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**DOE-STD-1175-2019  
June 2019**

# **DOE STANDARD**

## **SENIOR TECHNICAL SAFETY MANAGER FUNCTIONAL AREA QUALIFICATION STANDARD**

**DOE Defense Nuclear Facilities Technical Personnel**



**U.S. Department of Energy  
Washington, D.C. 20585**

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## APPROVAL

The Federal Technical Capability Program (FTCP) Panel consists of senior U.S. Department of Energy (DOE) managers responsible for overseeing the Federal Technical Capability Program. This Panel is responsible for reviewing and approving the qualification standard for Department-wide application. Approval of this qualification standard by the Federal Technical Capability Program Panel is indicated by signature below.

 

Karen L. Boardman, Chairperson

Date

Federal Technical Capability Program Panel

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## ACKNOWLEDGMENT

The Department of Energy (DOE) Office of Enterprise Assessments, National Training Center (EA-50), in support of the Federal Technical Capability Program, facilitated the development of this Senior Technical Safety Manager (STSM) Functional Area Qualification Standard (FAQS).

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**U.S. DEPARTMENT OF ENERGY  
FUNCTIONAL AREA QUALIFICATION STANDARD**

**SENIOR TECHNICAL SAFETY MANAGER (STSM)**

**PURPOSE**

The primary purpose of the Technical Qualification Program (TQP) is to ensure employees have the requisite technical competency to support the mission of the Department of Energy (DOE). The TQP forms the basis for the development and assignment of DOE personnel responsible for ensuring the safe operation of defense nuclear facilities. The Functional Area Qualification Standards (FAQS) are not intended to replace the U.S. Office of Personnel Management (OPM) qualifications standards or other departmental personnel standards, rules, plans, or processes. However, the FAQS should be referenced when developing vacancy announcements, crediting plans, interview questions, and other criteria associated with the recruitment, selection, and internal placement of technical personnel.

**APPLICABILITY**

The STSM FAQS establishes common performance competencies for all DOE STSM personnel who perform duties and responsibilities that could impact the safe operation of DOE's defense nuclear facilities. This FAQS has been developed as a tool to assist DOE Program and Field Offices in the development and implementation of the TQP in their organization. For ease of transportability of qualifications between DOE elements, Program and Field Offices must use this FAQS without modification or addition to the performance competency knowledge requirements. Satisfactory and documented attainment of the performance competencies in this FAQS ensures personnel possess the minimum requisite knowledge and skills to perform functional area duties and tasks common to the DOE enterprise. Additionally, needed organizational specific qualification standards, handled separately, supplement this FAQS and establish unique performance competencies at the organization (headquarters, field element, site, or facility) level.

**IMPLEMENTATION**

This FAQS, derived from a STSM Job Task Analysis (JTA), is composed of performance competencies based on task performance. Each performance competency includes knowledge requirements and any mandatory performance activities (MPA) that need to be completed in order to demonstrate the performance competency has been met. The DOE National Training Center (NTC) developed evaluation guides to support attainment of the performance competencies in this FAQS. These evaluation guides provide the expected level of knowledge for each knowledge requirement and are available for personnel assigned this FAQS and qualifying officials (QO) responsible for verifying the attainment of performance competency knowledge requirements. The evaluation guides for this FAQS are available through the NTC TQP support site at: <https://ntc.doe.gov/student/stp/techqualprogram>.

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It was recognized during the development of this FAQs that STSM is a qualification that is not directly tied to the duties and responsibilities for a specific job position like a Nuclear Safety Specialist (NSS) or Facility Representative (FR). In general, the STSM qualification was considered to be a body of knowledge related to ensuring the safety of nuclear facility operations that allowed a person qualified as an STSM to have demonstrated sound decision making related to nuclear safety. Although many personnel designated as requiring STSM qualification are in the line management chain as a supervisor or line manager, some are advisors to line managers. As a result the required competencies related to specific line management duties such as personnel management and communication skills are not included in this FAQs. Additionally, the entire body of knowledge required for special designations and authorities such as Safety Basis Approval Authority, Nuclear Facility Startup Authority, or Federal Project Director, are not included in this FAQs. Although this FAQs includes knowledge and related performance activities in these subject areas, a separate evaluation to determine any additional knowledge and experience required for these designations is needed.

The results of the STSM JTA were compared to the results of an integrated nuclear facility federal duty area analysis that identified the specific oversight duties and required knowledge of the technical staff primarily performing oversight of DOE nuclear facilities such as FRs, Safety System Oversight (SSO), NSS, and other nuclear facility Safety Management Program (SMP) functional leads. Oversight duty areas where the STSM was expected to make decisions or make a recommendation to the decision maker were given greater emphasis in this FAQs.

The performance competencies in this FAQs include DOE unique knowledge requirements that the candidate must obtain and then apply to specific oversight duties that are identified as mandatory performance activities (MPAs) in this FAQs. The overall objective of the MPAs is to determine whether an STSM candidate can apply the related knowledge in making decisions or recommendations to a decision maker that ensures adequate protection of the public, workers, and the environment.

The MPAs listed in this FAQs are required to be satisfactorily performed only once. If during a performance of the MPA any of the evaluation criteria are not satisfactorily met, the designated QO may require the candidate to perform the MPA again. In these cases satisfactory completion of the MPA only needs to be documented once. It is also recognized that some of the MPAs in this FAQs may already be included in organization specific qualification standards. In these cases the designated QO only needs to sign verifying completion of the MPA once as part of this FAQs or during completion of the organization specific qualification standard.

The MPAs in this FAQs were intended to be performed by STSM candidates in the nuclear facilities where they have designated duties and responsibilities. However, in cases where STSM candidates cannot perform the MPAs exactly as written in their assigned facilities within the required qualification timeframe, supervisors may use other options to facilitate completion the MPA requirements. This could include performance of the MPA in a simulated environment or by making minor modifications to the MPA or MPA evaluation criteria to fit local conditions. The reason for any changes in the MPA or MPA evaluation criteria or changes in the method of performance (e.g. simulate or use of exercise materials instead of performing) must be documented by the designated qualification official with approval of the supervisor and local FTCP agent.



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## EVALUATION CRITERIA

Attainment of the performance competency knowledge requirements and MPAs listed in this FAQs must be documented per the TQP plan or policy of the specific organization qualifying the individual and the requirements in DOE O 426.1A, *Federal Technical Capability Program*.

Each performance competency includes knowledge requirements that need to be completed in order to demonstrate the performance competency has been met. Attainment of the performance competency knowledge requirements listed in this FAQs must be verified by a designated QO using one or a combination of the following methods:

- Satisfactory completion of a written examination
- Satisfactory completion of an oral examination
- Documented evaluation of equivalencies

Equivalencies should be used with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP. Equivalencies may be granted for specific knowledge requirements and/or MPAs based on objective evidence of previous experience. Objective evidence includes a combination of transcripts, certifications, or completed work products. Equivalencies must be granted in accordance with the TQP plan of the organization qualifying the individual.

Successful completion of the MPAs in this FAQs must also be verified by a designated qualifying official (QO). The QO must verify that the evaluation criteria, including any organization specific requirements, were satisfactorily met during observation of the MPA and/or review of the results of the MPA. Satisfactory attainment of the performance competency knowledge requirements and MPAs contained in this FAQs must be documented using the STSM FAQs qualification card in the Electronic Technical Qualification Program at <https://etqp.ntc.doe.gov>.

After verification of attainment of all the performance competency knowledge requirements and the MPAs in this FAQs, an STSM candidate must satisfactorily complete the final qualification activity requirements identified in DOE O 426.1A and any other applicable organization specific requirements before being designated as a Qualified STSM.

## INITIAL QUALIFICATION AND CONTINUING TRAINING

Appendix A, *Initial Qualification Training Recommendations*, includes a list of NTC and other training courses that support attainment of the performance competency knowledge requirements and/or provide an opportunity for STSM candidates to practice performance of the MPAs in this FAQs.

Appendix B, *Continuing Training Recommendations*, includes two tables. Table 1, *Core Continuing Training Recommendations*, includes courses that based on a task analysis should be considered first to meet the continuing training requirements in DOE O 426.1A following initial qualification. Table 2, *Organization Specific Continuing Training and Performance Activity Recommendations*, includes additional courses that depending on organizational specific duties and responsibilities of a particular STSM may be completed to meet the required continuing training hours in DOE O 426.1A, as well as additional performance activities that should be considered as part of the STSM CT program.

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## DUTIES AND RESPONSIBILITIES

The JTA that formed the basis of this FAQs was focused on the duties and responsibilities of an STSM related to making decisions or providing recommendations to decision makers involving nuclear safety and ensuring the adequate protection of the public, workers, and the environment. The following are the broad duties and responsibilities included in the scope of the STSM FAQs:

1. Integrate safety into management and work practices to accomplish mission objectives, while ensuring worker and public health and safety, and the protection of the environment.
2. Evaluate nuclear facility performance data from contractor assurance systems and federal oversight activities and provide technical direction and feedback as needed to contractor and federal employees to ensure adequate protection of the public, workers, and the environment.
3. Comply with Departmental directives, Federal and State regulations and binding agreements through implementation of policies, directives and procedures.
4. Allocate and manage resources or make recommendations to decision makers to ensure adequate resources are available to perform baseline oversight of nuclear facilities.
5. Provide leadership in establishing and sustaining safety culture.

Position-specific duties and responsibilities for STSMs are contained in organization specific qualification standards and position descriptions.

## BACKGROUND AND EXPERIENCE

The knowledge requirements and associated MPAs identified in the FAQs were developed based on candidates having the preferred education and experience levels identified below. Personnel assigned to complete this FAQs who do not meet these requirements may need additional developmental assignments and supporting training to satisfactorily complete this FAQs.

The preferred education and experience for STSMs are:

### 1. Education

An STSM should possess a scientific or engineering degree with a major in an academic area that supports the functional responsibilities of the position (exceptions to this requirement should be considered only in rare circumstances, and then in accordance with the OPM Qualification Standards Handbook). An advanced technical degree is considered to be an advantage. Additionally, professional credentials (e.g. Professional Engineer) and industry certifications are desirable.

### 2. Experience

STSM candidates should have demonstrated the ability to make sound decisions related to a broad scope of nuclear facility operations with the overall goal of ensuring the adequate protection of the public, facility workers, and the environment. Previous or current experience

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as a qualified DOE Facility Representative, Safety System Oversight, or Nuclear Safety Specialist; previous experience in the Nuclear Industry as an Architect or Design Engineer, Nuclear Steam System Supplier, Commercial Nuclear Utility Technical or Project Manager, Senior Reactor Operator (Licensed or Certified), Nuclear Regulatory Commission Senior Resident Inspector or equivalent position; and/or previous experience in the military with nuclear power plants or other nuclear power applications would be considered highly beneficial for potential STSM candidates.

### REQUIRED PERFORMANCE COMPETENCIES

The performance competencies contained in this standard include knowledge requirements that are in addition to and distinct from the knowledge requirements contained in the General Technical Base (GTB) Part A and B Qualification Standard (QS). All STSM personnel completing initial qualification must satisfy the knowledge requirements of the GTB Part A QS, and the knowledge requirements and MPAs in the GTB Part B QS, prior to or in parallel with attaining the knowledge requirements for the performance competencies in this FAQs. Each performance competency defines the expected level of knowledge and performance an individual must attain to meet the intent of this standard. Each performance competency is further described by knowledge requirements and, if necessary, MPAs that describe the task(s) that must be demonstrated to meet the intent of the related performance competency.

**Note 1:** When regulations, DOE directives, or other industry standards are referenced in this FAQs, the most recent revision should be used. However, STSM candidates may have duties and responsibilities at facilities that utilize predecessor documents to those identified in this FAQs. In these cases the STSM candidates and QOs should refer to the versions of these documents included in the local contract during the attainment and verification of related knowledge requirements. Any applicable knowledge requirements in predecessor documents that are not included in this FAQs should be included in the organizational specific QS or continuing training program.

**Note 2:** If specific evaluation criteria are not identified for any of the MPAs in this FAQs the following generic evaluation criteria should be used together with any local expectations to verify acceptable completion of the particular MPA.

#### Generic MPA Evaluation Criteria

- Identify expectations (i.e. criteria) for the specific activity
- Compare results to expectations (criteria) and document conclusions
- Document the basis for any identified issues or recommendations
- Discuss if applicable how you would communicate results to appropriate federal and/or contractor personnel.

#### 1. An STSM shall demonstrate knowledge of the DOE's regulatory and directive requirements for safe operation of nuclear facilities.

##### Knowledge Requirements

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- A. Discuss the Departments regulatory framework for ensuring that the operation of DOE's nuclear facilities provides adequate protection of the worker, the public, and the environment.
- 1) Describe the DOE self-regulatory framework, including the role of the DOE's nuclear safety directives.
  - 2) Discuss the purpose and scope of DOE O 410.1, *Central Technical Authority Responsibilities regarding Nuclear Safety Directives*.
  - 3) Identify Nuclear Safety Directives listed in DOE O 410.1.
  - 4) Describe the process for ensuring applicable nuclear safety directives are in the applicable contract.
  - 5) Explain the role of invoked DOE or voluntary consensus standards in DOE's regulatory framework.
  - 6) Explain the exemption and equivalency process in DOE O 251.1D, as they relate to Nuclear Safety Directives.
  - 7) Explain where the list of nuclear safety directives are included in applicable contract mechanisms.
  - 8) List the Nuclear Facility Core and Crosscutting Performance Areas in DOE G 226.1-2A, *Federal Line Management Oversight of DOE Nuclear Facilities*.
- B. Safety System Operability
- 1) Define the term Operability in terms of nuclear facility safety structure, system, and components (SSC).
  - 2) Discuss SSC reliability including the definition of reliability and how system reliability relates to system performance and operability.
  - 3) Discuss SSC availability including the definition of availability and how system availability relates to system performance and operability.
  - 4) Discuss the situations that would warrant performing an operability determination including the inputs for conducting and the potential outputs of an operability determination.
  - 5) Discuss the purpose, scope, objectives, and regulatory and/or DOE directive requirements for a contractor cognizant system engineer (CSE) program.
  - 6) Describe the DOE's expectations for the use and content of system design description documents.
  - 7) Describe how to determine if a given SSC meets system safety functional requirements and design performance criteria.
  - 8) Describe DOE expectations for contractor system health reports and how the information in these reports relates to SSC operability.
  - 9) Describe how system walk downs relate to configuration management and ensuring the operability of safety SSCs.
- C. Technical Safety Requirement (TSR) Implementation
- 1) Discuss the definition for each type of TSR listed in Appendix A to Subpart B of 10 CFR 830.

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- 2) Discuss the general principles of SSC Operability in the TSRs.
  - 3) Describe the importance of facility modes and how they relate to limiting conditions for operability (LCOs).
  - 4) Discuss where minimum staffing levels are defined in the TSRs.
  - 5) Discuss where procedure requirements are defined in the TSRs.
  - 6) Discuss the different types of administrative controls (ACs) in the TSRs.
  - 7) Discuss the concept of key elements of safety management programs (SMPs) and how they relate to ACs as described in DOE-STD-3009-2014.
  - 8) Describe the guidance provided in DOE-STD-1186, Specific Administrative Controls, and the two different formats for writing the SAC in the TSRs.
  - 9) Describe how MAR limits developed per DOE-STD-1027 are treated in the TSRs.
  - 10) Discuss how design features are treated in the TSRs.
  - 11) Describe how general LCO Surveillance Requirements (SRs) are used in the TSRs.
- D. Safety Management Program (SMP) Effectiveness
- 1) Radiation Protection Program
    - a. Explain the purpose, scope, objectives, and regulatory and/or DOE directive requirements of a Radiation Protection Program.
    - b. Identify any invoked Standards for a Radiation Protection Program.
    - c. Identify key documents/outputs of a Radiation Protection Program.
  - 2) Fire Protection Program
    - a. Explain the purpose, scope, objectives, and regulatory and/or DOE directive requirements of a Fire Protection Program.
    - b. Identify any invoked Standards for implementation of a Fire Protection Program.
    - c. Identify key documents/outputs of a Fire Protection Program.
  - 3) Criticality Safety Program
    - a. Explain the purpose, scope, objectives, and regulatory and/or DOE Directive requirements of a Criticality Safety Program.
    - b. Identify any invoked Standards for implementation of a Criticality Safety Program.
    - c. Identify key documents/outputs of a Criticality Safety Program.
  - 4) Radioactive Waste Management Program
    - a. Explain the purpose, scope, objectives, and regulatory and/or DOE Directive requirements for a Radioactive Waste Management Program.
    - b. Identify any invoked Standards for implementation of a Radioactive Waste Management Program.
    - c. Identify key documents/outputs of a Radioactive Waste Management Program.
  - 5) Nuclear Material Packaging and Transportation Program

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- a. Explain the purpose, scope, objectives, and regulatory and/or DOE Directive requirements for a Nuclear Material Packaging and Transportation Program.
  - b. Identify any invoked Standards for implementation of a Nuclear Material Packaging and Transportation Program.
  - c. Identify key documents/outputs of a Nuclear Material Packaging and Transportation Program.
  - d. Explain the packaging and handling considerations for storage and transportation of each type of material or waste, in accordance with DOE O 441.1-1C Chg. 1, DOE O 460.1D, and DOE O 461.1C.
- 6) Worker Safety and Health Program
- a. Explain the purpose, scope, objectives, and regulatory and/or DOE Directives for a Worker Safety and Health (WSH) Program.
  - b. Discuss the function and typical content of a worker safety and health program that meets 10 CFR 851 and OSHA.
  - c. Explain the relationship of the WSH program to Nuclear Facility Safety Management Programs.
  - d. Identify key documents/outputs of the WSH Program.
- E. Work Planning and Control
- 1) Discuss the purpose, scope, and regulatory drivers for implementing activity-level work planning and control (WP&C).2) Explain the basic process for developing a job hazards analysis (JHA) or job safety analysis (JSA).
  - 2) Explain the importance of identifying and screening impacts on technical safety requirements (TSRs), changing modes of facility operation, and entrances to limiting controls for operations (LCOs) during the early planning of work activities.
  - 3) Explain the concept of skill of the worker/craft and how it may be applied in the WP&C process.
  - 4) Explain the hierarchy of controls
  - 5) Explain the steps involved in the preparation and release/authorization of work.
  - 6) Explain the purpose and scope of pre-job briefings and post-job reviews.
- F. Safety Management System Effectiveness
- 1) Integrated Safety Management System (ISMS)
    - a. Discuss the purpose, scope, and regulatory drivers for an ISMS.
    - b. Explain the department's framework for implementing an ISMS in terms of core functions and guiding principles, in accordance with DOE P 450.4A.
    - c. Describe the process used to develop and approve the contractor's annual ISM performance objectives, measures, and commitments.
    - d. Explain the relevance and importance of an ISMS description to the execution of an ISMS.

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- e. Explain the purpose of an authorization agreement and its relationship to the ISM guiding principles.
- 2) Nuclear Facility Quality Assurance (QA)
    - a. Discuss the Purpose, Scope, and regulatory drivers for a Nuclear Facility QA Program.
    - b. Describe the relationship between 10 CFR 830, DOE O 414, and NQA-1 for implementing a nuclear facility quality assurance program.
    - c. Identify the key documents/outputs of the Nuclear Facility QA program.
- G. Emergency Preparedness
- 1) Identify the regulatory drivers for an Emergency Preparedness Program.
  - 2) Discuss the purpose and objectives of DOE's Emergency Management (EM) Program as defined in DOE O 151.1D, Comprehensive Emergency Management System
  - 3) Discuss the concept of Emergency Public Information and the different roles of the Department's Public Affairs Office and the Joint Information Center in disseminating information in an emergency.
  - 4) Describe the contents of and the requirements for a continuity of operations (COOP) plan.
  - 5) Identify the key documents/outputs of an EM program.
- H. Formality of Operations
- 1) Identify the four components of Formality of Operations, in accordance with DOE G 226.1-2A.
    - a. Describe how key elements of each of the components of a Formality of Operations Program support maintaining the availability and reliability of safety SSCs.
    - b. Describe how key elements of each of components of a formality of operations program relate to the ISM core functions and/or guiding principles.
- I. Conduct of Operations
- 1) Discuss the purpose, scope, objectives, regulatory drivers and associated DOE directives for a Conduct of Operations Program.
  - 2) Explain the relationship between the specific program requirements, the referenced DOE Guides and Standards, and the detailed program attributes in Attachment 2 and Appendix A of DOE O 422.1.
  - 3) Identify the topical area requirements in Attachment 2 of DOE O 422.1 that should be integrated with other related DOE requirements.
  - 4) Identify the Key documents/outputs of the Conduct of Operations Program.
- J. Conduct of Maintenance

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- 1) Discuss the purpose, scope, objectives, regulatory drivers and associated DOE directives for a Nuclear Facility Maintenance Program.
- 2) Identify any invoked standards for implementation of a Nuclear Facility Maintenance Program.
- 3) Identify the key documents/outputs of a nuclear facility maintenance program.
- 4) Define each of the following maintenance related terms and explain their relationship to each other:
  - a. Corrective
  - b. Preventive
  - c. Predictive
  - d. Periodic
  - e. Planned
  - f. Reliability-centered
  - g. Troubleshooting

### K. Conduct of Training

- 1) Discuss the purpose, scope, objectives, regulatory drivers and associated DOE directives for a contractor Nuclear Facility Training Program.
- 2) Describe the inputs, outputs, and primary steps of the systematic approach to training.
- 3) Identify the required activities for qualification of nuclear facility operators and operations supervisors in DOE O 426.2.
- 4) Identify the nuclear facility positions that are required to be certified positions in DOE O 426.2.

### L. Conduct of Engineering

Note: Conduct of engineering is not formally defined in the DOE Directives. In this FAQs the configuration management process and supporting engineering functions is equivalent to the concept of a conduct of engineering program.

- 1) Discuss the purpose, scope, objectives, regulatory drivers and associated DOE directives for a Configuration Management (CM) process.
- 2) Describe some of the interfacing DOE directives listed in DOE-STD-1073.
- 3) State the objectives of the following elements of a CM process as provided in DOE-STD-1073.
  - a. Design control
  - b. Work Control
  - c. Change Control
  - d. Document Control
- 4) Discuss the specific types of CM assessments that are performed and the purpose for conducting these assessments in DOE-STD-1073.



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- 5) Discuss the following engineering principles:
  - a. Design items and processes are developed using engineering principles and appropriate technical standards.
  - b. Appropriate technical and industrial standards are incorporated into the design work or changes.
  - c. Design interfaces, including organizational and design product interfaces, are identified and controlled.
  - d. Changes to the original design receive reviews and approval, comparable to the reviews and approvals of the original design considering the scope of the change.
- 6) Describe the roles and responsibilities of the design authority position.
- 7) Discuss the purpose of change control boards.
- 8) Describe the relationship of configuration management to safety basis documentation and requirements (DSAs and TSRs, including system design description documents [SSDs]).
- 9) Describe the relationship of the safety basis and design basis to the authorization basis.

### M. Issue Identification and Resolution

Note: For this FAQs the issues management system (IMS) as part of the Contractor Assurance System is equivalent to the Issue Identification and Resolution cross cutting performance area.

- 1) Discuss the purpose, scope, objectives, regulatory drivers and associated DOE directives for an Issues Management System.
- 2) Discuss the required activities that must be completed and documented for issues categorized as higher significance findings.

## 2. An STSM shall demonstrate knowledge of the Department's expectations and available resources for fostering a healthy safety culture.

### Knowledge Requirements

- A. Explain the relationship between organizational culture, safety culture, and a safety conscious work environment.
- B. Explain the department's concept of safety culture in terms of the functional areas and attributes, in accordance with DOE G 450.2, Attachment 10.
- C. Explain how a STSM can have either a positive or negative impact on an organizations safety culture.
- D. Describe the role of Federal Line Management's oversight when monitoring the safety culture of contractor organizations that operate DOE nuclear facilities.
- E. Discuss methods and tools available for routine monitoring of safety culture.

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- F. Explain the concept of Human Performance Improvement (HPI) and how it can be utilized to develop an understanding of how human performance can contribute to occurrences and events.
- G. Explain the relationship of HPI to safety culture.
- H. Explain how management's handling of workforce concerns can affect safety culture.
- I. Describe the purpose, scope, and importance of the Department's Employee Concerns Program.
- J. Describe the purpose, scope, and importance of the differing professional opinions process in DOE O 442.2 for issues involving nuclear safety.
- K. Discuss the role of STSM specifically identified in the DPO process
- L. Explain the importance of encouraging alternate points of view.
- M. Explain how the consideration of alternate points of view can affect safety culture
- N. Explain how to reach consensus when given differing opinions.
- O. Define whistleblower.

**3. An STSM shall demonstrate knowledge of the Departments expectations for recruiting, deploying, developing, and retaining a technically competent workforce that will accomplish DOE missions in a safe and efficient manner.**

### Knowledge Requirements

- A. Explain the purpose of the Technical Qualification Program (TQP), in accordance with DOE O 426.1A.
- B. Explain the STSM's role when implementing the TQP.
- C. Explain the Federal Technical Capability Program (FTCP) Panel's relationship to the TQP.
- D. Discuss how you would use the following to develop technical staff and the pro and cons of each method, including the role in the STSM in each.
  - 1) Mentoring
  - 2) Rotational assignments
  - 3) Professional Seminars
  - 4) Cross training
- E. Describe the typical interactions and related roles and responsibilities between the local FTCP agent and line management in decisions related to recruitment, hiring, and retention of personnel in the TQP.

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- F. Discuss considerations you would use to identify any needed compensatory measures for personnel performing oversight who have not completed initial qualification or continuing training (CT) requirements.
- G. Discuss the requirements in DOE O 426.1 for a continuing training (CT) program and any organizational specific requirements for identifying, completing, and tracking CT and performance activities to maintain qualifications.

#### 4. An STSM shall apply knowledge to make decisions and/or recommendations to line management regarding the safe operation of nuclear facilities.

##### Knowledge Requirements

###### A. DOE Nuclear Facility Oversight Framework

- 1) Explain the departments framework for conducting oversight of nuclear facilities outlined in DOE G 226.1-2A, DOE Line Management Oversight of Nuclear Facilities.
- 2) Explain the roles and responsibilities between the FR, NSS, SSO and other functional area subject-matter experts in providing oversight of the nuclear facility core and crosscutting performance areas.
- 3) Discuss the attributes that should be considered in designing site specific performance measures and processes for safety oversight of nuclear facilities in DOE G 226.1-2A.
- 4) Discuss the types of information you would use to determine the level of the hazard or consequence in the nuclear facility core performance areas, including nuclear facility SMPs.

###### B. Evaluation of Contractor Assurance System

- 1) Discuss the DOE's expected outcome of a contractor assurance system (CAS) and why having a robust CAS is important in the DOE's oversight approach.
- 2) Discuss the required attributes for each of six components of CAS in DOE O 226 and how they contribute to achieving the desired outcome of the overall CAS.
- 3) Explain why it is important to identify and evaluate the output of the CAS at functional, topical, or program level as well as the system level.
- 4) Discuss the types of data you would expect the Federal nuclear facility oversight personnel (e.g. Facility Representatives, Nuclear Safety Specialists, Safety System Oversight, and SMP Functional Area Leads) to provide to support the ongoing evaluation of the effectiveness of the CAS.

###### C. Nuclear Facility Oversight Planning

- 1) Explain how the level of a programs performance is used in the development of the integrated nuclear facility oversight plans.
- 2) Discuss how to use information from the CAS at the various levels (system, functional, topical, program) to adjust the level and mix of oversight activities between these areas.
- 3) Explain how operational risks are used in developing integrated oversight plans.

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- 4) Explain how the level of confidence in CAS data accurately reflecting the contractor's performance in the core and crosscutting performance areas is used in the development of the integrated oversight plan.
- 5) Describe the types of changes that should be evaluated during periodic updates to the nuclear facility oversight plans and the potential impact these changes may have on the planned oversight activities
- 6) Discuss the pros and cons of the following types of oversight activities and the factors that allow the level and mix of these activities to be adjusted:
  - a. Operational Awareness Activities (OAA)
  - b. Assessments
  - c. Shadow Assessments and/or Joint assessments

### D. Collecting and Analyzing Oversight Data

- 1) For each of the six Safety Management Programs listed in PC #1 (Fire Protection, Radiation Protection, Criticality Safety, Radioactive Waste Management, Nuclear Material Packaging and Transportation, and Worker Safety and Health programs):
  - a. Describe the key elements<sup>1</sup> of the program.
  - b. Discuss typical performance measures or indicators for the key elements
  - c. Identify any contractor and federal baseline oversight requirements.
  - d. Identify any required federal approvals or other inherent federal activity identified in the directives for each performance area.
  - e. Describe the typical types and frequency of OAAs to support the ongoing evaluation of the implementation of the program key elements.
  - f. Discuss potential indicators of a programmatic breakdown of the key elements.
- 2) For each of the four components of the formality of operations crosscutting performance area listed in PC #1 {Conduct of Operations, Conduct of Maintenance, Conduct of Training, and Conduct of Engineering (i.e. configuration management process)}:
  - a. Describe the key elements of the program.
  - b. Discuss typical performance measures or indicators for the key elements.
  - c. Identify any contractor and federal baseline oversight requirements.
  - d. Identify any required federal approvals or other inherent federal activity identified in the directives for each performance area.
  - e. Describe the typical types and frequency of OAAs to support the ongoing evaluation of the implementation of the program key elements.
  - f. Discuss potential indicators of a programmatic breakdown of the key elements.

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<sup>1</sup> In the context of evaluating program performance, **key elements** are those attributes of a program that either significantly contribute to achieving the desired result of the program or if they fail will lead to a failure in meeting the overall objective of the program. **Key elements** are typically associated with requirements in the Contract Requirements Document (CRD) for the applicable program.

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- 3) Discuss how you would periodically evaluate CAS and federal oversight data to identify potentially significant nuclear facility performance issues.
- E. Communication and Resolution of Significant Nuclear Safety Performance Issues
- 1) Explain the purpose of an Issues Management System and its significance when managing the contractor's performance.
    - a. Describe the attributes and potential criteria for determining high significant issues.
    - b. Explain how to utilize causal analysis results when evaluating the effectiveness of corrective actions.
    - c. Explain how the resolution of significant issues should be validated.
  - 2) Discuss the conditions that could potentially require a federal ISM system verification and declaration
  - 3) Describe the four circumstances of TSR violations that can occur and associated reporting requirements
  - 4) Describe the pros and cons for the following methods of communicating performance issues to the contractor:
    - a. Electronic Issues management system
    - b. Informal communication (email, phone, face to face)
    - c. Formal periodic communication (monthly, quarterly performance input or rollup of lower level issues)
    - d. Formal one-time letter from Contracting Officer Representative
  - 5) Explain the DOE line management responsibilities for managing the Federal response to unplanned events identified in DOE O 225.1B, Accident Investigations.
    - a. Explain line management's role when preserving evidence at the scene of an accident.
    - b. Explain the criteria for determining when an Accident Investigation Board should be appointed.
- F. DOE Independent Oversight and Nuclear Safety Enforcement
- 1) Independent Oversight
    - a. Describe the DOE Office of Enterprise Assessments (EA) responsibilities and requirements in DOE O 226.1B, *Implementation of DOE's Oversight Policy*.
    - b. Discuss how EAs independent oversight activities are identified and incorporated into the nuclear facility oversight plan.
    - c. Describe how the results of EA's independent oversight activities are evaluated and factored into the planning and conduct of ongoing nuclear facility oversight activities.
  - 2) Nuclear Safety Enforcement
    - a. Explain the purpose of the Price Anderson Amendments Act (PAAA) and its relationship to DOE's self-regulatory framework.

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- b. Identify the nuclear safety regulations applicable to the PAAA.
- c. State the purpose and scope of 10CFR 820, *Procedural Rules For DOE Nuclear Activities*.
- d. Discuss the roles and responsibilities of EA and DOE Line Management in the overall enforcement process outlined in 10CFR 820.
- e. Discuss the role of the site's Enforcement or PAAA Coordinator.
- f. Discuss the purpose of the Noncompliance Tracking System (NTS) and expectations for the use of the NTS by DOE contractors and Line Management.

### G. External Oversight

- 1) Explain the oversight role of the DNFSB regarding the operation of the department's defense nuclear facilities, in accordance with DOE M 140.1-1B.
  - a. Identify the functional differences between the defense board staff and its members.
  - b. Describe the significance of defense board letters and recommendations.
- 2) Explain the DOE line management's role when interfacing with the DNFSB.
  - a. Explain the roles of different positions that interface with the DNFSB.
  - b. Identify the responsibilities and authorities of positions that interface with the DNFSB.

**MPA 4.1.** Review an integrated nuclear facility oversight plan and provide recommendations as necessary for adjustments to the level and mix of planned oversight activities.

#### MPA Evaluation Criteria

- 1) Verify that required federal oversight activities in the core and crosscutting performance areas are included in the integrated nuclear facility oversight plan.
- 2) Evaluate whether considerations for program performance, the level of confidence in the data and information provided by the CAS, and the level of hazards, were considered in determining any additional federal oversight activities in the core and crosscutting performance areas.
- 3) Evaluate whether there are adequate federal resources to perform the required baseline oversight activities and priority supplemental oversight activities.
- 4) For any identified recommendations, discuss at a minimum, the following:
  - a. Provide the basis for the recommendation, including the criteria you used to determine the priority of any recommended oversight activities.
  - b. Potential courses of action to address any recommended changes in planned oversight activities, including how to address any staffing related issues.
  - c. The risks associated with not conducting any recommended oversight activities.

**MPA 4.2.** Evaluate the adequacy of a casual analysis, corrective action plan, and planned effectiveness review for a significant issue (event, incident, or significant issue such as identification of a programmatic weakness).

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### MPA Evaluation Criteria

- 1) Evaluate the significant determination using local criteria
- 2) Evaluate the linkage between the causal factors, corrective actions, and effectiveness criteria
- 3) Compare results to expectations (criteria) and draw conclusions
- 4) Describe the basis for any identified issues or recommendations
- 5) Discuss if applicable, how you would communicate results to appropriate federal and/or contractor personnel

**MPA 4.3.** Review contract list of directives and verify that the applicable and required Nuclear Safety Directives per DOE O 410.1 are included in the contract.

**MPA 4.4.** Review the contractor's evaluation of performance in one of the cross cutting performance areas.

### MPA Evaluation Criteria

- 1) Identify sources of site specific contractor and federal oversight data you would use in this evaluation of performance.
- 2) Identify the key elements and related performance measures used in the evaluation.
- 3) Identify the criteria you use in this evaluation.
- 4) Document any issues you identify and provide a basis for the significance of the issues using local criteria.
- 5) Describe how you would communicate any issues to the applicable contractor and the reasons why you chose this method.

**MPA 4.5.** Review the results of a federal or contractor assessment of one of the Safety Management Programs listed in PC #1.

### MPA Evaluation Criteria

- 1) Verify the scope of the assessment was followed.
- 2) Verify any issues are adequately supported and properly categorized using local criteria.
- 3) Draw an overall conclusion on the adequacy of the assessment and your confidence in the results.
- 4) Discuss how you would address any issues you identified during the review.

**MPA 4.6.** Observe and evaluate the adequacy of one of the following contractor led assessment activities:

- A. A periodic ISM/CAS evaluation
- B. A review of nuclear facility related performance area
- C. An effectiveness review

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### MPA Evaluation Criteria

- 1) Verify the scope of the assessment was followed.
  - 2) Verify any issues are adequately supported and properly categorized using local criteria.
  - 3) Draw an overall conclusion on the adequacy of the assessment and your confidence in the results.
  - 4) Discuss how you would address any issues you identified during the review.
- 5. An STSM shall apply knowledge to provide input to line management on the contractor's nuclear safety performance rating and award fee determination.**
- A. Explain the importance of providing periodic nuclear safety performance feedback to the contractor, including the mechanisms for doing so (CPARS, conditional payment of fee, for example).
  - B. Explain how the STSM integrates results from Federal staff oversight activities, when determining the contractors overall nuclear safety performance evaluation.
  - C. Explain why the department indemnifies operating contractors from the risk of operating nuclear facilities, including a discussion of relative laws and enforcement of the indemnification, in accordance with the Price-Anderson Amendment Act (PAAA).
    - 1) Explain the purpose and objectives of the PAAA.
    - 2) Discuss the regulations of the PAAA.
    - 3) Explain the roles of the site's Enforcement or PAAA Coordinator.

**MPA 5.1.** Based on evaluation of CAS and Federal Oversight Data provide input in the periodic scoring of the contractor's performance and award fee determination in at least one performance area using local performance evaluation input process.

- 6. An STSM shall make decisions and/or recommendation to line management regarding the development, approval, implementation, and maintenance of nuclear facility safety basis documents.**

### Knowledge Requirements

- A. Safety Basis Development
  - 1) Explain the purpose of a facility's hazard analysis.
  - 2) Explain how a facility's hazard category is determined.
  - 3) Describe the purpose of DOE-STD-1027-2018.
  - 4) Describe the process for determining the initial and final hazard categorization of a DOE nuclear facility.
  - 5) Discuss the requirements and guidance for the following in DOE-STD-1027
    - a. Excluding radioactive material from the radiological inventory



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- b. Reducing the radiological inventory through facility segmentation
  - c. Modifying radionuclide threshold quantities
- 6) Explain the purpose of a facility's accident analysis.
  - 7) Explain the purpose of safety class controls and how safety class controls are determined.
  - 8) Explain the purpose of safety significant controls how safety significant controls are determined.
  - 9) Explain the purpose of design features and how design features are determined.
  - 10) Describe how other hazard controls documented in hazard evaluations are maintained in the DSA.
  - 11) Describe how criticality safety controls are identified and documented in the DSA.
  - 12) Discuss how DOE-STD-3007-2017, provides the linkage between the criticality safety evaluation process and the requirements in DOE-STD-3009-2014 with respect to the identification of safety controls.
  - 13) Explain the concept of tailoring using the graded approach, as it relates to nuclear facility operations.
  - 14) Explain the concept of defense in depth, as it relates to nuclear facility operations.
  - 15) Explain the preferred hierarchy of safety controls in the documented safety analysis.
  - 16) Explain the pros and cons regarding the use of administrative controls and requirements associated with the use of Specific Administrative Controls (SAC).
- B. Safety Basis Approval
- 1) Explain the review and approval process for the safety basis (SB) document, in accordance with DOE-STD-1104-2016.
    - a. Describe the roles and responsibilities of the SB Team Leader and SBAA in the SB review and approval process.
    - b. Explain the purpose of a Safety Basis Review Plan.
    - c. Explain how mission needs can affect the content of the Safety Basis Review Plan (i.e. the strategy for selection of controls, the scope of the review, and the selection of the appropriate safety harbor methodology).
    - d. Explain the relationship of safety design basis documents from SDS thru DSA and the order of their development.
  - 2) Explain the purpose and function of the Safety Evaluation Report (SER).
    - a. Explain the SER's significance to the Safety Basis approval decision.
    - b. Describe situations where it may be appropriate to use modified SER format (i.e. letter).
    - c. Discuss the appropriate use of Conditions of Approval (COAs) in SB approval documents.
  - 3) Explain the required process criteria and attributes for nuclear facility safety delegations in DOE O 450.2.

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- 4) Discuss the purpose, scope, requirements, and responsibilities for approval of exemptions to nuclear safety rules and approval of an alternate method for developing a documented safety analysis.

### C. Safety Basis Implementation and Maintenance

- 1) Explain the purpose and need for Implementation Verification Reviews.
- 2) Explain the purpose of the Unreviewed Safety Question (USQ) process and its role in maintaining the DSA.
- 3) State the screening and evaluation criteria used for USQ determinations.
- 4) Describe what constitutes a Potentially Inadequate Safety Analysis (PISA).
- 5) Describe the actions taken in the event of a PISA.
- 6) Explain the purpose of an Evaluation of the Safety of the Situation (ESS) and the Justification for Continued Operations (JCO).
  - a. Explain the bases for approval of the JCOs and ESSs.
- 7) Explain the requirements from 10 CFR 830 when updating the DSA.
- 8) Using the guidance in DOE G 423.1-1B, Implementation Guide for Use in Developing Technical *Safety Requirements*, discuss the following:
  - a. The purpose of TSR Implementation Verification Reviews (IVRs)
  - b. Determining the need for and timing of a Federal IVR
  - c. Considerations in the application of the graded approach when conducting IVRs

### D. Safety Basis integration with Safeguards and Security

- 1) Explain how Safeguards and Security features can negatively affect a facility's Safety Basis.
- 2) Explain how the facility's Safety Basis and implementation of SMPs can have a negative effect on Safeguards and Security.
- 3) Explain how shipping and receiving materials of national security interest may impact the Safety Basis.

#### **MPA 6.1.** Review a USQ Determination.

#### **MPA 6.2.** Review a Safety Evaluation Report (SER) for one of the following:

- A. A DSA Annual Update
- B. A positive ESS or JCO
- C. A new TSR control

#### **MPA 6.3.** Perform at least one of the following operational awareness activities (OAA):

- A. Walk down a facility with appropriate Subject Matter Expert (SSO, NSS, or FR) and identify any safety class and or safety significant controls contained in a TSR.
- B. Review a contractor SSC Operability Determination.

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- C. Review a TSR status board or other tracking mechanism and verify facility compliance with the TSR surveillance requirements.

**MPA 6.4.** Evaluate a hazard analysis or accident analysis for a specific hazard or accident scenario.

**MPA 6.5.** Evaluate the results of a contractor independent verification review (IVR) of a safety basis control

### MPA Evaluation Criteria

- 1) Verify the scope of the IVR was followed.
- 2) Verify any issues are adequately supported and properly categorized using local criteria.
- 3) Draw an overall conclusion on the adequacy of the IVR and your confidence in the results.
- 4) Discuss how you would address any issues you identified during the review.

**MPA 6.6.** Evaluate the adequacy of the description of Safeguard and Security interfaces in a site specific DSA.

### MPA Evaluation criteria

- 1) Identify the section(s) of the DSA that describe S&S interfaces.
- 2) Determine if the description and evaluation of these interfaces is sufficient to describe any potential impact on nuclear safety.
- 3) Based on existing criteria in DOE directives draw a conclusion as to whether the description and acceptance of S&S interfaces are acceptable.

## **7. An STSM shall demonstrate knowledge of the requirements for waste management and environmental stewardship of nuclear facilities.**

### Knowledge Requirements

#### A. Permits

- 1) Explain what type of permits are typically applicable to nuclear facilities.
- 2) Explain who the permit regulators are for nuclear facilities.
- 3) Explain how permits are evaluated for nuclear facilities.
- 4) Discuss the relationship between the typical nuclear facility environmental permits and the nuclear facility authorization basis.

#### B. Regulations

- 1) Discuss the regulatory and any local processes for ensuring public involvement in environmental regulations and associated permits.

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- 2) Discuss the potential consequences of environmental regulation noncompliance.
- 3) Describe the purpose, scope, and objectives of the Clean Air Act.
- 4) Identify the key documents required by the Clean Air Act.
- 5) Describe the purpose, scope, and objectives of the Clean Water Act.
- 6) Identify the key documents required by the Clean Water Act.
- 7) Describe the purpose, scope, and objectives of the Resource Conservation and Recovery Act (RCRA).
- 8) Identify the key documents required by the RCRA.
- 9) Describe the purpose, scope, and objectives of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- 10) Identify the key documents required by the CERCLA.
- 11) Describe the purpose, scope, and objectives of the Toxic Substances Control Act (TSCA).
- 12) Identify the key documents required by the TSCA.
- 13) Describe the purpose, scope, and objectives of the National Environmental Policy Act (NEPA).
- 14) Identify the key documents required by the NEPA.
- 15) Discuss the purpose, scope, and objectives of the Federal Facility Compliance Act (FFCA).
- 16) Identify the key documents required by the FFCA.
- 17) Describe the purpose, scope, objectives, and regulatory drivers of DOE O 458.1 Admin Chg. 2.
- 18) Identify the key documents required by DOE O 458.1 Admin Chg. 2.
- 19) Describe the criteria for determining the following:
  - a. Low-level waste
  - b. High-level waste
  - c. Transuranic waste
  - d. Mixed waste

### C. Reporting

- 1) Discuss the purpose, scope, and required content of the Annual Site Environmental Report (ASER).
- 2) Discuss the reporting requirements for a nuclear facility environmental permit violation.

## **8. An STSM shall apply knowledge to make decisions and/or recommendation to line management regarding the construction and modification of nuclear facilities.**

### Knowledge Requirements

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- A. Explain the purpose, scope, and the contractor's requirements, of DOE O 413.3B Chg. 3.
  - 1) Identify the total project cost that invokes the requirements of DOE O 413.3B and DOE-STD-1189.
- B. Explain the review and approval process for the safety design basis document, in accordance with DOE-STD-1104-2016.
  - 1) Explain the types of safety design basis documents identified in DOE-STD-1189 and how approval of these documents establishes the readiness to proceed to the next phase of designing a project.
  - 2) Explain the roles and responsibilities of the Safety Basis Approval Authority and the Federal Project Director, in accordance with DOE O 420.1C.
  - 3) Explain the purpose and function of the safety review letter in the approval of safety design bases documents.
- C. Explain how to determine if a change is a major modification when compared to a Safety Basis.
  - 1) Identify the criteria for determining if a facility modification qualifies as a major modification and the conditions under which DOE-STD-1189 requires major mod assessments be provided to the DOE Field Element Manager.
- D. Explain the content and importance of DOE O 420.1C in relation to facility design.
- E. Explain a facility's technical baseline.
- F. Explain the measures taken when configuration management of the technical baseline is lost.
- G. Explain the roles and responsibilities of the Safety Design Integration Team, in accordance with DOE-STD-1189.
- H. Explain the requirements and expectations for the Safety Design Strategy (SDS), in accordance with DOE-STD-1189.
- I. Discuss the requirements in DOE-STD-1189 and DOE-STD-1104 for federal review of long lead procurement of safety SSCs.
- J. Discuss the requirements in DOE-STD-1189 and DOE-STD-1104 for a federal review of the preliminary results of the design of safety SS.
- K. Explain the applicability the Code of Record's requirements, including traceability.
- L. Explain the purpose, scope, contractor, and Federal requirements, in DOE O 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*.
- M. Explain the objectives and overall process for achieving and verifying readiness in DOE-STD-3006-2010.
  - 1) Explain the use of the startup notification report.

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- 2) Explain the key elements of the Plan of Action (POA) and the importance of the POA to the overall process of verifying readiness.
  - 3) Explain the terms declaration of readiness and readiness to proceed, and how the STSM may interact with these process steps.
- N. Explain the Federal and Contractor Line Management's responsibilities for achieving and verifying readiness.
- 1) Explain the roles and responsibilities of the Federal Readiness Team Leader, the Federal Project or Program Manager, and the Startup Authority.
  - 2) Explain the key elements of the Contractor's Readiness Program that should be periodically evaluated as part of federal oversight.

**MPA 8.1.** Review and evaluate one of the following activities related to the construction of or modifications to a nuclear facility:

- A. A major modification determination
- B. A safety design strategy document
- C. A long lead procurement package for a safety SSC
- D. The results of the preliminary review of the design of a new or modified safety SSC

**MPA 8.2.** Perform at least one of the following activities related to the start up or restart of nuclear facilities.

- A. Review and evaluate a Readiness to Proceed Memo for a proposed readiness activity.
- B. Review and evaluate the POA for a proposed readiness activity (contractor or federal).
- C. Review and evaluate the required the level of readiness verification in a periodic SNR.

APPENDIX A

INITIAL QUALIFICATION TRAINING RECOMMENDATIONS

For STSM personnel completing initial qualification Table 1 provides a list of NTC training courses that support attainment of the performance competency knowledge requirements in this FAQs and provide an opportunity for STSM candidates to practice performance of the MPAs in this FAQs.

Note: Refer to the NTC safety training course catalog at <https://ntc.doe.gov/student/stp> to verify the currently available courses and their titles.

TABLE -1 INITIAL QUALIFICATION TRAINING RECOMMENDATIONS	
Performance Competency (PC) Knowledge Requirements and MPAs	Applicable NTC Training Courses (Note: DE refers to an online course)
<b>PC #1 – Regulatory and Directive Requirements</b>	
A. DOE Regulatory Framework	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 1, Lesson 2, DOE Directives System</i></li> <li>• SBA-110DE, <i>Nuclear Facility Safety Basis Fundamentals</i></li> </ul>
B. Safety System Operability	<ul style="list-style-type: none"> <li>• SMP-200, <i>Safety System Oversight Duties and Responsibilities</i></li> </ul>
C. TSR Implementation	<ul style="list-style-type: none"> <li>• SBA-150DE, <i>TSR Development</i></li> </ul>
D. Safety Management Program Effectiveness	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lesson 4, Radiation Protection; and Lesson 5, Worker Protection Standards</i></li> </ul>
E. Work Planning and Control	<ul style="list-style-type: none"> <li>• FOO-240, <i>Fundamentals of Work Planning and Control</i></li> </ul>
F. Safety Management System Effectiveness	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 2, Lesson 2, Integrated Safety Management; and Season 3, Lesson 1, Quality Assurance</i></li> </ul>
G. Emergency Preparedness	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 3, Lesson 4, Emergency Management</i></li> </ul>
H. Formality of Operations	

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I. Conduct of Operations	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 3, Lesson 2, Conduct of Operations</i></li> <li>• FOO-100DE, <i>Conduct of Operations Applied Fundamentals</i></li> <li>• FOO-200, <i>Conduct of Operations</i></li> <li>• FOO-205, <i>Conduct of Operations Case Study Applications</i></li> </ul>
J. Conduct of Maintenance	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 3, Lesson 5, Maintenance Management</i></li> <li>• FOO-210, <i>Conduct of Maintenance</i></li> </ul>
K. Conduct of Training	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 1, Lesson 3, Federal and Contractor Training</i></li> <li>• MIT-103DE, <i>Introduction to the Instructional Design Process</i></li> </ul>
L. Conduct of Engineering (Configuration Management)	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 3, Lesson 3, Configuration Management</i></li> <li>• FOO-230, <i>Configuration Management</i></li> </ul>
<b>PC #2 – Safety Culture</b>	
A-C. Safety Culture Fundamentals	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 2, Lesson 4, Strong Nuclear Safety Culture</i></li> <li>• TLP-200, <i>Safety Culture for DOE and DOE Contractor Leaders</i></li> </ul>
D- E. Oversight of Safety Culture	<ul style="list-style-type: none"> <li>• TLP-200, <i>Safety Culture for DOE and DOE Contractor Leaders</i></li> </ul>
F-G. Human Performance Improvement	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season2, Lesson 3, Human Performance improvement</i></li> <li>• EIP-100, <i>HPI Fundamentals</i></li> </ul>
H-N. Employee Concerns and DPO	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lesson 6, Employee Concerns</i></li> </ul>
<b>PC #3 –Technical Qualification Program</b>	
A-C. TQP Requirements	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 1, Lesson 3, Federal and Contractor Training</i></li> </ul>



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D-G. TQP Implementation	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 1, Lesson 3, Federal and Contractor Training</i></li> <li>• TQP-150DE, <i>Qualifying Official Training</i></li> </ul>
<b>PC#4 – Safe Operation of Nuclear Facilities</b>	
A. DOE Nuclear Facility Oversight Framework	<ul style="list-style-type: none"> <li>• DOE-120, <i>DOE Oversight and Implementation</i></li> </ul>
B. Evaluation of Contractor Assurance System	<ul style="list-style-type: none"> <li>• DOE-120, <i>DOE Oversight and Implementation</i></li> <li>• DOE-145, <i>Oversight for Supervisors</i></li> </ul>
C. Nuclear Facility Oversight Planning	<ul style="list-style-type: none"> <li>• DOE-120, <i>DOE Oversight and Implementation</i></li> <li>• DOE-145, <i>Oversight for Supervisors</i></li> </ul>
D. Collecting and Analyzing Oversight Data	<ul style="list-style-type: none"> <li>• DOE-130, <i>Fundamentals of Performance Management</i></li> <li>• DOE-145, <i>Oversight for Supervisors</i></li> <li>• DOE-310, <i>Oversight Data Analysis and Reporting</i></li> </ul>
E. Communication and Resolution of Significant Nuclear Safety Performance Issues	<ul style="list-style-type: none"> <li>• DOE-145, <i>Oversight for Supervisors</i></li> <li>• DOE-320, <i>Causal Analysis and Corrective Action</i></li> </ul>
F. DOE Independent Oversight -EA	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 1, Lesson 1, PAAA Act of 1988</i></li> </ul>
G. External Oversight -DNFSB	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 1, Lesson 4, Defense Nuclear Facilities Safety Board</i></li> </ul>
<b>MPA 4.1 – Review an Integrated Nuclear Facility Oversight Plan</b>	<ul style="list-style-type: none"> <li>• DOE-145, <i>Oversight for Supervisors</i></li> </ul>
<b>MPA 4.2 – Evaluate a casual analysis and corrective action plan</b>	<ul style="list-style-type: none"> <li>• DOE-145, <i>Oversight for Supervisors</i></li> <li>• DOE-320, <i>Causal Analysis and Corrective Action</i></li> </ul>
<b>MPA 4.4 – Review a contractor evaluation of performance</b>	<ul style="list-style-type: none"> <li>• DOE-145, <i>Oversight for Supervisors</i></li> </ul>
<b>PC #5 –Performance rating and award fee determination</b>	
A-B. Contractor Nuclear Safety Performance Rating Process and Inputs	
C-D. DOE Nuclear Safety Enforcement	<ul style="list-style-type: none"> <li>• STS-100DE, <i>Season 1, Lesson 1, PAAA Act of 1988</i></li> </ul>

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<b>PC #6 – Safety Basis</b>	
A. Safety Basis Development	<ul style="list-style-type: none"> <li>• SBA-120DE, <i>Hazard Identification, Categorization, and Evaluation Fundamentals</i></li> <li>• SBA-130DE, <i>Accident Analysis and Control Selection</i></li> <li>• SBA-150DE, <i>TSR Development</i></li> </ul>
B. Safety Basis Approval	<ul style="list-style-type: none"> <li>• SBA-170DE, <i>SER and SRL Development</i></li> </ul>
C. Safety Basis Implementation and Maintenance	<ul style="list-style-type: none"> <li>• SBA-160DE, <i>USQ Process</i></li> </ul>
D. Safety Basis Integration with Safeguards and Security	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 2, Lesson 1, Safeguards and Security</i></li> </ul>
<b>MPA 6.1</b>	<ul style="list-style-type: none"> <li>• SBA-250, <i>USQ Process Implementation Review and Approval</i></li> </ul>
<b>MPA 6.3</b>	<ul style="list-style-type: none"> <li>• SAF-786, <i>TSR Implementation</i></li> </ul>
<b>MPA 6.4</b>	<ul style="list-style-type: none"> <li>• SBA-220, <i>Hazard Analysis Review</i></li> <li>• SBA-230, <i>Accident Analysis and Control Selection Review</i></li> </ul>
<b>PC#7- Waste Management and Environment Stewardship</b>	
A. Permits	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lesson 1, Environmental Requirements</i></li> </ul>
B. Regulations	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lessons 1, Environmental Requirements</i></li> </ul>
B. 1 -2 Process Requirements	
B. 3-6 Clean Air Act	
B. 7- 8 RCRA	
B. 9-10 CERCLA	
B. 11-12 TSCA	
B. 13-14 NEPA	
B. 15-16 FFCA	
B. 17-19 Waste Management	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lesson 2, Waste Management</i></li> </ul>
C. Environmental Reporting	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lessons 1, Environmental Requirements</i></li> </ul>

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<b>PC #8- Construction and Modification of Nuclear Facilities</b>	
A-K. DOE Requirements and Standards for Construction and Modifications of Nuclear Facilities	<ul style="list-style-type: none"><li>• STS-100DE, <i>STSM Knowledge Base, Season 4, Lesson 3, Program and Project Management</i></li><li>• SBA-140DE, <i>Safety Design Basis Document Development</i></li></ul>
L-N. Readiness Verification	<ul style="list-style-type: none"><li>• SMP-100DE, <i>Readiness Review Program Fundamentals</i></li></ul>

APPENDIX B

CONTINUING TRAINING RECOMMENDATIONS

Table 1, *Core Continuing Training Recommendations*, includes the NTC courses associated with the performance competency knowledge requirements and related MPAs in this FAQs that should be primarily used to identify training courses to meet the continuing training hour requirements of DOE O 426.1A. Qualified STSM personnel should maintain proficiency in the performance of the MPAs identified in this FAQs through satisfactory performance of normally assigned job tasks. For tasks that are infrequently performed or where there are no organization specific opportunities for actual performance, personnel may use exercises conducted by the NTC during formal classroom training or use locally developed exercises as part of an assigned continuing training program to maintain proficiency.

Table 2, *Organization Specific Training and Performance Activity Recommendations*, includes continuing training and performance activity recommendations for a list of potential organization specific STSM duties and responsibilities. Table 2 includes performance activities (PAs) that STSMs are infrequently required to perform or PAs that are related to organization specific duties and responsibilities assigned to an STSM. Depending on organization specific duties and responsibilities these PAs may be used as professional development and/or to meet the continuing training activity requirements of DOE O 426.1A. These courses and performance activities should be referred to identify training hours and performance activities in addition to those in Table 1 to meet the minimum continuing training hour and performance activity requirements in DOE O 426.1A.

Note: Refer to the NTC safety training course catalog at <https://ntc.doe.gov/student/stp> to verify the currently available courses, their titles, and number of credited course hours.

Table 1- Core Continuing Training Recommendations	
Performance Competency (PC) and MPAs	Recommended Continuing Training Courses
PC #4 – Ensuring Safe Operation of Nuclear Facilities MPA 4.1, 4.2, 4.4, 4.6	<ul style="list-style-type: none"> <li>• DOE-110DE, <i>Oversight Fundamentals</i></li> <li>• DOE-200DE, <i>Assessment Fundamentals</i></li> <li>• DOE-145, <i>Oversight for Supervisors</i></li> <li>• DOE-310, <i>Oversight Data Analysis and Reporting</i></li> <li>• DOE-320, <i>Casual Analysis and Corrective Action</i></li> <li>• DOE-130, <i>Fundamentals of Performance Management</i></li> <li>• DOE-215, <i>Assessment Preparation and Application</i></li> </ul>
PC #6 – Safety Basis Development, Approval, Implementation, and	<ul style="list-style-type: none"> <li>• SBA-120DE, <i>Hazard Identification, Categorization, and Evaluation Fundamentals</i></li> <li>• SBA-130DE, <i>Accident Analysis and Control Selection</i></li> <li>• SBA-150DE, <i>TSR Development</i></li> </ul>

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Maintenance. MPA s 6.1, 6.3, and 6.4	<ul style="list-style-type: none"> <li>• SBA-160DE, <i>USQ Process</i></li> <li>• SBA-170DE, <i>SER and SRL Development</i></li> <li>• SBA-250, <i>USQ Process Implementation Review and Approval</i></li> <li>• SAF-785, <i>TSR Implementation</i></li> </ul>
PC #8 – Nuclear Facility Construction, Modification, and Readiness Verification MPAs 8.1 and 8.2	<ul style="list-style-type: none"> <li>• SBA-140DE, <i>Safety Design Basis Document Development</i></li> <li>• SMP-100DE, <i>Readiness Review Program Fundamentals</i></li> </ul>
All PCs	<ul style="list-style-type: none"> <li>• STS-100DE, <i>STSM Knowledge Base, Seasons 1-4</i></li> <li>• STS-300, <i>STSM Case Study Applications</i></li> </ul>

Table 2- Organization Specific Continuing Training and Performance Activity Recommendations		
Responsible Duty Areas	Recommended Continuing Training Courses	Recommended Performance Activities
Nuclear Facility Core Performance Area Oversight	<ul style="list-style-type: none"> <li>• FOO-100DE, <i>Conduct of Operations Applied Fundamentals</i></li> <li>• SMP-200, <i>Safety System Oversight Duties and Responsibilities</i></li> <li>• FOO-240, <i>Fundamentals of Work Planning and Control</i></li> <li>• FOO-200, <i>Conduct of Operations</i></li> <li>• FOO-205, <i>Conduct of Operations Case Study Applications</i></li> <li>• FOO-210, <i>Conduct of Maintenance</i></li> <li>• FOO-230, <i>Configuration Management</i></li> </ul>	<ul style="list-style-type: none"> <li>• Participant in performance Assessment of responsible performance area</li> <li>• Participant or shadow an EA or external assessment of responsible performance area</li> <li>• Participant in a site Emergency Management Drill</li> </ul>
Safeguards and Security Functional Area Oversight	<ul style="list-style-type: none"> <li>• MCA-101DE, <i>Introduction to Nuclear Material Control and Accountability (MC&amp;A)</i></li> <li>• MCA-110, <i>Basics of MC&amp;A</i></li> <li>• MCA-120, <i>Basics of Nuclear Material Control</i></li> <li>• SRM-100DE, <i>Security Risk Management</i></li> </ul>	<ul style="list-style-type: none"> <li>• Participant in Federal Survey</li> <li>• Shadow a contractor led survey</li> <li>• Shadow or Participant in EA S&amp;S assessment</li> </ul>

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	<ul style="list-style-type: none"> <li>• VAP-140, <i>Vulnerability Assessment Fundamentals</i></li> <li>• VAP-335, <i>Fundamental of Performance Management</i></li> </ul>	
Assessment Team Leader	<ul style="list-style-type: none"> <li>• TLP-300, <i>Assessment Team Leader</i></li> <li>• EIP-400, <i>Accident Investigation</i></li> </ul>	<ul style="list-style-type: none"> <li>• Lead any of the following types of Assessments:             <ul style="list-style-type: none"> <li>- Federal RA or ORR</li> <li>- Effectiveness Review of closure of significant Issue or event</li> <li>- Lead or serve on an Accident Investigation Team</li> </ul> </li> </ul>
Environmental Program Oversight		<ul style="list-style-type: none"> <li>• Review and recommend approval of updates to local permits</li> <li>• Shadow independent review of ISO 14001 Environmental Management System</li> </ul>
Safety Basis Approval Authority	<ul style="list-style-type: none"> <li>• SBA-170DE, <i>SER and SRL Development</i></li> <li>• SBA-220, <i>Hazard Analysis Review</i></li> <li>• SBA-230, <i>Accident Analysis and Control Selection Review</i></li> <li>• SBA-240, <i>TSR Review and Approval</i></li> <li>• SBA-250, <i>USQ Process Implementation Review and Approval</i></li> </ul>	<ul style="list-style-type: none"> <li>• Review and concur or approve an annual update or change to a DSA or TSR</li> <li>• Review and concur or approve an Evaluation of the Safety Situation (ESS) or Justification for Continued Operation (JCO)</li> </ul>
Safety Culture and Safety Management System Oversight	<ul style="list-style-type: none"> <li>• TLP-150, <i>Safety Culture for Front Line Leaders</i></li> <li>• TLP-200, <i>Safety Culture for DOE and DOE Contractor Leaders</i></li> </ul>	<ul style="list-style-type: none"> <li>• Participant in any of following:             <ul style="list-style-type: none"> <li>- Evaluation of Contractor Assurance System Effectiveness</li> <li>- ISM Verification</li> <li>- Safety Culture Assessment</li> </ul> </li> </ul>

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		<ul style="list-style-type: none"> <li>- DPO Panel</li> </ul>
Nuclear Facility Performance Evaluation	<ul style="list-style-type: none"> <li>• DOE-130, <i>Fundamentals of Performance Management</i></li> </ul>	<ul style="list-style-type: none"> <li>• Participant in development/Revision of applicable program performance measures</li> </ul>
Nuclear Facility Construction or Modification	<ul style="list-style-type: none"> <li>• SBA-260, <i>Safety in Design Document Review and Approval</i></li> </ul>	<ul style="list-style-type: none"> <li>• Review any of the following:               <ul style="list-style-type: none"> <li>- Safety Design Strategy Document</li> <li>- Conceptual Safety Design Report</li> <li>- A major modification determination</li> </ul> </li> <li>• Participant in any of the following reviews               <ul style="list-style-type: none"> <li>- Independent Project Review</li> <li>- Technical Independent Project Review</li> </ul> </li> </ul>
Technical Qualification Program Implementation		<ul style="list-style-type: none"> <li>• Attend an FTCP Panel Face to Face Meeting</li> <li>• Participant in or lead a TQP self-assessment</li> <li>• Participant in an TQP Accreditation Review</li> <li>• Participant in a TQP Qualification Oral Board</li> </ul>

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## CONCLUDING MATERIAL

**Review Activity:**

EM  
NNSA  
NE  
SC  
EA

**Preparing Activity:**

EA-50

**Project Number:**

TRNG: P1175-2019REV

**Field and Operations Offices:**

CBFO  
CH  
ID  
OH  
OR  
ORP  
RL  
SR

**Field or Site Offices:**

Argonne Site Office  
Brookhaven Site Office  
Fermi Site Office  
Kansas City Field Office  
Livermore Field Office  
Los Alamos Field Office  
Nevada Field Office  
NNSA Production Office  
Princeton Area Office  
Savannah River Field Office  
Sandia Field Office