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Personnel Selection, Training, and Qualification Management Plan

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ACRONYMS

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOE O	DOE Order
DUF ₆	Depleted Uranium Hexafluoride
ES&H	Environment, Safety, and Health
ESH&QA	Environment, Safety, and Health & Quality Assurance
FLSA	Fair Labor Standards Act
GET	General Employee Training
JPM	Job Performance Measure
KSA	Knowledge, Skills, and Abilities
MCS	Mid-America Conversion Services, LLC
OJT	On-the-Job Training
SAT	Systematic Approach to Training
SME	Subject Matter Expert
STR	Subcontract Technical Representative
TAG	Training Advisory Group
TES	Training Evaluation Standard
TIM	Training Implementation Matrix
TPD	Training Program Description
UF ₆	Uranium Hexafluoride

EXECUTIVE SUMMARY

Mid-America Conversion Services, LLC (MCS) is contracted with the U.S. Department of Energy (DOE) to operate facilities in Portsmouth, Ohio, and Paducah, Kentucky. These facilities convert depleted uranium hexafluoride (DUF₆) to uranium oxide and hydrofluoric acid for further use or disposal. MCS is responsible for providing qualified staff to support this mission. This document, DUF6-PLN-027, *Personnel Selection, Training, and Qualification Management Plan*, states the training mission, goals, and objectives for the operational phase of the contract, including uranium hexafluoride (UF₆) cylinder surveillance and maintenance.

From this point forward, DUF6-PLN-027 will be referred to as the "Plan." The Plan will provide an outline for the DUF₆ procedure that will implement DOE Order (O) 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*. The Plan briefly describes a systematic approach to training (SAT) process that is incorporated into the business planning process. The Plan will also include brief descriptions or outlines of other DOE orders, standards, and handbooks; and industry consensus standards. These orders, rules, regulations, standards, and good practices produce an effective SAT process, which is based on job duties and related knowledge, skills, and abilities (KSA) required for competent job performance. Details of how these additional references will be implemented will be included in the DUF₆ training administrative procedure, DUF6-U-TRN-0001, *Training and Qualification*.

1 PURPOSE

MCS is required to provide a trained and qualified staff that has the requisite KSAs to properly perform work in accordance with the safety basis for the DUF₆ Project. "DUF₆ Project" is used in this document to include all of those elements that contribute to the fulfillment of DUF₆ conversion and cylinder storage yard operations and maintenance. The Plan describes a graded approach to analyze, design, develop, implement, evaluate, and maintain a comprehensive and cost-effective selection, training, and qualification program to meet this responsibility.

The training and qualification program described in DUF6-U-TRN-0001 is based on the SAT process described in DOE O 426.2. DUF6-U-TRN-0001 governs the training and qualification required for the safe operation of the DUF₆ Project. The SAT process is not affected by multiple sites or changes in organizations. The general titles used in the Plan reduce the need to change the Plan when the organizations change. Another powerful attribute of the SAT process is that the analysis phase inherently contains a graded approach to training development based on the significance and complexity of the work functions (i.e., rating the tasks based on difficulty, importance, and frequency) which renders a rated task list. Further grading of the training process is included in DUF6-U-TRN-0001.

Figure 1, *Personnel Selection, Training, and Qualification Management Plan Document Relationship*, shows the relationship of the Plan to procedures, training program descriptions (TPDs), and training materials, as well as DOE orders and federal, state, and local codes and regulations.

DUF6-U-TRN-0001 includes the training and qualifications required for DUF₆ Project personnel, contractors, and subcontractors. The Plan applies to all individuals or groups of individuals, either internal or external, who are directly or indirectly responsible for, or involved in, any of the following training activities: analysis, design, development, implementation, evaluation, records, or maintenance of training programs.

DUF₆ Project personnel assigned to perform or manage activities affecting quality shall receive indoctrination in their job responsibilities and authority that includes general criteria, technical objectives, requirements of applicable codes and standards, regulatory commitments, company procedures, and quality assurance program requirements.

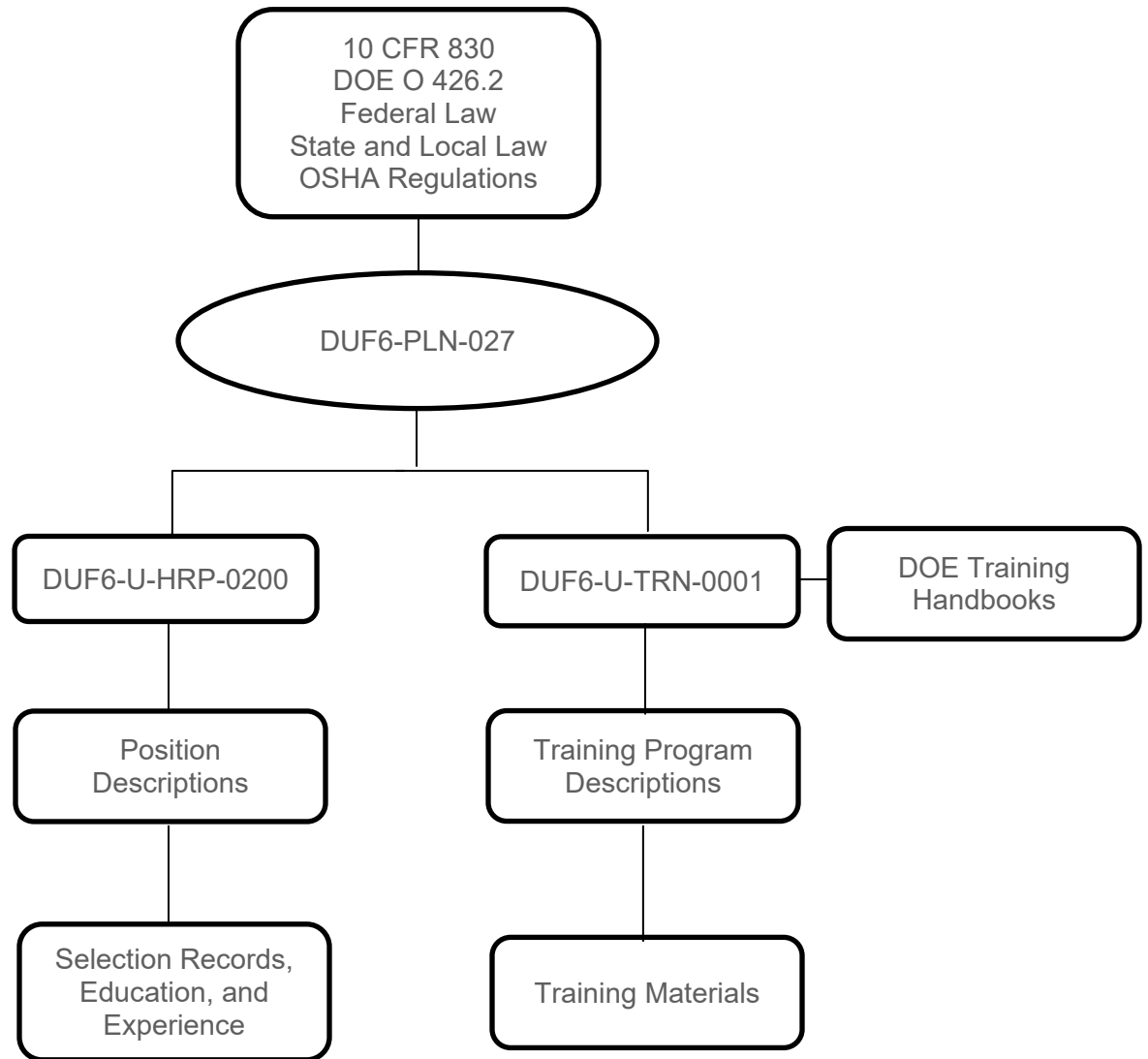


Figure 1. Personnel Selection, Training, and Qualification Management Plan Document Relationship

1.1 REQUIREMENT

The Plan describes a training system that satisfies the requirements of DOE O 426.2, for the DUF₆ Project.

1.2 COMMITMENT

DUF₆ Project management is responsible for the safe operation of the conversion facilities and cylinder storage yards. Fundamental to safe operation is training that is conducted effectively and is directly related to the performance needs and criteria of the job. Achieving performance-based training requires commitment and involvement from the functional manager and line manager/supervisors of the organization for which training is conducted.

This involvement and commitment includes the following:

- Identifying position entry-level education and experience
- Analyzing training needs
- Approving training design
- Approving learning objectives
- Setting learning performance standards
- Approving test items
- Implementing training, including the evaluation of participants
- Monitoring the implementation and effectiveness evaluations of training programs
- Selecting subject matter experts (SMEs) and instructors to participate in training development and implementation
- Budgeting and scheduling the time required for both initial and continuing training for managers and assigned workers

Management is involved at the start to ensure that they are not only cognizant of ongoing activities, but are also involved to the degree necessary to thoroughly understand the training process and support the objectives and desired outcomes. Policies implemented and supported by senior management provide the energy, focus, and sense of urgency that training programs need to ensure they get the attention needed to be successful.

An important element of this management commitment is the Training Advisory Group (TAG). The TAG is a senior leadership team that sets training policy, identifies training resources, and monitors training program effectiveness. The TAG does not relieve functional managers from responsibility for the training and qualification of their personnel.

1.3 TRAINING MISSION

The DUF₆ Project training mission is to implement training programs through which personnel can develop the necessary KSAs to continuously sustain, enhance, and improve job performance and individual development consistent with DUF₆ Project goals and objectives. Additionally, training records are maintained to document training activities. Accomplishing this mission enables the DUF₆ Project to operate in a safe and

environmentally sound manner while meeting or exceeding operational and management goals and objectives.

1.4 GOALS AND OBJECTIVES

Through the disciplined use of the Plan, the DUF₆ Project meets the training and development needs of its employees by providing a standardized, structured selection process needed to ensure safe, reliable, and effective operation of MCS-controlled facilities. By following the Plan and DUF6-U-TRN-0001, the DUF₆ Project will meet or exceed the following objectives:

- Develop and provide quality performance-based initial and continuing training to prepare personnel to perform duties in a safe and reliable manner.
- Ensure competency is maintained commensurate with the responsibilities of the assigned position.
- Ensure that subcontract personnel are qualified to perform contracted duties or services in a safe and reliable manner.
- Ensure training programs meet or exceed all applicable federal, state, and local laws, codes, regulations, and requirements.
- Ensure training programs provide a highly skilled workforce of employees and subcontractors who are trained and qualified.
- Ensure the availability of a pool of qualified candidates from within the organization to fill current and planned staffing needs.
- Maintain management awareness of progress toward training goals through continuous monitoring and reporting of training activities.
- Ensure continuous improvement in MCS products and services.
- Identify and analyze performance problems to determine the need for training program changes or improvements by reviewing facility and industry operating experience and training trends (e.g., continued team performance weaknesses identified during facility walkthroughs).
- Routinely evaluate training effectiveness and correct identified weaknesses.

2 PERSONNEL SELECTION AND ASSIGNMENT

Note: The information in this section pertains to Human Resources activities and is not covered in the Training flow down documents.

Managers select and assign employees to the organizations' positions with the assistance of the Human Resources organization. This section describes the process for defining position requirements, selecting candidates for defined positions, and granting exceptions to education, experience, and training requirements.

Selection criteria for assigning personnel to positions in the organization are determined through the analysis processes and are documented in position descriptions. The position descriptions, which are developed and maintained by the human resources organization, include the following information:

- Position title

- Job family
- Grade
- Fair Labor Standards Act (FLSA) status
- Position overview
- Functional (responsibilities)
- Competencies
- Minimum requirements (education and experience)
- Environment, safety, and health (ES&H) principles
- Working conditions (motor abilities, special senses, work conditions, environmental conditions, personal requirements, and equipment)

Exceptions to education, experience, and training requirements may be granted by line management based on an evaluation of the employee's or candidate's previous education, experience, and training against the criteria in DOE O 426.2 and the learning objectives in the applicable training programs. The processes for preparing position descriptions and granting exceptions to education, experience, and training requirements are defined in DUF6-U-HRP-0200, *Training, Education, and Experience Exceptions*, which is approved by DOE.

3 SYSTEMATIC APPROACH TO TRAINING PROCESS

This section defines the process for implementation of the SAT process. The performance-based training system selected for the DUF6 Project staff is based on the following:

- DOE O 426.2
- DOE-HDBK-1074-95, *Alternative Systematic Approaches to Training*
- DOE-HDBK-1078-94, *Training Program Handbook: A Systematic Approach to Training*
- DOE-STD-1070-94, *Criteria for Evaluation of Nuclear Facility Training Programs*
- DUF6-PLN-003, *Project Quality Assurance Plan*

The SAT process uses selected portions of these standards, guidelines, and DOE manuals to provide the depth and scope of training needed for the DUF6 Project. The guidance documents referenced do not impart requirements, but provide acceptable methods for meeting the requirements of DOE O 426.2.

The actions for implementing the SAT process are provided in DUF6-U-TRN-0001.

3.1 BACKGROUND

The SAT process has proven to be a highly effective means of ensuring that personnel are trained to conduct their assignments safely and efficiently (Refer to Figure 2, *SAT process model*). The SAT process uses five steps: analysis, design, development, implementation, and evaluation. Using this model ensures consistent and reliable performance of employees because their training programs reflect systematically-determined job requirements. Because the training is job-related, the performance-based training program more effectively meets the needs of the employee. With a well-trained workforce, a greater level of operational safety can be realized.

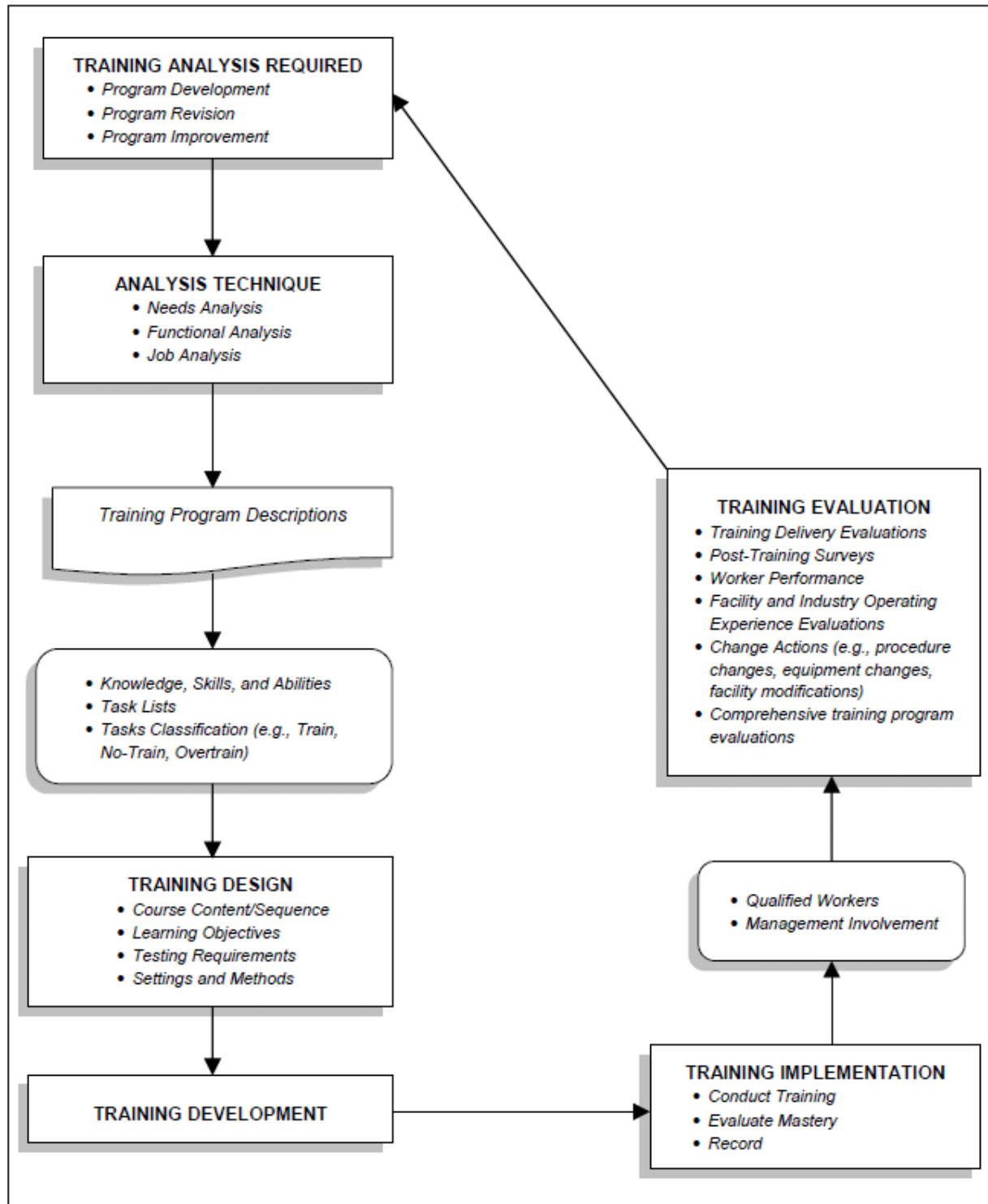


Figure 2. SAT Process Model

The SAT process provides training based on job tasks and the related KSAs required for competent job performance.

This training is further distinguished by four subject categories discussed later in this document:

- General Employee Training (GET), as described in DOE O 426.2
- Job specific training, where workers develop unique KSAs
- Special tasks training, which includes training on tasks not required of all workers in a particular function, including any certification requirements (this would include technical qualification programs)
- Continuing training and requalification requirements that maintain, reinforce, and upgrade worker KSAs to ensure continued competency, awareness of industry events, and capabilities enhancement

3.2 PROCESS DESCRIPTION

The SAT process is an approach for developing and implementing training programs for the DUF₆ Project personnel who can impact the safety basis through their involvement in the operation, maintenance, and technical support. The first four phases of the SAT process, as shown in Figure 2, are generally sequential, with the output of one phase providing the input to the next. The evaluation phase is interactive and occurs throughout the process. Considerable overlap of the phases exists when lessons are being developed. A brief description of each phase of the SAT process is as follows:

3.2.1 Training Analysis

Analysis ensures that training programs are oriented specifically to the work activities of the position. Training needs are determined by a needs analysis and a job analysis as defined below. Program goals are then established, and the scope of training content is defined.

3.2.1.1 Needs Analysis

Needs analysis is a systematic evaluation of events, plant or process changes, and performance problems that accurately identifies the solution to eliminating human performance discrepancies. If training is needed, the needs analysis provides information related to performance deficiencies, barriers to desired job performance, and recommended training solutions.

3.2.1.2 Job Analysis

Job analysis is a process which develops a list of tasks for a specific job or position. A job analysis provides reasonable assurance that tasks essential to safe operation are identified for training. Job analysis involves developing a task list, selecting task for training, rating the tasks for difficulty, importance, and frequency, and determining the appropriate level (no train, train, or overtrain), and validating the results.

3.2.1.3 Task Analysis

Task analysis breaks down individual tasks to determine elements (steps) and KSAs required to competently perform the task. Task analysis can be accomplished by performing procedure walk downs, by observing workers perform tasks, or during the development of procedural steps necessary to perform the task. Task analysis is optional and only used if resources are sufficient to support. Well-written learning objectives may substitute for the task analysis by incorporating the KSAs. Refer to DOE-HDBK-1074-95.

3.2.2 Training Design

During the training design phase, terminal objectives are developed from the knowledge, skill, or task statements that were created in the analysis phase. Necessary KSAs are translated into enabling objectives, which are organized into instructional units and sequenced to aid the learning process. The objectives establish the fundamental units of instruction and guide the development of training materials, tests, and strategies. Examinations are developed from the enabling objectives during this phase, or may be developed in the development phase, depending on the individual developer.

3.2.3 Training Development

During the training development phase, training materials (based on the results of the training design phase) are produced. Classroom lesson plans, on-the-job training (OJT) guides, training aids, and trainee materials are developed during this phase. Examinations are developed from the enabling objectives during this phase, or may be developed in the design phase, depending on the individual developer.

3.2.3.1 Classroom Lesson Plans/OJT Guides

Classroom lesson plans and OJT guides are instructional materials used by the instructor or trainer and establish the learning objectives and appropriate presentation methods to be used to achieve the objectives.

3.2.3.2 Training Aids

Training aids directly support the instructional objectives by enhancing the presentation. Training aids are used to clarify, illustrate, and emphasize points; reinforce concepts; maintain interest; add realism; and afford non-classroom experiences. Training aids include computers, videotapes, films, models, slides, flip charts, chalkboards, transparencies, and tape recordings.

3.2.3.3 Trainee Materials

Trainee materials include all resources identified by classroom lesson plans and used by the trainee during a training session (e.g., textbooks, technical publications, self-study guides, design documents, procedures, manuals, or instructor-prepared handouts).

3.2.4 Training Implementation

During implementation, training is delivered and trainee mastery of learning objectives is ensured via knowledge exams and/or performance demonstrations. Training is implemented using written guidance documents. Techniques that are used to implement training include:

- OJT
- Classroom training
- Laboratory training
- Individualized instruction (e.g., self-study, computer-based training, or interactive video)

Regardless of the method used, training is conducted by instructors who are trained and qualified for the setting in which they are performed.

3.2.4.1 *On-the-Job Training*

OJT requires instructors to be qualified to perform the task or assignment and to have completed OJT Instructor/Evaluator training. While it is permissible to train more than one person simultaneously, trainee evaluations must be conducted one-on-one.

3.2.4.2 *Classroom Training*

During implementation, qualified instructors (or SMEs under the oversight of qualified instructors) deliver classroom instruction using lesson plans. Lesson plan detail and format vary as a function of the complexity and hazard of the task. Direct trainee participation in the learning process is encouraged, and appropriate instructional techniques (e.g., briefings, lecture, discussion, case studies, and seminars) are used.

3.2.4.3 *Individualized Instruction*

Individualized instruction, self-study, and computer-based training are used to supplement or replace traditional lecture-based classroom training. These types of training are effective in improving knowledge of fundamentals, facility systems, components, and procedures.

3.2.4.4 *Laboratory Training*

Laboratory training is used to supplement portions of the OJT and classroom training. The laboratory allows one instructor to provide training to a greater number of trainees than is possible with OJT. Training materials for laboratory training include job aids (guides), Training Evaluation Standards (TESs), and Job Performance Measures (JPMs). Laboratory training provides practice with equipment that is similar or the same as in-plant equipment, but in a setting without hazards that exist at the job site (e.g., high noise levels, radiation areas, or toxic environmental conditions).

3.2.4.5 **Elements of Implementation**

Elements of training implementation include the following:

- Training is implemented in accordance with current, approved training materials and procedures.
- Training activities encourage direct trainee participation in the learning process.
- Instructors use instructional techniques that are appropriate to training content and objectives.
- Trainee mastery of learning objectives is evaluated using performance examinations (OJT, performance demonstrations, and operational evaluations); written or oral examinations; quizzes; role-play; case studies; and/or group exercises.

3.2.5 **Training Evaluation**

The final phase is the training evaluation phase. Evaluation provides the critical feedback loop to ensure that training is meeting its intended purpose (i.e., to improve employee performance) and ensures that the training program is based on up-to-date information that reflects current operations. Feedback from instructors, trainees, and supervisors is provided to management and is reviewed, along with management and independent assessment data, for its impact on changes to elements of the training program.

Although presented as a separate phase, program evaluation is a continuing process that occurs during all phases of the SAT process. The results are translated into action items or recommendations that are factored into training program content or training methods.

Specifically, training programs are evaluated using the following criteria:

- Content adequacy
- Test adequacy
- Presentation adequacy
- Documentation adequacy
- Post-training job performance
- Instructor performance

Evaluation and feedback data generated at the conclusion of a course or training program focuses on the consistency and relevance of the completed course or training program. Instructors use suggestions received from the evaluation process to modify and improve training program content and delivery. Training program content is continuously monitored and revised as a result of changes in areas such as policies, procedures, system or component design; job requirements; regulatory requirements; and industry guidelines or commitments. Adjustments are also made based on analysis of operating experience information, such as occurrence reports, inspection reports, information notices, circulars, and bulletins.

The training and qualifications will be evaluated on a periodic basis—not to exceed three years—in accordance with DOE-STD-1070-94. Feedback on training course material and instruction is part of this expanded evaluation of the training program.

3.2.6 Program Documentation

Documenting completed training activities provides a continuous record of the five phases of the SAT process and substantiates the validity of the training program. To facilitate training program development or modification, it is essential to document the actions and decisions made during the entire process. These records are maintained on an ongoing basis. The critical portion of the decision trail includes, not only the decisions themselves, but also the rationale that led to making them. This information is maintained throughout the lifetime of the training program to document its development and subsequent modifications.

Training and qualification completion data is provided to line management to enable them to assign qualified workers to perform work independently. Documentation products include the following:

- A rated, validated, and approved Job Analysis
- A description of techniques and participants involved
- Approved TPDs
- Evidence of SME and line management involvement
- Attendance records
- Student evaluation results
- Evidence of instructor qualification
- Program evaluations
- Individual training records
- Records of approved changes made to training and a description of the considerations or drivers for the changes

4 GENERAL TRAINING

All persons employed either full-time or part-time in DOE hazard category 2 and 3 nuclear facilities are trained commensurate with their job duties. An important element is general training for employees.

4.1 GENERAL EMPLOYEE TRAINING

The GET program includes training in the following areas as they relate to the individual jobs:

- General description of facilities
- Job-related policies, procedures, and instructions
- Radiological health and safety program in accordance with 10 CFR 835, *Occupational Radiation Protection*
- Facility emergency plans
- Industrial safety/hygiene program

- Fire protection program
- Security program
- Quality assurance program
- Criticality safety in accordance with ANSI/ANS-8.20 – 1991, *Criticality Safety Training*

Visitors, sub-contracted personnel, and temporary personnel are under continuous escort while at the facility unless they have been trained in appropriate areas from the above list to the extent necessary to ensure safe execution of their duties.

For persons requiring long-term access (more than ten working days), understanding of the information provided by the GET program is evaluated by administering a written examination for both the classroom or web-based training. All hazard identification and safety signage on the exam is identical in appearance and language as it exists at the facility. The exam covers areas selected for training and is of sufficient difficulty to ensure the person has adequate knowledge to work independently. Persons who do not pass the exam are not permitted access without a continuous escort.

Changes to GET are included in continuing training programs for all facility personnel. Exams are administered every two years on areas of the GET program that are included in the continuing training program.

5 JOB SPECIFIC TRAINING

All persons employed either full-time or part-time in DOE hazard category 2 and 3 nuclear facilities are trained commensurate with their job duties. As described in DOE O 426.2, most positions require initial training beyond GET. Other positions (i.e., operators, maintenance technicians, and technical support personnel) require initial training and qualification as well as formal continuing training and requalification.

5.1 INITIAL TRAINING DESCRIPTION

The training program is established for facility personnel (operations, maintenance, and technical staff) using the SAT process. The following are required attributes of the training and qualification program:

- The training and qualification program is developed using a graded approach based on the hazards involved and risks associated with the operation of the DUF₆ facilities.
- Periodic, systematic evaluations of training and qualification programs, not to exceed three years, are performed in accordance with DOE-STD-1070-94. Included in this evaluation is the DUF₆-U-TIM-0001, *Training Implementation Matrix for the DUF₆ Project*, to ensure that the document reflects current facility requirements and meets DOE O 426.2.
- Changes to facilities, processes, procedures, and regulations are reviewed to determine if the existing training and qualifications programs are consistent with, and reflect, those changes.

- The concept of training personnel as a team (stressing communications and interaction) is used where job functions require team solutions and activities.
- Training programs consist of a combination of classroom-type and OJT. Classroom training includes lectures, seminars, computer-based training, and structured self-study activities.

Management ensures that personnel, who are in the process of completing training on tasks and activities for which they are not fully qualified, work under direct supervision of a qualified individual. Personnel, who are not qualified, do not independently make decisions or take action when the work could affect facility safety; and management does not place personnel who are in training in such positions. However, personnel may independently perform specific tasks or job assignments for which they are qualified.

5.2 EXCEPTIONS TO INITIAL TRAINING

Initial training programs are developed for persons with entry-level knowledge and skills. Some candidates may already possess the knowledge and skills necessary for certain aspects of their job requirements. Any exceptions to training are granted in accordance with DUF6-U-HRP-0200.

5.3 CONTINUING TRAINING

Continuing training programs are established for facility personnel as required in DOE O 426.2. Continuing Training can be defined in two forms. One is less formal and applies to all site personnel. This continuing training takes the form of such things as GET, management briefings, required reading, and safety meetings. The content of the management briefings and required readings can contain anything from procedure and policy changes to lessons learned. The second form of continuing training is more formal and generally applies to facility positions that require an initial qualification and a periodic requalification to perform the position duties and responsibilities.

- The continuing training and requalification program is developed using a graded approach based on the hazards involved and risks associated with the operation of the DUF₆ facilities.
- Periodic, systematic evaluations of training and qualification programs, not to exceed three years, are performed in accordance with DOE-STD-1070-94. Included in this evaluation is DUF6-U-TIM-0001 to ensure that the document reflects current facility requirements and meets DOE O 426.2.
- Changes to facilities, processes, procedures, and regulations are reviewed to determine if the existing continuing training and requalification programs are consistent with, and reflect, those changes.
- The concept of training personnel as a team (stressing communications and interaction) is used where job functions require team solutions and activities. Typically implemented via the drill program.
- Continuing training programs consist of a combination of classroom-type and OJT. Classroom training includes lectures, seminars, computer-based training, and structured self-study activities.

Per DOE O 426.2, continuing training programs for qualified positions are 2 years in length and should contain the subject areas that were required for the positions initial training. Continuing training should also include modifications to the facility that required changes to be made to operations, changes to procedures, lessons learned, and industry events that have some correlation to the operation of the facility.

6 QUALIFICATION

Qualification is defined in terms of education, experience, examinations, and any special requirements necessary for performance of assigned responsibilities. The training program is based on the requirements in DOE O 426.2 and is intended to provide reasonable assurance that personnel at the DUF₆ facilities possess qualifications to operate and maintain the facility safely and reliably under all conditions.

For the employee, qualification is the completion of all required training (including JPMs and demonstration of sufficient knowledge and skills) to safely and independently operate or maintain systems in compliance with established procedures, documented safety analyses, and technical safety requirements.

6.1 GENERAL REQUIREMENTS

The training requirements leading to qualification for personnel who can impact the safety basis are documented in each training program's TPD and the associated qualification cards/profiles. Included are requirements for documented assessment of a person's qualification through examinations and performance demonstrations. TPDs and the associated qualification cards/profiles detail the processes for indicating that a person is qualified and when the qualification expires.

- Qualification may be granted only after all requirements listed in the associated qualification card/profile have been satisfactorily completed.
- Qualification of operators and their immediate supervisors is valid for a period not to exceed two years unless revoked for cause (e.g., medical disqualification or performance deficiencies).

6.2 SUBCONTRACT PERSONNEL

Subcontract personnel are required to meet the qualification requirements for the job function to be performed. Subcontract technical representatives (STRs) ensure that subcontract and temporary personnel who perform specialized activities are qualified to perform their assigned tasks. Subcontract personnel are considered adequately qualified with proper documentation based on at least one of the following:

- The satisfactory result of an assessment of subcontractor records which relate to qualification of the subcontract personnel being considered for assignment by the operating organization
- The operating contractor's previous verification (within two years) of the ability of the subcontract employee to perform assigned tasks safely and efficiently

- Successful completion by the subcontract employee of those segments of the operating contractor's qualification program which are considered pertinent to accomplishment of the task to be performed

6.3 MANAGERS AND TECHNICAL STAFF

Even though applied broadly to personnel in the operating organization, the term qualification has a different application for managers and technical staff personnel. These personnel may be considered qualified by virtue of meeting the education and experience requirements associated with the position and by completing applicable position-specific training. Additionally, a comprehensive examination need not be administered to determine their qualification.

Continuing training and professional development programs are established to meet the needs of the individual and the position. Satisfactory performance of managers and technical staff may be documented in personal performance appraisals which assess performance of assigned duties and individual performance.

6.4 TECHNICIANS AND MAINTENANCE PERSONNEL

Qualification of technicians and maintenance personnel includes performance demonstrations to determine their ability to adequately perform assigned tasks. Written exams are administered to technicians and maintenance personnel where applicable. Radiological control technicians are trained in accordance with the requirements of 10 CFR 835. Satisfactory completion of the continuing training program, performance of their assigned duties, and an assessment of individual performance are used to document continued satisfactory performance of technicians and maintenance personnel.

6.5 OPERATIONS AND SUPERVISORS

Operator training is sufficiently comprehensive to cover areas which are fundamental to the candidate's assigned tasks to ensure that personnel are capable of safely performing their duties. The training program includes the following:

- A core of subjects, such as industrial safety, instrumentation and control, basic physics, chemistry, industry operating experience, and major facility systems (as applicable to the position and the facilities).
- On-the-job and classroom-type training to ensure that personnel are familiar with all aspects of their positions (Among these training elements are normal and emergency procedures, administrative procedures, radiation control practices, location and functions of pertinent safety systems and equipment, procedures for making changes or alterations in operations and operating procedures, and technical safety requirements).
- Qualification of operators and their immediate supervisor includes examinations as applicable to the position. The examinations include written exams, oral exams, operational evaluations, and performance demonstrations.

- Written exams and performance demonstrations are administered to qualified operators and supervisors.
- Initial qualification for a position includes a comprehensive written examination to confirm the individual's suitability to perform assigned duties.

6.6 EXAMINATIONS

Examinations are addressed in detail in DUF6-U-TRN-0001, which describes the process for examination/evaluation development, approval, security, administration, remediation, and maintenance of examination question banks. The training program ensures that examinations contain a representative sampling of the knowledge and skills identified in, and derived from, the learning objectives resulting from the systematic analysis of the position.

Examinations include questions from sources, such as documented safety analyses, technical safety requirements, system description manuals, operating procedures, occurrence reports, and other sources as applicable. Oral examinations are conducted as one-on-one walkthroughs or by an oral board or committee consisting of personnel identified by line management and the training organization. The oral examination content is tailored to evaluate the candidate's operational knowledge (e.g., initial/continuing training program subjects) and organizational awareness to determine how the individual will function in an operating environment.

7 CERTIFICATION

Certification is the process by which management endorses and documents in writing the satisfactory achievement of qualification of a person for a position. Certification follows the completion of the qualification program for those positions identified as requiring certification. The notable difference between certification and qualification is that certification requires management endorsement of an individual's qualification to ensure senior management involvement in the qualification of key positions (i.e., fissionable material handlers and their supervisors).

Certification must not be granted until all qualification requirements (including written and oral examinations and operational evaluations) and other specified requirements (e.g., medical examination) have been satisfactorily completed and management has assured that the person is capable of safely performing all functions of the position. Satisfactory completion of qualifications which result in certification must be verified by a person or group other than the candidate's immediate supervisor or the person/group that provided the training. Certification must be valid for a period not to exceed two years unless revoked for cause (e.g., medical disqualification, performance deficiencies, or failure to maintain proficiency).

8 REQUALIFICATION

After initial training has been completed and the individual is considered “fully qualified,” a two-year cycle of continuing training required for requalification begins for personnel in certain positions (i.e., operators and their immediate supervisors). Requalification cards/profiles are assigned to personnel in these positions, and they are requalified upon completion of the continuing training program, including requisite examinations (written, oral, and operational/performance). Personnel are not allowed to continue to function in a qualified position if they have not completed all of the requalification program elements within the two-year requalification cycle.

8.1 REQUALIFICATION EXAMINATIONS

Requalification includes requisite examinations, including specified operational evaluations or performance demonstrations. Requalification examinations include subjects in which the person is expected to be knowledgeable and emphasize those subjects covered by the continuing training program.

A person is suspended from performing specific working activities if the person fails a requalification exam, shows serious job performance deficiencies which indicate that he or she may perform in an unsafe manner, or if any required training element lapses. Qualification may be regained after completing remedial training designed to correct the deficiency(s) and satisfactorily completing a reexamination or completion of the lapsed training requirement.

8.2 ABSENCES

When a qualified individual has been absent from duties for greater than 3 months, but less than 12 months, selected retraining (including written examinations, oral examinations, and operational/performance evaluations, as deemed necessary) is required prior to reassignment to duties. The qualification or certification base date for the individual remains the same as it was before the absence.

When a qualified individual has been absent from duties for greater than 12 months, comprehensive written and oral examinations and operational/performance evaluations (as required of initial candidates) are required to determine weak areas. Retraining and reexamination are required in areas of weakness, and upon successful completion, a new qualification or certification date may be established.

Qualification status may be reinstated when the employee has successfully completed the actions outlined in a requalification plan developed in accordance with DUF6-U-TRN-0001. The requalification plan is developed by the employee's responsible functional manager, in conjunction with the training manager. The plan may include training courses, OJT, job/task shadowing with a qualified employee(s), written and oral examinations, operational/performance evaluations, and other actions as specified.

8.3 EXTENSIONS

DOE approval for an extension is not required for qualified positions. Extensions for certified positions must be approved by DOE. In accordance with DUF6-U-TRN-0001, a 30-day extension is allowed for training requirements on a case-by-case basis in order to support operational and mission commitments. However, an extension is not granted out of convenience and must be documented prior to the expiration date. Requests for extension must be submitted and approved before the expiration date, or the qualification will lapse. Further, if the employee does not complete the qualification requirements within the approved extension period, the qualification will lapse.

The extension process is initiated by the responsible functional manager who sends an email or letter for qualification or requalification extension to the Training Manager. The request, which explains the circumstances that prevented the person from completing the requirements is either approved or disapproved by the Training Manager.

9 TRAINING PROGRAM SUMMARIES

The following subsections provide brief descriptions of the training programs for each of the facility training programs. Details of the DUF6 Project training programs can be found in DUF6-U-TRN-0001 and the associated TPDs.

9.1 OPERATIONS PERSONNEL

All operations personnel are either qualified to perform the tasks associated with their specialties or they work under the direct supervision of personnel who are qualified to perform the activities or tasks.

Personnel, who perform work on engineered safety features, as identified in the facility documented safety analysis, are trained on those systems and components, including systems having a direct impact on the safe operation of the facility.

9.2 TECHNICIAN AND MAINTENANCE PERSONNEL TRAINING

All technicians and maintenance personnel are either qualified to perform the tasks associated with their specialties or they work under the direct supervision of personnel who are qualified to perform the activities or tasks.

Personnel, who perform work on safety significant engineered features, as identified in the facility documented safety analysis, are trained on those systems and components, including systems having a direct impact on the safe operation of the facility.

Training program content for radiological control technicians is developed and conducted in accordance with the requirements in 10 CFR 835; DOE-STD-1098-2008, *Radiological Control*; and DOE O 426.2 discipline.

9.3 TECHNICAL STAFF TRAINING

Technical staff is defined as personnel involved in surveillance, testing, analysis of facility data, planning modifications, program review, and technical problem resolution in their areas of expertise. A list of technical staff positions that have a direct impact on employee, facility, environment, or public safety can be found in DUF6-U-HRP-0200.

Entry-level technical staff personnel, who provide technical support to the operating organization, are trained in facility-specific subject areas as applicable to the position and at a minimum will meet the requirements as specified in DOE O 426.2. Training exceptions may be granted following evaluation and approval of prior education and or completed courses. The training exception process is defined in DUF6-U-HRP-0200.

9.4 MANAGEMENT AND SUPERVISORY TRAINING

DUF6-U-TRN-0001 lists the specific subjects as outlined in DOE O 426.2 that makeup the training programs for managers and supervisors. Other aspects of management and supervisory training are the following:

- Supervisory skills and management training need not be subject to examination as part of initial training.
- Supervisory skills and management training need not be included in the continuing training program.

10 TRAINING PROGRAM ASSESSMENTS

To ensure the DUF₆ Project training program is in compliance with the DOE O 426.2, regular assessments as well as a periodic comprehensive assessment will be conducted. The following subsections provide brief descriptions of the required assessments.

10.1 INTEGRATED MANAGEMENT ASSESSMENT

The Training Manager and training program owners shall conduct quarterly assessment of training consisting of subsections of the requirements of DOE O 426.2 and DOE STD 1070-94.

10.2 THREE YEAR SYSTEMATIC TRAINING PROGRAM EVALUATION

A systematic evaluation of the Training Program will be conducted that includes lines of inquiry (LOI)/checklist mimicking the requirements of DOE O 426.2 and DOE STD 1070-94. This evaluation is performed by the Contractor Assurance System or Quality Assurance organizations.

11 TRAINING FORECASTS AND BUDGETING PROCESS

An annual training forecast is prepared by organization managers and incorporated into the DUF₆ Project budget.

11.1 ACQUISITIONS REQUIRED TRAINING

For purchase requests or contracts that replace, add, or modify equipment, systems, or programs, the scope of work may include any training that will be required to support use of the items or services procured. Training is purchased as part of any hardware/equipment buy. The technical/cost evaluation process includes evaluating and selecting the most cost effective method for providing the training associated with the acquisition.

12 RESPONSIBILITY AND AUTHORITY

This section describes the responsibilities and authority of managers, supervisors, and other personnel for the conduct of training for the DUF6 Project. Figure 3, *Training Functional Organization*, shows the functional relationship between major elements of the DUF6 Project organization for managing the selection of training and qualification activities. Provisions for the formation of the TAG, under the direction of the DUF6 President and Project Manager, have been included to ensure an appropriate level of management oversight and review. The TAG monitors programs to ensure that selected training is effective and is based on a systematic approach to training.

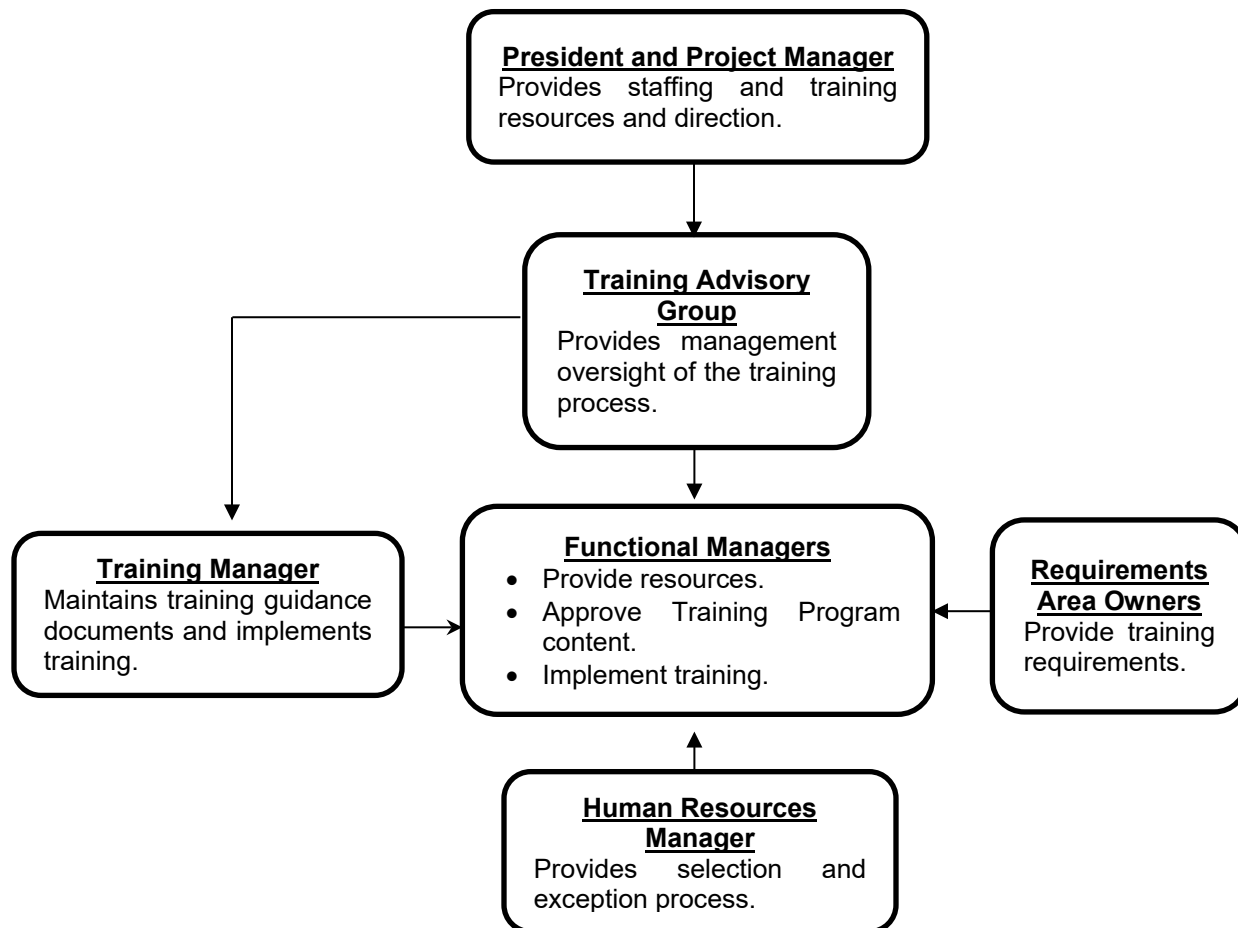


Figure 3. Training Functional Organization

12.1 PRESIDENT AND PROJECT MANAGER

The President and Project Manager provides staffing, training resources, and direction for personnel selection, training, and qualification.

12.2 TRAINING ADVISORY GROUP

The TAG maintains senior management level oversight of the MCS training and qualification programs. The TAG is a senior leadership team that sets training policy, approves training resources, and monitors training program effectiveness. The TAG does not relieve line management from the responsibility for developing and maintaining effective training and qualification programs that will produce competent workers and supervisors. DUF6-U-TAG-0001, *Training Advisory Group Charter*, provides a complete description of the activities, actions, role responsibilities, and meeting requirements for the TAG. The following is a general description of the TAG.

The TAG is primarily concerned with successful accomplishment of the MCS training mission, which enables the DUF6 Project to operate in a safe and environmentally sound manner while meeting or exceeding operational and management goals and objectives.

The MCS training mission is to implement training programs through which employees, supervisors, and managers can develop the necessary knowledge, skills, and abilities to sustain, enhance, and improve job performance and individual development consistent with DUF6 Project goals and objectives.

The TAG reviews the summary results of the SAT phases:

- Making recommendations or suggestions as to the adequacy of the resources planned for implementing the training programs described by these processes.
- Reviewing overall training program effectiveness metrics, reviews, assessments, or training-related conditions adverse to quality.

The TAG cross-functional membership and voting quorum is described in the TAG Charter. At a minimum, its membership includes the following:

- Chairperson – Human Performance Manager or Training Manager
- Project Manager or designee
- Portsmouth Plant Manager or designee
- Paducah Plant Manager or designee
- Environment, Safety, and Health & Quality Assurance (ESH&QA) Manager or designee
- Operations Support Manager or designee
- Human Resources Manager or designee (as needed)
- TAG Secretary

12.3 REQUIREMENTS AREA OWNERS

Requirements area owners provide information to the functional and training organizations on training requirements that flow from federal and state laws, regulations, and DOE directives in their respective areas.

12.4 HUMAN RESOURCES MANAGER

The Human Resources Manager is responsible for maintaining the guidance documents for the selection and assignment of DUF6 personnel. This includes DUF6-U-HRP-0001, *Human Resources Policy Manual*, and DUF6-U-HRP-0200, *Training, Education, and Experience Exceptions*.

12.5 TRAINING ORGANIZATION

The training organization consists of training professionals reporting to the Training Manager. Line personnel or SMEs who perform instruction or training activities as part of their responsibilities are matrixed to the training organization when performing those activities.

Note:	The following job summaries are typical for the positions listed. Current position descriptions are maintained by Human Resources. See the current project's organization chart to see the composition of the training organization.
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12.5.1 Training Manager/Training Program Manager

The Training Manager/Training Program Manager is responsible for the coordination of the DUF6 Project training programs at all three sites (Lexington, Paducah, and Portsmouth) to ensure all DUF6 Project staff, DOE representatives, and subcontractors obtain the required KSAs needed to accomplish the DUF6 Project mission safely and effectively in accordance with all applicable policies, procedures, specifications, laws and/or regulations. The Training Manager/Training Program Manager provides leadership and supervision of professionals responsible for the analysis, design, development, implementation, evaluation, and maintenance of the DUF6 Project training programs and for providing a wide array of information resource management services to a diverse customer base.

12.5.2 Training and Procedures Supervisor

The Training and Procedures Supervisor is responsible for providing day-to-day supervision of training and procedures personnel.

12.5.3 Training Specialist/Instructor

The Training Specialist/Instructor is responsible for providing technical expertise in the instructional analysis, design development, implementation, and evaluation of training programs using sound principles, communication, and SAT-based instructional

technology for a variety of needs in support of the DUF₆ project at their assigned facility (Portsmouth or Paducah).

12.5.4 Training Coordinator

The Training Coordinator is responsible for the management of the training database, maintaining site training records, and input into Document Control and Records Management. He or she is responsible for coordinating with line manager/ organizational training coordinator(s) to schedule training for DUF₆ Project personnel, and assisting the Training Manager, Training Specialist/Instructors, and/or SME instructors with program records maintenance. If the specific DOE O 426.2 requirements are satisfied, this position may also serve as an Organizational Training Coordinator.

12.5.5 Training Analyst

The Training Analyst is responsible for developing and providing technical expertise in the instructional design and development of training programs using the SAT-based elements, (analysis, design, development, implementation, and evaluation) sound principles, communication, and instructional technology for a variety of needs in support of the DUF₆ project at their assigned facility (Portsmouth or Paducah)

12.5.6 Training Developer

The Training Developer is responsible for developing and revising training materials.

12.6 FUNCTIONAL MANAGER

Each functional manager is responsible for ensuring personnel are trained and qualified commensurate with their responsibilities. This is accomplished by working with the Training organization to implement the training program requirements.

12.7 LINE MANAGER/SUPERVISOR

A line manager/supervisor assists in identifying, developing, and conducting training and maintaining the qualification status for their organizational units.

12.8 EMPLOYEE

Each employee is responsible for ensuring that he or she is trained and qualified to accomplish work assignments in a safe and effective manner.

13 REFERENCES

- 10 CFR 830, Subpart A, *Quality Assurance Requirements*
- 10 CFR 835, *Occupational Radiation Protection*
- ANSI/ANS-8.20-1991, *Criticality Safety Training*
- DOE-HDBK-1074-95, *Alternative Systematic Approaches to Training*
- DOE-HDBK-1076-94, *Table Top Job Analysis*

- DOE-HDBK-1078-94, *Training Program Handbook: A Systematic Approach to Training*
- DOE-HDBK-1103-96, *Table Top Needs Analysis*
- DOE-HDBK-1118-99, *Guide to Good Practices for Continuing Training*
- DOE O 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*
- DOE-STD-1070-94, *Criteria for Evaluation of Nuclear Facility Training Programs*
- DOE-STD-1098-2008, *Radiological Control*
- DUF6-PLN-003, *Project Quality Assurance Plan*
- DUF6-U-CPL-0017, *Operating Experience Program*
- DUF6-U-HRP-0001, *Human Resources Policy Manual*
- DUF6-U-HRP-0200, *Training, Education, and Experience Exceptions*
- DUF6-U-PEP-1110, *Operations Design Change Control*
- DUF6-U-TAG-0001, *Training Advisory Group Charter*
- DUF6-U-TIM-0001, *Training Implementation Matrix for the DUF₆ Project*
- DUF6-U-TRN-0001, *Training and Qualification*

14 ATTACHMENTS

None

END OF DOCUMENT