset management and provide examples of their application within PGDP.
 - Disposition
 - Asset management systems
 - Commencement of execution
 - Infrastructure
- e. Outline the systems, controls, and processes used at ORO in the management of incentive and surplus facilities.
- f. Explain the purpose and methods used to control baseline change requests at PGDP.

- 4.5 Paducah Site Office personnel shall demonstrate a familiarity level of knowledge of evaluating emerging remediation technologies available to PGDP.

Supporting Knowledge and/or Skills

- a. Discuss the major criteria and their inter-relationship(s) that are used to evaluate a new remediation technology including:
 - Feasibility
 - Mitigation
 - Cost effectiveness
 - Efficiency
 - Long term durability
 - b. Explain the process and methods used to assess the R&D data and evaluate the scientific premises presented in support of a new remediation technology (to confirm that the design engineering supports the proposal's claims against the specific need).
 - c. Describe the means of reviewing cost and risk performance for a new technology against existing baseline technology and how these estimates are weighted in making decisions to proceed with the project proposal.
 - d. Discuss means of determining public, stakeholder, and political support for or opposition to the new technology application.
 - e. Describe the process for assessing the feasibility of a new proposed technology project in terms of needed infrastructure support and/or capability.
 - f. Discuss the various kinds of expertise that could be called upon to provide technical input on the value of a recommended technology.
- 4.6 Paducah Site Office personnel shall demonstrate a working knowledge of Radiological Control Program reviews and audits in accordance with DOE requirements and PGDP procedures.

Supporting Knowledge and/or Skills

- a. Audit contractors/subcontractors compliance with 10CFR835 requirements for radiation protection.
- b. Review the results of non-destructive analysis measurements and assess accuracy and adequacy.

- c. Describe national and international radiation protection standards and recommendations applicable to PGDP operations.
 - d. Coordinate audits of PGDP radiation control records and radiation protection plans.
- 4.7 Paducah Site Office personnel shall demonstrate the ability to manage and oversee DOE facilities, contractors, and properties located on the Paducah Site in accordance with governing documents, such as:
- Oak Ridge Operations Office Environmental Management Ten Year Plan
 - Lease Agreement Between the United States Department of Energy and the United States Enrichment Corporation
 - Site Management Plan - Paducah Gaseous Diffusion Plant, Paducah, Kentucky

Supporting Knowledge and/or Skills

- a. Review the above listed documents and describe their implementation at PGDP.
- b. Evaluate time management activities for PGDP specific requirements including:
 - Site project control system/Work Package system, process, controls and documents
 - Integrated Work Control Package system, processes, controls and documents
- c. Discuss how these requirements are expected to evolve over the next year, 5 years, and 10 years as the mission of PGDP facilities changes.
- d. Describe the elements addressed in a facility turnover plan.
- e. Participate in the review and concurrence of a turnover plan for a facility to operations.
- f. Discuss the various tests and evaluations used to verify that physical assets perform according to documented performance criteria. Provide specific examples from PGDP managed projects.
- g. Monitor operating contractor tests of physical assets and weigh and assess the results of the evaluation(s).
- h. Identify the areas contaminated (nuclear and/or chemical) in the past from the operation of the PGDP and summarize the current site remediation strategy.