

## Chemical Processing Competency 3.1

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**Competency 3.1** Chemical processing personnel shall demonstrate a familiarity level knowledge of the training and qualification programs(s) requirements identified in the following department of Energy (DOE) Orders:

- DOE Order 5480.18B, Nuclear Facility Training Accreditation Program
- DOE Order 5480.20A, Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Facilities
- DOE Order 360.1, Training

### 1. Supporting Knowledge and Skills

- a. Discuss the meaning of “qualification” and its importance to quality.
- b. Describe the purpose and scope of the DOE Orders listed above.
- c. Discuss why certain skills or proficiencies should be demonstrated periodically.
- d. Describe the types of changes to a program or process that require modification to a training program.

### 2. Self-Study Activities (corresponding to the intent of the above competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://wastenot.inel.gov/cted/stdguido.html">http://wastenot.inel.gov/cted/stdguido.html</a>	DOE Standards, Guides, and Orders
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Read** pages 4 through 5 of DOE Order 5700.6C, *Quality Assurance*.

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**Read** page I-2 D OE Order 5480.20A, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Facilities*

EXERCISE 3.1-A Discuss the meaning of “qualification” and its importance to quality.

**Read** DOE Order 4480.18B, *Nuclear Facility Training Accreditation Program*.

**Read** DOE Order 5480.20A, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Facilities*.

**Read** DOE Order 360.1, *Training*

EXERCISE 3.1-B Describe the purpose and scope of the Orders listed above.

EXERCISE 3.1-C Discuss why certain skills or proficiencies should be demonstrated periodically.

EXERCISE 3.1-D Describe the types of changes to a program or process that require modification to a training program.

### 3. Summary

DOE Order 360.1 identifies the general requirements for DOE Federal employee training. The Order states the requirements for administering the training and qualification of technical employees and managers thereby providing management direction and oversight that could impact the safe operation of a defense nuclear facility. DOE's objectives are to ensure the development and implementation of contractor-administered training programs that provide consistent and effective training for personnel at DOE nuclear facilities.

DOE Order 5480.20A contains minimum requirements that must be included in contractor training and qualification programs. The requirements are based on DOE, Nuclear Regulatory Commission (NRC), and related industry standards, and are applicable to all operable DOE nuclear facilities. Because the operation of DOE reactor and non-reactor nuclear facilities involves certain risks to employees, the public, and the environment, well-trained and qualified operating organization personnel are of extreme importance. A vital element in ensuring a well-trained and qualified work force is the implementation of the systematic approach to training (SAT). This approach has proven effective in the commercial nuclear power industry and in other major industries.

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DOE Order 5480.18B establishes the process and the objectives and criteria for the accreditation of training programs at DOE facilities. The Order formalizes DOE's endorsement of the systematic approach to training and initiates requirements within DOE to ensure training program quality.

### 4. Exercise Solutions

EXERCISE 3.1-A Discuss the meaning of "qualification" and its importance to quality.

ANSWER 3.1-A According to DOE Order 5480.20A, qualification is defined as follows:

"Qualification is defined in terms of education, experience, training, examination, and any special requirements necessary for performance of assigned responsibilities." The Order further states, "The requirements in this Order are based on industry standards and are intended to provide reasonable assurance that personnel at DOE nuclear facilities possess qualifications to operate and maintain the facility safety and reliably under all conditions." DOE Order 5480.20A, page I-2.

DOE Order 5700.6C, section II A. 2., paragraphs a., d., and f. state the following regarding qualification:

"a. Personnel performing work should be capable of performing their assigned tasks. Qualification requirements should be established for specific job categories, such as operators, designers, managers, supervisors, inspectors, welders, engineers, scientists, and independent assessment personnel."

"d. Personnel performing work that requires special skills or abilities should be qualified prior to performing work."

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EXERCISE 3.1-B Describe the purpose and scope of the Orders listed above.

ANSWER 3.1-B

Purpose and Scope of Selected DOE Orders		
DOE Order	Purpose	Scope
<b>DOE Order 5480.20A,</b> <i>Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities</i>	To establish selection, qualification, and training requirements for management and operating (M&O) contractor personnel involved in the operation, maintenance, and technical support of Department of Energy-owned (DOE-owned) Category A and B reactors and non-reactor nuclear facilities.	Applicable to all Departmental Elements which are responsible for operable DOE-owned Category A and B reactors and non-reactor facilities. The Director, Naval Nuclear Propulsion Program, is exempt from this Order. Attachment I sets requirements that are to be applied to the universe of contractors awarded DOE management and operating contracts involving operable DOE-owned Category A and B reactors and non-reactor facilities. (Paragraph 3)
<b>DOE Order 360.1,</b> <i>Training</i>	<ul style="list-style-type: none"> <li>a. Assign responsibilities and provide requirements for establishing, implementing, documenting and evaluating training programs for Federal employees.</li> <li>b. Commit to the continuing development of employees to ensure quality performance from a technically competent, versatile, and diverse work force.</li> <li>c. Establish the requirements for the training and qualification of technical employees and managers whose position requires them to provide management direction or oversight that could impact the safe operation of a defense nuclear facility.</li> </ul>	This Order is applicable to Department of Energy Federal employees. Clarification of the applicability of the specific requirements is included within the chapters.

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Purpose and Scope of Selected DOE Orders		
DOE Order	Purpose	Scope
<p><b>DOE Order 4480.18B,</b> <i>Nuclear Facility Training Accreditation Program</i></p>	<p>To establish the process and the objectives and criteria for the accreditation of training programs at Department of Energy (DOE) facilities.</p>	<p>a. The provisions of this Order apply to all contractors performing work for the Department as identified below, and as provided by law and/or contract.</p> <p>b. This Order shall be applicable to training programs for operations personnel, maintenance personnel, and technicians at operable DOE nuclear facilities listed in Attachment 1. All other nuclear facilities shall have training programs that are formally documented and implemented in accordance with applicable DOE Orders. This Order shall not be applicable to nuclear facilities listed in Attachment 1 that are in a standby status, as long as they remain in that status.</p> <p>c. The provisions of this Order do not apply to: (1) The Naval Nuclear Propulsion Program which is separately covered under Executive Order 12344 and Public Law 98-525; (2) Those activities subject to the Nuclear Regulatory Commission, or the Nuclear Regulatory Commission Agreement State licensing; and (3) safeguards training and security education which are included in the DOE 5630 series Orders.</p>

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EXERCISE 3.1-C Discuss why certain skills or proficiencies should be demonstrated periodically.

ANSWER 3.1-C Demonstration of certain skills should be demonstrated periodically to ensure adequate maintenance of the required skills. This is especially important for skills that are performed infrequently but are difficult to perform and are very important to safe operations.

EXERCISE 3.1-D Describe the types of changes to a program or process that require modification to a training program.

ANSWER 3.1-D Changes in areas such as policies and/or procedures, system or component design, job requirements, regulatory requirements, and industry guidelines or commitments may require modification to a training program. Adjustments should also be made as a result of reviews of operating experience information such as Occurrence Reports, inspection reports, information notices, and bulletins.