

FTCP-PSQS-1178-2020
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Department of Energy
FEDERAL TECHNICAL QUALIFICATION PROGRAM

Technical Program Manager/Program Liaison
Program Specific Qualification Standard



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APPROVAL

Per DOE O 426.1B, the Federal Technical Capabilities Panel (FTCP) is responsible for concurring on Program Specific Qualification Standards (PSQS). The signatures below indicate approval and concurrence with this PSQS.

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ACKNOWLEDGMENT

The Department of Energy (DOE) / National Nuclear Security Administration (NNSA) developed this Technical Program Manager/Program Liaison Program Specific Qualification Standard (PSQS) with support from the National Training Center (EA-50) FTCP Support Office.

The NNSA organizations and specific personnel that supported the development of this PSQS were as follows:

- Douglas Eddy, NNSA Lawrence Livermore (NA-LL)
- Susan Morris, NNSA Production Office (NPO)

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INTRODUCTION

This Program Specific Qualification Standard (PSQS) establishes a core set of performance competencies for fulfilling the duties and responsibilities of a Technical Program Manager/Program Liaison (TPM/PL) for a typical Department of Energy (DOE) organization. Any additional competencies needed to fulfill organizational specific duties and responsibilities of a TPM/PL should be included in the organization specific qualification standard (OSQS).

PURPOSE

The DOE/NNSA developed this PSQS to ensure designated personnel have the competency to perform the duties and responsibilities of a Technical Program Manager/Program Liaison. The content of this PSQS should be referenced and used as appropriate to develop vacancy announcements, crediting plans, interview questions, and other criteria associated with the recruitment, selection, and internal placement of personnel assigned this. The PSQS provides a common set of performance competencies for personnel fulfilling the duties and responsibilities of a TPM/PL for a typical DOE organization.

A team of personnel within the NNSA who either perform or supervise personnel performing TPM/PL duties and responsibilities performed a task analysis that was used to derive the performance competencies in this PSQS.

Satisfactory and documented completion of the performance competency requirements contained in this PSQS ensures that a TPM/PL possesses the minimum requisite competence to fulfill the related duties and responsibilities. Verification of attainment of performance competencies contained in this PSQS must be documented in the Electronic Technical Qualification Program (eTQP) at <https://etqp.ntc.doe.gov>.

APPLICABILITY

DOE O 426.1B, *Department of Energy Federal Technical Capabilities* (FTC) allows a PSQS to be developed and included in the DOE Technical Qualification Program (TQP) in areas where a defined and consistent qualification program is needed to ensure personnel have the technical competence commensurate with their job responsibilities. The DOE/NNSA, with concurrence from the DOE Federal Technical Capability Program (FTCP) Panel, developed this PSQS to ensure designated personnel have the competency to perform the duties and responsibilities of a TPM/PL. Satisfactory and documented attainment of the technical competencies in this PSQS ensures personnel possess the minimum requisite knowledge and skills to perform TPM/PL duties and tasks common to the DOE enterprise.

For ease of transportability of qualifications between DOE elements, Program and Field Offices that choose to assign this PSQS to personnel performing TPM/PL duties, must use it without modification or addition to the performance competency knowledge requirements. Organization Specific Qualification Standard (OSQS) may also be developed to supplement this PSQS and establish unique TPM/PL performance competencies at the organization (headquarters, field element, site or facility) level.

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If personnel are required to be in the TQP and cannot use this PSQS without modification per DOE O 426.1B, a job-specific qualification standard (JSQS) should be developed and assigned.

IMPLEMENTATION

This PSQS includes performance competencies that define the depth of breadth of knowledge required to perform the common duties and responsibilities of TPM/PL. As noted above to ensure transportability of qualifications personnel assigned this PSQS must complete the all the performance competencies without modification. If the performance competencies in this PSQS do not closely align with those associated with the organization specific TPM/PL duties and responsibilities, supervisors with concurrence of the local FTCP Agent may elect to develop and assign these individuals a JSQS.

Appendix A outlines suggested training courses that can be completed to aid in the attainment of the performance competency knowledge requirements in this PSQS. Appendix B includes additional competencies specific to NNSA's mission that should be considered for inclusion in the participant's OSQS. As other program offices elect to use this program specific qualification standard, identification of those similar program unique competencies for their participant's organization-specific qualification standard should be added to Appendix B in future revisions.

In some cases, the technical competencies in this PSQS apply to specific job tasks that are identified as mandatory performance activities (MPAs). The objective of the MPAs is to determine whether the personnel assigned this PSQS can apply the related knowledge to satisfactorily perform the associate job task.

The following evaluation criteria are applicable to all MPAs. MPAs should be performed in the candidates assigned technical program area. Additional evaluation criteria, if applicable, are included for each identified MPA. Expectations for evaluating observed activities should be based on both local implementing procedures and DOE Order requirements.

- Identify expectations (i.e. criteria) for the specific Mandatory Performance Activity.
- Compare results of the Mandatory Performance Activity to expectations (criteria) and draw conclusions.
- Document results of the Mandatory Performance Activity using local procedures for an operational awareness activity.

Any MPAs listed in this PSQS are required to be satisfactorily performed only once. If any of the evaluation criteria are not satisfactorily met during a performance of the MPA, 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. Some of the MPAs in this PSQS 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 PSQS or during completion of the organization specific qualification standard.

Candidates should perform the MPAs listed in the PSQS in their normal work environment, such as in assigned facilities or areas where the associated mission work is being accomplished. Supervisors may use other options to facilitate completion of the MPA requirements in cases where candidates cannot perform the MPAs exactly as written in their normal work environment within the required qualification timeframe. This could include performance of the MPA in a

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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 (QO) with approval of the supervisor and local FTCP agent.

All TPM/PL personnel assigned this PSQS must obtain the knowledge requirements and MPAs in Part B, *Oversight Performance* of the General Technical Base (GTB) Qualification Standard (QS), prior to or in parallel with attaining the knowledge requirements for the performance competencies in this PSQS. Depending on the job duties and responsibilities of personnel assigned this PSQS, supervisors may elect to assign all or a subset of the competencies in Part A, *Knowledge Requirements* of the GTB QS, as part of the OSQS or as part of the continuing training requirements.

EVALUATION CRITERIA

The competency statements and supporting knowledge and/or skill evaluation elements included in this PSQS define the required knowledge and/or skill that an individual must possess.

Personnel may obtain the performance competencies in this PSQS by one or more of the following methods:

- Attending formal training that includes the supporting knowledge and/or skill evaluation elements similar to the ones listed for each of the competency statements. The candidate should use the knowledge and/or skill evaluation elements as a basis for evaluating the content of the training courses to be used to meet the PSQS competency statements.
- Completing structured self-study, such as computer-based training or criterion-referenced instruction courses that contain evaluation tools.
- Previous experience, training, education, or qualification. PSQS knowledge and/or skill evaluation elements may be considered satisfied when the candidate demonstrates that experience and/or prior training or qualification is equivalent.
- Completing self-study. The candidate may use the knowledge requirements in the PSQS as a guide to study associated references to obtain the required knowledge requirements.

Attainment of the knowledge requirements listed in this PSQS must be verified by a designated QO using one or a combination of the following methods listed in DOE O 426.1B, *DOE Federal Technical Capabilities*:

- Satisfactory completion of a written examination
- Satisfactory completion of an oral evaluation
- Documented evaluation of equivalencies
- Completion of approved training courses that confirm attainment of specific knowledge requirements

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A designated QO must also verify successful completion of the MPAs in this PSQS. 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 PSQS must be documented using the Electronic Technical Qualification Program (eTQP) at: <https://etqp.ntc.doe.gov>.

EDUCATION AND EXPERIENCE

The education and experience recommendations for a Technical Program Manager/Program Liaison are listed below.

Education:

- Should have Bachelor of Science degree in engineering, science, or a related discipline or meeting the alternative requirements specified for engineers, or scientists in the OPM Qualification Standards Handbook.

Experience:

- Level of expertise must be sufficient to function as a technical expert on programmatic matters pertaining to the day-to-day operation of a nuclear facility or activity.

INITIAL AND CONTINUING TRAINING

Appendix A, *Technical Program Manager/Program Liaison Program Specific Qualification Standard Course Crosswalk*, lists the courses that personnel should consider taking to help obtain the performance competency knowledge requirements in this PSQS.

Following initial qualification personnel completing this PSQS must participate in an organization specific continuing training program that meets the requirements of DOE O 426.1B.

DUTIES AND TASKS

The following are the duties and tasks identified during the task analysis for a typical TPM/PL¹:

1. Manage and coordinate activities associated with assigned programmatic/project responsibilities.
2. Develop, review, and approve or recommend approval of budget requests to accomplish program goals and objectives.
3. Develop, review, and approve or recommend approval program plans to support the accomplishment of mission objectives in a safe, efficient, and effective manner.

¹ This list is for a typical TPM/PL based on the NNSA duty analysis. Competencies associated with organization specific TPM/PL duties and responsibilities not included in this list should be included in the OSQS.

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4. Monitor and evaluate cost, schedule, and the completion of programmatic goals and milestones in accordance with approved plans.
5. Monitor program activities and ensure the deliverables and outcomes associated with a program are technically adequate.
6. Prepare reports and make presentations to reflect overall program status, cost and funding issues, resource requirements, adherence to schedules and milestones, and other program issues, as required.
7. Maintain effective communication with Headquarters, field elements, regulatory agencies, the public, and other stakeholders to accomplish program goals, as required.
8. Verify that safety is integrated into management and work practices to accomplish program objectives and ensure worker and public health and safety, as required.
9. Verify that related nuclear and environmental regulations and requirements are integrated into program plans and activities to protect personnel, the facility, and the environment.
10. Verify that programs comply with Departmental Directives, Federal and State Regulations and other binding agreements.

This PSQS identifies performance competencies and related knowledge requirements for items 2 through 5. Items 1, 6, and 7 are not addressed in this PSQS. Competencies related to these duties are typically obtained through experience and on-the-job training. Items 8-10 are tasks that are performed as part of the duties in items 3-5.

PERFORMANCE COMPETENCIES

1. **The TPM/PL must demonstrate knowledge of program and project management principles using the processes and procedures necessary to ensure the safety of departmental activities, including mission and key programs.**

Knowledge Requirements:

- A. Discuss the Department's policy for planning, programming, budgeting, and acquisition of capital assets as described in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets.
- B. Define the following terms:
 - 1) Baseline
 - 2) Graded approach
 - 3) Infrastructure
 - 4) Life cycle
 - 5) Programmatic management
 - 6) Metrics and performance measures
- C. Discuss the responsibilities, authorities, and implementation requirements for DOE O 430.1C, Real Property and Asset Management, at defense nuclear facilities.
- D. Discuss the purpose, scope, and application of DOE O 413.3B and the DOE O 413.3 Guides; this includes the definition of key terms, essential elements, and personnel responsibilities and authorities.

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- E. Discuss the source documents necessary to effectively manage the organization's program.
- F. Discuss the purpose, use, and content of the
 - 1) Project Execution Plan (PEP)
 - 2) Project deliverables supporting critical decisions

Mandatory Performance Activity (MPA) 1: Review and evaluate the adequacy of a program schedule.

Evaluation Criteria: Verify the appropriate use of milestones and supporting activities.

2. **The TPM/PL must demonstrate knowledge of program resources to meet commitments as described in DOE G 430.1-1, Chapter 23, *Life Cycle Cost Estimate*.**

Knowledge Requirements:

- A. Define the term "work breakdown structure" and discuss the process for developing one.
- B. Define and compare the terms "cost estimate" and "budget."
- C. Describe the process for preparing cost estimates and budgets.
- D. Describe and compare direct and indirect costs.
- E. Discuss schedule and cost variance.
 - 1) Define the term "estimate at completion".
 - 2) Describe the following elements of the Federal budgeting process:
 - a. The participants in the Federal budget process and the major phases of budgeting
 - b. Budget documents, their development, and their use
 - c. Congressional, Office of Management and Budget (OMB), and DOE-internal budget roles and processes

Mandatory Performance Activity (MPA) 2: Review a budget and associated WBS for a program/project.

Evaluation Criteria:

- A. Verify that direct and indirect costs are properly identified.
- B. Verify that supporting activities are identified in the supporting work breakdown schedule.

3. **The TPM/PL must demonstrate knowledge of the Department's expectations for fostering a healthy safety culture and establishing an integrated safety management program.**

Knowledge Requirements:

- A. Explain the significance of human error in the incidences of occurrences and events.
- B. Describe the purpose, scope, and importance of the Department's employee concerns program as stated in DOE O 442.1A.

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- C. Identify and describe the seven guiding principles and five core functions of Integrated Safety Management (ISM) per DOE G 450.4-1C.
 - D. Explain the relationship between organizational culture, safety culture, and a safety conscious work environment.
 - E. Describe the purpose, scope, and importance of the differing professional opinions process in DOE O 442.2 for issues involving nuclear safety.
 - F. Explain the importance of encouraging alternate points of view.
 - G. Define whistleblower.
4. **A Technical Program Manager/Program Liaison must demonstrate knowledge of the Unreviewed Safety Question (USQ) process in accordance with 10 CFR 830.203 and DOE G 424.1-1B, *Implementation Guide for Use In Addressing Unreviewed Safety Question Requirements*.**

Knowledge Requirements:

- A. Discuss the purpose of the USQ process.
 - B. Describe the types of changes that are required to be evaluated using the USQ process.
 - C. Discuss why program changes may need to be evaluated using the USQ process.
 - D. Describe the difference between USQ screening and USQ determinations.
 - E. Discuss the following:
 - 1) Allowable USQ screening criteria
 - 2) The questions involved in making the USQ determination
 - 3) Outputs of the USQ Determination
5. **The candidate must demonstrate knowledge of nuclear safety management standards and documentation including their application.**

Knowledge Requirements:

- A. Discuss the how the following processes may interface with your assigned technical program and identify the applicable supporting DOE standards for each of these processes.
 - 1) Nuclear Facility Hazard Categorization
 - 2) Nuclear Facility Hazard Evaluation, Accident Analysis, and Control Selection
 - 3) Verification of Startup and Restart of Nuclear Facilities

Evaluation Criteria:

- A. For each of the below, describe how the directive/standard applies to facilities within your technical program.
 - 1) DOE O 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*.
 - 2) DOE-STD-1027-92, *Guidance on Preliminary Hazard Classification and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*.

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- 3) DOE-STD-1189-2016, *Integration of Safety into the Design Process*.
- 4) DOE-STD-3006-2010, *Planning and Conduct of Operational Readiness Reviews (ORR)*.
- 5) DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*.
- 6) DOE-STD-3011-2016, *Preparation of Documented Safety Analysis for Interim Operations at DOE Nuclear Facilities*.

B. Discuss the application and implementation of the standards listed above in the development of site and facility safety management documents.

6. The candidate must demonstrate knowledge of 10 CFR 830.204, “Documented Safety Analysis,” with respect to its impact on Department nuclear safety.

Knowledge Requirements:

- A. Discuss the four basic purposes and objectives of documented safety analysis (DSA).
- B. Describe the responsibilities of contractors authorized to operate defense nuclear facilities for the development and maintenance of a DSA.
- C. Describe the requirements for the scope and content of a DSA and discuss the general content of each of the required sections of the analysis.
- D. Discuss the approval requirements for the DSA for new facilities and subsequent changes to the analysis.
- E. Discuss the requirements for the contractor to maintain the DSA current.

7. The candidate must demonstrate knowledge of the terminology used in nuclear safety analysis.

- A. Differentiate between the following categories of individuals who may be affected by an accident at a Department nuclear facility:
 - 1) Public (Maximally Exposed Offsite Individual)
 - 2) Collocated worker
 - 3) Worker
- B. Describe the differences of the following categories of safety structures, systems, and components (SSCs):
 - 1) Safety-class structures, systems, and components (SC-SSC)
 - 2) Safety-significant structures, systems and components (SS-SSC)
 - 3) Defense-in-depth (DID)/Important to Safety
- C. Differentiate between the function and contents of the following documents:
 - 1) Documented Safety Analysis (DSA)
 - 2) Preliminary Documented Safety Analysis (PDSA)
 - 3) Basis for Interim Operation (BIO)
 - 4) Technical Safety Requirements (TSR)

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- 5) Preliminary Hazards Analysis (PRHA)
- D. Differentiate between the following types of facilities:
 - 1) Nonreactor nuclear facilities (Category 1,2,3)
 - 2) Reactor facility
 - 3) Below Hazard Category 3 nuclear facility

8. The candidate must demonstrate knowledge of environmental standards, laws, and regulations.

Knowledge Requirements:

- A. Discuss the National Environmental Policy Act (NEPA process and the role of the Department and its contractors in implementation to include:
 - 1) Environmental impact statement (EIS)
 - 2) Environmental assessment (EA)
 - 3) Finding of no significant impact (FONSI)
 - 4) Categorical exclusion (CX)
 - 5) Record of decision (ROD)
- B. Discuss the purpose and requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- C. Discuss the relationship between the CERCLA and all other environmental regulations, especially the relationship between CERCLA and RCRA.

9. The candidate must demonstrate knowledge of DOE directives structure and their relationship to applicable laws, rules, Federal/state regulations and industry standards.

Knowledge Requirements:

- A. Discuss the purpose and the relationship between DOE Orders, Directives, Federal regulations, and state regulations.
- B. Discuss the DOE directives process.
- C. Discuss the DOE rulemaking process.
- D. Discuss the relationship between the DOE and other agencies, such as OSHA, Nuclear Regulatory Commission (NRC), and EPA.
- E. Discuss the use of Memoranda of Understanding (MOU) and Memoranda of Agreement (MOA) with external agencies and organizations.

Mandatory Performance Activity (MPA) 3: Discuss any MOUs and MOAs associated with your technical program.

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APPENDIX A

NNSA Technical Program Manager/Program Liaison
Program Specific Qualification Standard

COURSE CROSSWALK

Topics Covered	Listed Course(s)
Safety Culture Fundamentals	TLP-200, Safety Culture for DOE and DOE Contractor Leaders
Safety Culture	GTB Part B
Integrated Safety Management/ DOE Nuclear Facility Oversight Framework	DOE-120, DOE Oversight and Implementation
USQ Process	SBA-160DE, USQ Process
Nuclear Hazards	SBA-120DE, Hazard Identification, Categorization, and Evaluation Fundamentals SBA-130DE, Accident Analysis and Control Selection SBA-150DE, TSR Development
Safety Basis Approval	SBA-170DE, SER and SRL Development
Nuclear Safety Analysis	SBA-120DE, Hazard Identification, Categorization, and Evaluation Fundamentals SBA-130DE, Accident Analysis and Control Selection SBA-150DE, TSR Development SBA-170DE, SER and SRL Development DOE-145, Oversight for Supervisors DOE-320, Causal Analysis and Corrective Action
Documented Safety Analysis Safe Harbors 10 CFR 830 safe harbors	SBA-110DE, Documented Safety Analysis Safe Harbors
Program and Project Management	STS-100DE, STSM Knowledge Base Season 4

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APPENDIX B

NNSA Technical Program Manager/Program Liaison Program Specific Qualification Standard

Recommended Organization Specific Qualification Standard Statements:

- A. Discuss the purpose, content, and philosophy, as appropriate to the position, of the following safety management standards for nuclear explosive safety:
 - 1) DOE O 452.1E, *Nuclear Explosive and Weapon Surety Program*
 - 2) DOE O 452.2E, *Nuclear Explosive Safety*

Performance Activity (PA) 1: Review and evaluate the adequacy of cost estimates.

Evaluation Criteria:

- A. Verify that direct and indirect costs are properly identified.
- B. Verify that supporting activities are identified in the supporting work breakdown schedule.