

U.S. Department of Energy Orders Self-Study Program

DOE O 5480.20A

**PERSONNEL SELECTION, QUALIFICATION, AND
TRAINING REQUIREMENTS FOR DOE NUCLEAR FACILITIES**



ALBUQUERQUE OPERATIONS OFFICE

Change No: 0
DOE: 5480.20A
Level: Familiar
Date: 7/24/98

**DOE ORDER 5480.20A
PERSONNEL SELECTION, QUALIFICATION, AND TRAINING REQUIREMENTS
FOR DOE NUCLEAR FACILITIES
FAMILIAR LEVEL**

OBJECTIVES

Given the Familiar Level of this module and the resources, you will be able to perform the following:

1. State in your words what the U. S. Department of Energy (DOE) hopes to achieve by implementing DOE Order 5480.20A.
2. Define terms contained in this Order and/or match terms with the correct definition.
3. Complete a set of fill-in-the-blank questions related to personnel selection, qualification, training at nuclear facilities; and
4. Identify contractor requirements associated with this Order.

Note: If you think that you can complete the practice at the end of this level without working through the instructional material and/or examples, complete the practice now. The course manager will check your work. You will need to complete the practice at this level successfully before taking the criterion test.

RESOURCES

DOE Order 5480.20A, Personnel Selection, Qualification, and Training Requirements at DOE Nuclear Facilities, 11/15/94.

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INTRODUCTION

The Familiar Level of this module is divided into three sections. In the first section, we will discuss the purpose and scope of DOE Order 5480.20A. In the second section, we will define the terms associated with the Order. We will discuss DOE policy and some DOE and contractor requirements for personnel selection, qualification, training, and staffing at DOE reactor and non-reactor nuclear facilities in the third section. We have provided examples throughout the module to help familiarize you with the material. The examples will also help prepare you for the practice at the end of this module and the criterion test.

Before continuing, you should obtain a copy of the resources. Copies of the Orders are available on the Los Alamos National Laboratory Website at <http://iosun.lanl.gov:1776/htmls/directives.html> or through the course manager. Several additional resources are cited in the Attachment 2 of the Order. You may need to refer to these documents to complete the examples, practice, and criterion test.

The Order in this module describes the methods and requirements that DOE and contractors use for personnel selection, qualification, training, and staffing at DOE reactor and non-reactor nuclear facilities.

SECTION 1 (PURPOSE AND SCOPE)

SCOPE

The provisions of this Order apply to all departmental elements that are responsible for operable DOE-owned Category A and B reactors and nonreactor nuclear facilities. The Director, Naval Nuclear Propulsion Program, is exempt from this Order.

PURPOSE

To establish selection, qualification, and training requirements for management and operating contractor personnel involved in the operation, maintenance, and technical support of DOE-owned Category A and B reactors and non-reactor nuclear facilities.

SECTION 2 (DEFINITIONS)

U.S. Department of Energy Order 5480.20A contains several definitions. Some of those definitions are repeated here for your convenience. These definitions may differ from those contained in the

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Order. Additionally, terms that are in the DOE Order but not in this section may appear in the examples, practice, and/or the criterion test. Therefore, it is important that you are familiar with the Order and this instructional material.

Certification

The process that contractor facility management uses to provide written endorsement of the satisfactory achievement of qualification of a person for a position.

Education

The successful completion of the requirements established by an accredited educational institution.

Exception

The release from the requirements of this Order. Exception also refers to the release of an individual from portions of a training program through prior education, experience, and/or testing.

Job Analysis

A systematic method used in obtaining a detailed listing of the tasks of a specific job.

Nuclear Experience—Category “A” and “B” Reactors

Experience acquired at commercial, production, training, test, military, or research reactors and includes experience acquired in reactor facility start-up activities or operation. Experience in design, construction, maintenance, or related technical services that is job-related may also be considered. Appropriate research or teaching, or both, may be included as nuclear experience.

Nuclear Experience—Non-Reactor Nuclear Facilities

Experience acquired at any facility where radioactive materials are routinely handled, stored, processed, or used.

Operating Organization

The on-site organization responsible for operation, maintenance, and technical support services related to operations. This organization may include off-site personnel who provide operational support.

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Operational Evaluation

A facility walkthrough that may include system and/or component operation, or simulation of operations, during which the candidate is observed and questioned regarding procedures, safety implications, and technical specifications or operational safety requirements, as applicable.

Power Plant Experience

Experience acquired in the testing, operation, or maintenance of power-generating facilities. Experience in design and construction may be considered applicable power plant experience and should be evaluated on a case-by-case basis.

Shift Supervisor

A certified person in the operating organization designated by contractor facility management to direct operations-related activities of personnel at a DOE-owned reactor or non-reactor nuclear facility.

Shift Technical Advisor

A person who has been assigned to provide on-shift advice and counsel to shift personnel to help determine causes and mitigation of facility accidents.

Training Implementation Matrix

A matrix prepared by the operating organization that defines and describes the application of the selection, qualification, and training requirements of this Order.

Training Program

A planned, organized sequence of activities designed to prepare persons to perform their jobs, meet a specific position or classification need, and maintain or improve their job performance.

Note: You do not have to do example 1 on the following page, but it is a good time to check your skill or knowledge of the information covered. You may do example 1 or go to Section 3.

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EXAMPLE 1

Using the Familiar Level of this module and the resources, complete the following exercises.

1. State in your words what the DOE hopes to achieve by implementing DOE Order 5480.20A.

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2. Match the following terms with their definitions by writing the letter representing the definition next to its term. Not all of the definitions are used.

Terms:

- | | |
|----------------------|-----------------------------|
| ___ Certification | ___ Task Analysis |
| ___ Job Analysis | ___ Senior Reactor Operator |
| ___ Reactor Operator | ___ Shift Supervisor |

Definitions:

- A systematic method used in obtaining a detailed listing of the tasks of a specific job.
- A facility walkthrough that may include system and/or component operation, or simulation of operations, during which the candidate is observed and questioned regarding procedures, safety implications, and technical specifications or operational safety requirements, as applicable.
- The process that contractor facility management uses to provide written endorsement of the satisfactory achievement of qualification of a person for a position.
- A person certified by contractor facility management to operate (i.e., manipulate the controls of) a DOE-owned reactor.
- A person certified by contractor facility management to operate and to direct the operation of a DOE-owned reactor.
- A certified person in the operating organization designated by contractor facility management to direct operations-related activities of personnel at a DOE-owned reactor or non-reactor nuclear facility
- A person who has been assigned to provide on-shift advice and counsel to shift personnel to help determine causes and mitigation of facility accidents.
- The systematic process of examining a task to identify skills, knowledge, and/or abilities required for successful task performance.

Note: When you have finished, compare your answers to those contained in the example 1 self-check. When you are satisfied with your answers, go to Section 3

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EXAMPLE 1 SELF-CHECK

- 1. State in your words what the DOE hopes to achieve by implementing DOE Order 5480.20A.

The purpose of DOE Order 5480.20A is to establish selection, qualification, and training requirements for management and operating contractor personnel involved in the operation, maintenance, and technical support of DOE-owned Category A and B reactors and non-reactor nuclear facilities.

- 2. Terms:

<u> c </u> Certification	<u> h </u> Task Analysis
<u> a </u> Job Analysis	<u> e </u> Senior Reactor Operator
<u> d </u> Reactor Operator	<u> f </u> Shift Supervisor

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SECTION 3, POLICY AND REQUIREMENTS

In this section, we will describe some requirements for DOE and contractor personnel selection, qualification, training, and staffing at DOE reactor and non-reactor nuclear facilities. The material is paraphrased from the Order contained in this module. Additionally, requirements that are in the Order but are not in this section may appear in the example, practice, or criterion test. Therefore, it is important that you are familiar with the Order and this instructional material.

GENERAL

This Order contains chapters that delineate general and specific requirements that apply to M&O contractor operating organization personnel. Chapter I contains requirements that have broad applicability for training and qualification of personnel at all operable nuclear facilities. Chapters II, III, and IV contain requirements for personnel at DOE category A production, test, and research reactors, category B reactors, and non-reactor nuclear facilities, respectively.

CHAPTER I –REQUIREMENTS APPLICABLE TO ALL NUCLEAR FACILITIES

The purpose of Chapter I is to establish general training program requirements for personnel involved in operating, maintaining, and supporting all DOE nuclear facilities.

The operating contractor shall establish an organization within the line management organization that is responsible for training operating organization personnel. In some cases this may be integrated into the operating organization and may not necessarily be officially designated as a training organization. The duties, responsibilities, qualifications, and authority of training organization personnel shall be documented, and managerial responsibilities and authority clearly defined. This organization may include subcontracted personnel who conduct training activities.

Subcontractor personnel shall meet the qualification requirements for the job function to be performed. Additionally, the operating organization shall ensure that subcontractor and temporary personnel who perform specialized activities are qualified to perform their assigned tasks. The Order details specific methods that may be used to ensure that these personnel are properly qualified.

The operating organization shall have a process for selecting and assigning personnel to the

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operating organization. This process should consider factors such as background, experience, and education and may involve a selection test. Selection should be based on the ability to meet job performance requirements. The Order allows personnel not meeting the literal requirements of the Order to be evaluated based on consideration of the collective experience of the operating organization and/or DOE approval on a case-by-case basis, providing the overall operating organization is strong and balanced.

Qualification is defined in terms of education, experience, training, and any special requirements necessary for performing assigned responsibilities. Personnel at DOE reactor and non-reactor nuclear facilities shall possess qualifications that provide reasonable assurance that their decisions and actions ensure that assigned responsibilities are conducted properly and safely. The qualification requirements for personnel at each functional level in the operating organization shall be described in written procedures. Criteria contained in the Order establish the basis for qualification requirements. Qualification may be granted only after ensuring that all requirements have been satisfactorily completed. Qualification shall be valid for a maximum of two years at which time the individual shall be requalified as described in the Order.

Certification is the process by which contractor nuclear facility 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 official contractor management endorsement of an individual's qualification to ensure senior management involvement in the qualification of key operations positions. Other significant differences between qualification and certification are the requirements associated with continuing training, examination, and reexamination for recertification.

- The program leading to certification shall be governed by written procedures that include requirements for documented assessment of the person's qualifications through examinations and operational evaluations.
- Certification may be granted only after all qualification requirements 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 shall be verified by a person or group other than the candidate's immediate

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supervisor or the person/group that provided the training. Certification shall be valid for a period not to exceed two years unless revoked for cause

- Reactor operators and senior reactor operators at Category A and B reactors, and fissionable material handlers and fissionable material handler supervisors at non-reactor nuclear facilities shall be certified. For all other operators and their immediate supervisors, the operating organization shall identify in the training implementation matrix any additional positions that will be certified.

Training for operations and maintenance personnel should be based on analyzed needs resulting from a needs analysis or job analysis. Training for technical support personnel should be based on the results of an assessment of position responsibilities. Training programs shall consist of a combination of classroom-type and on-the-job training, including simulator and laboratory training as applicable to the position. Classroom-type training includes lectures, seminars, computer-based training, and structured self-study training activities. Qualification programs shall be reviewed by contractor facility management and kept updated to reflect changes to the facility, procedures, regulations, quality assurance requirements, and industry operating experience. The concept of training personnel as a team and stressing team communications and interaction shall be used where job functions require team solutions and activities.

A training implementation matrix shall be prepared by the operating organization. This matrix shall define and describe the application of the selection, qualification, and training requirements of the Order. The matrix shall clearly define the organization, planning, and administration of the qualification program, and set forth the responsibility, authority, and methods for conducting training. Suitable justification shall be provided for any requirement not implemented. The matrix shall be submitted to the head of the field organization for approval. For low-hazard, non-reactor nuclear facilities, the training program shall be developed based on the hazards involved and risk associated with the operation or activity. Accordingly, the level of detail and content of the training implementation matrix should reflect the needs associated with such facilities.

Initial and continuing training programs shall be implemented to ensure that operating organization personnel are qualified to perform job requirements. This is achieved by using a systematic approach to training. The basic elements of a systematic approach to training include the following.

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- A systematic analysis of the jobs to be performed
- Learning objectives derived from the analysis of the job that describe desired performance after training.
- Training design, development, and implementation based on the learning objectives.
- Evaluation of trainee mastery of the objectives during training.
- Evaluation and revision of the training based on the performance of trained personnel in the job setting.

An initial training program shall be established for operating organization personnel for developing or enhancing their knowledge, skills, and ability to perform job assignments. Personnel in training shall not independently make decisions or take actions that could affect facility safety, nor shall personnel in training be placed in such positions. However, they may independently perform specific tasks in job assignments for which they are qualified.

Continuing training programs shall be designed and implemented for maintaining and enhancing the proficiency of operating organization personnel who perform functions associated with safety-related structures, systems, and components identified in the facility safety analysis report.

These programs shall be structured commensurate with specific position needs, and shall be administered on a cycle not to exceed two years.

Periodic written and oral examinations and/or operational evaluations shall be administered and documented throughout the cycle on material included in the training program.

Continuing training programs for certified operations personnel shall consist of preplanned classroom-type training, on-the-job training, and operational evaluations on a regular and continuing basis, and shall include, as a minimum, the following.

- Training in significant facility system and component changes, applicable procedure changes, applicable industry operating experience, seldom-used skills and knowledge, and training needed to correct identified performance problems.
- Drills shall be conducted in the facility to enable personnel and operating teams to maintain proficiency in their ability to respond to abnormal or accident situations.
- Instruction in the use of facility systems for controlling or mitigating accidents, including both classroom-type and training in the facility.

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- Training, as applicable to the position, in subject areas where examinations and experience or other evidence indicates an emphasis in scope and depth of coverage is needed. The Order includes a list of these subject areas.

Training personnel with primary administrative responsibility for the training program are exempt from these provisions. For example, an individual who prepares, administers, and grades a written examination does not have to take the examination.

The Order contains requirements for General Employee Training (GET). The Order prescribes that all persons employed either full-time or part-time in DOE nuclear facilities shall be trained in the following areas commensurate with their duties:

- General description of facilities
- Job-related policies, procedures, and instructions
- Radiological health and safety program
- Facility emergency plans
- Industrial safety/hygiene program
- Fire protection program
- Security program
- Quality assurance program
- Criticality safety

The Order also prescribes that visitors, contracted personnel, and temporary personnel receive this training to the extent necessary for ensuring safe execution of their duties, or be under continuous escort while in the facility. For persons requiring access for more than one to two weeks, understanding of the GET information shall be evaluated by a written examination. Persons who do not pass the examination shall not be permitted access without continuous escort. The GET shall be included in continuing training programs for all facility personnel, and examinations administered every two years.

For those facilities where a probabilistic risk assessment (PRA) has been performed, initial and continuing training programs for operations and technical support personnel shall include training on the principal results of the PRA. This training shall address the following.

- The importance of facility systems in preventing damage or severe accidents.

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- Locations of all significant amounts of radioactive and other hazardous materials, and measures for preventing their release.
- The importance of maintaining operational limits and conditions, and the consequences of violating those limits.

The Order describes specific requirements for various groups of personnel and identifies specific subject areas that should be covered by the training program. These groups are as follows.

- Technicians and maintenance personnel.
- Technical support personnel.
- Management and supervisory personnel.

The contractor's documented training program should describe the specific training required of these personnel, appropriate to their assigned tasks.

Written and oral examinations and operational evaluations shall be prepared and administered to demonstrate that personnel possess the required knowledge and skills. The Order describes the specific requirements applicable to various functional positions. The Order also describes requirements for biennial reexamination or periodic examinations throughout the biennial cycle that cover continuing training program subjects or elements. Students should be familiar with these requirements which, although not included in this training module, may be included in the examples, practice, and/or criterion test.

Employees shall not be allowed to function as qualified or certified operators and supervisors if they have not completed all of the requalification program elements within two years. Persons who fail requalification or show serious job performance deficiencies that could impact safety shall be removed from activities requiring qualification. Requalification may be regained after successfully completing remedial training and reexamination. Recertification of operators and supervisors shall be based on reviews of individual operating performance by management and a current medical examination. The Order also describes specific requirements for certified operators or supervisors who have been absent from certification duties for periods greater than three months.

Some personnel may already possess the necessary knowledge and skills for their job and may be excepted from areas of the training program because of prior education, experience, and training. Proficiency testing is the preferred method of excepting persons from specific areas of training. In

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all cases, the requisite examinations for establishing qualification shall be completed. The operating organization shall establish procedures and criteria for administering and documenting exceptions to initial and continuing training program requirements according to the Order requirements. In all cases, the operating organization shall ensure that sufficient facility-specific instruction is provided to enable candidates to perform job requirements. The operating organization procedures detailing criteria for granting exceptions shall be submitted to the field organization for approval. Any exception from certification or qualification requirements shall be approved by contractor management.

An extension of certification or qualification may be granted to persons on a case-by-case basis to support operational and schedule commitments. The operating organization shall establish an administrative procedure that addresses extensions to ensure timely completion of certification or qualification requirements. The Order describes the minimum requirements to be addressed by the procedure. Extensions of certification for operators and supervisors shall be approved by the field organization.

The Order establishes requirements for considering alternatives to educational requirements. Persons who do not possess the formal educational requirements specified in the Order may be evaluated on a case-by-case basis for factors that may be considered as completion of technical portions of engineering, engineering technology, or related science programs. Guidance is provided for consideration of relevant experience. Documentation is required to justify using this methodology. Additionally, the Order allows consideration, on a case-by-case basis, of certain post-secondary course work or job-related training as an alternative to some formal education requirements.

Contractors shall develop and implement administrative procedures that specify requirements for generating, collecting, maintaining, and retaining qualification and certification records for operating organization personnel. Students should familiarize themselves with these requirements.

CHAPTER II – CATEGORY “A” REACTOR PERSONNEL

Chapter II provides specific requirements besides the general requirements of Chapter I for personnel at DOE Category “A” reactor facilities. Entry-level requirements for operating

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organization personnel are intended to ensure that these personnel have the knowledge, skills, and abilities to operate and maintain the reactor and related support systems in a safe and reliable manner under all conditions. The Order contains specific entry-level requirements for managers, supervisors, technical support personnel, operators, technicians, and maintenance personnel. Students should review the requirements contained in the Order. The Order also specifies that a medical examination shall be given to prospective employees and a reexamination shall be given at least every two years to certified operators and supervisors.

The operating organization shall ensure that the operating staff possesses adequate engineering and accident assessment expertise. This may be accomplished by designating a shift technical advisor (STA) for each shift, or by combining the shift supervisor or an on-shift senior reactor operator with the STA position. If the combined approach is used, the designated STA shall meet the following qualifications:

- Current certification as a senior reactor operator.
- Successful completion of the STA training requirements, and one of the following educational requirements.
 - Baccalaureate degree in engineering.
 - Professional engineer's license.
 - Baccalaureate degree in engineering technology, including course work in the physical, mathematical, or engineering sciences.
 - Baccalaureate degree in a physical science, including course work in the physical, mathematical, or engineering sciences.

All DOE production reactors shall have a full-scope simulator that meets the requirements contained in the American National Standards Institute/American Nuclear Society 3.5-1985, which is not part of this training module. The Order describes use of the simulator for training and drills.

The Order provides additional position-specific training requirements for:

- shift technical advisors;
- fuel-handling operations;
- control manipulations;
- reactor operator written examinations;
- senior reactor operator written examinations;

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- operational evaluations; and
- operating crew or shift training.

To maintain proficiency, all certified reactor operators and senior reactor operators shall perform certification duties on a minimum of:

- five 8-hour shifts per calendar quarter; or
- three 12-hour shifts per calendar quarter; or
- nine 4-hour shifts per calendar quarter.

If active status is not maintained, certification shall be suspended and the person shall not be assigned certification duties. Before resuming duties associated with certification, the operating contractor shall ensure that certification is otherwise current and valid, and the reactor operator and senior reactor operator have performed certification duties under the direct supervision of a certified reactor operator or certified senior reactor operator, as appropriate to the position, for a minimum period of 24 hours and must include a complete tour of the facility and all required shift turnover procedures.

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Chapter III – Category “B” Reactor Personnel

This chapter provides specific requirements besides the general requirements of Chapter I for personnel at Category “B” reactor facilities. Entry-level requirements for operating organization personnel are intended to ensure that these personnel possess the knowledge, skills, and abilities to operate and maintain the reactor and related support equipment in a safe and reliable manner under all conditions. The Order contains specific entry-level requirements for managers, supervisors, operators, technicians, maintenance personnel, and technical support personnel. Students should review the requirements contained in the Order. The Order also specifies that a medical examination shall be given to prospective employees and a reexamination shall be given at least every two years to certified operators and supervisors.

The Order provides additional position-specific training requirements for:

- senior reactor operators,
- reactor operators,
- fuel handling operations,
- control manipulations,
- reactor and senior reactor operator written examination contents and
- operational evaluations.

Certified reactor operators and senior reactor operators shall actively perform job functions associated with their certification to maintain proficiency. The proficiency requirement is imposed to ensure that certified personnel continue to possess and practice the skills and abilities necessary to operate the systems and equipment for which they are responsible in a safe and reliable manner during both normal and abnormal facility operations and system transients. To maintain active status, reactor operators and senior reactor operators shall perform certification duties for at least four hours per calendar quarter.

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CHAPTER IV – NON-REACTOR NUCLEAR FACILITY PERSONNEL

Chapter IV provides specific requirements besides the general requirements of Chapter I for personnel at DOE non-reactor nuclear facilities. Entry-level requirements for operating organization personnel are intended to ensure that these personnel possess the knowledge, skills, and abilities to operate and maintain the facility in a safe and reliable manner under all conditions. The Order contains specific entry-level requirements for managers, supervisors, operators, technicians, maintenance personnel, and technical support personnel. The Order also specifies that a medical examination shall be given to prospective employees and a reexamination at least every two years to certified operators, fissionable material handlers, and supervisors.

The Order provides additional position-specific training requirements for:

- operators,
- fissionable material handlers,
- supervisors,
- certified operator and supervisor written examination contents,
- operational evaluations, and
- control manipulations

To maintain proficiency, fissionable material handlers, fissionable material handler supervisors, and any other operators and/or supervisors identified by the operating organization to be certified must actively participate in the job functions associated with their certification. If certified operators, fissionable material handlers, or certified supervisors are absent from activities associated with the certified position for extended periods, their ability and readiness to perform at a high level of vigilance can be expected to decrease. The proficiency requirement is imposed to ensure that certified personnel continue to possess and practice the skills and abilities necessary to operate the systems and equipment for which they are responsible in a safe and reliable manner during normal and abnormal facility operation and system transients. The operating organization shall establish procedures that define requirements and frequency necessary to maintain an active status.

Note: You do not have to do example 2 on the following page, but it is a good time to check your skill or knowledge of the information covered. You may do the example or go directly to the practice.

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EXAMPLE 2

Complete the following sentences by filling the correct terms in the blank spaces.

1. _____ methodology is recommended by DOE for designing and developing training programs for all DOE reactor and non-reactor nuclear facilities.
2. The operating organization's training organization may include _____ personnel who conduct training activities.
3. Subcontractor personnel shall not perform facility activities until _____ requirements have been met.
4. Qualification is valid for a maximum of _____ years.
5. _____ is the process that contractor facility management uses to endorse and document the satisfactory achievement of qualification of an individual for a position.
6. Training for operations and maintenance personnel should be based on analyzed needs that result from a _____ or _____.
7. For low-hazard, non-reactor nuclear facilities, the training program shall be developed based on the _____ involved and _____ associated with the operation or activity.
8. _____ and _____ training programs shall be implemented to ensure that operating organization personnel are qualified to perform job requirements.
9. Personnel in training shall not _____ make decisions or take actions that could affect facility safety.
10. To maintain proficiency, certified reactor operators at a Category "B" reactor must actively perform job functions for at least _____ hours per calendar quarter.
11. If established proficiency requirements are not met, certification shall be _____

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until certification is regained.

Note: When you are finished, compare your answers to those contained in the example 2 self-check. When you are satisfied with your answers, go on to the practice in this module.

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EXAMPLE 2 SELF-CHECK

Complete the following sentences by filling the correct terms in the blank spaces.

1. Performance-based training methodology is recommended by DOE for designing and developing training programs for all DOE reactor and non-reactor-nuclear facilities.
2. The operating organization's training organization may include subcontracted personnel who conduct training activities.
3. Subcontractor personnel shall not perform facility activities until qualification requirements have been met.
4. Qualification is valid for a maximum of two years.
5. Certification is the process that contractor facility management uses to endorse and document the satisfactory achievement of qualification of an individual for a position.
6. Training for operations and maintenance personnel should be based on analyzed needs that result from a needs analysis or job analysis.
7. For low-hazard, non-reactor nuclear facilities, the training program shall be developed based on the hazards involved and risk associated with the operation or activity.
8. Initial and continuing training programs shall be implemented that ensure operating organization personnel are qualified to perform job requirements.
9. Personnel in training shall not independently make decisions or take actions that could affect facility safety.
10. To maintain proficiency, certified reactor operators at a Category "B" reactor must actively perform job functions for at least four hours per calendar quarter.
11. If established proficiency requirements are not met, certification shall be suspended until

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certification is regained.

Note: When you are satisfied with your example, go on to the practice. The course manager will check your practice and verify your success at the Familiar Level.

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This practice is required if your proficiency is to be verified at the familiar or general level. This practice will prepare you for the criterion test that will be required if your proficiency is to be verified at the general level. You will need to refer to the Orders to answer the questions in the practice correctly. The practice and criterion test will also challenge additional skills that you have acquired in other formal and on-the-job training.

PRACTICE

1. Define the following terms in your words.

Certification:

Exception:

Operating Organization:

Reactor Operator:

Training Implementation Matrix:

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Complete the following sentences by filling the correct terms in the blank spaces.

5. Training and examination covering abnormal facility procedures and emergencies shall be required at least _____ for certified operations personnel.
6. Training personnel are exempt from the continuing training requirements for the area of primary _____ responsibility.
7. Visitors, contracted personnel, and temporary personnel shall be under continuous _____ while at a facility unless they have been appropriately trained.
8. Training at a facility where a probabilistic risk assessment has been performed shall address the importance of maintaining operational _____ and _____.
9. Oral examinations may be conducted as a _____ walkthrough.
10. Recertification of operators and supervisors shall be based on a review of individual _____ performance during the past certification period.
11. The operating organization shall establish _____ and _____ for administering and documenting exceptions to initial and continuing training requirements.

Note: The course manager will check your practice and verify your success at the Familiar Level. When you have successfully completed this practice, go to the General Level.

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DOE NUCLEAR FACILITIES
GENERAL LEVEL

OBJECTIVES

Given the Familiar and General Levels of this module, a scenario, and an analysis, you will be able to perform the following:

1. List the key elements you would look for in the contractor's action plan to correct the situation described in the scenario.
2. State which requirements, sections or elements of the U. S. Department of Energy (DOE) Order contained in this module apply to the situation described in the scenario.

<p>Note: If you think that you can complete the practice at the end of this level without working through the instructional material and/or the examples, complete the practice now. The course manager will check your work. You will need to complete the practice at this level successfully before taking the criterion test.</p>
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RESOURCES

Facility Representative Qualification Course, DOE Order 5480.20A, Familiar Level, 7/2498.
DOE Order 5480.20A, Personnel Selection, Qualification, and Training, for DOE Nuclear Facilities, 11/15/94.

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INTRODUCTION

The Familiar Level of this module introduced the purpose and scope of DOE Order 5480.20A. Several definitions from the Order and the policy and requirements for selecting, qualifying, training, and staffing DOE reactor and non-reactor nuclear facilities were presented. In the General Level of this module, students are asked to apply the information contained in the Familiar Level and the Order to a series of questions related to the Order. Students are also presented with a scenario depicting work situations related to the Order in this module. The example scenario includes a situation, the actions taken to remedy the situation, and the DOE Order requirements related to the situation. Students will be asked to review the contractor's actions and decide if they are correct. Students will also be asked to decide if the correct Order requirements were cited in each situation. Please refer to the Order to make your analysis and answer the questions. You are not required to complete the example. However, doing so will help prepare you for the practice and criterion test.

Note: You do not have to do the example on the following page, but it is a good time to check your skill and knowledge of the information covered. You may do the example or go on to the practice.
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EXAMPLE SCENARIO

Please review the following scenario, and then answer these questions.

1. Is the contractor's action plan correct? If not, state what should have been done.
2. Were the correct requirements of the Order cited? If not, state the correct requirements.

On March 4, a maintenance employee obtained the key to a waste drum from a key custodian. The maintenance employee placed improperly packaged waste material into the drum, and relocked the drum. It was later determined that the maintenance employee did not have current waste generator qualifications on file. This was considered a procedural violation, as personnel involved in waste disposal are required by waste operations procedures to be waste generator qualified.

An investigation of the situation revealed the following.

- Waste operations procedures state that waste packaging personnel must have current waste-generator qualifications and that the maintenance employee's qualifications had expired.
- A formal list of qualified individuals did not exist. This meant that there was no way for the shift manager to verify if the maintenance employee was waste-generator qualified. Additionally, there was no mechanism for key custodians to identify if someone was waste-generator qualified.

Immediate actions:

- The building shift manager assigned properly waste generator qualified personnel to repackage the material in the drum.

Other actions:

- Training personnel developed and issued a list of qualified waste generators. Shift managers maintain the list in their office and use it to determine if individuals are waste-generator qualified when making work assignments.
- Training personnel developed and maintained a list of current waste-generator qualification packages and a list of qualified personnel. They distribute these lists monthly to support personnel to assist them in ensuring that individuals assigned to specific jobs are waste-generator qualified.
- Training personnel developed waste-generator cards that show the qualification periods and issued them to qualified personnel. Key custodians can use the cards to verify that personnel who disposition and generate waste are currently qualified.

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Applicable requirements:

- The purpose of the Order is to ensure that all persons are qualified to carry out their assigned responsibilities. Chapter I, Sections 7.a.(1) and (2) provide requirements for developing and maintaining training to meet the position requirements.
- Requirements for initial and continuing training can be found in Chapters I.7.c and I.7.d.

Write your answers below.

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EXAMPLE SELF-CHECK

Your answer does not have to match the following exactly. You may have added more corrective actions or cited other requirements. To be considered correct, your answer must include at least the following.

The actions taken were correct.

The proper requirements of the Order are cited. One additional requirement should have been included.

- Training department personnel also need to rigorously apply the principles and requirements of a systematic approach to training as defined in Chapter I.7.b of the Order. This chapter provides a discussion of elements that contribute to a successful program for initial and continuing training.

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4. List the minimum requirements that must be included in the administrative procedure that addresses extensions of certification or qualification.

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Please review the following scenario and answer the following questions.

1. Was the situation handled correctly? If not, state what should have been done.
2. Were the correct DOE Order requirements cited in the report regarding the situation? If not, state the correct requirements.

SCENARIO

During troubleshooting of wet air pumps to determine the cause of high pump operating temperatures, approximately 50 gallons of potentially hazardous material were discharged into a storm drain from a Category "B" reactor facility. The hazardous material content of the discharge was below reportable limits.

An investigation of the situation revealed the following.

- An operator violated a procedure regarding valve position.
- The valve in question contained no cautionary tag, label, or seal to prevent a discharge into the storm drain.
- The operator was not qualified to perform this job.

Immediate actions:

- Review applicable procedures.
- Examine other wet air pumps for cautionary tags, labels, and/or seals.

Planned actions:

- Install cautionary tags, labels, and/or seals to prevent operation of the valve and discharge into the storm drain.
- The training department will review the incident and incorporate lessons learned into operator training, with an emphasis on the impact of abnormal situations.

Applicable requirements:

Order 5480.20A, Chapter III, 2.a.

Write your answers here and then take your answers to the course manager for review.

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Note: The course manager will check your practice and verify your success at the General Level. When you have successfully completed this practice, the course manager will give you the criterion test.