

**Directive Number and Title:**

DOE 5480.20A, Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities

**Originating Office:**

Office of Environment, Safety and Health

**Review Team Members:**

Anne Troy, GC  
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**Background:**

The training Order was developed after the TMI Accident. It combined requirements from several other previous Orders and former AEC and ERDA manual chapters. The Order was developed through a series of contractor working meetings. It incorporates recommendations from the National Academy of Sciences and from the Defense Nuclear Facilities Safety Board (DNFSB). The Order contains requirements comparable to those issued by the NRC, INPO, and ANS. However, most NRC and industry standards are more stringent and prescriptive and are directed at commercial power plants. Therefore, the Order has modified the NRC and industry requirements to more directly apply to DOE research and test reactors and non-reactor nuclear facilities. In addition, the Order provides for a Training Implementation Matrix (plan) to further permit the operating contractors to adapt and apply the requirements to meet local site needs. The Order also specifically provides for the use of a graded approach.

When DOE canceled the former Training Accreditation Program Order (DOE 5480.18B) in 1996, the Department committed to the DNFSB to continue to implement DOE 5480.20A. This Order is consistent with the methodologies and comparable training requirements of NRC, INPO, ANS, and the International Atomic Energy Agency, yet provides some flexibility to meet unique site needs.

**Overview of Requirements:**

The purpose of the Order is to ensure the development and implementation of contractor-administered training programs that provided for effective training of personnel. It establishes minimum requirements for the selection, qualification and training of personnel that are based on the type of DOE nuclear facility.

DOE 580.20A applies to operable Category A and B reactors and non-reactor nuclear facilities. Separate chapters were developed to make significant distinctions between those requirements that fit research and test reactors and those that make sense for non-  
requirements were not just blindly applied to non-

reactor nuclear facilities). For D&D activities and environmental restoration activities, the Order would not apply when the DOE Operations Office and contractor determined the facility or activity is no longer operable; for example, if Technical Specifications were no longer needed, criticality is not a concern, significant quantities of radioactive material are no longer handled, etc. After this point, only OSHA/RCRA requirements and radiological protection training requirements apply.

The purpose of the CRD is to identify six basic requirements that apply to an operating contractor. The principal requirement is the development and approval, by the Operation Office, of a Training Implementation Matrix (plan) that defines and describes those training requirements applicable to the needs of the contractor. Once approved, the TIM is then the governing document for the selection, training, and qualification of operable nuclear facility personnel.

#### **Analysis:**

The Order is still needed for operable DOE nuclear facilities. All contractors have approved Training Plans based on the Order. The plans allowed for adapting the requirements and approach to implementation to meet the varying needs of DOE sites. The Order is consistent and comparable to industry approaches and methods. However, most industry standards (NRC, INPO, ANS) are directed at commercial nuclear power plants and are more stringent and prescriptive than necessary for DOE nuclear facilities. For example, specific experience requirements, specifying length of training programs, hours for examinations and number of questions, number of lectures, proficiency (number of hours of watch standing) requirements, medical requirements, etc., either had to be eliminated or modified to meet the needs of DOE. In addition, unlike NRC, DOE did not consider it appropriate for DOE personnel to administer examinations for reactor operators. This is more appropriately a contractor responsibility. DOE also provides for use of a graded approach to implementing the Systematic Approach to Training methodology, a performance-based training methodology that has been adopted nationally and internationally.

#### **Summary Recommendation of the Review Team:**

Retain the Order and CRD. Program offices, contractors, and EH should continue to work together to ensure the flexibility provided by the Order is used and that it is correctly being implemented as facilities transition from operation to decommissioning and decontamination.

#### **Summary of Comments Received:**

The following is a summary of comments received and analysis of the comments, where applicable.

1. Oakland Operations Office stated that the Order is well written and is of critical importance to ensure the competence of personnel involved in the operations of nuclear facilities. They stated that the requirements reflected an appropriate balance between ensuring safety and not being overly cumbersome.

2. Albuquerque Operations Office stated that the CRD is suitable for its purpose without amendments.

3. Chicago Operations Office:

- CH/BSA stated that no change is needed.
- CH/ANL stated that the Order should be eliminated and that ISM and 10 CFR Part 830 rules are sufficient.
- CH summarized by stating that the Order should be retained and reissued as a manual. They further stated that ISM does not specifically address the Order requirements.

Since all CH facilities have already approved Training Plans re-issuance of the Order in another format is not considered necessary. It would only create the need for significant contractor revisions of paper without any commensurate benefit.

4. Savannah River Operations Office stated that the Order should remain as a requirements document but stated that some components, specifically maintaining the Training Implementation Matrix (plan), are of questionable value and should be reviewed to determine if modifications are needed.

We discussed this comment with SR. They would prefer to use the contractor internal training administrative procedure as the controlling document since it reflects the approved TIM. The intent of the Order was not for DOE to approve internal contractor administrative procedures, however, the program office can always elect to go beyond the minimum requirements of the Order. Therefore, the approach by SR is acceptable and does not require any changes to the Order.

5. Energy Facility Contractor Group (EFCOG) stated that the Order is outdated for most DOE sites. They stated that the Order was written for reactors and those working with fissionable materials. They also stated that the Order should be applied only where reactors are in use and that other direction could be provided where this Order no longer fits.

We basically agree with this comment. The Order is only applicable to operable nuclear facilities as determined by the DOE Operations Office and contractor. We do not believe it is necessary for DOE to develop and invoke other direction when this Order no longer applies, since such direction would be redundant and duplicative of OSHA and radiological protection training standards and requirements (e.g., RCRA, 10 CFR 835, etc.) which are applicable for many environmental restoration activities.

6. Oak Ridge, Idaho, Ohio, and Richland Operations Offices and Yucca Mountain Project Office stated that they had no comments on the Order. Other office responses had no specific statements or comments on the Order.

*After the completion of the preceding portion of the report, the following supplemental views were received for inclusion in the report. These views have not been reviewed or endorsed by the team.*

#### **Views of GC-52**

Ben McRae, Assistant General Counsel for Civilian Nuclear Programs, joined by Anne Troy, provided the following additional views regarding an alternative approach to that being recommended by the Review Team.

The Performance Based Contracts DOE Order Review was established to re-assess the nature and extent of DOE Order requirements on DOE contractors and determine whether there are opportunities to reduce their impact, consistent with performance based contracting concepts. The overall objective of the Review is to eliminate "how to" type requirements as well as requirements which are determined to be unnecessary, non-value added, inappropriate, or duplicative, and to identify changes that would mitigate the impact of overly bureaucratic procedural requirements, or substitute less costly or more effective approaches or standards.

This Order contains many "how to" requirements. When incorporated into a contract through the DEAR clause on Laws, Regulations and DOE Directives (48 CFR Part 970.5204-2), the result can be the imposition of a system of de facto regulation without any real consideration of whether the myriad of "how to" requirements are appropriate or necessary for a particular facility. This result is especially troublesome as DOE undertakes increasingly more cleanup and decommissioning activities since the focus of the order is operating nuclear facilities, with the most attention given to reactors.

DOE Order 5480.20A is not needed to require contractors to develop and implement training programs. 10 CFR Part 830.201 requires contractors to perform work in accordance with hazard controls. 10 CFR Part 830.3 defines hazard controls to include safety management programs and defines safety management programs to include training. In addition, as part of developing the safety basis for a facility, 10 CFR Part 830.204(b)(5) requires a contractor to define the characteristics of its safety management programs. While 10 CFR Part 830 applies to contractors directly without the need for any contractual requirement, it is incorporated automatically into contracts through the DEAR clause on Laws, Regulations and DOE Directives (48 CFR Part 970.5204-2).

Since DOE Order 5480.2A is unnecessary, it should be eliminated and replaced with a policy statement that would focus on (1) performance objectives for a training program, (2) the need to tailor training programs to reflect the work being performed and the associated hazards, taking into account appropriate industry/national/international consensus standards, and (3) integration into the contractor's safety management system. In addition, a working group, with representatives from EH, GC and other interested entities, should be convened to determine whether a guide is needed to retain the useful information in existing DOE Order 5480.20A. If a guide is found necessary, the working group should be directed to make the guide clear and concise and to avoid the potential

The elimination of DOE Order 5480.20A would not prevent the continued or future use of the existing requirements in this order as the basis for a contractor's training program. It would, however, lessen the likelihood these requirements would be imposed without a thorough and thoughtful application of the safety basis rule in 10 CFR Part 830 and of integrated safety management (ISM) pursuant the DEAR clause on Integration of Environment, Safety and Health into Work Planning and Execution (48 CFR Part 970.5223-1).

It should be noted that the definition of safety management programs in 10 CFR Part 830 explicitly refers to "quality assurance, maintenance of safety systems, personnel training, conduct of operations, inadvertent criticality protection, emergency preparedness, fire protection, waste management, and radiological protection of workers, the public and the environment." Thus, the analysis for DOE Order 5480.20A would apply to several other DOE Orders, including DOE Order 5480.19, Change 2, Conduct of Operations Requirements for DOE Facilities and DOE Order 433.1, Maintenance Management Program for Nuclear Facilities. Accordingly, consideration should be given to eliminating these Orders and replacing them with policy statements. In addition, these Orders are often accompanied by long, detailed "how to" guidance documents. For example, the existing guide that accompanies DOE Order 433.1 is over 300 pages. While it contains much useful information, it has the potential to operate as de facto regulation. Accordingly, consideration should be given to convening a working group, with representatives from EH, GC and other interested entities, to review and revise these guides to make them clear and concise and eliminate the potential for de facto regulation.

If the Panel for the Performance Based Contracts DOE Order Review (the Panel)) accepts this recommendation, it should specify a date (such as 30 days after the acceptance of the recommendation by the Panel) by which the Orders must be eliminated and policy statements issued. The Panel's intervention may be necessary to achieve this date. In addition, the Panel may specify dates for the working groups to complete their reviews.

#### **View of EH-5**

The Office of Safety and Health (EH-5) worked with Ben McRae and Anne Troy to create the alternative approach described in preceding section section. EH-5 believes there is merit in this alternative approach to streamline requirements, consistent with the hazards in the workplace, into an integrated safety management system. EH-5 believes it will be productive to establish a Working Group to pursue this alternative approach using a deliberative and inclusive process that includes the DNFSB.

#### **View of DOE Departmental Representative to the Defense Nuclear Facilities Safety Board (DOE S-3.1)**

The DOE Departmental Representative strongly recommends that the Department consults with the Defense Nuclear Facilities Safety Board (Board) before making any decision to eliminate a "Directive of Interest" to the Board. In recent meetings with Mr. Richard Hopf and Ms. Ellen Livingston, the Board has requested to be notified of any potential decisions to eliminate "Directives of Interest" to the Board. The Board's most recent list of "Directives of Interest" issued on October 16, 2001, includes this directive.

The Board has statutory responsibility to review and evaluate the content of safety-related standards for defense nuclear facilities [42 USC 2286a]. The Department management has long ago established and institutionalized an agreement with the Board for the Board to review and comment on all safety-related directives and changes prior to issuance. The Department's Order and Manual on Directives (O 251.1 and M 251.1-1A) describe the Department's process to ensure the Board has opportunity to review safety-related directives and changes prior to issuance. A sudden unilateral change in the long-established way the Department does business with the Board on review of safety requirements is likely to cause unnecessary perturbations in the Department's working relationship with the Board.

The Departmental Representative has responsibility to facilitate the Board's review of safety-related directives. If requested, the Departmental Representative will facilitate discussions between applicable Department and Board personnel to discuss potential elimination of this directive. Again, the Departmental Representative strongly recommends that this consultation with the Board needs to occur before a Department decision on elimination is reached.