

U.S. Department of Energy
National Nuclear Security Administration (NNSA)

Livermore Field Office
Technical Qualification Program
Self Assessment Report

May 31, 2013

Assessment Team



Richard Crowe, NNSA NA-SH-80, Team Leader

5/31/13
Date



Dan Schwendenman, NNSA NA-SH-50

5-31-2013
Date



Carol Ingram, NNSA LFO Facility Operations

5/31/13
Date

Approved By:



Philip Hill, LFO FTCP Agent

6/17/13
Date

Table of Contents

Executive Summary 1

Introduction..... 3

Scope and Methodology 3

Results..... 3

Appendix A Assessment Forms A - 1

Appendix B Team Member Biographies..... B - 1

Appendix C Interviews, Documents, and Activities C - 1

NNSA LFO TQP Self Assessment Report

Executive Summary

The purpose of the Livermore Field Office (LFO) Technical Qualification Program (TQP) is to ensure that federal technical personnel with safety oversight responsibilities at defense nuclear facilities at Lawrence Livermore National Laboratory possess competence commensurate with responsibilities. LFO is committed to ensuring it has the necessary technical capabilities to provide the kind of management, direction, and guidance essential to safe operation of DOE's defense nuclear facilities.

DOE O 426.1 Federal Technical Capability, Section 4b (7), requires self-assessment of TQP and Federal Technical Capability (FTC) Program implementation within one's organization every four years. The purpose of this self-assessment is to ensure that the LFO TQP and the FTC Program continue to meet requirements, and to identify opportunities to improve nuclear facility safety oversight effectiveness through the programs. Throughout this document, the term "TQP" refers to both TQP and FTC Programs. In addition, please note that the Livermore Site Office (LSO) was recently renamed the Livermore Field Office (LFO), so when documents refer to LSO, they are considered to refer to LFO.

LFO management has ensured that their Federal employees are properly trained and technically capable of carrying out their responsibilities. All objectives were met.

Two **strengths** were noted. Many LFO personnel are self-motivated and pursue opportunities to increase their technical knowledge. The TQP Manager, in support of LFO management, has continued to effectively administer the Technical Qualification and Federal Technical Capability Programs.

One significant weakness was noted. The reduction of training and travel budgets is detrimental to the establishment and, more importantly, the maintenance of technical competency required to carry out Federal responsibilities.

Two other **weaknesses** were noted.

- The LFO *Integrated Management System Manual* does not clearly and accurately define Federal line management responsibilities in the area of technical capability.
- LFO organizational goals and senior manager position descriptions and performance plans do not establish the expectation for employees to achieve and maintain technical competence.

One recommendation was noted. It is recommended that the LFO supplemental continuing training program (e.g., required reading) be resumed as part of continuing training.

There is a growing need for LFO personnel to take on multiple duties for various areas which will require additional training, both in the classroom and OJT. LFO must find a way to continue to meet its responsibilities with fewer personnel, while maintaining a practical level of rigor in the TQP. The alternative is that LFO and NNSA will find themselves with a shortfall of sufficient technical abilities needed to provide thorough and accurate safety oversight.

LFO has a well-managed, robust and rigorous TQP and FTCP. Management commitment was demonstrated and significant employee involvement was noted. It is recommended that senior NNSA management be informed of the significant weakness and that LFO address the weaknesses as appropriate.

NNSA LFO TQP Self Assessment Report

Introduction

The purpose of the Livermore Field Office (LFO) Technical Qualification Program (TQP) is to ensure that federal technical personnel with safety oversight responsibilities at defense nuclear facilities at Lawrence Livermore National Laboratory (LLNL) possess competence commensurate with their responsibilities. LFO is committed to ensuring it has the necessary technical capabilities to provide the kind of management, direction, and guidance essential to safe operation of DOE's defense nuclear facilities.

DOE O 426.1 Federal Technical Capability, Section 4b (7), requires self-assessment of TQP and Federal Technical Capability (FTC) Program implementation within one's organization every four years. During the week of April 23-26, 2013 the LFO TQP Self Assessment Team evaluated the NNSA LFO against the five FTC and seven TQP Objectives and Criteria required by DOE O 426.1. (See Attachment A.)

Throughout this document, the term "TQP" refers to both TQP and FTC Programs. In addition, please note that the Livermore Site Office (LSO) was recently renamed the Livermore Field Office (LFO). When documents refer to LSO, they are considered to refer to LFO. Terms used for issues are consistent with those in ePegasus and defined in LSO WI 414.9.1, *Writing and Managing Assessments of LSO, Issues, and Corrective Action Plans in ePegasus*.

Scope and Methodology

LFO received support from the National Nuclear Security Administration (NNSA) Office of the Associate Administrator for Safety and Health (NA-SH) to supplement the resources available at the LFO. The use of experienced team members from other NNSA offices has promoted increased integration across NNSA in support of the TQP and nuclear safety. The review team was led by the Technical Lead for Operations and Readiness within the Office of the Chief of Defense Nuclear Safety for the NNSA, a qualified Senior Technical Safety Manager (STSM) from NA-SH-80 (Nuclear Safety). The other team members included the Acting NNSA TQP Manager, a qualified Nuclear Safety Specialist on detail from NA-SH-50 (Operations and Safety Engineering), and the LFO TQP Manager, an engineer qualified in Technical Training, and a Certified Safety Professional. (See Attachment B for team member biographies.)

Results

The results are summarized below, by objective. All objectives were met. More details are included in Attachment A.

Objectives:

FTC-1, Executive Commitment and Line Management Ownership.

Line management is actively involved in all aspects of technical employee recruitment, retention, development, and deployment. Although senior line management strongly supports continuous technical development and improvement of employees, the lack of training and travel funds has made the ability to implement this effort limited. Several weaknesses were

NNSA LFO TQP Self Assessment Report

noted in LFO governing documents and position descriptions.

Weaknesses:

FTC-1-1/W: The LFO *Integrated Management System Manual* does not clearly and accurately define Federal line management responsibilities in the area of technical capability.

FTC-1-2/W: LFO organizational goals and senior manager position descriptions and performance plans do not establish the expectation for employees to achieve and maintain technical competence.

FTC-2, Recruiting Technically Capable Personnel.

The LFO use of Excepted Service Authority and the NNSA Future Leaders Program demonstrates effective processes to attract highly capable technical personnel.

FTC-3, Staffing and Deployment

Staffing plans for the Technical Qualification Program are developed, maintained, and used as the basis for recruiting, developing, and deploying personnel to ensure that critical safety positions are filled with technically competent people. An individual on detail performed several duties concerning nuclear safety that required participation in the TQP without being in the program and without formal compensatory measures established.

FTC-4, Development of Technically Capable Personnel.

Line management supports and effectively implements programs and processes to encourage the continuous improvement of technical personnel. The reduction in available funding for these programs may significantly affect LFO's ability to support these continuous improvement efforts in the future.

Weakness:

FTC-4-1/W: The reduction of training and travel budgets is detrimental to the establishment and, more importantly, the maintenance of technical competency required to carry out Federal responsibilities.

FTC-5, Retaining Technically Capable Personnel.

LFO management has demonstrated a strong commitment to technical competence and values and respects the workforce. Interviews with members of the TQP demonstrate this with a number of individuals actively pursuing increasing their level of knowledge.

NNSA LFO TQP Self Assessment Report

TQP-1, Demonstration of Competence.

The *LFO TQP Manual* documents the processes to identify employee positions for inclusion in the TQP, to identify the means with which employees attain and demonstrate competencies, and to evaluate the technical competence of those employees. LFO demonstrates that these procedures are being followed.

TQP-2, Competency Levels.

LFO TQP competency requirements are clearly defined and consistent with DOE FAQss and applicable industry standards for similar occupations.

TQP-3, Plans and Procedures.

The LFO TQP follows an established procedure that incorporates DOE requirements for maintaining a technically competent workforce. The roles and responsibilities for the TQP are understood by the participants, and the program receives strong support from LFO management. Records demonstrate that the TQP is being properly administered.

TQP-4, Qualification Tailored to Work Activities.

The LFO TQP includes provisions for identifying site- and position-specific needs and implements them through a site-specific qualification standard as well as additional qualification requirements for facility representatives and safety system oversight personnel. The LFO TQP supports the mission needs of the office.

TQP-5, Credit for Existing TQPs.

The LFO TQP program allows for equivalencies, but to date none have been needed. Results of previous training and other qualification/certification programs are used in the evaluation of some competencies, especially where DOE training opportunities do not exist.

TQP-6, Transportability.

LFO TQP competency requirements identified as applying throughout the Department are transferable.

TQP-7, Measurable.

The TQP receives strong support from management to ensure LFO staff demonstrate adequate technical competency. Issues identified with the TQP have received appropriate attention and resolution. Continuing training follows the NNSA TQP Continuing Training Program.

NNSA LFO TQP Self Assessment Report

Appendix A Assessment Forms

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA: Executive Commitment and Line Management Ownership	OBJECTIVE: FTC-1	OBJECTIVE MET <u> X </u> YES <u> </u> NO
--	--------------------------------	--

OBJECTIVE

FTC-1, Executive Commitment and Line Management Ownership. Line management is actively involved in all aspects of technical employee recruitment, retention, development, and deployment.

Criteria:

- 1.1 Line managers are aware of the requirements and administrative flexibilities associated with recruiting, hiring, and retaining high-quality technical employees.
- 1.2 Senior line management supports the continuous technical development and improvement of employees.
- 1.3 Supporting Departmental organizations (personnel, training, contracts, finance, etc.) recognize line managers as customers and effectively support them in achieving and maintaining technical excellence.
- 1.4 The applicable Level One or field level Functions, Responsibilities, and Authorities Manual (FRAM) clearly defines Federal line management responsibilities in the area of technical capability.
- 1.5 Achieving and maintaining technical competence are reflected in the goals and objectives of the organization and the position descriptions and performance evaluation plans of senior managers.
- 1.6 Technical capability programs and processes are institutionalized through Policy, Orders, Standards, and procedures.
- 1.7 Management uses the results of previous FTCP assessments as a tool to improve the program.

DISCUSSION OF RESULTS

1.1 Line managers are aware of the requirements and administrative flexibilities associated with recruiting, hiring, and retaining high-quality technical employees.

All managers interviewed were aware of the requirements and flexibilities associated with recruiting, hiring, and retaining technical employees. However, due to the limited ability to hire staff and the NNSA organizational pressure to reduce staff, some of these flexibilities have not been able to be exercised. This has resulted in maintenance of current staff and reassignment of duties when necessary.

The criterion was met.

NNSA LFO TQP Self Assessment Report

1.2 Senior line management supports the continuous technical development and improvement of employees.

Although senior line management strongly supports continuous technical development and improvement of employees, the lack of training and travel funds has made the ability to implement this effort limited.

The criterion was met.

1.3 Supporting Departmental organizations (personnel, training, contracts, finance, etc.) recognize line managers as customers and effectively support them in achieving and maintaining technical excellence.

The LFO Technical Qualification Manager does an excellent job supporting line management in achieving and maintaining technical excellence. This support ensures line managers are aware of the status of qualification of their employees, what actions can be done to advance the training and qualification of employees, and what opportunities are available for continuous training.

The criterion was met.

1.4 The applicable Level One or field level Functions, Responsibilities, and Authorities Manual (FRAM) clearly defines Federal line management responsibilities in the area of technical capability.

The highest LFO field level document, the *LSO Integrated Management System Manual (IMSM)* is weak in definition of Federal line management responsibilities in the area of technical capability, especially with regard to oversight of safety in defense nuclear facilities. The purpose of the LFO TQP is to ensure that federal technical personnel with safety oversight responsibilities at defense nuclear facilities at LLNL possess competence commensurate with their responsibilities. Clear responsibilities are needed in order to use the Systematic Approach to Training to identify training and qualification requirements. The LFO Federal Technical Capability Program relies on clear roles and responsibilities defined in governing documents as a basis for the program. Critical technical capability positions, (i.e., those positions relied upon to ensure safe operations of defense nuclear facilities) must participate in the TQP. However, as written, the *LSO IMSM* does not provide sufficient detail to identify where nuclear safety responsibilities reside.

The *IMSM* consolidates the previous LSO FRAM, ISMS Description, and Quality Assurance Program Manual into one document. The *IMSM* is intended to be a comprehensive governing document for LFO and to tie together implementing documents. However, it lacks specificity in clearly and unambiguously defining field office Federal line management responsibilities in the area of technical capability, especially with regard to ensuring safety in defense nuclear facilities. There are also gaps in the flow-down of high level nuclear safety oversight responsibilities into position descriptions. This will be discussed in section 1.5, below. Some examples of shortcomings in the highest level document include:

- 1) The *IMSM* lacks detail in describing nuclear safety oversight responsibilities for the organization. DOE O 426.1 5b (3) requires Field Element Managers to designate the positions and/or individuals in their respective organizations that provide oversight of safety management programs identified

NNSA LFO TQP Self Assessment Report

in the respective facilities Documented Safety Analyses (DSAs). LFO procedures do not assign safety management oversight responsibilities. For example, *IMSM* section 3.1.3 on Operations Teams summarizes general team composition, including Team Leader, program representatives, Project Managers (should be Federal Project *Directors*), FRs assigned to oversee the respective facilities, and ESH&QA and SS SMEs. The description of sources of expertise lacks specificity (i.e., in which organization does the particular expertise reside, for each chapter of the DSA) and is incomplete. The list does not specify how or where the functional areas are addressed for the following DSA chapters: criticality safety (Ch. 6), radiation protection (Ch. 7), hazardous material (Ch. 8), radioactive and hazardous waste management (Ch. 9), facility maintenance management (Ch. 10), occupational safety (Ch. 11), procedures and training (Ch. 12), human factors (Ch. 13), quality assurance (Ch. 14), emergency preparedness (Ch. 15), Decontamination & Decommissioning (Ch. 16), management, organization, & industrial safety (Ch. 17). Other functional areas that should be covered are fire protection, software QA, and Safety System Oversight for mechanical and electrical systems. This could be addressed if the *IMSM* described how each of the chapters in the DSA, including the respective safety management program functions, is covered, including which organization or office contributes the respective expertise. This is an observation: **LFO has not designated the positions and/or individuals in the respective organizations at LFO that provide oversight of safety management programs that are identified in the LLNL nuclear facility DSAs (FTC-1-1/O).**

- 2) The *IMSM* lacks specificity in describing nuclear safety authorities that drive technical capability requirements. For example, *IMSM* Section 3.1.5.2 Management Delegations does not specifically mention the NNSA HQ delegation of safety basis approval authority to senior site management. Although it refers to the actual date of the delegation memo, the *IMSM* simply says that NA-10 delegated "certain Nuclear Safety authorities" to Phillip Hill and Samuel Brinker, and that in another memo, NA-10 delegated "certain Nuclear Safety authorities" to Kimberly A. Davis, "based on the criteria promulgated by the Deputy Secretary." This is probably one of the most important Federal line management responsibilities given a site manager, and it has a direct relationship to the need for critical technical capability and participation in the TQP. The section says only that the delegations to LSO are noted within each function, without referring the reader to the particular function or section of the manual. This is an observation: **The *IMSM* lacks specificity in describing nuclear safety authorities that drive technical capability requirements (FTC-1-2/O)**
- 3) *IMSM* section 3.1.7 Function 3.1.6 [*sic*] LSO Resource Allocation references DOE O 426.1 and assigns the Manager responsibility for the conduct of Workforce and Succession Planning regarding the preservation of critical technical capabilities. Although succession planning should be based upon organizational responsibilities, the *IMSM* does not clearly describe the flow-down of nuclear safety oversight responsibilities from Headquarters into the organizations and positions at LFO. This hinders the effective and comprehensive identification of critical positions. The *IMSM* is inconsistent with and fails to reference *LSO Manual 426.1 LSO Technical Qualification Program (LSO TQP Manual)*, which implements DOE O 426.1, at LFO. This is an observation: **The description of federal line management responsibilities for critical technical capability planning described in the *IMSM* is not connected to the implementing document, the *LSO TQP Manual* (FTC-1-3/O).**
- 4) *IMSM* section 3.2 Personnel Training and Qualification defines the separate but related functions of training (3.2.1) and the Technical Qualification Program (TQP, 3.2.2). This section of the *IMSM* is not comprehensive, however, since it is limited to the TQP. (Note, too, that the *IMSM*,

NNSA LFO TQP Self Assessment Report

which is supposed to encompass more than safety, makes no mention of other non-safety qualification requirements for LFO personnel, such as contracting officers and specialists, other business functions, and Federal Project Directors.) This is an observation: **The LFO IMSM does not describe other qualification areas at LFO, such as the Project Management Career Development Program (PMCDP).** (FTC-1-4/O).

- 5) *IMSM* section 3.2.2 describes the LFO TQP, but the information is out of date. It does not reflect the current *LSO TQP Manual*, which was revised in September 2012. It references a work instruction (WI 426.1.1) that was canceled by the revised *LSO TQP Manual*. The *IMSM* lists responsibilities of the TQP Manager, but the revised *LSO TQP Manual* no longer references a TQP Manager. Some of the responsibilities listed were never the responsibility of the LFO TQP Manager, such as maintenance of a list of training activities or classes corresponding to competencies. Since the summer of 2012, the LFO TQP Manager no longer has responsibilities related to the FR qualification program. In order for LFO to ensure that the organization maintains requisite technical capabilities for nuclear safety oversight as changes occur, the associated expectations for managers need to be either clearly defined in the *IMSM*, or referenced if not fully defined in the *IMSM*. *IMSM* supervisory expectations relative to the TQP are not adequately described. This is an observation: **Complete supervisory responsibilities relative to the TQP are not provided or referenced in the LFO IMSM.** (FTC-1-5/O).

These issues combine to result in the following weakness: **The LFO Integrated Management System Manual does not clearly and accurately define Federal line management responsibilities in the area of technical capability.** (FTC-1-1/W)

The criterion was not met.

1.5 Achieving and maintaining technical competence are reflected in the goals and objectives of the organization and the position descriptions and performance evaluation plans of senior managers.

Achieving and maintaining technical competence is not reflected in LFO organizational goals and objectives, nor is it consistently and clearly stated in position descriptions and performance standards of senior managers. There is no evidence that LFO has formally established goals and objectives for the organization. Goals are not posted on the LFO intranet or SharePoint, nor are they defined in the *IMSM*, where one would expect to find them. Although *IMSM* Section 3.1.6 LSO Integrated Management System requires the TDSSO to prepare annual field office safety goals for Manager approval, no approved safety goals of the organization were available. LSO Values from 2009 are found in a Policies folder on SharePoint, along with six human resource-related policy statements (employee concerns, diversity, wall decorations, etc.). LSO Values include commitment to "our Mission," integrity, quality, customer feedback, teamwork, respect, balance of life's priorities, etc., but do not mention technical competence. Achieving and maintaining technical competence are not reflected in goals and objectives of the organization. This is an observation: **Achieving and maintaining technical competence are not reflected in goals and objectives of the organization.** (FTC-1-6/O)

The need for technical competence is supposed to be based on the responsibilities of the job (i.e., competence commensurate with responsibility). Critical positions that require participation in the TQP must meet criteria defined in DOE O 426.1. One of the criteria is that the position must have responsibilities related to the safe operation of defense nuclear facilities. [DOE O 426.1 4b(1)(a)]. At LFO,

NNSA LFO TQP Self Assessment Report

one of the technical deputies who has been delegated approval authority and whose organization includes the safety basis team has been assigned to participate in the TQP, yet safety is not included in the duties of his PD. Other LFO senior managers PDs have very limited reference to oversight of nuclear facility safety. This may explain why expectations to achieve and maintain technical competence for LFO senior managers, their subordinates, or the workforce in general are limited or absent from senior manager position descriptions (PDs) and performance evaluation plans, even though this is required by DOE O 426.1 4b(5)(f) and (g).

- Only two senior manager PDs require qualification as an STSM: the Site Office Manager and one AM. The Site Office Manager PD does not mention the TQP or the requirement to maintain qualifications as an STSM.
- The PDs for most LFO senior managers (the Technical Deputy for Safety and Environmental Programs, Technical Deputy for Defense and Security Operations, Assistant Manager (AM) for Defense Programs, AM for Sustainability and Infrastructure, and AM for Interagency Missions) state nothing other than that the position is in the DOE Technical Qualification Program. There is no mention of the need to maintain qualifications as an STSM.
- The PD for the AM for Safeguards & Security does not mention the expectation to qualify and maintain qualification in the TQP.
- Senior manager PDs have nothing that expects them to ensure that their workforce gain and maintain technical competence.
- The PD for the manager and one technical deputy include nuclear safety responsibilities, while the other technical deputy PD, mentioned above, has a heavy emphasis on contract administration, program execution, and safeguards and security. Responsibilities of that second deputy include ensuring the growth of new programs to support the long-term viability of the lab; there is no mention of safety in the summary of the position.
- The PD for the AM for ES&H requires the incumbent qualify as an STSM, even though the job responsibilities did not reflect their actual job as an assistant manager, included responsibilities that are actually assigned to another manager, and was actually aligned with a different FAQS, Occupational Safety.
- As mentioned above, senior manager PDs lacked reference to their supervisory responsibilities required by DOE O 426.1 and the *LSO TQP Manual*, such as analysis of technical positions for possible inclusion in the TQP. LFO governing documents do not establish and institutionalize technical capability requirements to ensure effective safety oversight of defense nuclear facilities.

There are two related observations:

Most senior manager PDs have limited or no responsibilities clearly related to safety in defense nuclear facilities. (FTC-1-7/O)

LFO senior manager PDs do not consistently include all of their high level responsibilities, such as qualification as an STSM, maintaining qualifications in the TQP, or ensuring the technical capability of the workforce, as required under DOE O 426.1. (FTC-1-8/O)

The above gaps reflect a weakness in the LFO TQP: **LFO organizational goals and senior manager position descriptions and performance plans do not establish the expectation for employees to achieve and maintain technical competence. (FTC-1-2/W).**

The criterion was not met.

NNSA LFO TQP Self Assessment Report

1.6 Technical capability programs and processes are institutionalized through Policy, Orders, Standards, and procedures.

Technical capability programs and processes are institutionalized through DOE policy, orders, and standards, through NNSA user's guides and other official documents, and through the *LFO TQP Manual*. As mentioned under criterion 1.4, the *LFO IMSM* needs to be revised to institutionalize and maintain a continuous flow-down of technical capability expectations.

The criterion was met.

1.7 Management uses the results of previous FTCP assessments as a tool to improve the program.

LFO manages issues from external and internal assessments through ePegasus. For example, LFO identified and corrected weaknesses from the previous (2008) TQP self-assessment, and from recent 2008 and 2011 CDNS review. In addition, the September 2012 update of the *LSO TQP Manual* corrected seven Federal T&Q issues from the 2011 CDNS review. (See TQP 7.2.)

The criterion was met.

CONCLUSION The objective was met.

Line management is actively involved in all aspects of technical employee recruitment, retention, development, and deployment. Although senior line management strongly supports continuous technical development and improvement of employees, the lack of training and travel funds has made the ability to implement this effort limited. Several weaknesses were noted in LFO governing documents and position descriptions.

Weaknesses:

FTC-1-1/W: The *LFO Integrated Management System Manual* does not clearly and accurately define Federal line management responsibilities in the area of technical capability.

FTC-1-2/W: LFO organizational goals and senior manager position descriptions and performance plans do not establish the expectation for employees to achieve and maintain technical competence.

Observations:

FTC-1-1/O: LFO has not designated the positions and/or individuals in the respective organizations at LFO that provide oversight of safety management programs that are identified in the LLNL nuclear facility DSAs.

FTC-1-2/O: The *IMSM* lacks specificity in describing nuclear safety authorities that drive technical capability requirements.

FTC-1-3/O: The description of federal line management responsibilities for critical technical capability planning described in the *IMSM* is not connected to the implementing document, the *LSO TQP Manual*.

NNSA LFO TQP Self Assessment Report

FTC-1 -4/O: The LFO *IMSM* does not describe other qualification areas at LFO, such as the Project Management Career Development Program (PMCDP).

FTC-1-5/O: Complete supervisory responsibilities relative to the TQP are not provided or referenced in the LFO *IMSM*.

FTC-1-6/O: Achieving and maintaining technical competence are not reflected in goals and objectives of the organization.

FTC-1-7/O: Most senior manager PDs have limited or no responsibilities clearly related to safety in defense nuclear facilities.

FTC-1-8/O: LFO senior manager PDs do not consistently include all of their high level responsibilities, such as qualification as an STSM, maintaining qualifications in the TQP, or ensuring the technical capability of the workforce, as required under DOE O 426.1.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA: Recruiting Technically Capable Personnel	OBJECTIVE: FTC -2	OBJECTIVE MET <u>X</u> YES <u> </u> NO
--	---------------------------------	---

OBJECTIVE

FTC-2, Recruiting Technically Capable Personnel. An effective process is implemented to attract highly competent technical personnel to fill key positions in the Department.

Criteria:

- 2.1 Excepted Service Authorities are considered as a tool to attract highly competent technical personnel to fill key safety positions.
- 2.2 Intern programs, such as the Departmental Intern Program, are recognized as an effective method to attract technically competent personnel to the Department.

DISCUSSION OF RESULTS

2.1 Excepted Service Authorities are considered as a tool to attract highly competent technical personnel to fill key safety positions.

Excepted Service Authority is known, understood, and utilized by senior management as much as possible to attract highly competent technical personnel in the local highly competitive market.

The criterion was met.

2.2 Intern programs, such as the Departmental Intern Program, are recognized as an effective method to attract technically competent personnel to the Department.

Senior management effectively utilizes the NNSA Future Leaders Program to recruit and hire entry level technical personnel. Several graduates of the program are in full time technical positions within the LFO staff.

The criterion was met.

CONCLUSION The objective was met.

The LFO use of Excepted Service Authority and the NNSA Future Leaders Program demonstrates effective processes to attract highly capable technical personnel.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET
Staffing and Deployment	FTC -3	<u> X </u> YES <u> </u> NO

OBJECTIVE

FTC-3, Staffing and Deployment. Technical staffing plans are developed, maintained, and used as the basis for recruiting, developing, and deploying personnel to ensure that critical safety positions are filled with technically competent people.

Criteria:

- 3.1 Technical staffing plans are developed and maintained to identify critical safety positions and other key technical positions within the organization.
- 3.2 Technical staffing plans form the basis for recruiting, developing, and deploying technical personnel in the organization.
- 3.3 Employees in critical safety positions and other key technical positions possess the requisite education, training, experience, and background for their positions.
- 3.4 The STSM Program is effectively implemented in the organization. The STSM describes how STSM candidates are selected and compensatory measures used when responsible individuals lack STSM qualification.

DISCUSSION OF RESULTS

3.1 Technical staffing plans are developed and maintained to identify critical safety positions and other key technical positions within the organization.

LFO develops, submits, and maintains Annual Workforce Analysis and Staffing Plans as required and requested annually by the Federal Technical Capability Panel. The plans are developed to identify critical safety positions and other key technical positions within LFO. To preserve the knowledge of those who leave the office, it's more important than ever to document assumptions and the basis for the contents of the technical staffing plans.

The criterion was met.

3.2 Technical staffing plans form the basis for recruiting, developing, and deploying technical personnel in the organization.

Based on the needs identified for nuclear safety oversight, managers formally evaluate and designate positions for inclusion in the TQP using the NNSA TQP Position Evaluation Questionnaire (PEQ), as described in the *LFO TQP Manual*. The PEQ identifies the assigned functional area for the position, which drives the training and development of the individual. Workforce deployment of technical personnel at LFO includes consideration of their technical capabilities. An exception was identified

NNSA LFO TQP Self Assessment Report

where LFO did not fully conform to the expectations of DOE O 426.1 section 3a, Applicability.

An individual led high visibility nuclear safety related correspondence and nuclear facility annual DSA updates without being in the TQP, or having a compensatory measure in place. The individual, on an extended (longer than 90 days) detail to the office, had not been screened prior to work assignments to document whether compensatory measures were required. Over the past 12 months, the non-TQP individual on detail has been given a number of assignments of direct relevance to nuclear safety oversight, including coordination of correspondence with the DNFSB regarding safety controls for nuclear operations, as well as coordination of review of annual updates to DSAs and TSRs for several nuclear facilities. This is an observation: **On several occasions, a non-TQP person led a review of a nuclear facility annual DSA update. It's not evident that a formal compensatory measure was in place. (FTC-3-1/O).**

The systematic approach to training requires that development and deployment, including assignment to a functional area qualification standard, be based upon position responsibilities. According to DOE O 426.1 section 4b(5)(f), "The supervisor, in conjunction with the organizational FTC Program Agent, determines and documents if each position and/or individual must participate in the TQP based on the duties and responsibilities of the position description. If the position is required to participate in the TQP, they must also identify the appropriate FAQs and individual competencies for that position. Individual performance standards must be consistent with requirements set by the TQP." It has been noted in FTC1.5 that Position Descriptions do not consistently and accurately describe what the incumbents' responsibilities are, so the process for identification of TQP participants and assignment of functional area standards is flawed and raises the question of whether the identification process, hence deployment, is reliable. This is an issue with the integrity of the overall identification process: Position descriptions do not consistently or completely define actual job responsibilities related to nuclear safety oversight, nor are they aligned with the appropriate FAQs for the position. As a result, **LFO senior manager Position Descriptions are not a reliable tool to support development and deployment decisions (FTC-3-2/O).**

The criterion was met.

3.3 Employees in critical safety positions and other key technical positions possess the requisite education, training, experience, and background for their positions.

The 2012 annual workforce analysis and staffing plan report for the LFO identified 49 full-time equivalent positions considered necessary to ensure safe operations of defense nuclear facilities, 47 of which are currently filled. Interviews with several of the LFO staff members filling these positions, including such key positions as facility representatives and safety system oversight personnel, indicate they possess the requisite education, training, experience and background for their positions. Training records indicate the training they have received is appropriate for their particular technical position and is documented in accordance with requirements of the LFO training program.

The criterion was met.

3.4 The STSM Program is effectively implemented in the organization. The STSM describes how STSM candidates are selected and compensatory measures used when responsible individuals lack STSM qualification.

NNSA LFO TQP Self Assessment Report

Currently, all positions requiring an STSM are filled with qualified STSMs. All STSMs are current with their qualification or requalification. In those cases where compensatory measures were needed, they were effectively implemented. No compensatory measures are currently required. The STSM program is effectively implemented.

The criterion was met.

CONCLUSION The objective was met.

Staffing plans for the Technical Qualification Program are developed, maintained, and used as the basis for recruiting, developing, and deploying personnel to ensure that critical safety positions are filled with technically competent people. An individual on detail performed several duties concerning nuclear safety that required participation in the TQP without being in the program and without formal compensatory measures established.

Observations:

FTC-3-1/O: On several occasions, a non-TQP person led a review of a nuclear facility annual DSA update. It's not evident that a formal compensatory measure was in place.

FTC-3-2/O: LFO senior manager Position Descriptions are not a reliable tool to support development and deployment decisions.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA: Development of Technically Capable Personnel	OBJECTIVE: FTC -4	OBJECTIVE MET <u> X </u> YES <u> </u> NO
--	---------------------------------	---

OBJECTIVE

FTC-4, Development of Technically Capable Personnel. Programs and processes are effectively implemented to encourage the continuous improvement of technical personnel.

Criteria:

- 4.1 The TQP is effectively implemented. (Note: This program is evaluated using the TQP objectives and criteria.)
- 4.2 Fellowship programs and other continuing education processes are effectively used to enhance the continuous improvement of technical personnel.
- 4.3 Employees are encouraged to join professional organizations, write professional papers, and pursue professional certifications.

DISCUSSION OF RESULTS

- 4.1 **The TQP is effectively implemented. (Note: This program is evaluated using the TQP objectives and criteria.)**

This self-assessment examined seven objectives associated with TQP implementation. Refer to the discussion later in this report for these objectives (TQP-1 through TQP-7). All seven objectives were determined to be met, indicating the TQP is effectively implemented.

The criterion was met.

- 4.2 **Fellowship programs and other continuing education processes are effectively used to enhance the continuous improvement of technical personnel.**

When opportunities and funding are available, LFO uses existing mechanisms, such as participation in government leadership development programs, NELT, the Safety Basis Academy, etc., to enhance the continuing development of technical personnel.

It has been noted in 3.3 that positions are staffed with technically competent personnel. There is a concern, however, about the ability of the office to maintain those technical competencies in the future if there is no funding to support needed ongoing training. This is a significant weakness. **The reduction of training and travel budgets is detrimental to the establishment and, more importantly, the maintenance of technical competency required to carry out Federal responsibilities (FTC-4-1/W).**

NNSA LFO TQP Self Assessment Report

The criterion was met.

4.3 Employees are encouraged to join professional organizations, write professional papers, and pursue professional certifications.

Several participants in the TQP expressed satisfaction with the encouragement and support they have received in participating in outside professional organizations and DOE working groups. Many use the resources of these organizations to pursue and maintain qualification requirements or professional certification. At the same time, participants noted support has decreased within the past year due to funding constraints and in particular participants under FAQs that have requalification requirements expressed concern with the ability to maintain their certification in the future.

The criterion was met.

CONCLUSION The objective was met.

Line management supports and effectively implements programs and processes to encourage the continuing development of technical personnel. The reduction in available funding for these programs may significantly affect LFO's ability to support these continuous improvement efforts in the future.

Weakness:

FTC-4-1/W: The reduction of training and travel budgets is detrimental to the establishment and, more importantly, the maintenance of technical competency required to carry out Federal responsibilities.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET
Retaining Technically Capable Personnel	FTC -5	<u> X </u> YES <u> </u> NO

OBJECTIVE

FTC-5, Retaining Technically Capable Personnel. DOE is an organization where technically competent personnel are respected and want to work.

Criteria:

- 5.1 Technical personnel are assigned positions and responsibilities that allow them to effectively use their education, training, experience, and background in a fulfilling way.
- 5.2 Career path planning and succession planning are effectively used to help retain technically capable personnel.
- 5.3 Technical performance is used as a basis for performance reviews, promotions, recognitions, rewards, etc.
- 5.4 An effective process is in place to preserve critical technical capabilities during Reduction in Force.

DISCUSSION OF RESULTS

5.1 Technical personnel are assigned positions and responsibilities that allow them to effectively use their education, training, experience, and background in a fulfilling way.

See FTC-3.3

5.2 Career path planning and succession planning are effectively used to help retain technically capable personnel.

Career path planning and succession planning are used to the extent possible under the current staffing and budget challenges. This helps retain technical personnel.

The criterion was met.

5.3 Technical performance is used as a basis for performance reviews, promotions, recognitions, rewards, etc.

Interviews with management indicated that technical performance is a prime basis for promotions, recognition, etc. consistent with performance objectives established in performance plans.

NNSA LFO TQP Self Assessment Report

The criterion was met.

5.4 An effective process is in place to preserve critical technical capabilities during Reduction in Force.

As discussed in FTC-1.5, the Field Office does not have formal processes for preserving critical Technical capabilities. It has been a considerable length of time since the last RIF in DOE and one is not expected in the near term. Based on this, it is not possible to evaluate a process that is not needed at the current time.

While the possibility of a RIF is unlikely, the preservation of critical technical capabilities over the long term is a concern across NNSA, DOE, and the federal government. The most recent LFO workforce analysis noted that over the next five years approximately 48% of the individuals currently in the Technical Qualification Program will be eligible to retire. No surpluses are anticipated. Possible shortages were identified in the areas of Radiation Protection, Technical Training, Nuclear Safety Specialist, and Occupational Safety. LFO plans to continue to rely on NNSA/HQ in order to continue to meet technical capability needs. The LFO Agent is involved in a strategic plan initiative with the Federal Technical Capability Panel to ensure it has the critical technical capabilities it needs for the long-term success of NNSA.

CONCLUSION The objective was met.

LFO management has demonstrated a strong commitment to technical competence and values and respects the workforce. Interviews with members of the TQP demonstrate this with a number of individuals actively pursuing increasing their level of knowledge.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET <u>X</u> YES ___ NO
Demonstration of Competence	TQP-1	

OBJECTIVE

TQP-1, Demonstration of Competence. The program clearly identifies and documents the process used to demonstrate employee technical competence.

Criteria:

- 1.1 At a minimum, personnel providing management direction or oversight that could impact the safe operation of a defense nuclear facility have been identified as TQP participants.
- 1.2 IDPs, training plans, technical qualification records, or other related documents are updated to reflect the activities required for each individual to satisfy competencies.
- 1.3 A formal evaluation process is in place to objectively measure the technical competency of employees. The rigor of the evaluation process is commensurate with the responsibilities of the position.

DISCUSSION OF RESULTS

1.1 At a minimum, personnel providing management direction or oversight that could impact the safe operation of a defense nuclear facility have been identified as TQP participants.

According to the *LFOTQP Manual*, supervisors are responsible to screen technical employee position descriptions to identify personnel whose oversight responsibilities could impact the safe operation of a defense nuclear facility. Supervisors document the results of the screening on a Position Evaluation Questionnaire, and provide it to the FTCP Agent for a vote by the LFO Technical Qualification Council (TQC). The vote confirms whether or not the position belongs in the TQP, and if so, the appropriate Functional Area Qualification Standard (FAQS).

The 2012 annual workforce analysis and staffing plan report for the LFO identified 49 full-time equivalent (FTE) positions considered necessary to ensure safe operations of defense nuclear facilities, two of which are not filled, of the total LFO on-board count of 86 FTE positions. The Manager, Deputy Managers, Assistant Managers, and the Senior Technical Safety Advisor participate in the TQP under the STSM functional area qualification standard (FAQS). Other participants have been assigned the most applicable FAQS to their technical position as determined by the LFO Technical Qualification Council. These FAQS include Criticality Safety, Electrical Systems and Safety Oversight, Emergency Management, Environmental Compliance, Facility Maintenance Management, Facility Representative, Fire Protection Engineering, Mechanical Systems, Nuclear Safety Specialist, Occupational Safety, Radiation Protection, Safeguards and Security, Technical Program Manager, Technical Training, Waste Management, and Weapon Quality Assurance. Coverage for the technical capability identified as needed but not filled (Quality Assurance) is being provided through compensatory measures until an LFO staff member becomes qualified. The LFO personnel who provide management direction or oversight that could impact safe operation of a defense nuclear facility have all been identified as participants in the TQP and have qualified or are pursuing initial

NNSA LFO TQP Self Assessment Report

qualification with the exception of the individual discussed in FTC-3.2.

The criterion was met.

1.2 IDPs, training plans, technical qualification records, or other related documents are updated to reflect the activities required for each individual to satisfy competencies.

IDPs, training needs assessments, and other training needs documents are updated to reflect activities required for each individual competencies.

The criterion was met.

1.3 A formal evaluation process is in place to objectively measure the technical competency of employees. The rigor of the evaluation process is commensurate with the responsibilities of the position.

LFO has a formal evaluation process in place to objectively measure the technical competence of the employee. The rigor of the process is appropriate for position responsibilities. LFO relies on approved Qualifying Officials (QOs) who are vetted with the TQC for meeting specified criteria, trained as QOs and documented as approved QOs. The list of QOs is published both on SharePoint and on the NNSA Albuquerque web site.

As described in LSO 426.1, *Livermore Site Office Technical Qualification Program*, TQP participants demonstrate competence commensurate with responsibility by qualifying on the General Technical Base Qualification Standard, a primary FAQS, and the *Livermore Site Office Site Specific Qualification Standard*. Competence is determined primarily through testing and other evaluation methods as determined by the qualifying official. Oral board interviews and walk-through demonstrations are conducted for certain qualification standards. Training records indicate the formal process is followed and documented in accordance with program requirements. Interviews with participants and qualifying officials indicate the evaluation process has sufficient rigor to ensure the competence of participants is adequately established.

The criterion was met.

CONCLUSION The objective was met.

The LFO TQP Manual documents the processes to identify employee positions for inclusion in the TQP, to identify the means with which employees attain and demonstrate competencies, and to evaluate the technical competence of those employees. LFO demonstrates that these procedures are being followed.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA: Competency Levels	OBJECTIVE: TQP-2	OBJECTIVE MET <u> X </u> YES <u> </u> NO
--	----------------------------	---

OBJECTIVE

TQP-2, Competency Levels. Competency requirements are clearly defined and consistent with applicable industry standards for similar occupations.

Criteria:

- 2.1 Competency requirements include clearly defined knowledge, skill, and ability elements.
- 2.2 Recognized experts help establish competency requirements.
- 2.3 Related professional certification requirements are considered in the program as applicable.
- 2.4 Competency requirements are identified in the areas listed below. (Note: this does not imply that three separate documents are required.)
 - **Basic Technical Knowledge.** Competency in areas such as radiation protection, occupational safety, chemical safety, nuclear safety, and environmental regulations.
 - **Technical Discipline Competency.** Competency in a technical discipline (e.g., mechanical engineering, chemical engineering) that can be demonstrated by education, professional accreditation, examination, or on-the-job performance.
 - **Position Knowledge, Skills, and Abilities.** Competencies specific to the position, facility, or program and the office.

DISCUSSION OF RESULTS

2.1 Competency requirements include clearly defined knowledge, skill, and ability elements.

Competency requirements are defined in DOE-approved Functional Area Qualification Standards (FAQSs) or in LFO-approved qualification standards. They include clearly defined knowledge, skill, and ability elements.

The criterion was met.

2.2 Recognized experts help establish competency requirements.

Recognized subject matter experts from across DOE help establish competency requirements for FAQSs. For example, LFO TQP subject matter experts have been recognized for their involvement in revisions to the Environmental Compliance, Facility Representative, Fire Protection, Occupational Safety, and Technical Training FAQSs.

NNSA LFO TQP Self Assessment Report

LFO has several staff members who are recognized as NNSA leaders in their fields of expertise, and they have been called upon to develop or review proposed changes to functional area qualification standards. Ten of the 32 qualification standards acknowledge LFO staff members as contributors or reviewers.

The criterion was met.

2.3 Related professional certification requirements are considered in the program as applicable.

Several functional areas recognize professional certification and/or the training associated with maintaining that certification as elements demonstrating competence or providing continuing education. These functional areas include fire protection engineering, occupational safety, and safeguards and security.

When it can be demonstrated through alignment with supporting knowledge statements, related professional certification requirements are considered in the program as applicable. The use of professional certifications provides additional benefits, including enhanced federal employee credibility when interfacing with the contractor, and an external system of managing proficiency that can reduce or eliminate the need for Departmental resources to perform that function.

The criterion was met.

2.4 Competency requirements are identified in the areas listed below. (Note: this does not imply that three separate documents are required.)

- **Basic Technical Knowledge.** Competency in areas such as radiation protection, occupational safety, chemical safety, nuclear safety, and environmental regulations.
- **Technical Discipline Competency.** Competency in a technical discipline (e.g., mechanical engineering, chemical engineering) that can be demonstrated by education, professional accreditation, examination, or on-the-job performance.
- **Position Knowledge, Skills, and Abilities.** Competencies specific to the position, facility, or program and the office.

Competency requirements related to basic technical knowledge, technical discipline, and position knowledge, skills, and abilities are identified for all LFO TQP participants. LFO uses the DOE-wide General Technical Base and Functional Area Qualification Standards, as well as a current field office qualification standard, and for Facility Representatives and Safety System Oversight Engineers, position-specific competencies. The requirements are described in the *LFO TQP Manual*.

The criterion was met.

CONCLUSION The objective was met.

LFO TQP competency requirements are clearly defined and consistent with DOE FAQs and applicable industry standards for similar occupations.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET
Plans and Procedures	TQP-3	<u> X </u> YES <u> </u> NO

OBJECTIVE

TQP-3, Plans and Procedures. Plans and/or procedures are developed and implemented to govern administration of the program.

Criteria:

- 3.1 Senior management is committed to the TQP.
- 3.2 Written procedures that adequately define the processes and requirements to implement the TQP are in place.
- 3.3 Roles and responsibilities for implementing the TQP are clearly defined and understood by all involved.
- 3.4 The procedures that govern implementation of the TQP are understood by all involved and are being implemented as written.
- 3.5 A training and qualification records system is established for each employee in the TQP.

DISCUSSION OF RESULTS

3.1 Senior management is committed to the TQP.

Interviews with senior management indicate a strong commitment to the TQP. Although senior line management strongly supports continuous technical development and improvement of employees, the lack of training and travel funds has made the ability to implement this effort limited. See also FTC-4.2.

The criterion was met.

3.2 Written procedures that adequately define the processes and requirements to implement the TQP are in place.

The LFO manual LSO 426.1, *Livermore Site Office Technical Qualification Program*, describes LFO implementation of DOE O 426.1, *Federal Technical Capability*. The manual is organized to align with the sections of the DOE order, and it describes in sufficient detail how the TQP is implemented at LFO. The Manual references and relies upon DOE O 426.1 and NNSA TQP Program procedures to complement the local manual and conform to a standardized approach.

The criterion was met.

3.3 Roles and responsibilities for implementing the TQP are clearly defined and understood by all involved.

Section 5 of LSO 426.1 describes the TQP roles and responsibilities for the Manager, Technical Deputies, Supervisors, Federal Technical Capability Panel (FTCP) Agent, Technical Qualification

NNSA LFO TQP Self Assessment Report

Council, qualifying officials, and participants. Interviews with participants, supervisors, and the FTCP Agent demonstrated that these roles and responsibilities are understood. Currently, the TQP is coordinated by the LFO subject matter expert for technical training, who plans to retire within a month. LFO has made some reassignments to ensure the TQP infrastructure maintains the same level of performance throughout the time of transition of personnel.

The criterion was met.

3.4 The procedures that govern implementation of the TQP are understood by all involved and are being followed in accordance with LSO 426.1.

The procedures that govern implementation of the TQP, including DOE O 426.1, NNSA TQP procedures, and the *LFO TQP Manual*, are understood by all involved and are being implemented as written. Interviews with participants in the TQP as well as their supervisors and review of available documentation indicated TQP processes are understood and are being followed in accordance with LSO 426.1.

The criterion was met.

3.5 A training and qualification records system is established for each employee in the TQP.

LFO has established an official LFO TQP records system, which is described in the *LFO TQP Manual*. When appropriate and as practical, LFO has been using electronic records as much as possible to manage the TQP. This has been driven by the need to provide TQP records to the NNSA TQP Manager in Albuquerque, but also with the goal of reducing the carbon footprint and improving efficiencies of the administration of the program at LFO.

Section 4.b.(3)(e) of LSO 426.1 describes the requirements for establishing and updating records associated with the TQP, and Section 4.b.(3)(k) specifies the official qualification records to be maintained in accordance with the *NNSA TQP User's Guide*. The records for all individuals at LFO who are or have been in the TQP are maintained in a secure filing drawer. Records for TQP participants who were interviewed were found to contain all required documentation, such as position evaluation questionnaires, completed qualification cards, and continuing training progress trackers, and the documents were properly filed out.

The criterion was met.

CONCLUSION The objective was met.

The LFO TQP follows an established procedure that incorporates DOE requirements for maintaining a technically competent workforce. The roles and responsibilities for the TQP are understood by the participants, and the program receives strong support from LFO management. Records demonstrate that the TQP is being properly administered.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET <u> X </u> YES <u> </u> NO
Qualification Tailored to Work Activities	TQP-4	

OBJECTIVE

TQP-4, Qualification Tailored to Work Activities. The program identifies unique Department- and position-specific work activities and specifies the knowledge and skills necessary to accomplish that work.

Criteria:

- 4.1 An analysis has been performed to identify the related knowledge, skill, and ability elements to accomplish the duties and responsibilities for each TQP functional area or position.
- 4.2 The program includes job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office.
- 4.3 The program supports the mission needs of the office.

DISCUSSION OF RESULTS

4.1 An analysis has been performed to identify the related knowledge, skill, and ability elements to accomplish the duties and responsibilities for each TQP functional area or position.

Section 4.b.(3)(d) of LSO 426.1 requires that when a position description is written for a technical position, the supervisor, with support from a human resources specialist, performs a job analysis to identify the key responsibilities and duties, including whether the position needs to be in the TQP. In some cases as described in FTC-3 PDs did not reflect the TQP requirements for the position.

The criterion was met.

4.2 The program includes job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office.

All LFO TQP participants are required to qualify to the *LSO Site Specific Qualification Standard*, which establishes common competency requirements specific to LFO or Lawrence Livermore National Laboratory (LLNL). The five competencies address the mission, organization and functions of LFO, the rest of DOE, and LLNL; LLNL facilities, operations and institutional programs; systems that support oversight of nuclear facility safety; LFO business processes and management systems; and the regulatory framework for safety and security. In addition, facility representatives are assigned position-specific competencies to qualify to the specific facilities to which they are assigned, and safety system oversight personnel qualified to the LFO Safety System Oversight Qualification Standard in addition to the standard associated with their respective system.

NNSA LFO TQP Self Assessment Report

The criterion was met.

4.3 The program supports the mission needs of the office.

With few exceptions, LFO is able to meet the mission needs of the office with LFO personnel who have been qualified through the TQP. As discussed in FTC-3, some safety basis reviews have been led by a person who has not qualified to the Nuclear Safety Specialist FAQs. In addition, support is provided on a limited, as-needed basis in areas where LFO does not have a qualified individual, such as presently in quality assurance. Overall, the TQP supports LFO mission needs.

The criterion was met.

CONCLUSION The objective was met.

The LFO TQP includes provisions for identifying site- and position-specific needs and implements them through a site-specific qualification standard as well as additional qualification requirements for facility representatives and safety system oversight personnel. The LFO TQP supports the mission needs of the office.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET <u> X </u> YES <u> </u> NO
Credit for Existing Technical Qualification Programs	TQP-5	

OBJECTIVE

TQP-5, Credit for Existing Technical Qualification Programs. The program is structured to allow credit, where appropriate, for other TQP accomplishments.

Criteria:

- 5.1 Credit (equivalency) is granted for previous training, education, experience, and completion of related qualification/certification programs, where applicable.
- 5.2 Equivalency is granted based upon a review and verification of objective evidence, such as transcripts, course certificates, test scores, or on-the-job experience.
- 5.3 Equivalencies are formally validated, approved, and documented.

DISCUSSION OF RESULTS

5.1 Credit (equivalency) is granted for training records indicated that previous training, education, experience, or other qualification/certification programs are used in support of the evaluation process for competencies in qualification standards.

Discussions with TQP participants and review of training records indicated that previous training, education, experience, or other qualification/certification programs are used in support of the evaluation process for competencies in qualification standards.

The criterion was met.

5.2 Equivalency is granted based upon a review and verification of objective evidence, such as transcripts, course certificates, test scores, or on-the-job experience.

Section 4.b.(3)(1) of LSO 426.1 states that equivalencies should be used “sparingly and with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP.” Documentation of equivalencies is to follow the guidelines of the NNSA TQP User’s Guide, be submitted to the Technical Qualification Council or LFO Manager for approval, and be filed in the participant’s official TQP records. To date no equivalencies have been granted. However, completion of training related to other certification programs (e.g., safeguards and security, fire protection engineering) has been used to demonstrate competencies in the associated qualification standard. This has been helpful for demonstrating competence to standards for which DOE does not have adequate training resources, such as cyber security.

The criterion was met.

NNSA LFO TQP Self Assessment Report

5.3 Equivalencies are formally validated, approved, and documented.

As stated in the discussion above for Objective 5.2, no equivalencies have been granted at LFO.

The criterion was met.

CONCLUSION The objective was met.

The LFO TQP program allows for equivalencies, but to date none have been needed. Results of previous training and other qualification/certification programs are used in the evaluation of some competencies, especially where DOE training opportunities do not exist. This objective is met.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA:	OBJECTIVE:	OBJECTIVE MET <u>X</u> YES ___ NO
Transportability	TQP-6	

OBJECTIVE

TQP-6, Transportability. Competency requirements identified as applying throughout the Department are transferable.

Criteria:

- 6.1 The program includes all competencies that have been identified as applying throughout the Department.
- 6.2 Formal documentation of the completion of Department-wide competencies is maintained in a manner that allows for easy transferability.
- 6.3 The TQP is integrated with personnel-related activities, such as position descriptions, vacancy announcements, recruiting, and performance appraisals.

DISCUSSION OF RESULTS

6.1 The program includes all competencies that have been identified as applying throughout the Department.

Section 4.b.(3)(d) of LSO 426.1 states that LFO TQP participants demonstrate competence by qualifying on the General Technical Base qualification standard, a primary functional area qualification standard (FAQS), and the site-specific qualification standard. The primary FAQS must reflect the participant's main job responsibilities. Some positions require additional site- and facility-specific qualification. Training records demonstrate that all current and past participants in the TQP are qualifying or have qualified to General Technical Base qualification standard and at least one DOE-issued FAQS.

The criterion was met.

6.2 Formal documentation of the completion of Department-wide competencies is maintained in a manner that allows for easy transferability.

Section 4.b.(3)(e) of LSO 426.1 requires the FTCP Agent to ensure that appropriate qualification cards are issued to each participant. The procedure lists the DOE website where fillable qualification cards are available. Further, the qualification cards are treated as official DOE records upon issue and are required to be securely filed at LFO. Records for all active participants are maintained in a secure location and standard qualification cards have been used. Records for past participants still working at LFO are maintained separately in the same file location. Section 4.b.(3)(f) of LSO 426.1 requires the FTCP Agent to ensure an individual's TQP records are transferred when an LFO TQP participant transfers to another DOE office and to notify the NNSA TQP Manager. Also, the procedure describes the process for evaluating previous qualifications for employees who transfer to LFO from another DOE office.

The criterion was met.

NNSA LFO TQP Self Assessment Report

6.3 The TQP is integrated with personnel-related activities, such as position descriptions, vacancy announcements, recruiting, and performance appraisals.

While LFO supervisors follow the documentation requirements for assignment of personnel to the TQP, the integration of the TQP with personnel-related activities could be improved to better demonstrate the flow-down of qualification assignments based on job duties. There is wide variety in the PD language relative to safety oversight of nuclear facilities. While PDs generally require TQP participation, PDs don't state the need to participate in the TQP within a particular functional area. For example, an FR PD did not set the expectation that the FR qualify on the FR FAQs. There are some positions whose responsibilities don't readily align with existing FAQs. However, many positions do correlate directly with a functional area. Positions with clear connections to FAQs are STSMs, Facility Representatives, Safety System Oversight engineers, Safety Analysts (NSS), etc. See criterion FTC 1.5 for details regarding senior managers.

The criterion was met.

CONCLUSION The objective was met.

LFO TQP competency requirements identified as applying throughout the Department are transferable.

NNSA LFO TQP Self Assessment Report

FUNCTIONAL AREA: Measurable	OBJECTIVE: TQP-7	OBJECTIVE MET <u> X </u> YES <u> </u> NO
---------------------------------------	----------------------------	---

OBJECTIVE

TQP-7, Measurable. The program contains sufficient rigor to demonstrate compliance to the principles.

Criteria:

- 7.1 The technical competency of personnel who have completed the requirements of the TQP is adequate and appropriate.
- 7.2 The program allows for continuous feedback and periodic evaluation to ensure that it meets the needs of the Department and the missions of the office.
- 7.3 The TQP provides for continuing training.

DISCUSSION OF RESULTS

7.1 The technical competency of personnel who have completed the requirements of the TQP is adequate and appropriate.

To the extent that short interviews can relay, TQP participants interviewed displayed an adequate and appropriate understanding of the technical aspects of their jobs. There are no known issues where technical competence of LFO staff has been called into question.

The criterion was met.

7.2 The program allows for continuous feedback and periodic evaluation to ensure that it meets the needs of the Department and the missions of the office.

In September 2012, the LFO TQP Manual was updated to address issues and promote a more efficient program. The Manual is aligned with DOE O 426.1 to facilitate compliance. Seven issues from previous CDNS reviews were addressed (see FTC 1.7), four LSO TQP documents were consolidated into one, and the number of pages was reduced by 30%. Responsibilities were clarified, hyperlinks provided to facilitate easy access to forms and guidance, the process for coordination of QOs with other offices was described, and records requirements were clarified.

Section 4.b.(7) of LSO 426.1 requires the FTCP Agent to perform or coordinate self-assessment of the TQP in accordance with the requirements of DOE O 426.1, which specifies a frequency of at least once every four years. A self-assessment was performed in 2008. In addition, the program has been subject to other reviews, such as biennial reviews performed by CDNS staff. Issues resulting from these reviews have been resolved. Further, in preparation for this self-assessment, surveys were sent to TQP participants asking a series of questions concerning the participant's experience with the TQP. Seventeen responses were received, the results of which are reflected in this assessment or were forwarded to the NNSA TQP Manager for information.

NNSA LFO TQP Self Assessment Report

The criterion was met.

7.3 The TQP provides for continuing training.

Section 4.b.(3)(j) of LSO 426.1 requires all LFO TQP participants to maintain proficiency through the NNSA TQP Continuing Training Program. This is accomplished primarily by completing items listed on individual continuing training progress trackers issued by NNSA TQP Manager early in the fiscal year. Training records indicate LFO TQP participants are completing their continuing training program progress trackers.

Until 2012, the TQP implemented a required reading program as part of TQP continuing education, in which the TQP coordinator identified DOE and nuclear industry items for review. Typically, the coordinator generated a monthly list of mandatory and suggested items considered to cover topics that were relevant to LFO activities. Several employees mentioned that they considered the generation of these lists to be helpful, and consideration should be given to resuming the required reading program or instituting something similar.

The criterion was met.

CONCLUSION The objective was met.

The TQP receives strong support from management to ensure LFO staff demonstrate adequate technical competency. Issues identified with the TQP have received appropriate attention and resolution. Continuing training follows the NNSA TQP Continuing Training Program.

Appendix B Team Member Biographies

LFO TOP Self Assessment Team Leader: Richard Crowe

Mr. Crowe is the Technical Lead for Operations and Readiness within the Office of the Chief of Defense Nuclear Safety for the National Nuclear Security Administration. This position serves as the lead process owner for start-up and restart of nuclear facilities within NNSA as well as the NNSA technical lead for operational safety issues. This includes oversight, coordination, and management of all aspects of operational safety and facility readiness including regulations, Directives, and standards, and field assessment of operational formality and start-up/restart of nuclear facilities. Mr. Crowe developed and implemented a highly successful nuclear safety assessment program and has led the review of all seven NNSA nuclear sites and the headquarters Defense Programs organization.

Prior to his current position, Mr. Crowe held various positions in the Department of Energy.

As Special Assistant to the Deputy Secretary and Director, Safety Management Implementation Team, Mr. Crowe was responsible for implementing, through line management, the Department's Safety Management Policy, Integrated Safety Management (ISM), across the complex.

Subsequent to his selection by the Department of Energy for the Senior Executive Service, Mr. Crowe held the following three positions: As Associate Deputy Assistant Secretary for Military Application (ADASMA) in Defense Programs, Mr. Crowe was responsible, in collaboration with the Deputy Assistant Secretary, for carrying out Department of Energy responsibilities to achieve national security objectives established by the President; and assisting in reducing the global nuclear danger by planning for and maintaining a safe, secure, and reliable stockpile of nuclear weapons and associated materials, capabilities, and technologies. Prior to becoming ADASMA, Mr. Crowe was the Director of the Office of Research, Development and Testing Facilities where he was responsible for the safe, secure and environmentally sound operation of all of the facilities at Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratory, and the Nevada Test Site. As Director of the Office of Inspections he was responsible for developing and implementing a formal system for the assessment of Operations Office and contractor performance.

Other DOE positions included: Deputy Director of the Office of Processing and Reactor Facilities and Director, Plant Readiness Division where he was responsible for the operations, maintenance, training and testing of the Savannah River production reactors.

Prior to joining DOE, Mr. Crowe worked at the Shoreham Nuclear Power Station where he served in the positions of Assistant to the Plant Manager and Nuclear Analysis Division Manager.

Mr. Crowe spent twelve years in the Navy Nuclear Power Program. He served tours as Executive Officer, Engineer Officer during new construction and Division Officer on three nuclear powered submarines. Additionally, he served a tour on the Nuclear Propulsion Examining Board, Atlantic.

Mr. Crowe received his B.S. in Nuclear Engineering from the University of Virginia on an NROTC scholarship. He is also certified as a Senior Reactor Operator.

LFO TOP Self Assessment Team Member: Dan Schwendenman

Daniel Schwendenman is a Nuclear Operations Specialist with the Office of Operations and Safety

Engineering within the NNSA Office of the Associate Administrator for Safety and Health. He has over 29 years experience in providing engineering and related technical services in the nuclear engineering field. He served as a nuclear propulsion fluid systems engineer with the Division of Naval Reactors for six years, and for 23 years he has been involved in operations associated with the nuclear weapons complex. His areas of expertise include authorization basis documentation development and review; operational readiness review and readiness assessment; nuclear design review; safety management program planning, development, and implementation; safety and health program assessment and review; quality assurance program implementation; and project management. He has been qualified as a Nuclear Safety Specialist in the NNSA Technical Qualification Program since 2007.

Currently, Mr. Schwendenman is serving a detail with the NNSA Office of Leadership and Career Management as the Acting NNSA TQP Manager. In this role he is responsible for providing leadership and guidance in the successful implementation, coordination, and integration of the NNSA-wide Technical Qualification Program. Mr. Schwendenman has a B.S., Chemical Engineering, Massachusetts Institute of Technology, 1983

LSO TQP Self Assessment Team Member: Carol Ingram

Carol Ingram is the Technical Qualification Manager for the NNSA Livermore Field Office. She manages the LFO TQP, and performs oversight of contractor nuclear facility training and qualification at LLNL. She has over 25 years of experience as an engineer, performing safety, environmental, and programmatic oversight at DOE sites in California and Missouri. She was responsible for oversight of contractor hazardous, radioactive, and mixed waste management programs including implementation of the Federal Facility Compliance Act. She served as a sub-team leader on the ISMS Verification at Sandia National Laboratory, participated on various readiness review teams at LLNL, LBNL, and SLAC, a management review team for the Argonne Site Office, and on the DOE oversight team for an LBNL ISMS peer review. As the Oakland Training Manager, she led a task force to establish the corporate NNSA TQP. As ES&H Team Leader at the Berkeley Site Office, she had oversight responsibilities for occupational safety, construction safety, and hazard analysis, and led the DOE OSHA Corrective Action Plan Closure Verification at LBNL, which systematically verified closure of over 2,000 OSHA deficiencies identified in a previous comprehensive OSHA inspection.

Ms. Ingram is a Certified Safety Professional, and qualified in the DOE Technical Qualification Program in Technical Training. She holds a B.A. in History from San Jose State University, an M.Ed. from the University of Washington, a B.S. in Mechanical Engineering from the University of Maryland, and an M.S. in Mechanical Engineering from Stanford University. Ms. Ingram holds a lifetime California community college teaching credential in engineering. She is a member of the American Society of Safety Engineers and the Human Factors and Ergonomics Society. Prior to working for DOE, she was a technical writer, a production/packaging supervisor and process engineer for a Fortune 500 manufacturer, and a teacher.

Appendix C Interviews, Documents, and Activities

Interviews:

- LFO Site Manager
- LFO Technical Deputy for Security, Safety & Operations/ FTCP Agent
- LFO Technical Deputy for Programs & Business
- LFO Senior Technical Advisor
- LFO AM for Contract and Business
- LFO AM for Defense Programs
- LFO AM for Environment Safety and Health
- LFO AM for Facility Operations
- LFO AM for Interagency Missions
- LFO AM for Sustainability and Infrastructure
- LFO AM for Safeguards and Security
- LFO Qualifying Officials
- LFO TQP participant(s) whose qualification is in progress (Nuclear Safety Specialist initial qualification, Nuclear Safety Specialist requalification, Occupational Safety gap qualification, Fire Protection Engineer gap qualification)
- LFO TQP participant(s) whose qualifications are completed (Criticality Safety, Technical Program Manager, Safeguards and Security-Cyber Security, Nuclear Safety Specialist, Facility Representative for B239/B331/B334, Mechanical Systems and Safety System Oversight (LFO plan), Facility Maintenance Management, Safeguards and Security-Protective Force Operations)
- LFO Technical Qualification Manager

Document Review:

- *NNSA Livermore Site Office Integrated Management System Manual*, December 2012
- LSO M 426.1, *Livermore Site Office Technical Qualification Program*, 9/25/12
- *NNSA Livermore Site Office Values*, posted at <http://lsosharepoint.abq.doe.gov/Policies/Forms/AllItems.aspx> on 6/19/2009
- Technical Qualification Program personnel training/TQP files (sample), e.g., Vacancy Announcement, Position Evaluation Questionnaire, Position Description, IDP
- LSO Work Instruction 414.9.1, *Writing and Managing Assessments of the Livermore Site Office, Issues, and Corrective Action Plans in ePegasus*, 10/12/11
- Qualification records for TQP participants (two FRs, two non-FRs)
- Position Descriptions & Performance Plans for LFO technical managers: Site Office Manager; Technical Deputy for Security, Safety & Operations; Technical Deputy for Programs & Business; AM for Defense Programs; AM for Environment Safety & Health; AM for Interagency Missions; AM for Sustainability & Infrastructure; and AM for Safeguards & Security
- Sampling of Position Descriptions (PDs), Performance Plans, & Individual Development Plans for subset of TQP participants: IDP for NSS; PD & Performance Plan for Senior Operations Manager (acting AM for Facility Operations); IDP for NMTP FR; PD & IDP

for Senior FR / B332 FR; PD for Packaging & Transportation Program Manager (qualified on Technical Program Manager FAQS); IDP for FLP graduate and General Engineer in AMDP, currently in initial qualification on NSS FAQS; Mechanical Safety Systems Oversight Engineer (qualified on LFO SSO and Mechanical Systems FAQS); PD, Performance Plan, & IDP for Technical Training Program Manager (qualified on Technical Training FAQS)

- *Livermore Site Office Response to the Defense Nuclear Facilities Safety Board* (DP:120102), K.Davis/J.McConnell, October 18, 2012 [regarding DNFSB letter (P. Winokur/T. D'Agostino), *Defense Nuclear Facilities Safety Board Report Concerning Adequacy of Safety Controls for Nuclear Operations at Lawrence Livermore National Laboratory*, dated August 30, 2012] [COR-DP-10.15.2012-470358]
- *Transmittal of Review Comments on the 2012 Annual Update of the Documented Safety Analysis and Technical Safety Requirements for the Building 239 Radiography Facility* (DP:120049), K.Davis/B.Goodwin, May 11, 2012 [COR-DP-4.6.2012-431082]
- *Transmittal of Review Comments on the 2012 Annual Update of the Documented Safety Analysis and Technical Safety Requirements for the Building 334 Hardened Engineering Test Building* (DP:120083), K.Davis/B.Goodwin, Aug. 24, 2012 [COR-DP-6.28.2012-449440]
- *Livermore Site Office Approval of Extension for Building 332 Documented Safety Analysis and Technical Safety Review [sic] Implementation* (DP:120092), K.Davis/B.Goodwin, 9/26/2012 [COR-DP-9.10.2012-464001]
- Correspondence regarding FR qualification
- LSO TQP Qualifying Official List, 8/20/12
- ePegasus assessment and surveillance reports by TQP participants
- *LSO Safety System Oversight Personnel Qualification Standard*, December 20, 2011
- *LSO Safety System Oversight (SSO) Functional Area Standard Qualification Plan*, December 20, 2011
- *LSO Site Specific Qualification Standard*, October 27, 2011
- LFO P 1063.2, *Facility Representative Training and Qualification Program*, Revision 4, April 2, 2013
- Memorandum from LFO Senior Facility Representative dated August 31, 2012, subject: "Facility Representative Assignments"
- Surveys completed by participants in the TQP, March and April 2013
- LSO Work Instruction 421, *Review and Approval of Nuclear Safety Basis Documents*, July 18, 2012

Observations

- Facility walkthrough with Facility Representative for B239/B331/B334
- TQC Meeting
- Qualification activity
- Surveillance
- Observation of interaction with contractor
- B239 (or other) walkthrough with mechanical SSO SME
- Participation of FTCP Agent and TQP Coordinator on monthly FTCP conference call