ORDER

DOE O 426.1

Approved: 11-19-09

Federal Technical Capability

U.S. DEPARTMENT OF ENERGY

Office of Health, Safety and Security

FEDERAL TECHNICAL CAPABILITY

1. PURPOSE. To define requirements and responsibilities for meeting the Department of Energy (DOE) commitment to recruiting, deploying, developing, and retaining a technically competent workforce that will accomplish DOE missions in a safe and efficient manner through the Federal Technical Capability Program (FTCP). The Department will strive to recruit and hire technically capable people; continuously develop the technical expertise of its existing workforce; and, within the limitations of executive policy and Federal law, retain critical technical capabilities within the Department at all times. The program and processes described in this Order support requirements established in DOE P 426.1, *Federal Technical Capability Policy for Defense Nuclear Facilities,* dated 12-10-98, and DOE O 360.1B, *Federal Employee Training,* dated 10-11-01.

2. CANCELLATION. DOE M 426.1-1A, *Federal Technical Capability Manual,* dated 5-18-04.

3. APPLICABILITY.

   a. Departmental Applicability. This Order applies to any DOE, including National Nuclear Security Administration (NNSA), organization that performs functions related to the safe operation of defense nuclear facilities. Other organizations within the Department may also apply elements of the program on an optional basis.

      The Administrator of the National Nuclear Security Administration (NNSA) must assure that NNSA employees comply with their respective responsibilities under this Order. Nothing in this directive will be construed to interfere with the NNSA Administrator's authority under section 3212(d) of Public Law (P.L.) 106-65 to establish Administration-specific policies, unless disapproved by the Secretary.

   b. Contractors. This Order does not apply to contractors.

   c. Equivalencies for DOE O 426.1. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at Title 50 United States Code (U.S.C.) sections 2406 and 2511, and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this directive for activities under the Director's cognizance, as deemed appropriate.

   d. Exemptions for DOE O 426.1. This Order does not apply to DOE, including National Nuclear Security Administration (NNSA), organizations that do not perform functions related to the safe operation of defense nuclear facilities.

4. REQUIREMENTS.

DOE offices and organizations must ensure that their Federal employees are appropriately trained and technically capable of carrying out their responsibilities.

a. Federal Technical Capability (FTC) Program Development and Administration.

(1) Each office listed below must designate a senior manager to serve as the office representative (the Agent) on the FTC Panel. These Agents must be qualified as Senior Technical Safety Managers (STSMs). To maintain continuity on the Panel, Agents should serve for a minimum of one year.

- Office of Science
  - Integrated Support Center, Oak Ridge Office
  - Integrated Support Center, Chicago Office
  - Pacific Northwest Site Office
- Office of Health, Safety and Security (HSS)
- Office of Under Secretary of Energy
  - Chief of Nuclear Safety (CNS)
- NNSA
  - Office of the Administrator, Senior ES&H Advisor
  - NNSA Service Center
  - Livermore Site Office
  - Los Alamos Site Office
  - Nevada Site Office
  - Sandia Site Office
  - Pantex Site Office
  - Savannah River Site Office
  - Y-12 Site Office
  - Chief of Defense Nuclear Safety (CDNS)
- Environmental Management
  - Office of Environmental Management
  - Carlsbad Field Office
  - Consolidated Business Center
  - Idaho Operations Office
  - Office of River Protection
  - Portsmouth/Paducah Project Office
  - Richland Operations Office
  - Savannah River Operations Office

Additionally, the Offices of Human Capital Management and HSS must designate senior representatives on the Panel, which receives advice and support from the Office of the Deputy Secretary and other supporting Departmental organizations, as appropriate.

(2) Functional Area Qualification Standards (FAQS) must be reviewed and approved by the Panel and issued in accordance with the processes established by Department's Technical Standards Program. At a minimum FAQS must address:

(a) Technical competencies required to perform as a qualified individual in the subject matter of the FAQS,

(b) Knowledge and skills associated with the competencies

(c) Any mandatory performance requirements (i.e., performance demonstrations for tasks considered as critical for demonstrating proficiency in a competency

(d) Applicable continuing education and/or proficiency requirements.

Updates to FAQS should include a gap analysis, or a summary of changes to the FAQS, to aid the requalification process. FAQS must be approved by the Panel Chair (See Appendix A, Development and Revision of Technical Qualification Standards). Sponsors who develop and revise FAQS must use the FAQS template approved by FTCP Chair and posted on the FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/FAQS-Template.doc).

(3) The Panel must develop and maintain an FTCP Action Plan annually that clearly identifies major issues related to needed technical competencies and the Department's Technical Qualification Programs (TQPs) and activities necessary to resolve these issues in a timely manner.

(4) The Panel must prepare periodic reports to the Secretary of Energy, based in part on the summary workforce analysis and staffing plans described in this Order. The report will summarize actions taken to address the Department's hiring and deployment needs and identify future actions to preserve critical technical capabilities to ensure safe operations of defense nuclear facilities. The report must be submitted at least on a biennial basis.

(5) The FTC Panel must assess the effectiveness of its functions at least every four years. These assessments must be conducted in accordance with the requirements of DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*, dated 7-31-2007, and the current objectives and criteria

approved by the FTCP Chair and posted on the FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc).

b. FTC Program Implementation.

(1) Senior managers must conduct annual workforce analyses of their organizations and develop staffing plans that identify critical technical capabilities and positions that ensure safe operations of defense nuclear facilities.

Workforce analyses identify the critical technical capabilities that must be maintained to ensure safe operation of defense nuclear facilities. A position determined to have critical technical capabilities must meet the following three criteria.

(a) The position must be technical in nature, in a field covered by a FAQS and have responsibilities related to the safe operation of defense nuclear facilities.

(b) The critical capabilities associated with the position must represent a specialized skill set that could not typically be replicated in 90 days using formal training.

(c) Loss of the technical capabilities resident within the position could jeopardize the Department's ability to meet safety or regulatory requirements.

(2) Each Headquarters and field element with defense nuclear facilities responsibility must establish a TQP for its organization. Although the programs may be designed to meet the unique needs and responsibilities of each organization, the following principles must be used as the basis for all TQPs.

(a) Demonstration of Competence. The program must clearly identify and document the process used to demonstrate employee technical competence (e.g., professional certifications, qualification cards, background, and experience).

(b) Competency Levels. The competency levels within the program must be clearly defined and consistent with applicable industry standards for similar occupations.

(c) Plans and Procedures. Plans and procedures must be developed and implemented to govern the administration of the program.

(d) Qualification Tailored to Work Activities. The program must clearly identify unique Department and position-specific work activities and the knowledge and skills necessary to accomplish the

work. A process must be developed to determine needed additional office/site/facility specific technical competencies for the individual positions.

(e) Credit for Existing Technical Qualification Programs. The program must be structured to allow credit, where appropriate, for other TQP accomplishments to date.

(f) Transportable. Competency requirements identified as having Department-wide applicability must be transferable. For ease of transportability of qualifications between DOE elements, the DOE General Technical Base Qualification Standard and the various DOE FAQSs must be used without modification or additions. Each DOE headquarters, field or organizational element determines whether office/site/facility specific qualification standards technical competencies are needed for TQP participants.

(g) Measurable. The program must contain sufficient rigor to demonstrate compliance with the TQP.

(3) Each organization must document its TQP requirements in a TQP plan. Organizations across the Department must use the FAQS as written in developing their TQP plans. The plans must be approved by the head of the element and include processes and requirements for the following.

(a) Individuals with assigned project management responsibilities for defense nuclear facilities, must be qualified through a combination of the project manager's career development program (additional information is provided in Appendix B, Technical Professional Career Development Program), the General Technical Base Qualification Standard, and the appropriate site and/or facility specific standard(s).

(b) Identifying employees and/or positions required to participate in the TQP.

(c) Identifying employees and/or positions participating in the TQP responsible for oversight of safety management programs as identified in the respective facility Documented Safety Analysis (DSA).

(d) Identifying employees and/or positions that can serve as qualifying officials to verify and certify qualifications.

(e) Identifying, developing, approving, revising, and updating individual qualification requirements, as appropriate.

(f) Establishing and/or updating Individual Development Plans (IDPs), training plans, qualification cards, or qualification-related records, for example, qualification plans, qualification cards, supporting documentation, and other records needed to support how the qualification was attained. The TQP plans should include the requirement to reference the TQP in IDPs and Performance Standards.

(g) Evaluating employees against FAQS, determining when to use oral review boards (protocol, questioning procedures, pass/not pass criteria, quorum requirements, reexamination requirements, etc.), and documenting the approval of equivalencies for required competencies.

(h) Determining final qualification requirements, such as comprehensive written examination, oral examination, site/facility walk-through, or some combination thereof.

(i) Addressing oral or written examination failures or other qualification failures, establishing reexamination requirements, and making work area or position reassignments.

(j) Establishing interim limitations or compensatory measures, if needed to support field office or program requirements, for candidates who have not achieved full qualification.

(k) Demonstrating full qualification and achieving full qualification in new assignments.

(l) Implementing continuing professional development and requalification programs.

(m) Maintaining training and qualification records. Personnel records/official personnel files are maintained separately by each Headquarters, field and organization element.

(4) Each organizational element must use FAQS or other appropriate means to document technical qualification requirements for the position. These requirements must be established using the systematic approach to training methodology and include the following.

(a) Basic Technical Knowledge about topics such as radiation protection, occupational safety, chemical safety, nuclear safety, and environmental regulations. This area is covered through completion of the DOE General Technical Base Qualification Standard.

(b) Technical Discipline Competency (e.g., mechanical engineering or chemical engineering), which can be demonstrated by education, professional certification, or examination. In addition to meeting Office of Personnel Management (OPM) requirements for the position, current expertise and DOE specific competencies are demonstrated through completion of the respective FAQS.

(c) Position Knowledge, Skills, and Abilities specific to the position, facility, program, and/or office.

(5) Headquarters and Field Element Managers (FEMs) must implement their TQP Plans.

(a) They must designate the positions and/or individuals in their respective organizations required to participate in the TQP and the qualification requirements that apply. A senior training official and/or an STSM must be designated as responsible for program direction and performance. TQP employees must satisfy the qualification requirements assigned to them in accordance with a defined schedule established by line management.

(b) Employees responsible for technical direction and oversight of safety management programs identified in the respective facility DSA must complete the General Technical Base qualification standard, the FAQS, and office-/site-/facility-specific competencies related to the safety management program they are assigned to oversee.

(c) Attainment of individual competencies in the FAQS must be evaluated and documented by a qualifying official and the immediate supervisor using one or a combination of the following methods:

1 satisfactory completion of a written examination,

2 satisfactory completion of an oral evaluation,

3 satisfactory completion of an observed task or activity related to a competency, or

4 documented evaluation of equivalencies.

(d) Equivalencies may be granted to employees who satisfy competencies indicated in FAQS. Equivalencies must be based upon objective evidence of previous education, training, certification, or experience. Objective evidence includes any combination of transcripts, certifications, and, in some cases, a

knowledge sampling demonstrated through a written and/or oral examination. Equivalencies should be used with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP.

(e) FEMs or designees must qualify candidates as possessing the basic technical knowledge; technical discipline competency; and any site-determined position-specific knowledge, skills, and abilities. Final qualification must be performed using one or a combination of the following methods—

1 satisfactory completion of a comprehensive written examination with a minimum passing score of 80 percent,

2 satisfactory completion of an oral examination administered by a qualified STSM or a qualification board of technically qualified personnel that includes at least one STSM, or

3 satisfactory completion of a walk-through of a facility with a qualifying official for verifying a candidate's knowledge of and practical skills related to selected key elements.

(f) FEMs or designees must develop formal guidance for walk-through and oral examinations that includes standards for qualification, use of technical advisors by a board, questioning procedures or protocol, pass/fail criteria, board deliberation and voting authorization procedures, and documentation process.

(g) TQP participants who complete applicable qualification requirements must continue their professional development and maintain proficiency through participation in continuing training, education, or other developmental activities.

(h) The duties and responsibilities of individual position descriptions drive participation in the TQP. They determine which FAQS and individual competencies are appropriate for that position. Individual performance standards should reflect and note an individual's particular requirements under the TQP.

(i) Workforce deployment, including reorganizations, must recognize the performance requirements of covered positions and maintain the safety, health, and environmental management technical competency requirements of the workforce.

(j) Training and qualification records must be maintained for all TQP participants especially STSMs, Facility Representatives (FRs) and Safety System Oversight (SSO) personnel.

(k) Organizations may accredit their TQPs by following the TQP Accreditation Process (See Appendix C). For organizations that have received accreditation, internal Departmental oversight activities must credit that site program's TQP for being properly implemented during the period of time that the site or program's FTCP accreditation is current.

(6) Key Qualification Areas.

(a) The Manager/Assistant Secretary/NNSA Deputy or Associate Administrator with responsibility for Defense Nuclear Facilities must ensure that positions of authority (authority to make decisions impacting safety of defense nuclear facilities) are staffed by qualified STSMs.

(b) FEMs or designees must qualify STSM, FR and SSO candidates (See Appendix D, Safety System Oversight Duties, Responsibilities, Knowledge, Skills, and Abilities for SSO candidates) as possessing the basic technical knowledge; technical discipline competency; and position-specific knowledge, skills, and abilities required for their positions. Final qualification of FRs is addressed in DOE-STD-1063-2006, *Facility Representatives.*

Final qualification for STSMs must be performed through satisfactory completion of a comprehensive written examination with a minimum passing score of 80 percent and

1 satisfactory completion of an oral examination by a qualified STSM or a qualification board of technically qualified personnel that includes at least one STSM or

2 satisfactory completion of a walk-through of a facility with a qualifying official for verifying a candidate's knowledge of and practical skills related to selected key elements.

(c) Maintenance of Qualifications. FEMs must require personnel filling STSM positions to re-qualify to the latest version of the STSM FAQS every five (5) years. The requalification period for FRs is addressed in DOE-STD-1063-2006, *Facility Representatives.* Personnel who fail to complete the identified requalification requirements by the end of the requalification period may be granted a six month extension for requalification by the respective FEM, provided that compensatory measures are identified and implemented to allow them to continue to perform their duties safely. If the requalification requirements are not completed within the six month extension, such personnel must be

removed by the respective FEM from duties requiring qualification.

(d) Both the FEM and Deputy FEM positions should be identified as STSM positions. At least one of the individuals filling these positions must meet the preferred education and experience for STSMs as described in the STSM FAQS. Further, at least one of the individuals must be a qualified STSM or compensatory measures must be in place to ensure that positions of authority are compensated by qualified STSMs.

(e) Compensatory and Alternative Measures. Management must put in place compensatory measures if the incumbent in an identified STSM position has not completed qualification or does not meet the education or experience requirements contained in the STSM FAQS. In developing and implementing compensatory measures, management must ensure that positions of authority are compensated by fully qualified STSMs.

(f) Selection, staffing, training, qualification and maintenance of qualification of Facility Representatives must be consistent with DOE-STD-1063-2006, *Facility Representatives*.

(7) Self-Assessment. Headquarters and field elements must conduct self-assessment of TQP and FTCP implementation within their organization at least every four years. These assessments must be conducted in accordance with the requirements of DOE O 226.1A, *Implementation of Department of Energy Oversight Policy,* dated 07-31-07, and the current objectives and criteria approved by the FTCP Chair and posted on the FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc).

5. RESPONSIBILITIES. The Secretary of Energy has delegated authority for implementing and maintaining the Federal Technical Capability Program (FTCP) to the Deputy Secretary of Energy.

a. Deputy Secretary.

(1) Appoints the FTCP Chair and provides leadership, direction, and resources to recruit, deploy, develop, and retain a workforce to accomplish DOE's missions in a safe and efficient manner.

(2) Reviews FTCP reports and the results of staffing analyses to identify potential corrective actions that ensure that the Department attracts and maintains the resources necessary to perform the Department's missions.

(3) Works with the FTCP Chair to communicate the Department's priorities for DOE workforce development and deployment.

(4) Meets with the Panel to discuss Departmental issues and FTCP concerns.

(5) Institutionalizes the FTCP through DOE policy to establish the program's objective, guiding principles, and functions.

(6) Resolves key FTCP issues which require the authority of the Deputy Secretary.

b. Administrator, National Nuclear Security Administration; Managers of Field Elements (including Project Offices, Operation Offices, Site Offices, and Service Centers); and PSOs.

(1) Establish TQPs for defense nuclear facilities and designate the positions and/or individuals in their respective organizations required to participate in the TQP and the technical qualification standards that apply to them.

(2) Ensure that STSM assignments or compensatory measures are in place to maintain an unbroken chain in the reporting structure of qualified STSMs in positions of authority.

(3) Designate the positions and/or individuals in their respective organizations that provide oversight of safety management programs identified in the respective facilities documented safety analyses (DSAs).

(4) Implement formal training and qualification programs, based on the appropriate functional FAQS, for employees who provide management direction or oversight of contractor technical activities that could impact the safe operation of a defense nuclear facility.

(5) Assign qualifying officials to sign TQP or site-specific qualification cards to verify that the TQP candidate possesses the required level of knowledge or skills.

(6) Verify competency of employees in technical positions, and approve qualification of such employees following demonstrations of competency.

(7) Approve the workforce analysis and staffing plans for their organizations.

(8) Develop and implement staffing plan performance indicators to be monitored on a regular basis.

(9) Resolve FTCP issues identified in their organizations through FTCP internal and external assessments.

(10) Appoint an FTCP Agent, who is qualified as an STSM and has ready access to and/or the authority to deploy resources for the FEM, PSO, or Administrator, NNSA.

(11) Conduct periodic self-assessments to evaluate the effectiveness of TQP within their organizations.

c. Chair of Federal Technical Capability (FTC) Panel.

(1) Oversees issues affecting the FTCP.

(2) Oversees development and implementation of FTCP Action Plans.

(3) Presides over the Panel and assigns an Executive Secretary of the Panel.

(4) In conjunction with HSS, develops and implements FTCP policy for the Department.

(5) Oversees implementation of the Department's TQP, which includes elements of FAQS for SSO, FR, STSM, as well as other TQP FAQSs and the FTCP website.

(6) Reviews and approves technical qualification standards for use throughout the Department.

(7) Provides support to assist site/program offices in conducting self-assessments of their TQP Program Plans in accordance with this Order.

(8) Maintains a list of the designated STSM positions and incumbents in DOE.

(9) Oversees the process for evaluating the qualification of employees filling STSM positions.

(10) In conjunction with the Office of Human Capital Management, provides policy input, guidance, and assistance for the scientific and engineering tracks for the Departmental Intern Program.

(11) Performs or oversees assessments of the effectiveness of the FTCP using internal and external experts.

(12) Develops and implements FTCP performance indicators.

(13) Conducts periodic briefings for the Defense Nuclear Facilities Safety Board (DNFSB) and its staff regarding execution of the responsibilities of the FTCP.

(14) Provides recommendations to senior Departmental officials regarding the improvement of DOE technical capability.

(15) Appoints the Vice Chair.

d. Vice Chair of the Panel. Serves as Chair of the Panel in the absence of the Chair.

e. FTC Agents.

(1) Coordinate development of the annual workforce analysis and staffing plans for their organizations.

(2) Oversee implementation of the TQP for their organizations, and ensure that the qualification process is relevant, and aligned with mission priorities.

(3) Assist FEMs/PSOs/Lead PSOs (LSPOs) in establishing or maintaining formal STSM programs for their organizations.

(4) Facilitate recruitment to fill open STSM positions with technically competent individuals.

(5) Concur with STSM vacancy announcements to ensure the inclusion of adequate selection criteria.

(6) Concur with competitive selections for STSM positions where the individual has not previously qualified as an STSM.

(7) Lead, participate in, or oversee FTCP assessments and TQP assessments within their organizations.

(8) Solicit information and feedback from people in their organizations regarding the improvement of technical capability of the Department's workforce.

(9) Keep people in their organizations informed of the progress/problems associated with execution of the FTCP, and seek support from senior officials regarding successful implementation.

(10) Assist with the development of the FTCP action plans.

f. Chief Health, Safety and Security Officer.

(1) Serves as the Office of Primary Interest for this Order.

(2) Coordinates accreditation of TQPs. (See Appendix C)

(3) Develops FTC policies for the Department in conjunction with the FTCP Panel Chair.

(4) In coordination with FTCP Chair, maintains the FTCP website.

g. Supervisors with Responsibilities for TQP Personnel.

(1) Maintain STSM qualification when assigned line responsibility and supervision of personnel who oversee safety of operations.

(2) Develop site-specific qualification standards and cards for safety systems for SSO personnel.

(3) Identify and approve candidate selection.

(4) Implement TQP personnel qualification schedules.

(5) Facilitate TQP qualification (e.g., ensure sufficient time and training is provided to complete qualification tasks).

(6) Train and qualify TQP candidates so they are capable of performing assigned duties.

(7) Ensure TQP responsibilities are included and maintained in Individual Performance Plans.

(8) Ensure TQP qualifications are maintained current by training and assignments planned in individual development plans (IDPs).

(9) Periodically evaluate program effectiveness and serve as a management advocate within the headquarters or the field element to resolve programmatic issues.

6. DEFINITIONS.

a. Critical Technical Capability. A position meeting the following two criteria:

(1) The position is technical in nature, in a field covered by a FAQS, with responsibilities related to the safe operation of defense nuclear facilities or other facilities as designated by Site Management or PSO. The critical capabilities associated with the position represent a specialized skill set that could not typically be replicated in 90 days using formal training.

(2) Loss of the technical capabilities resident within the position could jeopardize the Department's ability to meet safety or regulatory requirements.

b. Defense Nuclear Facilities. See DOE M 140.1-1B, *Interface with the Defense Nuclear Facilities Safety Board,* dated 3-30-01 (or its successor), and 42 U.S.C. 2286g (https://www.hss.energy.gov/deprep/dnfsb/legislat.asp) for formal definition of "Department of Energy defense nuclear facility."

c. Key Qualification Area. A functional area that has exceptional impact on nuclear safety at defense nuclear facilities.

d. Requalification. The successful completion of any new or updated competencies since an individual's last qualification or requalification, assuming the TQP participant maintains competency in unchanged FAQS or where new or updated competencies are determined by performing an evaluation or gap analysis between the current FAQS and the FAQS used for the last qualification or requalification. Updates to FAQS include a gap analysis, or a summary of changes, to aid in the requalification.

7. REFERENCES. Find DOE directives online at www.directives.doe.gov.

a. DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*, dated 7-31-07.

b. DOE O 360.1B, *Federal Employee Training,* dated 10-11-01.

c. DOE O 420.1B, *Facility Safety,* dated 12-22-05.

d. DOE M 426.1-1A, *Federal Technical Capability Manual,* dated 5-18-04.

e. DOE P 426.1, *Federal Technical Capability Policy for Defense Nuclear Facilities,* dated 12-10-98.

f. DOE-STD-1063-2006, *Facility Representatives,* dated April 2006 (http://www.hss.doe.gov/nuclearsafety/ns/techstds/standard/std1063/std1063_2006.pdf).

g. The National Nuclear Security Act, Title XXXII of the National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65, as amended, established the National Nuclear Security Administration as a separately organized agency within the Department of Energy.

h. Title XXXII of P.L. 106-65, National Nuclear Security Administration Act, as amended, which established a separately organized agency within the Department of Energy.

8. CONTACT. Questions concerning this Order should be addressed to the Office of Health, Safety and Security, Office of Worker Safety and Health Policy at (301) 903-6061.

BY ORDER OF THE SECRETARY OF ENERGY:

DANIEL B. PONEMAN
Deputy Secretary

APPENDIX A
DEVELOPMENT AND REVISION
OF FUNCTIONAL AREA QUALIFICATION STANDARDS

A key element of the Technical Quality Program (TQP) is a set of common Functional Area Qualification Standards (FAQS). These standards are developed for various functional areas of responsibility in the Department, including oversight of safety management programs identified as hazard controls in Documented Safety Analyses (DSAs). For each functional area, the FAQS identify the minimum technical competencies and supporting knowledge and skills for a typical qualified individual working in the area. The TQP will not have a specific standard for project management for individuals assigned project management responsibilities for defense nuclear facilities. Qualifications for these individuals are accomplished through a combination of the Project Manager Career Development Program and the General Technical Base Qualification Standard.

1. GENERAL. Each FAQS has a sponsor organization, which is usually a Headquarters or field office. The Panel Chair maintains the list of sponsor organizations for the individual FAQSs. Sponsor organizations are responsible for coordinating the development, update, and revision of their respective FAQS in accordance with the guidance contained in this Order.

   The Panel Chair also maintains a list of recognized experts for the FAQS. Each Headquarters and field office participating in the TQP can submit the names of two recognized experts for each FAQS. If an office does not have a recognized expert for a particular standard, it does not have to submit a name. The Panel evaluates the qualifications of the nominees and selects individuals who are recognized experts within their respective functional areas. The names and contact information for the recognized experts are provided to the sponsor organizations to help them develop, revise, and/or review FAQSs. Maintaining an up-to-date and valid list of recognized experts is essential to ensuring technically adequate and accurate FAQS.

   Technical qualification standards are issued through the Department's Technical Standards Program, after approval by the FTCP Chair in accordance with the requirements of that program.

2. PROCESS FOR DEVELOPING OR REVISING A FAQS. The process for developing or revising a FAQS is shown in Figure A-1 and described in the following steps.

   a. The sponsor organization coordinates a working group session with recognized subject matter and training expertise to develop or revise a FAQS, considering the typical duties and responsibilities performed by a qualified TQP participant in the subject matter of the FAQS. The purpose of the session is to establish the following for a typical qualified individual working in the functional area:

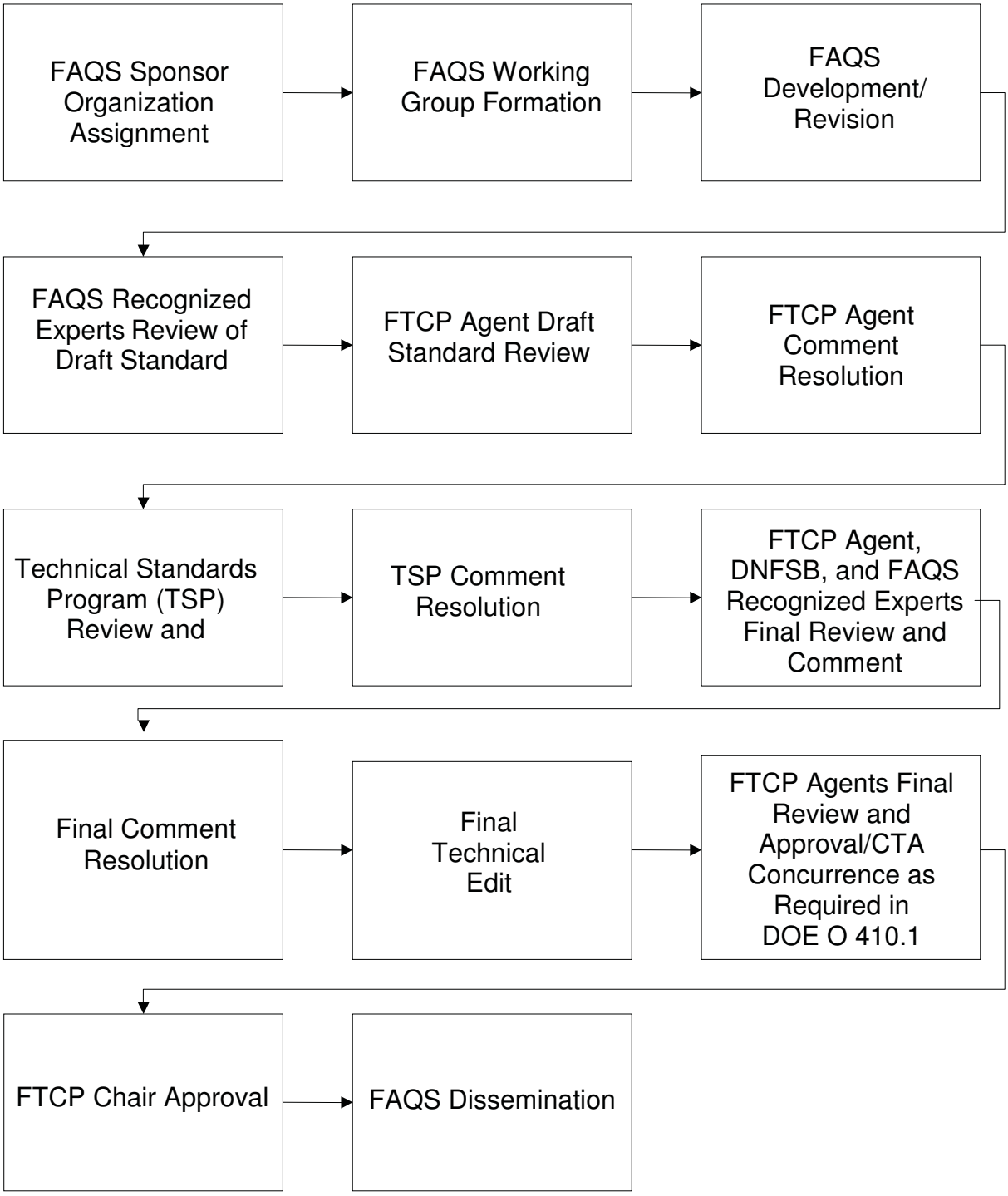

Figure A-1. Process for Developing FAQSs

(1) Technical competencies required to perform as a qualified individual in the subject matter of the FAQS,

(2) Knowledge and skills associated with the competencies,

(3) Any mandatory performance requirements (i.e., performance demonstrations for tasks considered as critical for demonstrating proficiency in a competency),

(4) Appropriate continuing education or proficiency opportunities,

(5) Applicable continuing education and/or proficiency requirements, and.

(6) Updates to FAQSs should include a gap analysis, or a summary of changes, to aid in the requalification

Approximately five recognized experts or more from across the complex should participate in this session. The sponsor solicits volunteers from the list of recognized experts maintained by the Panel. The preferred make-up of the group is three recognized experts from the field and two from Headquarters, with all the recognized experts from different organizations.

b. Develop a draft FAQS using data from the recognized expert working group session. (Note: This step may be done as part of the working group session described above, if time allows.) The sponsor develops the draft standard in the format described in this Order and using the standard template approved by the Panel. The sponsor does research as necessary to expand upon the information obtained in the working group session to ensure that competency statements, supporting knowledge and skills, and mandatory performance requirements are technically adequate and accurate.

c. The sponsor sends the draft FAQS to the list of DOE recognized experts for review and comment. The sponsor revises the standard as applicable based on the comments received.

d. The sponsor sends the draft FAQS to the Panel Chair. After ensuring that the standard is consistent in format with all other FAQS, the Panel Chair transmits the draft FAQS to Panel members for review.

e. The sponsor works with the Panel Chair, Panel members, and the working group to resolve comments.

f. The sponsor transmits the draft FAQS to the Office of Health, Safety and Security (HSS) for formal review and comment using the DOE Technical Standards RevCom tool.

g. HSS transmits the draft FAQS for Defense Nuclear Facilities Safety Board (DNFSB) staff review and comment.

h. The sponsor works with the Panel Chair, Panel members, working group, and DNFSB staff to resolve comments. The sponsor reviews all comments and catalogs them in a comment resolution document. The comment resolution document shows the organization that made the comment, the comment, and the

sponsor's resolution of the comment. The draft FAQS is revised as applicable based upon the comments received.

i. After completing all requirements of the Technical Standards Program, the sponsor transmits the final draft FAQS and the comment resolution document to the Panel Chair. After ensuring that the standard is consistent in format with all other FAQS, the Panel Chair transmits the final draft FAQS and the final comment resolution document to Panel members for review and approval. Once the Panel approves the standard, the Panel Chair signs the standard and transmits it to HSS for distribution throughout the Department.

3. TECHNICAL QUALIFICATION STANDARD FORMAT. FAQS template (with standardized language) and approved by FTCP Chair are available through the Federal Technical Capability Program (FTCP) website https://www.hss.energy.gov/deprep/ftcp/directives/FAQS-Template.doc

APPENDIX B
TECHNICAL PROFESSIONAL CAREER DEVELOPMENT PROGRAM

1. OVERVIEW.

Recruitment, hiring, and retention of high-quality employees are essential in performing the DOE mission. Hiring and retaining high-quality employees are often major challenges confronting line managers.

Several tools, collectively referred to as administrative flexibilities, are available to provide options in Federal employment actions supporting recruitment, hiring, and retention of high-quality employees. Line managers and servicing personnel offices should reference these tools for information about recruitment, hiring, and retention.

2. DEPARTMENTAL INTERN PROGRAMS.

DOE's two-year Departmental Intern Programs are designed to provide a continuing source of highly competent technical staff with the skills and knowledge to meet the Department's current and future technical and business staffing needs while also nurturing their potential as future leaders and managers within the Department. The program is designed to attract recent college graduates (entry level), current employees, and private-sector candidates with three to five years of experience and consists of general and specific training tracks (e.g., technical and business), management and development activities, and rotational work experience in a variety of functional programs and program support areas (at various Headquarters offices, field or area offices, laboratories, and/or contractor organizations). After completion of the two-year program, participants may be converted to permanent status and placed in positions necessary to fulfill mission needs.

The Panel collaborates with the Office of Human Capital Management to provide policy oversight and guidance for the Departmental Intern Programs. The Panel will participate in making decisions relative to the direction of the Departmental Intern Programs. Panel oversight includes, but is not limited to, evaluating the overall effectiveness of the program, course curricula, learning activities, and other program objectives. Panel Agents are also charged with promoting management support and resource availability to achieve program goals within their home organizations.

3. EXCEPTED SERVICE.

Excepted Service appointment authorities included in the National Defense Authorization Act for Fiscal Year 1995, was an excellent tool for Headquarters and field organizations to recruit and retain high-quality technical staff. Even though this tool is no longer available, the Excepted Service authorities in the Department of Energy Organization Act of 1997 is available and can expedite the hiring process and provide pay flexibilities to enhance recruitment and retention of key technical staff. The Excepted Service authorities may be particularly useful to organizations undergoing restructuring and associated skills mix concerns.

The National Defense Authorization Act for 1995 included in the authority to fill scientific, engineering, and technical positions relating to the safety of DOE defense nuclear facilities and operations. This authority could only be used to hire people for scientific, engineering, or technical defense positions related to the safety of nuclear facilities. The Excepted Service appointment authority found in Section 621(d) of the Department of Energy Organization Act is available for use in hiring high-quality individuals who may otherwise be difficult to attract and retain under current competitive service rules and procedures. Although primarily intended for scientific, engineering, and technical positions, this authority may also be used for professional and administrative positions and positions in operations not related to defense nuclear facilities safety.

Pay under both Excepted Service personnel authorities may be established up to an amount provided for by Executive Level III. Broad salary bands in contrast to pay ranges established under the more traditional General Schedule (GS)/Senior Level (SL)/Senior Executive Service (SES) systems govern pay administration in the Excepted Service.

Further guidance on the appropriate use of Excepted Service authorities may be obtained from your local personnel office or the Division of Executive and Technical Resources at Headquarters. Actions to fill positions some of the positions under these authorities are subject to review and approval by the Department's Executive Resources Board.

4. TECHNICAL PROFESSIONAL CAREER DEVELOPMENT PROGRAM.

a. Purpose. The Department has established a Technical Professional Career Development Program (TPCDP) for safety professionals, senior managers, and decision-makers responsible for nuclear safety, including those responsible for nuclear safety oversight. These technical professionals are primarily employees classified as scientists, engineers, or managers working in the safety, health, environmental, and management functions associated with the safe operation of defense nuclear facilities.

The TPCDP gives technical professionals the education and experiences necessary to develop the technical and managerial skills needed for their positions and helps ensure that DOE recruits, continuously develops, and retains the employees it needs for critical oversight and management jobs. In addition, technical professionals can develop technical and professional skills, obtain professional credentials, and perform challenging technical assignments so they can advance to higher-graded positions—all through a structured program.

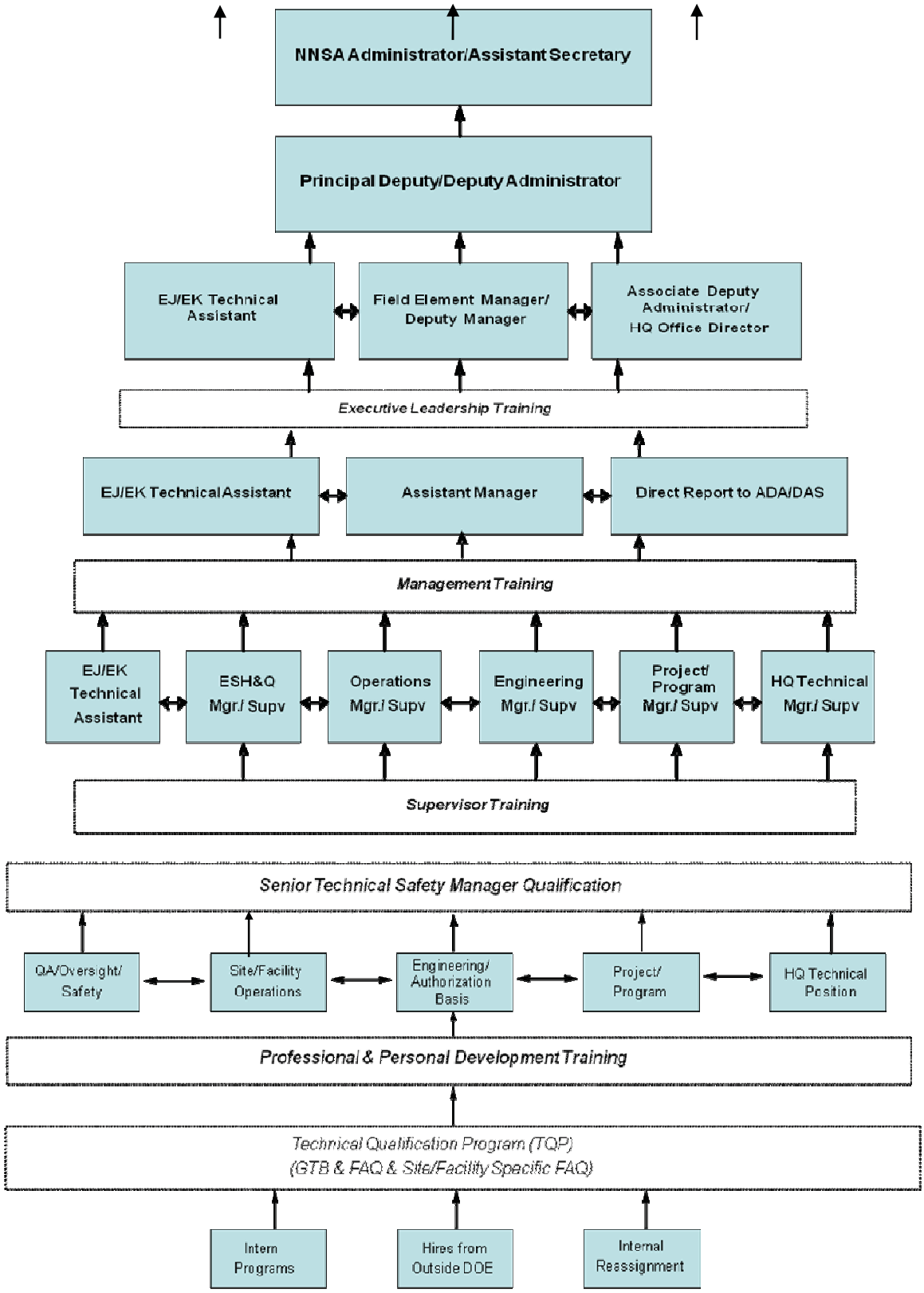

Figure B-1. Potential Career Progression for Qualified Personnel

Figure B-1 depicts the potential career paths for technical personnel and line management organizations: a management path and a technical path. The management path outlines a career path from entry into the Department up to becoming a senior executive, such as a Site Office manager or Headquarters Associate Deputy Administrator or Deputy Assistant Secretary; the technical path outlines a career from entry level to becoming a senior technical expert or advisor.

This section provides an overall description of the Department's TPCDP, which is a tool for ensuring that the DOE maintains the highly qualified and skilled technical professionals necessary to support safe operations of its complex, potentially high-risk defense nuclear facilities and programs. The elements of this program are integrated with the Department's Human Capital Management Program.

b. Program Summary. The TPCDP is a formal program approved by the Secretary of Energy through the Department's directives program. The program includes technical professionals throughout their careers, starting with their first permanent job and continuing until they leave the agency or take a different type of position.

As shown in Figure B-2, the TPCDP consists of Technical Base, Professional Base, and Management Base phases. The program builds on existing DOE programs as much as possible, integrating them into a career development system. The TPCDP is a strategic program that describes the career paths available to technical professionals and defines the training and work experiences required to progress along the career paths. The TPCDP is also a long-term program that covers many years of training, development, and professional growth in multiple assignments. The Technical Base and Professional Base consist primarily of non-supervisory assignments, and the Management Base consists of supervisory assignments. The Technical Expert path allows select employees to become recognized experts by their peers both in the Department and in industry.

Figure B-3 shows the major elements of the TPCDP and the approximate time span employees can expect to spend in each phase.

c. Recruitment. In addition to the Departmental Intern Program described in Section 2 of this appendix, other DOE organizations have established intern programs to address the specific needs of their respective organizations. Individuals hired under the NNSA Future Leaders Program are a principal source of new technical professionals for the NNSA. NNSA recruits college graduates for this program, assigns them to home offices, and requires them to complete two rotational assignments. Each intern is assigned a mentor. The interns receive NNSA orientation, core training, and office-specific training. The core training includes formal qualification on the General Technical Base Standard and a functional area standard, which is a major part of the first phase of the TPCDP, the Technical Base. Completion of these qualifications during the internships allows interns to finish the Technical Base phase rapidly, taking six months instead of the 18 months to two years normally required.

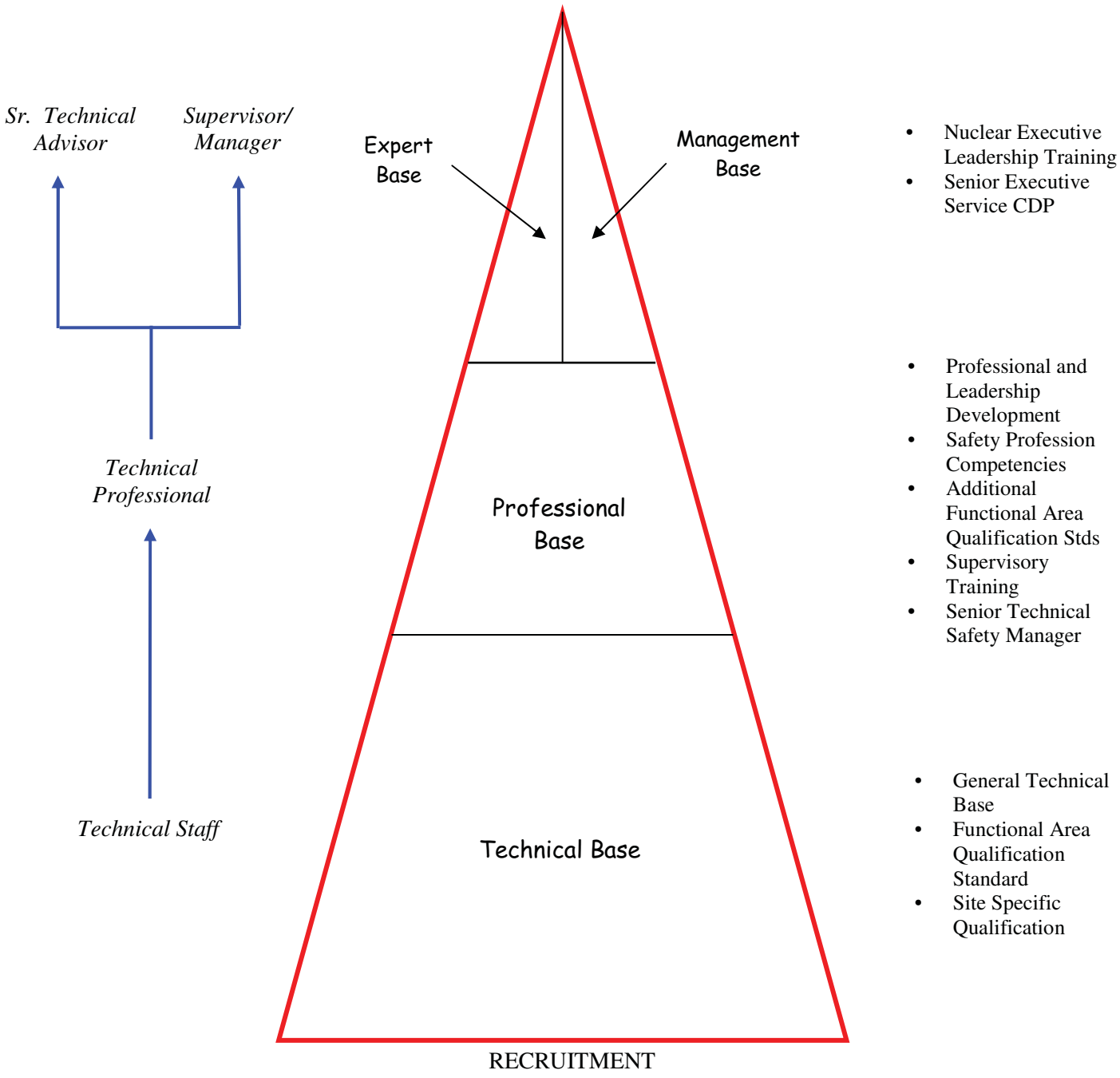

Figure B-2. Technical Professional Career Development Program – A Three-Phase Program

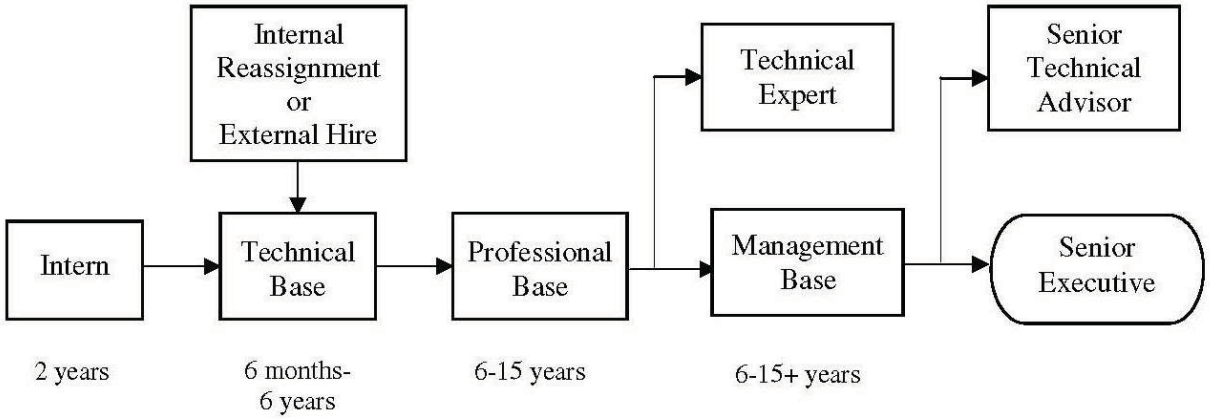

Figure B-3. Major Elements of the TPCDP

The Department's Corporate Outreach and Recruitment Council has created a corporate "umbrella" intern program called the "DOE Scholars Program." This program is designed as a comprehensive pipeline program to attract a new generation of employees into DOE and quickly prepare them for vital mid- to senior-level positions. The DOE Scholars Program offers flexibility to meet varied mission needs and mobility for candidates to move throughout the Complex. The program also provides a strategic approach to help the Department achieve a highly skilled, diverse workforce capable of carrying out vital mission areas.

Other DOE Program Offices sponsor Technical Intern Programs. The Department seeks to attract excellent technical graduates by using administrative flexibilities authorized for hiring interns. In order to compete for highly talented employees, the Department has the option of offering interns lucrative benefits, including recruitment bonuses, moving expenses, student loan repayments, and accelerated promotions.

Program Offices also recruit other technical personnel for the TPCDP in addition to interns. These other sources could be current employees within the Program Office, current employees from other DOE offices, or personnel from outside DOE selected to fill vacancies. Personnel hired from outside the Department or transferred from other Programs may enter the TPCDP at various points based on an objective evaluation of previous education, training, and experience.

d. Technical Base. The Technical Base encompasses the training and qualification for a new technical professional. New technical professionals can be interns hired directly from college for entry-level positions, or they can be more experienced professionals hired for non-supervisory positions.

Qualifications to enter the Technical Base phase are the knowledge and skills acquired through college education, combined with activities such as completion of internships, on-the-job training, and prior work experience within DOE or

external to DOE. New technical professionals in the Technical Base are expected to demonstrate effective performance by formal qualification in the Department's TQP, as defined in this Order Technical professionals complete the Technical Base phase when they achieve formal qualification in the General Technical Base Qualification Standard, a specific FAQS, and a site-specific or office-specific Qualification Standard. Most employees will take 18 months to complete the training and qualification activities in the Technical Base. This is accomplished in conjunction with their normal job assignments. When employees complete the Technical Base training and qualification, they are considered to be competent to perform all the duties and assignments associated with that functional area.

e. Professional Base. Technical professionals in the Professional Base phase of their careers develop further expertise within their assigned functions. This phase of an employee's development program includes a balance of technical skills with professional and personal development. Although there is a training curriculum associated with this phase, there is more emphasis on expanding the experience base of the employee.

Employees that complete the Professional Base are recognized as very well qualified in their functions. They typically hold positions in one of the five general technical- or safety-related organizations shown in Figure B4, below: Quality Assurance (QA)/Oversight/Safety, Site/Facility Operations, Engineering/Authorization Basis, Project/Program, and Headquarters Technical Position.

Figure B-4 shows examples of jobs in the various general technical- and safety-related organizations. Employees are encouraged to work in two or more of these organizations during the Professional Base phase of their careers.

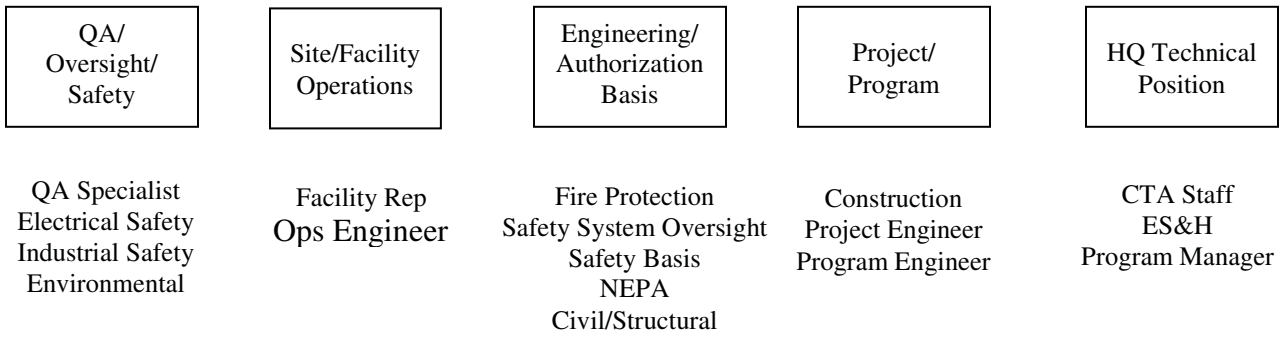

Figure B-4. Typical Technical and Safety-related Organizations

Employees should complete the Professional and Leadership Development curriculum while in the Professional Base. The specifically defined curriculum covers both technical and professional topics all technical professionals should know, such as safety culture, contract administration, project management, human performance improvement, and conduct of assessments. The curriculum also

covers personal development topics such as written and oral communications, conflict resolution, fundamentals of supervision, time management, and leadership. Technical professionals are expected to begin Professional and Leadership Development as soon as practicable after they enter the Professional Base.

When technical professionals have worked in a single function for a few years (typically three to five years), they should seek reassignment to a position in an organization other than the one where they currently work. Typically they are at a GS-13/14 or Pay Band III when they become candidates for assignment to different organizations with technical- or safety-related responsibilities. These assignments are typically within the original functional area in which they qualified. However, they are required to qualify under the site-specific or facility-specific standards for their new assignment. They expand their technical expertise through qualification and work in the new assignment.

As employees continue to work and progress through the Professional Base, they should seek to serve in at least two of the five types of organizations at the first-line worker level. Assignments in these organizations would not necessarily be at the same facility or even the same site. These assignments may require the employee to pursue qualification in an additional functional area, although this is not a requirement of the program. Diverse assignments to different facilities and different sites, including assignments to a central staff or Headquarters staff, are important to the development of the technical professional and are valued in the Department. Opportunities for professional growth and promotion generally are expanded with a diversity of experience in different programs, projects, facilities, and sites. A set of diverse assignments will help employees understand and better integrate the lessons learned at all locations and all levels of the Department into the day-to-day conduct of business. This also promotes better understanding and integration of different organizational functions and perspectives into technical and organizational decisions.

Employees complete the Professional Base when they have held permanent positions in at least two different technical- or safety-related organizations, have completed the Professional and Leadership Development curriculum, and are qualified as STSMs. It is expected that employees, their supervisors, and Departmental management work to accomplish these activities through the effective use of the Professional Base Development Plan. The Plan serves both to facilitate the accomplishment of training and assignments while in the Professional Base and to document the completion of these activities.

The Professional Base phase of the TPCDP broadens employees' technical experiences through assignments in different organizations with technical- and safety-related responsibilities. This phase also develops technical professionals to perform GS-14/15 or Pay Band IV level jobs as first- and second-level supervisors and managers. The Professional Base phase develops skills in leadership, management, supervision, program management, and communications

and involves management development in addition to technical growth. Employees gain program or project management experience in this phase. They lead teams for tasks such as operational readiness reviews or accident investigations. They can work independently on challenging technical assignments in support of their own organizations or other offices. Employees who complete the Professional Base have progressed to a career stage where they are prepared to manage programs or projects or lead teams. When employees complete the Professional Base phase of their development, they are qualified to compete for jobs as supervisors or managers in the Management Base.

f. Expert Base and Management Base. Some employees may choose to complete the Professional Base and continue working in that capacity for their entire career. Other employees may want to continue advancing their career, and, at this point, may choose one of two tracks. Those employees who want to progress into supervisory and management positions may pursue the Management Base. Other employees may want to practice their technical profession at a higher level without moving into a supervisory or management position. These employees may pursue the Expert Base.

(1) Expert Base.

The Expert Base phase of the TPCDP is directed toward a limited number of select employees who wish to continue to excel within their chosen profession. These employees are typically GS-14/15 or Pay Band IV, and, in select cases, they may become SES employees. The training and development program for these personnel is typically individually based and focused on achieving technical excellence within a specific discipline such as fire protection, criticality safety, structural engineering, or similar discipline. Employees in the Expert Base may continue to pursue advanced education to obtain a PhD in their technical discipline; in select cases, the Department will strive to support their choice through educational reimbursement or fellowship programs. Employees should also continue to pursue advanced training (not degree related) provided by professional organizations, educational institutions, other agencies, or commercial providers.

Employees in the Expert Base should also pursue other experiential opportunities in their technical discipline. At a minimum these experiential opportunities would involve short- and mid-term assignments within the Department in areas that allow for growth within their technical discipline. Such opportunities may include assignments on operational readiness review teams, accident investigation teams, assessment teams, or assisting other offices with a particular technical issue or project. Employees in the Expert Base should also pursue temporary assignments with other agencies or industry organizations to broaden their base of knowledge in their specific technical discipline.

In addition to continuing to pursue other education, training, and experience in their technical area, employees in the Expert Base should also pursue opportunities to participate on professional committees, such as standards-setting organizations, and should expect to earn professional certification before being promoted to the grade of GS-14/15 or Pay Band IV. The Department may support professional certification through training and reimbursement of certification costs on a case-by-case basis. Employees in the Expert Base should also periodically speak on topics and issues at outside conferences and publish articles in professional journals.

(2) Management Base.

The Management Base phase of the TPCDP includes first-line supervisor and middle management positions in line or staff offices with oversight responsibilities for defense nuclear facilities. These jobs typically are at the GS-14/GS-15 or Pay Band IV level. This phase includes supervisory and management assignments in at least two different departmental organizations, management training tailored to each employee, and experience in both headquarters and the field. Qualification in the Management Base includes the required knowledge and skills for managers who provide assistance, direction, guidance, oversight, or evaluation of contractor technical activities impacting the safe operation of defense nuclear facilities. Work experience and professional development at this level, and the STSM qualifications completed in the Professional Base, prepare employees for SES positions such as FEMs and Headquarters Program Directors.

Employees located in the field who are selected as first-level managers typically are assigned to one of four types of organizations: environment, safety, and health support; site and facility operations; site and facility engineering; or projects or programs. Employees at Headquarters typically are assigned to a technical organization such as programs, facilities, or safety support.

Managers initially assigned to these types of organizations generally should expect to remain in the initial assignment for three to five years. Following the initial assignment, they should seek assignment to one of the remaining types of organizations at this level, or potentially to a larger or more complex facility in the same type organization, to broaden their knowledge of, and experience with, defense nuclear facilities and sites. Managers typically should expect to serve in at least two organizations at this level, with between three and five years in each organization, before seeking positions in the next level. Assignments in these organizations need not be at the same facility or site. If the employee has not held positions at both a Headquarters and a field organization, then it is encouraged that employees complete a minimum of six months of

experience (not necessarily continuous) at one of those locations during the Management Base phase of their development.

Acquiring a diversity of experience in different DOE commercial or military programs, projects, facilities, and sites generally enhances professional growth and promotion. Pursuit and acquisition of advanced degrees in related areas may also enhance opportunities for advancement. Managers may remain in a first-level management position for some time due to personal choice or limited opportunities for continued advancement. First-level managers still should seek to spend no more than five years in any position at a facility or site. All other factors being equal, rotation of technical managers and advisors through field assignments, Headquarters, and other facilities and sites may provide the greatest opportunity for professional growth and promotion based on the greatest diversity of management experience with, and knowledge of, defense nuclear facilities. The Management Base is considered complete when employees complete at least two job rotations, have previous experience in both the field and Headquarters, and complete the management training specified in individual development plans. Broader and increasingly more responsible management positions make employees better prepared to seek senior management opportunities.

Technical managers who seek a senior management position should develop a broad range of knowledge, skills, and abilities to demonstrate executive leadership capability in addition to technical management expertise. The knowledge, skills, and abilities for senior management positions are developed and demonstrated through multiple assignments in increasingly more complex and challenging environments.

Candidates for senior management positions should consider progressive management assignments at multiple sites that provide learning opportunities to support a fundamental transition from technical management to organizational leadership. Key abilities to be developed as part of these progressive assignments should include the Executive Core Qualifications similar to those demonstrated for any SES position: (1) Leading Change (the ability to develop and implement an organizational vision which integrates key national and program goals, priorities, values, and other factors); (2) Leading People (the ability to design and implement strategies which maximize employee potential and foster high ethical standards in meeting the organization's vision, mission, and goals); (3) Results Driven (the ability to stress accountability and continuous improvement, to make timely and effective decisions, and to produce results through strategic planning and the implementation and evaluation of programs and policies); (4) Business Acumen (the ability to acquire and administer human, financial, material, and information resources in a manner which instills public trust and accomplishes the organization's

mission and to use new technology to enhance decision-making); (5) Building Coalitions/Communications (the ability to explain, advocate, and express facts and ideas in a convincing manner and negotiate with individuals and groups internally and externally); and (6) the ability to develop systems to more effectively and efficiently complete assigned missions.

Leadership and executive development programs beyond the scope of the TPCDP are available to refine the skills employees need to be competitive for senior executive jobs. There are courses such as the training offered by the Federal Executive Institute, which are focused on strengthening skills. Successful candidates for senior executive positions typically demonstrate that they meet the core qualifications and they have exemplary performance in their work experiences. Their track records show they have the capabilities to lead organizations and accomplish challenging tasks in a broad range of topics. A technical professional who becomes a SES manager likely will be responsible for a technical field much broader than only a safety function, such as a Headquarters Program Manager or a Site Office Deputy Manager or Manager.

Senior executives with responsibility for technical work are expected to complete Nuclear Executive Leadership Training. Nuclear Executive Leadership Training is a week long, in-residence course that covers topics such as safety culture, nuclear and non-nuclear safety, assessment, decision-making, human performance improvement, and contracting. The content is designed for executive-level employees.

APPENDIX C
ACCREDITATION OF DOE TECHNICAL QUALIFICATION PROGRAMS

1. OVERVIEW.

The accreditation of Technical Qualification Programs (TQPs) enables both Headquarters and field organizations in DOE to demonstrate that they have an effective program in place to ensure the technical competency of DOE technical employees whose duties and responsibilities require them to provide assistance, guidance, direction, oversight, or evaluation of contractor activities that could impact the safe operation of a defense nuclear facility. Accredited organizations are recognized for having programs and processes in place that adhere to established objectives and criteria for an effective TQP. Accreditation ensures the consistent application of TQP requirements across the Department, thereby facilitating the transportability of qualification when an individual moves from one organization to another.

2. PROCESS.

The accreditation process is applicable to those organizations within DOE that choose to seek accreditation of the TQP.

a. Accreditation Process Elements.

The TQP accreditation process consists of the activities described below. These activities are further described in this appendix and are depicted in Figure C-1.

- Development and implementation, by the organization requesting accreditation, of a TQP that meets the requirements stated in this Order.

- A comprehensive self-assessment of the TQP against the objectives and supporting criteria as described in a document entitled "Assessment of Technical Qualification Program" and posted on the FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc), by the requesting organization. The details and conclusions of that evaluation are documented in a self-evaluation report. The self-evaluation report (SER) and a declaration of readiness by the senior manager are transmitted to the TQP accreditation support office.

- Evaluation of the requesting organization's TQP by an onsite accreditation review team. This team, consisting of specifically qualified individuals will evaluate the TQP against the objectives and criteria. The onsite evaluation team pays particular attention to ensure that the program is being effectively implemented throughout the organization. The results of the onsite review are documented in a TQP Accreditation Review Team Report.

- A recommendation to the Deputy Secretary for accreditation of the program by the independent TQP Accreditation Board. This Board, consisting of

senior managers from DOE and an expert from outside of DOE, makes this recommendation based on a formal meeting with senior representatives from the requesting site and the TQP accreditation review team leader. The recommendation is based upon information contained in the accreditation review report, and feedback and input from senior management from the requesting organization.

- A determination by the Deputy Secretary regarding accreditation.

- Continuous implementation and maintenance of TQP accreditation for four years. The organization is expected to continue to maintain and implement the TQP in a manner that meets the objectives and criteria and that ensures a robust program. Renewal of accreditation is accomplished by the same process as initial accreditation, and involves both a self-evaluation report submitted by the organization as well as a review by an onsite accreditation review team. The TQP Accreditation Board will review the results of these efforts and make a recommendation to the Deputy Secretary to renew or defer accreditation.

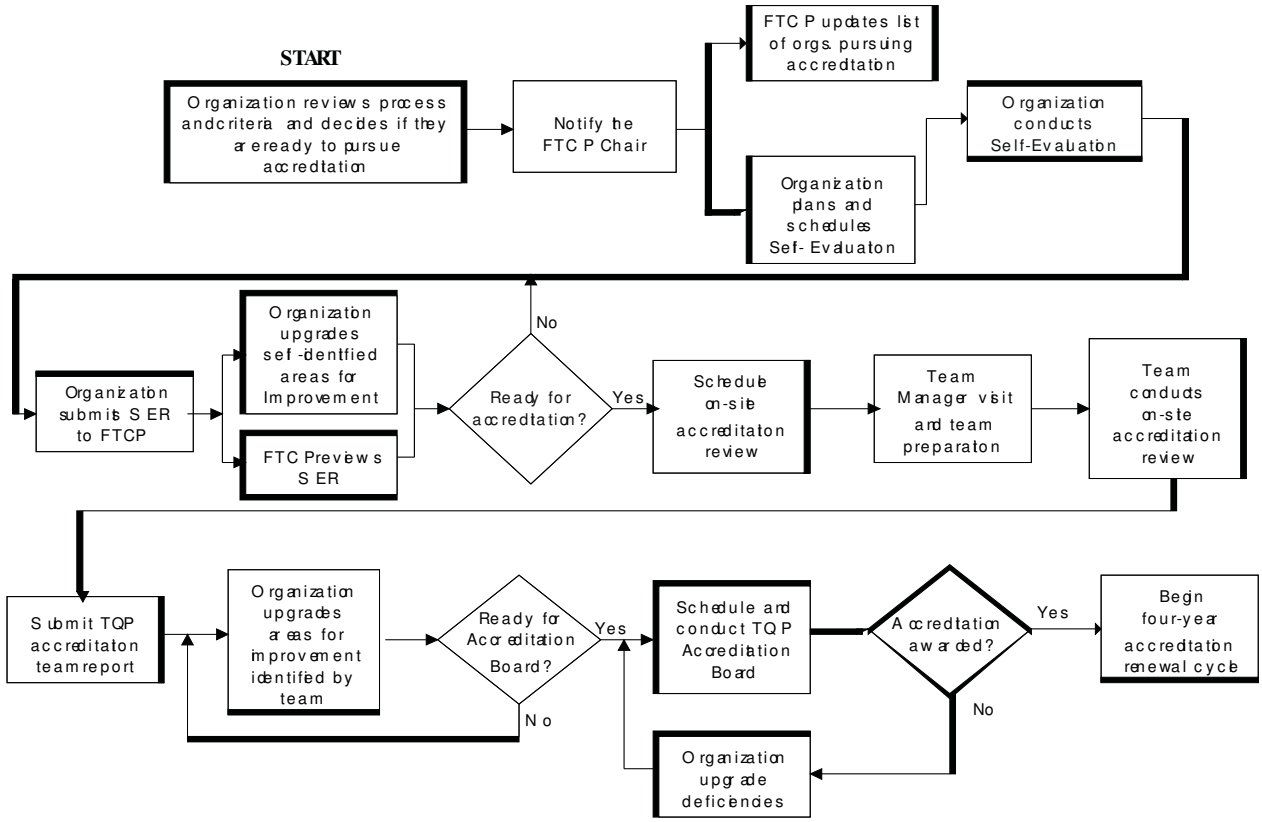

Figure C-1. TQP Accreditation Process

b. Accreditation Support.

The Office of Health and Safety, HS-10, serves as the TQP accreditation support office and, in that role, reports to the Panel Chair. The TQP accreditation support office is responsible for facilitating the TQP accreditation process. This includes the following:

- Developing and maintaining program documents,
- Supporting the National Training Center in providing training on the TQP accreditation process,
- Providing assistance as requested to support the TQP accreditation process,
- Establishing accreditation review teams,
- Supporting the TQP Accreditation Board,
- Providing accreditation status reports to the Panel Chair,
- Supporting the process to maintain and re-validate accredited TQPs, and
- Coordinating the necessary resources to support the accreditation process.

c. Self-evaluation and Self-evaluation Reports.

In preparation for initial accreditation or accreditation renewal, a TQP accreditation self-evaluation report is prepared for the TQP under review. The self-evaluation report serves as the "application" for accreditation. Before the accreditation review team visits the site, the requesting organization conducts a thorough self-evaluation of their program against the objectives and supporting criteria as described in "Assessment of Technical Qualification Program" posted on FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc), and documents the results in a self-evaluation report; and corrects, or begins to correct, any identified problems. The purpose of this self-evaluation is for the requesting organization to ensure that their program satisfies the criteria of an effective TQP. Organizations are encouraged to use an outside expert or peer from another organization to assist in this assessment and provide an objective, outside perspective. The TQP accreditation self-evaluation should meet the following key criteria:

- Senior managers oversee the self-evaluation process to ensure identification and description of TQP strengths and correction of weakness.
- Line managers and their staffs actively participate in the self-evaluation process.

- Self-evaluations of the TQP recognize both the strengths of the program and problems that need to be corrected.

- Alternative perspectives from other organizations or individuals are actively solicited.

- Activities or accomplishments (e.g., related ISO certifications, other professional certifications, participation in university sponsored programs) are identified and encouraged.

- Significant problems in the TQP are documented and investigated for root or contributing causes, and actions are taken to correct and prevent recurrence. Follow-up reviews are used to verify the effectiveness of corrective actions.

The TQP accreditation self-evaluation report is a comprehensive, standalone document that describes the requesting organization's TQP. For programs being reviewed for accreditation renewal, the TQP accreditation self-evaluation report reflects strengths and areas for improvement identified throughout the four-year renewal period. The senior manager responsible for the organization requesting accreditation approves the report and forwards it to the DOE TQP accreditation support office approximately two months before the accreditation team visit. The forwarding memo includes a declaration by the senior manager that the organization is implementing the TQP in accordance with the requirements of this Order and is ready for accreditation.

HSS reviews the TQP accreditation self-evaluation report and ensures that the report was prepared in accordance with the guidance in "Assessment of Technical Qualification Program" posted on FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc), and meets the criteria for TQP accreditation self-evaluation reports. The TQP accreditation support office coordinates with the senior manager responsible for the organization requesting accreditation to resolve any discrepancies or ambiguities within the TQP accreditation self-evaluation report prior to the TQP accreditation review team evaluation.

d. Accreditation Review Team and Team Activities.

The purpose of the TQP accreditation review team evaluation is to conduct a thorough and independent evaluation to review the status of TQP implementation and assess the actions taken to address areas for improvement identified in the self-evaluation report. For initial TQP accreditation, an accreditation team evaluation will be scheduled when the requesting organization submits a comprehensive TQP accreditation self-evaluation report. Accreditation review team evaluations typically are scheduled approximately three months before the TQP Accreditation Board review date.

The accreditation review team may consist of TQP accreditation support office staff, FTCP Agents, outside experts, and peer reviewers from other sites. The team members have collective expertise in facility operations, technical qualification programs, and facility management. They also meet specific, pre-established qualification requirements and receive training on the TQP accreditation process. The accreditation review team composition should represent a cross-section of NNSA and DOE elements (e.g., PSOs).

The TQP accreditation support office nominates the accreditation review team leader for a particular review, and the Panel Chair approves the team leader. The TQP accreditation support office selects the most qualified individual to do the job. In making the selection, the following criteria should be considered.

- The individual is a senior level (GS-15 or above) manager, qualified as an STSM, who is very knowledgeable of the development and implementation of TQPs.

- The individual has experience leading evaluation teams.

- The individual, by virtue of reputation, background, and experience, will be respected by the organization being assessed. FTCP Agents are encouraged to participate as team leaders.

The accreditation review team leader has the primary responsibility for selecting the team members. The importance of this task cannot be overemphasized. No other task has such a direct impact on the overall quality of the accreditation review. Typically, a TQP accreditation review team will have a team leader and four to six team members, one of which will be selected by the Chief of Defense Nuclear Safety (CDNS) or the Chief of Nuclear Safety (CNS).

Assessment team members should have technical experience relevant to the assignment and knowledge of TQPs. They should also have some experience conducting program assessments. This experience provides the background for team members to work independently at an unfamiliar location, gather information quickly, and make objective recommendations. Team members should have qualifications that will be respected by the organization requesting the assistance (e.g., reputation, relevant background, and type and length of experience).

Accreditation review team evaluations typically last about one week. During the evaluation, team members observe TQP activities; interview staff and management personnel; review qualification requirements and qualifications of personnel; and examine TQP materials. The TQP is evaluated against all of the objectives and criteria using specifically developed lines of inquiry. Accreditation review team results are discussed with staff and management personnel at the site on a daily basis during the review.

Following the onsite evaluation, the TQP accreditation review team prepares an exit report to describe the results of the review. This report forms the basis for an exit meeting with senior management of the organization being reviewed and identifies applicable strengths or areas for improvement. Following the exit meeting, the requesting organization submits written responses that describe the actions taken or planned for identified areas for improvement. The accreditation review team leader prepares a detailed TQP Accreditation Review Team Report that describes the results of the accreditation review team evaluation, but does not provide a recommendation regarding accreditation. This report is submitted to the TQP Accreditation Board for review and deliberation.

The format of the TQP Accreditation Review Team Report is as follows.

- Cover Page. Include the title of the report, the name of the office assessed, and the date of the report.

- Executive Summary. One page that provides a short overview of the team composition, dates of the assessment, and methodology. The Executive Summary should briefly describe assessment results, including strengths and weaknesses.

- Introduction. Provide relevant background information and describe the purpose and format of the report.

- Scope and Methodology. Describe the make-up of the team in general terms (referring to the attachment of the report for more detail), describe the scope of the assessment referencing the use of the objectives and criteria, and briefly describe the methodology applied.

- Results. Address in detail the overall program and each of the applicable objectives, including how the objective is met and identifies any strengths, areas for improvement, or other noteworthy information. Definitions of these three items are included in "Assessment of Technical Qualification Program" posted on FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc). Addressing each criterion for the objectives is not necessary; however, any criterion that is not achieved should be identified as a deficiency for that objective.

- Attachments. Include the following.

  - Objectives and criteria used for the evaluation.

    - List of team leader and team members, including a brief description of their backgrounds and experience.

  - List of people contacted, activities observed, and documents reviewed.

- Any other information the team leader deems pertinent.

e. Accreditation Board.

Five members of the TQP Accreditation Board meet as a voting board to consider the TQP for accreditation or accreditation renewal. The Board typically meets approximately two to three months following the accreditation review team evaluation. The composition of the voting board includes one senior executive from NNSA, the Office of Environmental Management, Office of Science, or other PSO; one senior executive from HSS; one manager of a field or site office; the CDNS or CNS; and one outside expert. Board members should not be directly associated with the TQP that is being considered for accreditation. Board members should be knowledgeable about the TQP, receive training on the accreditation process, and be approved by their PSO. For each Board conducted, the Chair will be the senior executive from HSS.

The TQP Accreditation Board meeting is attended by the responsible managers from the organization requesting accreditation, including the senior manager responsible for the TQP. Attendance is at the discretion of the organization requesting accreditation; however, it is essential that a senior manager who can make commitments to the Accreditation Board be present. The accreditation review team leader is also present at the meeting. Based on the information contained in the accreditation review team report, the Board members assess the status of the TQP and interact with FEMs and the accreditation review team leader. The TQP Accreditation Board decision is based on a comparison of the TQP with the accreditation objectives and supporting criteria, status of corrective actions for any identified problems, and interactions with organizational managers during the meeting. Based on a majority vote, the TQP Accreditation Board will make one of the following recommendations to the Deputy Secretary of Energy.

- Award initial accreditation (or defer initial accreditation pending completion of corrective actions and additional Board review).
- Renew accreditation.
- Place accredited TQPs on probation. (A TQP placed on probation retains accredited status.)
- Withdraw accreditation.

The Deputy Secretary of Energy will make the final decision regarding TQP Accreditation.

f. Maintaining Accreditation.

Organizations maintain TQP accreditation by continuing to implement and improve their programs in accordance with the objectives and criteria. By various

means (for example review of site events or HSS reviews), the TQP Accreditation Board may learn that one or more accreditation criteria are not being met for an accredited program. For each such reported problem, the Panel Chair will consult with the Deputy Secretary, and, at the request of the Deputy Secretary, may initiate a review commensurate with the apparent magnitude of the problem. If such a review is conducted, the Panel Chair will inform the appropriate managers of the problem and will either request additional information or have a team conduct an onsite review of the affected program. If appropriate, the affected DOE managers will be asked to demonstrate to the TQP Accreditation Board that accreditation of the affected program should be continued.

Organizations for those TQPs placed on probation submit a corrective action plan to the TQP Accreditation Board within 30 days of being notified of probationary status. The corrective action plan should address all issues identified by the Accreditation Board and identify any mitigating or compensatory measures. The organization should submit monthly reports to the Accreditation Board indicating the status of implementing the corrective actions to improve the program. An accreditation review team may review activities at the site to determine if corrective actions are being effectively implemented. The TQP Accreditation Board will review the status of probationary programs on a quarterly basis and decide if the organization should remain on probation, if accreditation should be restored, or if accreditation should be withdrawn.

Accreditation is valid for four years. The organization is expected to continue to maintain and implement the TQP in a manner that meets the objectives and criteria and ensures a robust program. Renewal of accreditation is accomplished by the same process as initial accreditation, and involves both a self-evaluation report submitted by the organization as well as a review by an onsite accreditation review team.

3. ACCREDITATION OBJECTIVES AND CRITERIA.

The TQP objectives and supporting criteria are described in "Assessment of Technical Qualification Program" posted on FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc).

4. SELF-EVALUATION REPORT GUIDANCE AND FORMAT.

a. Self-Evaluation Process.

Line manager and staff involvement in, and support of, the self-evaluation process are the foundation of the TQP accreditation effort. This includes their involvement in the self-evaluation of the program and the preparation of the accreditation self-evaluation report. In assessing TQP effectiveness, line managers and staff determine whether the program is resulting in measurable improvements in the organization.

Accreditation evaluations are performed using the objectives and supporting criteria as described in "Assessment of Technical Qualification Program" posted on FTCP website (https://www.hss.energy.gov/deprep/ftcp/directives/TQPAssessments.doc). The strengths and areas for improvement are substantiated with examples and selected anecdotal evidence that help clarify and provide perspective on their scope and depth. The root or contributing causes of areas for improvement are investigated, and actions are taken to correct the problems. Corrective action effectiveness reviews verify that problems identified in self-evaluations remain corrected.

b. Development of a Self-evaluation Report.

The results of accreditation self-evaluations are described in a report submitted approximately two months before a TQP accreditation review team evaluation. The accreditation self-evaluation report is a standalone document that conveys the health of the TQP. For accreditation renewal, the report also describes the results of ongoing and periodic focused self-assessments conducted during the accreditation period. As such, report quality can be enhanced by maintaining and periodically updating it, rather than reflecting the results of a single comprehensive evaluation.

Two months before the accreditation review team visit, the senior manager responsible for the organization requesting accreditation submits an approved self-evaluation report to the executive director of the TQP accreditation support office. The purpose of the report, together with an accreditation review team evaluation report, is to communicate sufficient information regarding the health of the TQP to facilitate an accreditation or accreditation renewal decision by the TQP Accreditation Board. Report content includes program strengths and areas for improvement, important program changes since accreditation or the last accreditation renewal, and brief descriptions of how each TQP Assessment Objective included in the document is met. The report will be submitted to the TQP Accreditation Board for accreditation or accreditation renewal consideration; it should be written with that audience in mind.

Organizations are encouraged to be critical in evaluating their TQPs and candid in describing areas for improvement. The report summarizes the root or contributing causes for areas for improvement and corrective actions taken or planned. The section of the report that requires a written description of how each objective is met can be organized by addressing each criterion associated with the objective, or the objective description can be presented in a narrative format. The decision on which option to use is left entirely to the discretion of the organization submitting the report. The TQP Accreditation Board decision, however, will be based on how well each objective is met, not on whether any particular criterion is met.

c. Definitions of Key Terms for Accreditation Self-Evaluation Reports.

(1) Area for Improvement. A TQP-related issue or problem that contributes to an accreditation objective not being fully met or that adversely impacts future TQP effectiveness is an area for improvement.

(2) Strength. This is an objective-level positive aspect of the TQP that is key to achieving superior performance. A strength adds significant value or improves organizational performance, as demonstrated by the following elements:

- enhanced ability of the organization to implement the TQP;
- successful implementation based on performance results;
- efficient use of organizational resources; and
- potential to serve as a model for other organizations to emulate.

(3) Noteworthy Information. This refers to comments included in the discussion section of the report that describe the quality of the TQP and provide perspective on the effectiveness of the program. Noteworthy information may be positive, but not strength or it may be a less significant problem or precursor to a more significant problem. For example, positive noteworthy information could be an aspect identified during a self-evaluation that is not considered strong enough to be called strength. Conversely, negative noteworthy information could be a problem that is not substantial enough to be considered an area for improvement. Noteworthy information provides additional management perspective that can be of value to the accreditation review team and to the Accreditation Board.

d. Format of the Self-Evaluation Report.

The self-evaluation report includes the following sections.

(1) Introduction and Summary.

This section is used to share management's perspective on the TQP with the accreditation review team and the Accreditation Board. It is expected that each organization will include information that best conveys the appropriate perspective on the TQP. This section is normally one to three pages and should include information such as:

- significant organizational performance issues and regulatory interactions that have helped shape the current organizational culture;

- strategic plans or events that have affected or are likely to affect the TQP, such as changes in staffing or loss of experienced personnel;

- overall management-level statement of how the TQP has been used to facilitate excellence in performance and strategy for the future; and

- description of how the accreditation self-evaluation report was prepared, the composition of the team, and the base of self-evaluation information used to develop the report.

(2) Mission and Organization.

This section is used to describe the mission(s) and functions of the organization requesting accreditation. The section also describes the organizational structure including high-level organizational charts, functions, and responsibilities.

(3) Self-Evaluation Results (by Objective).

This section comprises the majority of the self-evaluation report. Each objective is addressed individually in its own section. The following information is included for each objective.

- Discussion of Objective: Include noteworthy information and a brief summary of the status of how the objective is achieved. This section can be organized to address each criterion associated with the Objective or can be presented in a narrative format. In either case, address the following information for each Objective using examples and limited anecdotal evidence, where appropriate, to provide perspective.

- Strength(s): Include examples and applications of the strength, and describe the benefits achieved by the strength.

- Area(s) for Improvement: Include date of identification, examples of the problem, root or contributing causes, actions taken or planned to correct the problem, and results of effectiveness reviews, if performed.

NOTE - If no strengths or areas for improvement have been identified for the objective, then include the following statement: “No objective-level strengths or areas for improvement were identified.”

APPENDIX D
SAFETY SYSTEM OVERSIGHT, DUTIES, RESPONSIBILITIES, KNOWLEDGE, SKILLS, AND ABILITIES

1. OVERVIEW. System Safety Oversight (SSO) personnel are a key technical resource qualified to oversee contractor management of safety systems at DOE defense nuclear facilities. Unlike Facility Representatives (FRs), who are responsible for monitoring the safety performance of DOE defense nuclear facilities and day-to-day operational status, staff members assigned to SSO are responsible for overseeing assigned systems to ensure they will perform as required by the safety basis and other applicable requirements. SSO personnel are highly qualified people who perform assessments and investigations to confirm performance of assigned safety systems in meeting established safety and mission requirements and review sections of the Documented Safety Analysis (DSA) related to these systems. DOE line management is responsible for oversight of safety at DOE facilities and for meeting mission objectives and goals. Integrated Safety Management (ISM) System processes help to ensure systems are able to perform their design safety functions. Effective implementation of ISM relies upon the ability to apply engineering expertise to maintain safety system configuration and assess system condition and effectiveness of safety management program implementation. Federal staff requires a working knowledge of assigned systems and the contractor's application of the cognizant system engineer concept and safety program management as described in DOE O 420.1B, *Facility Safety*.

   The SSO Qualification Program is a key part of the Technical Qualification Program (TQP), considered an additional level of technical qualification, and builds upon technical discipline competencies.

2. DUTIES AND RESPONSIBILITIES.

   a. SSO Personnel.

      (1) Maintain communication and oversight of systems and monitor performance of the contractor's Cognizant System Engineer Program.

      (2) Attend selected contractor meetings with FRs and contractor personnel responsible for system performance (e.g., cognizant system engineers, design authorities, and program managers), review system health/status reports, review test results, interface with external organizations that can provide insights on performance, and perform other oversight activities on a routine basis.

      (3) Perform assessments, periodic evaluation of equipment configuration and material condition. The effect of aging on system equipment and components, the adequacy of application of work control and change control processes, and appropriateness of system maintenance and

surveillance should be considered with respect to reliable performance of safety functions.

(4) In conjunction with FRs, perform evaluations of contractor troubleshooting, investigations, root cause evaluations, and selection and implementation of corrective actions. SSO personnel may also be requested to respond to off normal and/or off normal hours events and investigations and be able to provide relevant insights and serve as the DOE recognized expert on issues related to assigned areas.

(5) Provide support to other Federal employees as appropriate. This may include program and project managers responsible for supervision of facility safety systems installed in new and modified facilities. It may also include those managing the implementation of ISM in the operation, maintenance, and configuration management of facility safety systems.

(6) Assess contractor compliance with relevant DOE regulations, industry standards, contract requirements, safety basis requirements, and other system requirements.

(7) Confirm configuration documentation, procedures, and other sources of controlling information are current and accurate.

(8) Report potential or emergent hazards immediately to DOE line management and FRs, and stop tasks, if required, to prevent imminent impact to the health and safety of workers and the public, to protect the environment, or to protect the facility and equipment and immediately notify the on-duty or on-call FR.

(9) May serve as a qualifying official in the development or revision of Functional Area Qualification Standards (FAQS), mentor assigned backups, and qualify other candidates to the same FAQS attained to achieve SSO qualification.

(10) Maintain cognizance of the appropriate funding and resources to maintain and improve safety systems.

(11) May perform additional duties and responsibilities, as assigned by their respective FEMs, if needed to meet specific requirements of their sites/facilities, systems/program activities, or other involved organizations.

b. Field Element Managers.

(1) Establish SSO qualification programs as part of the TQP.

(2) Establish appropriate training and performance requirements for SSO personnel and hold supervisors of SSO personnel accountable for achieving them.

(3) Define SSO requirements and ensure that SSO staffing needs are filled.

(4) Clearly define the functions, responsibilities, and authorities of personnel assigned to perform SSO and their interface/support of FRs. Ensure affected DOE and contractor managers understand their roles and relationships to FRs and the contractor's cognizant system engineers, and provide the necessary access and support.

(5) Verify that SSO candidates possess the required level of knowledge or skills to perform assessments and investigations to confirm performance of safety systems in meeting established safety and mission requirements.

(6) Assign qualifying officials to sign site-specific qualification cards.

c. Supervisors with Responsibilities for SSOs.

(1) Maintain STSM qualification.

(2) Develop site-specific SSO qualification standards and cards for safety systems and safety management programs.

(3) Identify and approve candidate selection.

(4) Establish SSO personnel qualification schedules.

(5) Facilitate SSO qualification (e.g., ensure sufficient time and training is provided to complete qualification tasks).

(6) Train and qualify SSO candidates so they are capable of performing assigned duties.

(7) Ensure SSO responsibilities are included and maintained in individual performance plans.

(8) Ensure SSO qualifications are maintained current by training and assignments planned in IDPs.

(9) Periodically evaluate program effectiveness and serve as management advocates within their respective field elements to resolve programmatic issues.

3. SSO KNOWLEDGE, SKILLS, AND ABILITIES.

a. Consistent with this Order, each field element organization develops a TQP to include the knowledge, skills, and abilities listed below for all SSO personnel. It is understood that as part of the TQP, all SSO personnel acquire the necessary basic technical knowledge and technical discipline competencies linked to their individual job descriptions. In addition, the overall competency expectation for SSO personnel is that they have a working knowledge of and ability to oversee those safety systems to which they have been assigned. The following knowledge, skills, and abilities were developed to meet this expectation.

(1) Identify and describe the Authorization Basis (AB) documents and describe the function and purpose of the assigned safety systems and major components and how these functions support the full spectrum of system operations.

(2) Given the major design basis supporting analyses, system design descriptions, calculations, and other information sources, explain how system performance requirements satisfy the AB.

(3) Describe the maintenance requirements of the safety system, describe how to determine the status and adequacy of contractor maintenance activities, and explain how the contractor maintains the configuration of the safety system (both physical and document configuration) throughout the work control and design change processes.

(4) Describe the unreviewed safety question process and its importance for maintaining the original safety basis.

(5) Describe the contractor's Cognizant System Engineer Program, the program's role in maintaining and improving safety system performance, the key criteria for determining that this role is adequately performed, and how to assess the program to confirm it is fulfilling assigned responsibilities.

(6) Describe the key considerations in preparing and implementing a troubleshooting plan to determine the root cause for equipment failures (e.g., evidence preservation, need for contingencies, application of ISM to trouble shooting). Describe how to obtain related facility or industry experience to support the cause determination.

b. In addition to evaluating and documenting how the above knowledge, skills and abilities have been achieved as part of the SSO personnel qualification, field element organizations should also use practical exercises such as the following to evaluate SSO staff knowledge, skills, and abilities.

(1) Performing walk-downs of the system and/or contractor facilities to demonstrate how system requirements and performance data are gathered.

(2) Conducting (preferably leading) performance-based assessments (through walk-downs, interviews, document reviews, and field observations) to confirm that

(a) AB documents are accurate and adequately maintained;

(b) system operation, maintenance, and performance is in accordance with this basis;

(c) the effect of aging on system equipment and components is addressed; and

(d) the contractor has an adequate Cognizant System Engineer Program (e.g., staffing, qualifications, responsibilities, programs) for monitoring, maintaining, and improving system performance.

Achievement and demonstration of knowledge, skills, abilities, and related practical factors are fully documented on the SSO candidate's qualification card.