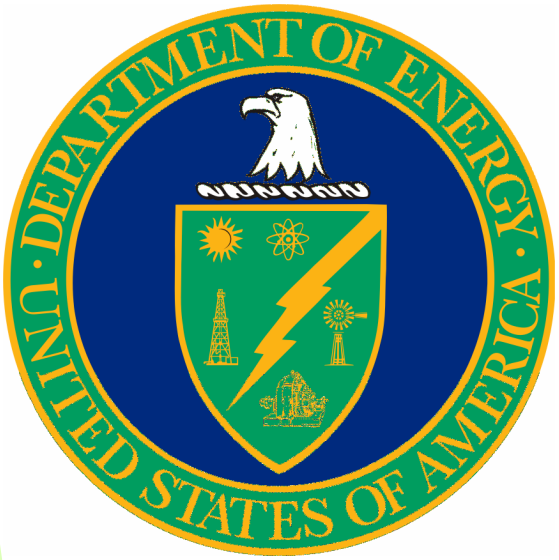
Sandia Site Office
Technical Qualification Program
Accreditation Review Team Report



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EXECUTIVE SUMMARY

The purpose of this Technical Qualification Program (TQP) Accreditation evaluation was to conduct a thorough, independent evaluation of the status of the implementation of the National Nuclear Security Administration (NNSA) Sandia Site Office (SSO) TQP and assess the actions taken to correct problems identified in the site self-evaluation report. This report documents the activities of the Accreditation Review Team and the results of its evaluation of the SSO TQP for the Accreditation Board.

The overall approach of the TQP Accreditation Review Team was to evaluate the personnel, procedures, and management control systems that demonstrate there is an effective program in place to ensure the technical capability of those SSO employees whose 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.

Overall the team concluded that SSO has made significant progress over the past year to implement an effective TQP. Although there were weaknesses (Areas for Improvement) noted by the team, many of these had been self-identified by SSO during their previous self-assessments and were in the process of being corrected during the review.

The Accreditation Review Team concluded that with a few minor exceptions, SSO has established systems and processes to ensure the technical capability of the Department of Energy technical employees whose 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. The Accreditation Review Team noted that the SSO staff has the appropriate set of technical competencies to perform its assigned tasks. The team was impressed with the level of senior management commitment and engagement in the entire TQP process — particularly in the area of final qualification evaluation. This management commitment and involvement will help to ensure the long-term sustainability of the program at SSO.

In some cases, SSO is dealing with legacy issues related to TQP and has work remaining to remedy those issues. It had previously identified many of these issues and is aggressively working to correct them. There was an issue witnessed by the team regarding the rigor of the evaluation process associated with implementing practical factors, and SSO management was taking steps to correct this while the team was still on site. The feedback and improvement process is not being implemented in accordance with SSO procedures, and the tracking and documenting of continuing training for SSO TQP participants needs to be improved.

The following is a summary of the strengths and weaknesses identified by the Accreditation Review Team. The team also made several observations; these are further detailed in the body of the report.

Strengths

- Senior management at SSO is very committed and fully engaged in the entire TQP process. It is particularly noteworthy that the Deputy Manager, SSO, interviews and evaluates all TQP participants as part of the final qualification process.

- SSO has developed detailed and comprehensive position-specific qualifications standards for each TQP position. This not only ensures an effective qualification process for incumbents, but also is an excellent tool for succession planning.

- The content and quality of the continuing training program for personnel in the Assistant Manager for Facility Operations organization is excellent. The program includes self-study, homework assignments, instruction by incumbents, and offsite visits to related equipment vendors to become familiar with equipment at the Sandia site.

Areas for Improvement

- Implementation of the process for evaluation of practical competencies witnessed by the Accreditation Team did not successfully demonstrate the candidates' necessary knowledge and skills as required by the SSO qualification standard and as expected by management.

- Some personnel, previously identified as qualified, have not completed all three levels of qualification (i.e., General Technical Base, Functional Area, and Office/Facility-Specific).

- The SSO TQP Procedure is not consistent with the recently issued NNSA Supplemental Directive with regards to equivalencies. However, implementation of this NNSA directive has recently been delayed for 6 months via memorandum.

- Several TQP participants have equivalencies documented on their functional area qualification cards without documented evidence on the SSO Competency Equivalency Evaluation Form.

- The discrepancies that exist in the formal TQP records for SSO personnel could impede the transportability of qualifications.

- The feedback and improvement process, as required by the TQP procedure, is not implemented.

- Individual Record of Continuing Training Forms are not maintained in the Individual Training Records as required by the governing procedure. Continuing training requirements for TQP participants (other than Facility Representatives) are not clearly identified or tracked in accordance with the continuing training requirements identified in each participant's functional area and position-specific qualification standards.

INTRODUCTION

The Technical Qualification Program (TQP) establishes a process to objectively determine that individuals performing activities related to the technical support, management, oversight, or operation of defense nuclear facilities possess the necessary knowledge, skills, and abilities to perform their assigned duties and responsibilities. TQP specifically applies to Department of Energy (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.

Recognition that an effective, sustainable TQP is in place is accomplished through an accreditation process. The accreditation process consists of three distinct activities: (1) a thorough self-evaluation by the organization requesting accreditation; (2) an independent, onsite evaluation by a TQP Accreditation Review Team; and (3) a review by an independent TQP Accreditation Board. This report documents the results of the review of the National Nuclear Security Administration (NNSA) Sandia Site Office (SSO) TQP by the TQP Accreditation Review Team.

The Accreditation Review Team conducted the review in accordance with the *Technical Qualification Program (TQP) Accreditation Review Plan* and TQP accreditation review schedule that were developed for this review. These documents followed the guidance provided in the approved *Technical Qualification Program Accreditation Process and Criteria*. The TQP objectives and criteria found in DOE M 426.1-1A, *Federal Technical Capability Manual*, were used as the basis for the review.

The "Results" section of this report summarizes the status of each objective, including how the objective is met, and identifies any strengths or areas for improvement. The detailed results of the assessment of the individual criteria for each objective can be found in Appendix A of this report. The review was lead by the Office of Health, Safety and Security (HSS) with assistance from qualified team members from across the Department. Team member assignments for each of the objectives are captured below.

TEAM LEADER
Ali Ghovanlou, HSS
Advisor – Mike Schoener (technical support)

Demonstration of Competence	**Competency Levels**	**Plans and Procedures**	**Qualification Tailored to Work Activities**
Karen Frisby, NNSA Service Center	Ed Parsons, Richland Operations Office	Julie Finup, Idaho Operations Office	Mark Sundie, Y-12 Site Office

Credit for Existing TQP	**Transportability**	**Measurable**
Denise Webb, Y-12 Site Office	James Szenasi, HSS National Training Center	Fred Bell, Los Alamos Site Office

SCOPE AND METHODOLOGY

The overall approach of the TQP Accreditation Review Team Evaluation of the SSO TQP was to evaluate the personnel, procedures, and management control systems that demonstrate there is an effective program in place to ensure the technical capability of DOE technical employees whose 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. The evaluation process included the following:

- Document reviews of SSO policies, procedures, and documents that support TQP;
- Interviews of SSO management and technical personnel in TQP;
- Observations of activities, including walkdowns and checkouts; and
- Assessment of the adequacy of the SSO Self-Assessment.

Conduct of the Evaluation

This evaluation was a disciplined, systematic, documented examination of the personnel, procedures, and management control systems that demonstrate that there is an effective program in place to ensure the technical capability of DOE technical employees whose 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.

The TQP Accreditation Review Plan formed the basis for the review and included lines of inquiry for each of the criteria. The lines of inquiry help define the scope and depth of the review for each TQP objective. The Objective and Criteria Evaluation Forms in Appendix A were used by the Team members to document the results of their review.

The Accreditation Review Team met daily during the onsite review to facilitate coordination of effort and exchange of information. The meetings allowed the members to discuss significant observations of problems identified during the day and permitted the Team Leader to identify any trends or areas of concern where more detailed information was required.

Review process quality assurance was the responsibility of the Team Leader and included oversight of the review, daily onsite peer reviews of team member findings, and specification of the form of reports. All team members were told they could issue a dissenting opinion in the final report. This independence, coupled with the professional experience of the team members, was intended to ensure an objective and comprehensive review.

Documentation Process

During the onsite review, team members were responsible for documenting the results of the review of their assigned objectives. This included a description of how the team member measured the site's performance relative to the objective and associated criteria, as well as how

the office was achieving the criteria, and the identification of strengths (if any), areas for improvement, or noteworthy observations. In addition, the team identified the documents reviewed, personnel interviewed, and activities observed. Each team member's evaluation was submitted to the Team Leader using Objective and Criteria Evaluation Forms.

RESULTS

The following provides a summary assessment of the SSO activities observed and evaluated by the Accreditation Review Team during this review as they relate to the objectives for TQP accreditation. Additional details relevant to the review can be found in the Objective Evaluation forms provided in Appendix A.

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

The SSO TQP Procedure describes the process for determining the SSO positions required to participate in TQP. The Assistant Managers are expected to provide the TQP Coordinator with a list of positions that fit TQP requirements for inclusion in the program. The procedure does not specify when this should occur or how frequently this happens. Also, the review and analysis process leading to identification of TQP positions is not described in the procedure. The fiscal year (FY) 2008 Self-Assessment identified the lack of review as an observation. This observation was not included in the SSO Corrective Action Plan; but, during an interview, the TQP Coordinator stated that he planned to update the procedure to correct this deficiency.

The Site Manager verified that the identification of TQP participants was based on a rigorous tabletop review and analysis process. This process culminated in the SSO Manager issuing a memorandum that designated the positions in TQP. If an individual in a position changes, the memorandum is not reissued since the designated position continues to be included in TQP. The process described in this paragraph is not documented and not formally incorporated in the procedure.

A review of SSO Individual Development Plans (IDP) identified only one individual with an IDP for FY 2008. However, a review of SSO training indicates that training for specific TQP requirements did take place during the current fiscal year, even though specific TQP-related courses were not included in the NNSA Training Plan. SSO is developing IDPs for FY 2009, and those reviewed all contained specific training that is related to each participant's Functional Area Qualification Standard (FAQS).

A review of qualification records revealed some incomplete records that do not adequately document the qualification of TQP participants. The SSO Corrective Action Plan (CAP) addresses this issue and contains plans to correct this problem. The individuals who have

incomplete records have been directed to complete a requalification or a position-specific qualification standard. All positions are expected to have qualifications completed by May 2009.

The SSO TQP procedure adequately describes the conduct of qualification activities. The team examined qualification cards for all SSO TQP participants to validate whether the verification method was appropriate for the competency. A variety of evaluation methods were used, including equivalencies, observation of performance, written exam, and oral evaluation. The process for identifying Qualifying Officials (QO) is detailed in the SSO TQP Procedure. The procedure requires QOs to attend a training session conducted by the SSO Manager.

The team observed a facility walkthrough intended to evaluate practical factors for the position-specific qualification standards for a Senior Technical Safety Manager, the Fire Protection Engineer, and the Radiation Protection Subject Matter Expert (SME). The Facility Representative (FR) performing the evaluation conducted the walkthrough as a training evolution. The FR was under the impression that TQP participants would orally demonstrate their knowledge on these facilities at a later opportunity. However, the practical factor competency in the qualification standards clearly states that during the walkthrough with the FR, the candidate will demonstrate, without assistance, knowledge on the listed topics. At the end of the walkthrough, the FR signed off the practical factor competency as the QO for these candidates for the Annular Core Research Reactor (ACRR) and Sandia Pulsed Reactor Facility (SPRF). Further interviews with the Federal Technical Capability Panel (FTCP) Agent and the Senior Technical Safety Advisor indicated that their expectations were not met and that the practical factor associated with the facility walkthrough should not be signed by a QO until the candidate had successfully demonstrated the knowledge required by this competency without assistance.

The final step in qualification of SSO TQP participants is an interview with the SSO Manager and/or Deputy Manager, who must be an SSO-qualified Senior Technical Safety Manager (STSM). The Deputy Manager, who currently fills this role, reviews the qualification cards and test scores prior to the interview. She normally focuses her questions on safety basis, Documented Safety Analysis (DSA), Integrated Safety Management, and related DOE Directives and asks a comprehensive list of questions that encompasses information from the General Technical Base (GTB) Qualification Standard and the participant's FAQS and Office/Facility/Position-specific Qualification Standard (O/F/PQS).

Strength

The rigorous final qualification activity/exam performed by the SSO Deputy Manager includes a detailed list of questions from all three levels of the qualification standards and is a strength of the SSO TQP evaluation process.

Noteworthy Information (Observations)

The SSO TQP procedure does not include provisions for a review and analysis of the positions in the TQP or documentation that this review and analysis occurred. The FY 2008 Self-Assessment identified the lack of review as an observation, but there was no documented corrective action identified.

Area for Improvement

Implementation of the process for evaluation of practical competencies witnessed by the Accreditation Team did not successfully demonstrate the candidates' necessary knowledge and skills as required by the SSO qualification standard and expected by management.

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

SSO uses the current FAQS endorsed by FTCP, along with the derived qualification cards from these standards. GTB qualification is accomplished using the GTB FAQS with predominate use of the Web-based training for competency training and evaluation. A review of qualification cards confirmed the use of FAQS as developed by FTCP.

Along with the use of FAQS, a unique O/F/PQS is developed for each TQP participant. These tailored qualification standards address formal training; procedures, processes, and functions; practical factors; and required reading. The design of position-specific qualification cards represents a strong management commitment to assuring highly competent technical personnel and a strategic management approach to formally defining specific position competencies that will create continuity in succession planning. Of the 38 designated O/F/PQSs, 33 have been developed and the remaining 5 are on schedule to be developed.

The team reviewed eight GTB qualification cards and found them to be complete, with computer-based training as the predominant form of competency evaluation. Eight TQP qualification records were also reviewed, and seven were found to utilize the FTCP FAQS and associated qualification cards. The one record found without FAQS incorporated was an individual whose record had been already determined incomplete by SSO and in need of corrective action. In addition, SSO has self-identified other records in need of further actions. In particular, some personnel previously identified as qualified have not completed all three levels of qualification (i.e., GTB, Functional Area, and Office/Facility). This is a "legacy" issue associated with TQP that was originally developed by the now defunct Albuquerque Operations Office. That program did not use the three levels of qualification standards, but rather, used individual qualification standards that were developed based only on the specifically assigned duties and responsibilities for each individual.

Strength

The content, detail, and quality of the position-specific qualification cards represent a strong management commitment to assuring highly competent technical personnel.

Noteworthy Information (Observations)

Office/Site/Position specific qualification cards have not been developed for all SSO positions in TQP.

Area for Improvement

Some personnel previously identified as qualified have not completed all three levels of qualification (i.e., GTB, Functional Area, and Office/Facility Specific).

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

The SSO management team is very knowledgeable of the roles and responsibilities associated with TQP and showed a high commitment to its effective implementation. The Site Manager relies heavily on the Deputy Manager and FTCP Agent for technical guidance when needed. The Deputy Manager performs a final oral board with all TQP participants to qualify the individuals to perform their functions. Senior management commitment was further evidenced during interviews with staff that indicated the manager places high priority on improving TQP at the site. The site manager holds a tactical planning meeting weekly with senior staff, and this meeting includes discussion of TQP issues as applicable. Succession planning is also discussed during these meetings. Cross-qualification of TQP personnel is utilized to ensure adequate, qualified resources are available to meet the site mission.

SSO uses two governing procedures to implement the Technical Qualification Program: SSO Corporate Procedure 0603.03, *Technical Qualification Program*, and SSO Operating Procedure 1304.04, *Facility Representative Training and Qualification*. These documents provide clear direction for effective implementation of TQP. Interviews with SSO personnel indicate a clear knowledge and understanding of the requirements contained in the implementing procedures.

A revision to NNSA Supplemental Directive, NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*, was issued on May19, 2008. This document was issued following completion of the SSO Self-Assessment for TQP accreditation and has not yet been evaluated against the existing SSO implementing directives for gaps or discrepancies.

There are no responsibilities identified in the SSO TQP procedures for the QOs. Interviews with the QOs indicated that the Sandia Site Manager and the TQP Coordinator provided training to all

of the QOs. This training communicated senior management expectations for being designated as a QO and the roles and responsibilities expected of the QO.

A review of the SSO procedures indicates that they adequately identify what documents are required to be in the official record and who is responsible for maintaining those records. Interviews with personnel identified as responsible for maintaining the official records indicated that these individuals clearly understood their roles and that the files were being maintained in an organized and auditable fashion. Review of the records highlighted a number of instances of poor quality control and lack of attention to detail issues related to the qualification cards, such as missing signatures, missing dates, missing qualification cards, and missing completion certificates. These issues were self-identified by SSO and are being corrected.

Strength

Senior management at SSO is fully committed to, and engaged in, all aspects of the management and implementation of TQP.

Noteworthy Information (Observations)

Numerous administrative and quality issues with the completion of qualification cards and qualification documentation were identified that would preclude acceptable records for transportability.

There were no responsibilities identified in SSO implementing procedures for the QOs.

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.*

The SSO TQP procedure defines the process to develop Office/Facility/Position-Specific Qualification Standards. The standards include Formal Training, Required Reading, Procedures/Processes/Functions, and Practical Factors. The procedure describes the analysis process that consists of discussions between the TQP participant and his/her assistant manager. The procedure also recommends consulting DOE-HDBK-1078-94, *Training Program Handbook: A Systematic Approach to Training*, and an SME to develop additional competencies. The results of the analysis are provided to the SSO TQP Coordinator, who creates the standard and corresponding qualification card. This methodology is systematic, logical, and ensures a technically correct qualification standard.

The team reviewed all SSO-approved O/F/PQS qualification standards to determine if the appropriate technical references, regulatory requirements, operating procedures, and facility safety analysis reports were used to identify the correct competencies. The standards were very detailed and contained the correct references, primarily in the Required Reading and

Procedure/Processes/Functions sections of the standard. The level of detail in identifying practical factors is exemplary. For example, SSO uses walkthroughs with specific topics and regulatory references identified and participation in assessments referencing topics relevant to the TQP participant's qualification area. The FTCP Agent indicated that a management expectation was established that all qualification standards for SMEs would factor in the impact of their discipline on the safety basis/envelope of SSO facilities they oversee. Management feels the importance of maintaining the safety basis and knowledge of controls at some level (familiarity or working) is integral to an SME's knowledge base if he/she is to effectively oversee the contractor's management and operation of the Sandia National Laboratory nuclear facilities.

The Site Manager and Deputy Site Manager stated a firm commitment to TQP as a means to improve the overall performance of the office. They have established a program with sufficient rigor that will provide the participants with an opportunity to gain a cross-section of knowledge to expand their skill base. These developmental factors allow the staff to be better prepared to pursue other career opportunities in the future. They are committed to establishing a TQP that can be maintained by future managers and staff, thereby integrating succession planning into the process.

Strength

The design of position-specific qualification cards represents a strong management commitment to assuring highly competent technical personnel and a management forward vision of formally defining specific position competencies that will create continuity in succession planning.

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

SSO TQP procedures provide a process for granting equivalencies "based on justification and objective evidence." The SSO process requires using an equivalency evaluation form to document previous education, training, certification, or experience for specific competencies related to assigned qualification standards. The Assistant Manager for Facility Operations (AMFO) evaluates and forwards the form and evidence to the SSO Manager for approval for FR participants. For non-FR participants, the FTCP Agent approves the use/application of equivalencies as documented on the equivalency evaluation form. SSO TQP procedures are compliant with DOE M 426.1-1A, but not with the more restrictive equivalency evaluation requirements in the recently issued NNSA Supplemental Directive, NA-1 M 426.1-1A, May 19, 2008. (Note: A recent NNSA memorandum has delayed the implementation period for this directive by 6 months).

A review of TQP records revealed several uses of the term "EQ" or equivalency on the GTB, functional area, and position-specific qualification cards. The SSO Self-Assessment identified a finding regarding the use of undocumented equivalencies, and a CAP was written and approved

to address the finding. However, the finding does not recognize that equivalencies cannot be used for the GTB or position-specific qualification standards. Therefore, CAP does not adequately resolve the application of equivalencies for GTB and/or position-specific qualification standards.

All four STSMs at SSO utilized equivalencies in their functional area qualification cards. The NNSA TQP Procedure referenced above states that equivalencies for STSMs must be demonstrated through some form of documented evaluation, such as an interview by the Agent or by a challenge exam. Two of the four STSMs had equivalencies documented; however, the rigor of the evaluation process is not consistent with the NNSA TQP Plan. Interviews with the FTCP Agent and TQP Coordinator revealed that they did not consider the NNSA TQP Plan to be a requirements document before its recent publication as an NNSA Supplemental Directive (May 2008). Therefore, their program requirements were built to the requirements documented in DOE M 426.1-1A, which does not levy the additional restrictions on the use of equivalencies for STSMs. For example, neither CP 0603.03 nor 1304.04 discuss the NA-1 M 426.1-1A requirement that professional certification cannot be used to demonstrate equivalency of competence for DOE-specific processes and requirements.

Several other TQP participants had equivalencies documented on their functional area qualification cards without documented evidence or the SSO Competency Equivalency Evaluation Form. Interviews with the FTCP Agent and TQP Coordinator revealed that they believe they have identified all participants with undocumented equivalencies per their recent Self-Assessment CAP and that the next step in the CAP is to document these equivalencies with objective evidence or conduct a reevaluation of the participants to ensure the use of equivalencies for the SSO TQP participants and FRs is compliant with both the SSO TQP procedure and DOE M 426.1-1A. Other than identifying the extent of condition of using undocumented equivalencies, no other action has been or will be taken prior to this next action. A determination of the qualification status and/or the need to impose duty limitations based on the possible application of unsubstantiated equivalencies has not been made, but will be done as part of the action to assess each participant's use of equivalencies. The estimated completion date of this action may allow participants with potentially unsubstantiated equivalencies to oversee defense nuclear facilities.

Noteworthy Information

The SSO FY 2008 Self-Assessment CAP does not adequately resolve the application of equivalencies for GTB and/or position-specific qualification standards.

A determination of the qualification status and/or the need to impose duty limitations based on the possible application of unsubstantiated equivalencies has not yet been completed.

Area for Improvement

The SSO TQP Procedure is not consistent with the recently issued NNSA Supplemental Directive with regards to equivalencies. However, implementation of this NNSA directive has recently been delayed for 6 months by a memorandum.

Several TQP participants have equivalencies documented in their functional area qualification cards without documented evidence or the SSO Competency Equivalency Evaluation Form.

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

A review of the qualifications cards and interviews with the FTCP Agent and NNSA TQP Administrator indicates that each NNSA TQP participant uses standard FAQS officially recognized by FTCP. All employees are required to qualify to GTB and at least one FAQS. NNSA Policy, interviews with the FTCP Agent, and review of qualification cards indicate that no exemptions are allowed or used by SSO. FAQS are used exactly as approved by FTCP and are fully transportable.

NNSA TQP Manual 426.1-1A describes the procedure for accepting TQP Qualifications from another office. The acceptance of transferred qualifications is at the discretion of the QO. Review of documents and interviews with QOs indicated the SSO is following this process. Interviews with the TQP Coordinator, review of TQP records, and interviews with individuals and review of their records indicated that there is information and required backup material to document their qualifications. The TQP Coordinator keeps copies of essential TQP records (qualification card, equivalency justification, certificate, etc.). The individual participants are required to maintain their own records including the original signed qualification card. However, legacy errors in qualification records were identified in the SSO Self-Assessment, and these are being addressed in the SSO CAP. Until corrected, these errors could still impede the transportability of qualifications.

Interviews with the Human Resources (HR) representative and reviews of vacancy announcements, performance plans, and IDPs demonstrated that each position contained a statement concerning TQP. The vacancy announcement process includes a checklist for the supervisor to determine if the position is in TQP. This is then verified by the FTCP Agent. A review of recent vacancy announcements includes indication of inclusion in TQP. The TQP requirements are also included in the Individual Performance Agreement and IDP.

A review of the official position descriptions (PD) on file with HR indicated that the PDs included an attachment that designated the position as a TQP position. Some PDs incorrectly stated that the employee was an STSM. SSO had a contractor update the TQP participants' PDs to correct these and other deficiencies. However, due to the implementation of the pay

banding/pay-for-performance demonstration project (DEMO), the Office of Human Capital Management Services at the Service Center was not willing to accept the new PDs since they will be rewriting all NNSA PDs into a new format by next March.

Noteworthy Information

The official SSO PDs are not up to date and have addendums that incorrectly identify personnel as STSMs.

Area for Improvement

The discrepancies that exist in the formal TQP records for SSO personnel could impede the transportability of qualifications.

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

TQP records were sampled and two SMEs and one Assistant Manager were interviewed during the assessment to determine their technical competency in the areas of Emergency Management, Fire Protection, and Senior Technical Safety Manager. All three individuals interviewed were able to adequately and appropriately answer the questions within their area of qualification, and no issues were identified with the level of knowledge of those interviewed. Walkdowns were completed with FRs and a Nuclear Facility Operations Engineer. FRs are qualified using written exams and oral boards. No issues were identified with the level of knowledge demonstrated by FRs evaluated as part of this assessment.

In response to issues identified by the Self-Assessment, some TQP participants were evaluated for the need to impose duty limitations. These reviews appropriately identified no restrictions for some staff members and restrictions for others. Continued use of this process will help ensure and document adequate technical competence or appropriate duty restrictions when qualifications are not yet completed or process deficiencies call into question the basis for allowing unrestricted oversight at defense nuclear facilities.

Review of a sampling of the final oral evaluation questions prepared for use by the Deputy Manager in completing the Final Evaluation Activity demonstrated that appropriate depth and breadth of expertise are reviewed. Additionally, the Deputy Manager adds broader context questions to satisfy her expectation that the technical expertise is implemented in the oversight role to meet management expectations. The final evaluation activity is rigorous, documented, and in compliance with the technical expectations of the procedure.

The SSO TQP Procedure provides a Feedback and Improvement Report form for use in providing program feedback. This same form is required to be completed by the TQP participant following completion of the final evaluation activity and is then submitted to the TQP

Coordinator. The feedback forms are required to be maintained in TQP records. Review of a sampling of records for personnel who had completed the final evaluation activity, after the procedure was issued and the requirement was instituted, identified no Feedback and Improvement Reports in the files. Interviews with TQP participants revealed that the formal mechanism for providing feedback via this form had not been used, but informal feedback is regularly provided to the TQP Coordinator.

Periodic evaluation of TQP is accomplished through self-assessment, directed external assessment, and requested assist visits. The FY 2008 Self-Assessment of the SSO TQP was completed in preparation for this TQP Accreditation Review. Corrective actions were developed for the findings identified by the Self-Assessment. The CAPs were not strictly in compliance with the format provided by the SSO governing procedure in that they were improved to include a causal analysis, but narrowed in that the section identifying required compensatory measures was not included. The CAP did not include corrective actions for the observations identified by the Self-Assessment.

SSO procedures require continuing training for TQP participants, specify the minimum requirements with approved methods for meeting the requirements, and require documentation of the training. Review of training completed identified that value-added training was conducted and, in some cases, clearly exceeded the expectations of the procedure. FRs conduct monthly program reviews that offer lessons learned and opportunities for continuing training, and weekly continuing training activities are discussed during weekly reviews by the FR team leader.

The AMFO organization has recently initiated additional activities that serve to maintain and develop TQP participants beyond the expectations of the procedure. The assignment of technical "homework topics" as continuing training serves to refresh basic technical knowledge of TQP participants; and the initiation of field trips to local vendors allows for direct observation and hands-on demonstration of equipment manufacturing and operation. Homework assignments include review of engineering fundamentals and completion of performance calculations, such as pump and fluids theory and performance.

Individual Record of Continuing Training Forms are not maintained in the Individual Training Records as required by the governing procedure, so verification of individual accomplishment of training is not facilitated or recorded as part of the official record. Records of group training and training materials are maintained separately, so the content and objective evidence of completion is available. However, continuing training requirements for TQP participants (other than FRs) are not clearly identified or tracked in accordance with the continuing training requirements identified in each participant's functional area and position-specific qualification standards. This deficiency is partially identified by the SSO TQP Self-Assessment, but is not addressed as part of the CAP.

Based on a review of training; qualification expectations identified in standards; records of individual accomplishments; final evaluation interview documentation; TQP program

requirements; and, most importantly, walkdowns and interviews with TQP participants discussing their individual areas of responsibility, the team verified that the SSO technical staff has the required competency to perform its assigned functions.

Strength

The content and quality of the continuing training program for personnel in the AMFO organization is excellent. It includes self-study, homework assignments, topical instruction by incumbents, and offsite trips to related equipment vendors.

Noteworthy Information

Although it is not an expressed requirement of the Corrective Action Management (CAM) procedure, the failure to develop a CAP for the observations noted in the Self-Assessment may result in missed opportunities to improve TQP.

The SSO Corporate Procedure for CAM should be updated to reflect current management expectations for preparing CAPs and managing action completion.

Area for Improvement

The feedback and improvement process as required by the TQP procedure is not implemented.

Individual Record of Continuing Training Forms are not maintained in the Individual Training Records as required by the governing procedure. Continuing training requirements for TQP participants (other than FRs) are not clearly identified or tracked in accordance with the continuing training requirements identified in each participant's functional area and position-specific qualification standards.

APPENDIX A – OBJECTIVE AND CRITERIA EVALUATION FORMS

This Appendix contains the detailed writeups of each specific criteria for the seven objectives required for TQP Accreditation. The writeups reflect the result of each of the individual team members assigned to evaluate the objective(s) and is provided as backup information. Although much more formal than "field notes," the information included in this section reflects the view of the individual team members based on their data-gathering and evaluation. The "Results" section of the report contains the formal, integrated results of the evaluation, reflects the view of the entire team, and is consistent with the information provided in this Appendix.

OBJECTIVE 1

Team Member(s): Karen Frisby

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

Criteria

1.1 At 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.

Document Review

- IDPs for the Transportation and Traffic Management Specialist, the Waste Management Engineer, the Facility Quality Assurance Engineer, and a Facility Representative
- PDs for the Transportation and Traffic Management Specialist, the Waste Management Engineer, the Facility Quality Assurance Engineer, and a Facility Representative
- Performance Plans for the Transportation and Traffic Management Specialist, the Waste Management Engineer, the Facility Quality Assurance Engineer, and a Facility Representative

- Copies of Technical Qualification Program Qualification Cards, Standards, certificates, memorandum, and other pertinent documents for the Transportation and Traffic Management Specialist, the Waste Management Engineer, the Facility Quality Assurance Engineer, and a Facility Representative in the TQP Coordinator's files
- SSO Corporate Procedure, *Technical Qualification Program*, Rev. 1, July 6, 2007
- SSO Operating Procedure, *Facility Representative Training and Qualification*, Rev. 0, June 29, 2007
- FY 2008 Self-Assessment of the SSO Technical Qualification Program, April 2008
- Sandia Site Office Corrective Action Plan, Technical Qualification Program FY 2008 Self-Assessment
- Memorandum for SSO Personnel from Patty Wagner, Manager; Subject: Technical Qualification Program Position Designation, dated June 19, 2008
- SSO Qualify Official Training
- Supplemental Directive, NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*
- National Nuclear Security Administration FY 2008 Training Plan, October 25, 2007

Interviews

- SSO TQP Coordinator
- SSO Site Manager
- SSO Deputy Manager
- SSO Qualifying Officials

Activity Observations

- None

Discussion

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

The SSO Corporate Procedure, *Technical Qualification Program*, describes the process for determining SSO positions required to participate in the SSO TQP. The procedure states that the assistant managers provide the TQP Coordinator with a list of supervised Federal positions that fit the requirement for inclusion in the program. The procedure does not state when this occurs or how frequently this happens. The FY 2008 Self-Assessment identified the lack of review as an observation. This observation is not included in the SSO CAP; but, during an interview, the TQP Coordinator stated that he planned to update the procedure to correct this deficiency.

In an interview with the Site Manager, she described a rigorous tabletop analysis process that was used to determine inclusion in TQP. The exclusion of the Safeguards and Security staff from TQP was also carefully analyzed, and those individuals are included in a TQP-like program. The memorandum for SSO Personnel from Patty Wagner, Manager; Subject: Technical Qualification Program Position Designation, dated June 19, 2008, designates the positions that are included in TQP. If an individual in a position changes, the memorandum is not reissued since the designated position continues to be included in TQP.

A review of a sample of SSO performance standards indicated that they all contained the following generic statement: "Dependent upon availability of funds, develops and maintains job-related competencies and other developmental training approved by your supervisor." This statement does not address an individual's specific requirements under TQP.

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

A review of four SSO IDPs indicated that only one individual has an IDP for the current fiscal year, FY 2008. The three other individuals have IDPs for the upcoming fiscal year (FY 2009). The Enterprise Training Services (ETS), the DOE organization responsible for training administration for the Department, did not issue a memorandum requesting that employees complete an IDP for FY 2008 since the needs assessment the ETS completed last year was only an organizational needs assessment. Many employees did not complete an IDP because the guidance to do so was never issued. The NNSA Training Plan for FY 2008, which applies to all NNSA sites and organizations, did not contain a rollup of information from IDPs, although it did contain a statement that TQP was a major training program planned for FY 2008. A review of SSO training indicates that training for specific TQP requirements did take place during the current fiscal year, even though specific TQP-related courses were not included in the NNSA Training Plan.

In the FY 2009 IDPs reviewed, all contained specific training that is related to each participant's applicable FAQS. For instance, the Transportation and Traffic Management Specialist plans to attend training on Federal Motor Carrier Safety Regulations (title 49, Code of Federal Regulations, part 390.3 (49 C.F.R. 390.3)). Other IDPs reviewed contain similar appropriate training activities.

In a review of the PDs for the Transportation and Traffic Management Specialist, the Waste Management Engineer, the Facility Quality Assurance Engineer, and a Facility Representative, all contained an attachment that designated the position as a TQP position. Each PD also stated that the employee was an STSM. However, according to the memorandum from Patty Wagner designating TQP positions, none of these individuals are STSMs. All four PDs also refer to positions in organizations that no longer exist. The Facility Quality Assurance Engineer PD does not mention quality assurance, so it is difficult to understand how the individual was assigned the Quality Assurance FAQS. The FAQS selection for the other three positions seemed appropriate

according to the PDs. In an interview with the TQP Coordinator, he explained that SSO had a contractor update the TQP participants' PDs, but, due to the implementation of the DEMO, the Office of Human Capital Management Services was not willing to adopt the new PDs since they will be rewriting all NNSA PDs into a new format by March 2009.

A review of the qualification records revealed some incomplete records; they do not adequately document the qualification of TQP participants. The SSO CAP addresses this issue and contains plans to correct this problem. The individuals who have incomplete records have been directed to complete a requalification or a position-specific qualification standard. All positions are expected to have qualifications completed by May 2009.

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.

An examination of qualification cards for all SSO TQP participants was performed to validate that the verification method was appropriate for the competency. A variety of evaluation methods were used, including equivalencies, observation of performance, written exam, and oral evaluation.

The process for identifying QO is detailed in the SSO Corporate Procedure, *Technical Qualification Program*, section 7.7. The SSO procedure requires QOs to attend a training session conducted by the SSO Manager. The material for the training session was reviewed and found to contain detailed instructions for the QO. This seems to ensure that a rigorous evaluation is conducted. The names of SSO QOs, their competency area, and the dates they completed QO training are contained in a memorandum signed by the SSO FTCP Agent. All SSO QOs completed training in 2007.

A facility walkthrough intended to evaluate practical competency for the position-specific qualification standards for a Senior Technical Safety Manager, Fire Protection Engineer, and Radiation Protection SME was observed by the team. A review of implementation of the process for evaluation of practical competencies witnessed by the Accreditation Team did not successfully demonstrate the candidates' necessary knowledge and skills as required by SSO qualification standard and expected by the management. (See objective 7 for a more detailed discussion of this issue.)

The final step in initial qualification is an interview with the SSO Manager and/or Deputy Manager. The interview must be conducted by an SSO STSM qualified person. Currently, the SSO Deputy Manager, since she is an STSM, performs this final qualification activity. The TQP Coordinator normally develops 8 to 12 short-answer questions for the Deputy Manager to ask. These questions cover GTB, functional area, and office-/facility-/position-specific competencies. The Deputy Manager reviews the qualifications cards and test scores, if applicable, prior to the interview. She normally focuses her questions on safety basis, DSA, Integrated Safety

Management, and Orders. After the Deputy Manager receives a satisfactory answer to a question on the oral exam, she checks off the question on the oral exam provided by the TQP Coordinator. If a participant does not answer satisfactorily, she may ask the participant to look up the correct answer and provide the right response. She documents this on the test if it is necessary. Several participants' files contained the oral exams used as a final qualification activity, and they covered all three levels of the qualification standards. This process is fairly new; prior final qualification interviews were more haphazard.

Area for Improvement

Implementation of the process for evaluation of practical competencies witnessed by the Accreditation Team did not successfully demonstrate the candidates' necessary knowledge and skills as required by the SSO qualification standard and expected by the management.

Strength

The rigorous final qualification activity/exam performed by the SSO Deputy Manager includes a detailed list of questions from all three levels of the qualification standards and is a strength of the SSO TQP evaluation process.

Noteworthy Information (Observations)

The SSO TQP Procedure does not include provisions for a review and analysis of the positions in TQP or documentation that this review and analysis occurred. The FY 2008 Self-Assessment identified the lack of review as an observation, but there was no documented corrective action identified.

OBJECTIVE 2

Team Member(s): Ed Parsons

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 accreditation requirements are considered in the program as applicable.

2.4 Competency requirements are identified in the areas listed below.
- 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.

Document Review

- Memorandum for Roy Schepens, Appointment of James Todd as Sandia Site Office Federal Technical Capability Program (FTCP) Agent, dated November 2, 2006
- *FY 2008 Self-Assessment of the SSO Technical Qualification Program*, dated April 2008
- Sandia Site Office Corrective Action Plan Technical Qualification Program FY 08 Self-Assessment
- Sandia Site Office Technical Qualification Program, dated July 6, 2007
- Sandia Site Office Qualifying Official List as of January31, 2008, dated February 5, 2008
- Facility Representative Training and Qualification, dated June 29, 2007
- Memorandum for Sandia Site Personnel, Technical Qualification Program Position Designation, dated June 19, 2008
- Health Physicist TQP qualification record
- Facility Representative #1 TQP qualification record
- Emergency Management Specialist TQP qualification record
- Fire Protection Specialist TQP qualification record
- Instrumentation and Controls Specialist/Safety System Oversight TQP qualification record
- Mechanical Systems Specialist/Safety System Oversight TQP qualification record

- Facility Representative #2 TQP qualification record
- Industrial Hygienist Specialist TQP qualification record

Interviews

- Health Physicist
- TQP Coordinator/FR Training Manager
- Assistant Manager for Facility Operations/FTCP Agent
- Senior Technical Safety Advisor

Activity Observations

- None

Discussion

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

SSO utilizes the current FAQS endorsed by FTCP, along with the derived qualification cards from these standards. GTB qualification is accomplished by the use of the GTB FAQS, with a predominate use of the Web-based training for competency training and evaluation. A review of eight qualification cards confirmed the use of FAQS by SSO.

Along with the use of FAQS, there is a specific O/F/PQSs developed for each TQP participant. The SSO TQP procedure describes the process to develop a tailored qualification standard and card that addresses the specific needs of the position and the individual. This tailored qualification card addresses formal training; procedures, processes and functions; practical factors; and required reading. Guidance on the development of the position-specific qualification card, along with minimum requirements for the card, is outlined in the TQP procedure.

A review of eight O/F/PQSs confirmed that expected competencies outlined in the TQP procedure are incorporated and are tailored to the individual technical position. Each O/F/PQS was found to have the minimum requirements as defined in the TQP procedure and clear evidence of tailoring to the specific position. Knowledge, skills, and abilities for each competency in the specific O/F/PQS are defined, when applicable.

Of the 38 designated O/F/PQSs, 5 still remain to be developed. The individuals who are candidates for these five specific O/F/PQSs are either newly assigned or new employees. The TQP Coordinator indicated that these individuals are currently in a training status and are not serving as the technically competent person for the position assigned. Other TQP-qualified individuals are serving these roles.

Recognized experts help establish competency requirements.

SSO utilizes the current FAQS approved by FTCP, along with the derived qualification cards from these standards. These standards have been established by SMEs and are accepted by FTCP.

In the development of O/F/PQSs, Appendix G of the TQP document is used to partially determine the competencies required for each O/F/PQS. The listed competencies in the appendix are established by SMEs. The TQP Coordinator stated that SMEs are consulted when unique considerations are to be given to needed O/F/PQS competencies.

Related professional accreditation requirements are considered in the program as applicable.

The TQP procedure provides the direction for determining equivalencies. To grant an equivalency, TQP candidates are required to fill out a Competency Equivalency Evaluation Form. The SSO Health Physicist's TQP record indicated the appropriate determination and documentation of equivalencies. DOE Standard Radiation Protection Functional Area Qualification Standard, DOE-STD-1174-2003, allows for the acceptance of the general technical equivalencies if the candidate has successfully passed Part 1 of the American Board of Health Physicists (ABHP) certification examination. The current SSO Health Physicist is certified by the ABHP, and this certification was appropriately documented as per the directions in section 7.5 of the TQP document. However, it was noted that the required documentation for determining equivalencies was not found within the SSO Industrial Hygienist's TQP record.

Competency requirements are identified as follows: (1) Basic Technical Knowledge; (2) Technical Discipline Competency; and (3) Position Knowledge, Skills, and Abilities.

SSO utilizes the current FAQS endorsed by FTCP, including the GTB qualification standard and associated qualification card. Eight GTB qualification cards were reviewed and were found to be complete, with computer-based training being the predominate form of competency evaluation.

SSO utilizes FAQS and derived qualification cards that are approved by FTCP for the majority of its functional area qualifications. As stated above, the TQP procedure describes a process that requires the participant and his/her assistant manager to develop a tailored qualification card that addresses the specific needs of the position and the individual. This tailored qualification card addresses formal training; procedures, processes, and functions; and practical factors and required reading. Knowledge, skills, and abilities for each competency in the specific O/F/PQS are defined, when applicable.

Eight TQP qualification records were reviewed, and seven were found to utilize the FTCP FAQS and associated qualification cards. The one record found without the FAQS incorporated was an individual whose record had been already determined incomplete by SSO and in need of corrective action. In addition to this record, SSO has self-identified other records in need of

further actions. In particular, some personnel previously identified as qualified have not completed all three levels of qualification (i.e., GTB, Functional Area, and Office/Facility). This is a "legacy" issue associated with personnel that were in the Albuquerque Operations Office TQP. These personnel did not use the three levels of qualification standards; but, rather, they had individual qualification standards developed based solely on their assigned duties and responsibilities at the Albuquerque Operations Office.

Area for Improvement

Some personnel previously identified as qualified have not completed all three levels of qualification (i.e., GTB, Functional Area, and Office/Facility Specific)

Strength

The content, detail, and quality of the position-specific qualification cards represent a strong management commitment to assuring highly competent technical personnel.

Noteworthy Information (Observations)

Office-Site-Position-specific qualification cards have not been developed for all SSO positions in TQP.

OBJECTIVE 3

Team Member(s): Julie Finup

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 TQP.

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

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

3.4 The procedures that govern implementation of 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 TQP.

Document Review

- Sandia Site Office Procedure 0603.03, *Technical Qualification Program*, Revision 1, dated July 06, 2007
- Sandia Site Office Procedure 1304.04, *Facility Representative Training and Qualification*, Revision 0, dated June 29, 2007
- FY 2008 Self-Assessment of the SSO Technical Qualification Program, dated April 2008
- Sandia Site Office Corrective Action Plan, "Technical Qualification Program FY08 Self-Assessment"
- Memorandum to SSO Personnel from Patty Wagner, Manager; "Technical Qualification Program Position Designation
- Supplemental Directive NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel Safety Responsibilities at Defense Nuclear Facilities*.
- NNSA FRAM
- Sandia Site Office FRAM

Interviews

- Manager, SSO
- Deputy Manager, SSO
- Assistant Manager for Facility Operations/FTCP Agent
- Nuclear Facility Operations Team Lead
- Sampling of participants who have completed qualifications
- Sampling of participants who are currently in qualifications
- Sampling of QO
- TQP Coordinator

Activity Observations

- None

Discussion

Senior management is committed to TQP.

The Site Manager and Deputy Manager were interviewed to assess whether management ownership, commitment, and accountability are the foundation of the training and qualification programs for the SSO TQP. The Site Manager is knowledgeable of all of the manager roles and responsibilities and showed a high commitment to implementing an effective TQP. The Site Manager understood the limitations of not being a technical person and relies heavily on the Deputy Manager and FTCP Agent for technical guidance when needed. The Deputy Manager performs a final oral board with all TQP participants to ensure that the process has been adequately followed to qualify the individual to perform their functions. Senior management commitment was further evidenced during interviews with staff that indicated the manager has placed a high priority on improving TQP at the site. The Site Manager holds a tactical planning meeting weekly with her senior staff to discuss who should be in TQP. Succession planning is also discussed during these meetings and cross-qualification of TQP personnel is utilized to ensure adequate qualified recourses to meet the site mission.

This criterion is met.

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

SSO uses two governing procedures to implement TQP. Sandia Site Office Corporate Procedure 0603.03, *Technical Qualification Program*, dated July 6, 2007, and Sandia Site Office Operating Procedure 1304.04, *Facility Representative Training and Qualification* Rev. 0, dated June 29, 2007. These documents were reviewed for flow down of requirements from DOE M 426.1-1A and DOE M 360.1-1B into the implementing documents and to ensure that the procedures are

written to give clear direction for effective implementation. A revision to Supplemental Directive, NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*, was issued on May 19, 2008. This document was issued following completion of the self-assessment for preparation for TQP accreditation and has not been evaluated for needs changes to the existing SSO implementing documents.

This criterion is met.

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

Reviews of the NNSA FRAM, Supplemental Directive NA-1 M 26.1-1A, the SSO FRAM, and the SSO TQP procedures all identify roles and responsibilities for implementing TQP. Interviews with SSO staff verified their understanding of those roles and responsibilities. During the review, it was noted that no responsibilities are identified in the implementing documents for QO. Interviews with QOs indicated that the Sandia Site Manager and the TQP Coordinator provided training to all QOs. This training provided by the Manager discussed senior management expectations for being designated as a QO and the roles and responsibilities expected of the QO. This was verified in interviews with the Manager, Deputy Manager, and the TQP Coordinator.

This criterion is met.

The procedures that govern implementation of TQP are understood by all involved and are being implemented as written.

Interviews were conducted with the Sandia Site Manager, Deputy Manager, Federal Technical Capability Agent for the SSO, Team Lead, Assistant Manager, QOs, and a sampling of TQP participants to ascertain their understanding of TQP procedures. With the exception of one individual, the personnel interviewed presented clear knowledge of the requirements contained in the implementing procedures. One individual was not aware of the requirement to maintain an auditable copy of qualification records in his own file.

This criterion is met.

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

A review of SSO implementing procedures was performed to ensure that they adequately identify a training and qualifications records system for personnel in TQP and FR Program. The procedure adequately identifies what documents are required to be in the official record and who is responsible for maintaining those records. Interviews with personnel identified as responsible for maintaining the official records indicated that personnel clearly understood their roles and

that the files were being maintained in an auditable fashion. Review of the records highlighted a number of attention-to-detail issues with filling out the qualification cards, missing signatures, missing dates, missing qualification cards, and missing completion certificates. This issue was self-identified by SSO during its Self-Assessment.

This criterion is met.

Area for Improvement

None

Strength

Senior management at SSO is fully committed and engaged in all aspects of the management and implementation of TQP.

Noteworthy Information (Observations)

Numerous administrative and quality issues with the completion of qualification cards and qualification documentation were identified that would preclude acceptable records for transportability.

No responsibilities are identified in the SSO implementing procedures for the QOs.

OBJECTIVE 4

Team Member(s): Mark Sundie

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, skills, 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.

4.2 The program supports the mission needs of the office.

Document Review

- Sandia Site Office Procedure 0603.03, *Technical Qualification Program*, Revision 1, dated July 06, 2007
- Sandia Site Office Procedure 1304.04, *Facility Representative Training and Qualification*, Revision 0, dated June 29, 2007
- FY 2008 Self-Assessment of the SSO Technical Qualification Program, dated April 2008
- Sandia Site Office Corrective Action Plan, Technical Qualification Program FY08 Self-Assessment
- Memorandum to SSO Personnel from Patty Wagner, Manager; "Technical Qualification Program Position Designation"
- Position-specific Qualification Standards for all TQP participants (33 total)

Interviews

- SSO Site Manager
- SSO Deputy Site Manager
- SSO FTCP Agent
- SSO TQP Manager

Activity Observations

None

Discussion

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.

The SSO procedure, 0603.03, *Technical Qualification Program,* section 7.4.7, defines the steps to develop O/F/PQS. The standards are divided into four sections: (1) Formal Training, which requires identification of the formal training courses the participant is required to attend to satisfy a qualification competency(s); (2) Required Reading, which the participant is required to achieve at least a familiarity level knowledge of the subject matter; (3) Procedures, Processes, and Functions, which identifies only those competencies that are pertinent to the TQP position and are outside those competencies required by GTB and FAQS; and (4) Practical Factors, which are performance-based activities used to demonstrate knowledge in specific topics. SSO chose to develop Office/Facility/Position specific standards for each TQP position, resulting in a total of 38 identified standards. Five of the standards are currently under development because these individuals are in either initial qualification or requalification.

Section 7.4.7.2 describes the analysis process to develop the O/F/PQS and Appendix G lists office and facility specific competencies. Appendix G lists a set of competencies applicable to all TQP participants and consists of formal training and required readings. There are also tables containing training requirements for unescorted access to SSO facilities. The analysis consists of discussions between the TQP participant and his/her assistant manager; Appendix G and the Position Description are reviewed to determine pertinent training relevant to the job tasks assigned to the TQP participant. The procedure also recommends consulting the DOE-HDBK-1078-94, *Training Program Handbook: A Systematic Approach to Training* and an SME to develop additional competencies. The results of the analysis are provided to the SSO TQP Coordinator, who then develops the standard and corresponding qualification card. The participant and his/her assistant manager review the standard and card and then submit the package to the FTCP Agent for final approval. When approved, the participant works to complete all the competencies on his/her qualification card based on the competencies in the standards. This methodology is systematic, logical, and will ensure that a technically correct qualification standard is generated.

Interviews with the SSO TQP Coordinator and the FTCP Agent verified that they both demonstrated sufficient knowledge of the process. All approved SSO Office/Facility/Position-specific standards were reviewed (33 total). All were developed in accordance with the SSO TQP procedure and approved by the FTCP Agent per the procedure. Based on examination of the standards and interviews, the conclusion is made that management involvement in all phases of the process is at a high level and will ensure rigor in the process. Based on these evaluations, this criterion is considered met.

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 SSO approved Office/Facility/Position-specific qualification standards were reviewed to determine if the appropriate technical references, regulatory requirements, operating procedures, and facility safety analysis reports were used to identify the correct competencies. The standards were very detailed and contained the correct references, primarily in the Required Reading and Procedure/Processes/Functions sections of the standard. The competencies listed in Appendix G include contractor-related competencies; for example, the tables listed contractor operating procedures, Resource Conservation and Recovery Act (RCRA), Radiation Training, Federal Employee Occupational Safety and Health (FEOSH), and Hazardous Waste Operations and Emergency Response (HAZWOPER) programs. The level of detail in identifying practical factors is exemplary. As examples, SSO uses walkthroughs with specific topics and regulatory references identified and participation in assessments referencing topics relevant to the TQP participant's qualification area. In the interview with the FTCP Agent, he indicated that a management expectation was established that all qualification standards for SMEs would factor in the impact of their discipline on the safety basis/envelope of the SSO facilities they oversee. Management feels the importance of maintaining the safety basis and knowledge of controls at some level (familiarity or working) is integral to an SME's knowledge base if he/she is to effectively oversee the contractor's management and operation of the SSO nuclear facilities. This expectation was also confirmed by the SSO Deputy Manager in an interview. The SSO Deputy Manager, who does all the final checkouts of TQP participants, stated that questions related to safety basis are integrated into her final checkout of TQP participants. Based on review of all standards and the information provided by SSO management, there is sufficient evidence to conclude that the SSO TQP includes job-specific requirements related to the regulatory codes, standards, and guides and will execute the SSO oversight mission successfully. Therefore, this criterion is met.

The program supports the mission needs of the office.

A review of the SSO Training files indicate that all O/F/PQSs developed for each TQP participant are designed to train them to oversee contractor-run facilities and their safety management programs and processes, which is one of the primary missions of SSO. A detailed review of the O/F/PQSs concluded that the standards will sufficiently prepare the TQP participants to effectively perform the SSO's oversight mission. In addition, there were nine TQP participants who were engaged in either initial qualification or requalification activities. Letters were signed out by the FTCP Agent to each participant defining the expectation to complete the three qualification standards, GTB, the appropriate FAQS, and the O/F/PQS developed for their position. The letter also specifies the target due date for completion of final qualifications; the latest date was May 19, 2009.

Interviews were conducted with the SSO Manager, Deputy Site Manager, Assistant Manager for Facility Operations (also the FTCP Agent) and the TQP Coordinator. The Site Manager and Deputy Site Manager stated a firm commitment to TQP as a means to make their program better. They have also established a program with sufficient rigor that will provide the participants an opportunity to gain a cross-section of knowledge to expand their skill base. These developmental factors will allow the staff to be better prepared to pursue other career opportunities in the future. Their intent was also to establish a TQP that can be maintained by future managers and staff; thereby, integrating succession planning into the process. SSO Management is also committed to provide quality and meaningful training to all staff members, not just the TQP participants. Periodic staffing meetings are conducted to determine existing available skills, and the skill sets are compared to mission requirements. The management team assigned staff to either TQP, a Safeguards and Security Program provided by the National Training Center, or support participation in the Project Management Career Development Program. This commitment to develop all staff members, not just the TQP participants, in support of the site missions and succession planning is considered a strength**.** Based on the interviews with SSO Management and the review of the Office/Facility/Position-specific standards, the SSO has effectively demonstrated that the TQP program supports the SSO missions; therefore, this criterion has been met.

Area for Improvement

None

Strength

The design of position-specific qualification cards represents a strong management commitment to assuring highly competent technical personnel and a management forward vision of formally defining specific position competencies that will create continuity in succession planning.

Noteworthy Information

None

OBJECTIVE 5

Team Member(s): Denise Webb

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

Criteria

4.3 Credit (equivalency) is granted for previous training, education, experience, and completion of related qualification/certification programs, where applicable.

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

4.5 Equivalencies are formally validated, approved, and documented.

Document Review

- SSO CP 0603.03, *SSO Technical Qualification Program*, Rev. 1, June 19, 2007
- SSO 1304.04, *SSO Facility Representative Training and Qualification*, Rev. 0, June 29, 2007
- SSO Emergency Management Program Manager Qualification Standard, January 2004
- SSO Office-/Facility-/Position-Specific Qualification Standard for Health Physicist, May 2008
- SSO Office-Specific Qualification Standard for Senior Technical Safety Manager, May 2008
- TQP Records for:
  - Health Physicist
  - STSM (STSA)
  - Fire Protection Engineer
  - Instrumentation & Control Safety System Oversight Engineer
  - STSM (AMES&H)
  - Criticality Safety Engineer
  - Emergency Management Specialist
  - STSM (AMFO)
  - STSM (Deputy Site Manager)
  - Industrial Hygienist
  - Mechanical Systems Safety System Oversight Engineer
  - Environmental Management Program Engineer
  - Facility Representative (ACRR & SPRF)
  - Facility Representative (NG & WM)
  - Waste Management
  - Safety Basis Engineer

- FY 2008 Self-Assessment of the SSO Technical Qualification Program, April 2008
- SSO Corrective Action Plan Technical Qualification Program FY08 Self-Assessment
- NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*, May 19, 2008
- DOE M 426.1-1A, *Federal Technical Capability Manual*, May 18, 2004
- DOE-STD-1137-2007, *Fire Protection Engineering Functional Area Qualification Standard*, December 2007

Interviews:

- TQP Coordinator
- FTCP Agent/AFMO
- AMES&H
- EM Specialist
- Fire Protection Engineer

Field Observations:

- None

Discussion:

Credit (equivalency) is granted for previous training, education, experience, and completion of related qualification/certification programs, where applicable.

Both SSO CP 0603.03 and SSO 1304.04, the governing documents for SSO TQP and FR training and qualification program, provide a process for granting equivalencies "based on justification and objective evidence." The SSO process requires the use of an equivalency evaluation form (as provided in Appendix A of CP 0603.03) to document previous education, training, certification, or experience for specific competencies related to assigned qualification standards. For non-FR TQP participants, the form and accompanying evidence are submitted to the appropriate assistant manager for review and concurrence, and the equivalency is approved by the FTCP Agent. For FRs, the same equivalency evaluation form is used and prepared by the FR candidate with objective evidence. The AMFO evaluates and forwards the form and evidence to the SSO Manager for approval.

Neither CP 0603.03 nor 1304.04 discuss the requirement that professional certification cannot be used to demonstrate equivalency of competence for DOE-specific processes and requirements. As stated in NA-1 M 426.1-1A, "professional certification does not satisfy the need to qualify in competence areas pertaining to DOE- and NNSA-specific directives, requirements, policies or procedures." Additionally, NA-1 M 426.1-1A states that "equivalencies should be used sparingly and with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP." However, CP 0603.03, section 7.5, states that "participants are encouraged to use equivalencies

as frequently as possible.…" SSO policy does encourage the use of rigor and scrutiny, but conflicts with the intended application of equivalencies to be infrequently applied. DOE M 426.1-1A does not dictate these additional constraints on the application of equivalencies; only that equivalencies should be documented with objective evidence and used with the utmost rigor and scrutiny. The SSO TQP procedures are compliant with DOE M 426.1-1A, but not with the more restrictive requirements in NA-1 M 426.1-1A.

A review of TQP participant records reveals that a number of TQP participants utilized the term "EQ" or equivalency for completion of both GTB and/or FAQ competencies as part of their qualification completion. One of these participants had the Competency Equivalency Evaluation Form as required by SSO 0603.03 in their TQP records. This form documented the use of a Health Physics certification towards specific competencies in the Health Physics FAQS. Although not all TQP records were reviewed, of the 16 sampled, the application of equivalencies for functional area qualifications was noted in the following TQP records:

- STSA (STSM)
- Instrumentation & Control SSO
- AMES&H (STSM)
- AMFO (STSM)
- Deputy Site Manager (STSM)
- Fire Protection Engineer
- Mechanical Systems SSO
- Facility Representative (Neutron Generator & Waste Management Facilities)
- Industrial Hygienist

The position-specific qualification card for the Industrial Hygienist SME provided explicit documentation of the types of activities and/or oral interview questions provided to the SME during his qualification. The level of detail and the scope of the assessment conducted by the QO were significant and provided an indisputable record of the basis for the candidate's qualification.

This criterion has been met.

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

As noted above, review of TQP records revealed several uses of the term "EQ" or equivalency on the GTB, functional area, and position-specific qualification cards. The use of GTB and position-specific equivalencies conflicts with the NNSA TQP Plan (NA-1 M 426.1-1A), Section 4.d, which states that "Completion of GTBQS and any assigned office-, site-, facility-, or position-specific competencies must still be demonstrated." The use of equivalencies for GTB competencies was noted on the GTB qualification card for the Instrumentation and Control Safety System Oversight Engineer, the Fire Protection Engineer, the Mechanical Systems SSO, the FR for the Neutron Generator and Waste Management facilities, and the Deputy Site

Manager. The use of equivalencies for position-specific qualification was noted for the Mechanical Systems Safety Systems Oversight Engineer. The SSO FY 2008 Self-Assessment identified a finding regarding the use of undocumented equivalencies, and a CAP was written and approved to address the finding. However, the finding does not recognize that equivalencies cannot be used for GTB or position-specific qualification standards as per the recently issued NNSA directive. Therefore, the CAP does not adequately resolve the application of equivalencies for GTB and/or position-specific qualification standards.

Additionally, all four STSMs at SSO used equivalencies in their functional area qualification cards. The NNSA TQP Plan states that equivalencies for STSMs must be demonstrated through some form of documented evaluation, such as an interview by the Agent or by a challenge exam. There were no documented records of such an evaluation.

Two of the STSMs were interviewed to determine if they recalled an interview or challenge exam specifically designed to demonstrate their knowledge for those competencies satisfied by the use of equivalencies on their qualification cards. The AMES&H recalled a final exit interview with the Deputy Site Manager, but this was a comprehensive final qualifying interview versus one tailored to the specific equivalencies on his qualification card. The STSM qualification card for the AMFO was entirely satisfied through the use of equivalency. The documentation provided to substantiate the application of these equivalencies consisted primarily of a gap analysis developed by the incumbent that compared the STSM qualification competencies he had completed at his previous position to the STSM competency requirements for his position within SSO. The AMFO could not recall if a final interview was conducted, but did not believe he was evaluated specifically on the use of equivalencies on his qualification card. Normally, such a gap analysis would be considered documentation supporting a transfer of qualifications versus an application of equivalencies. However, since the AMFO was essentially "requalified" with a new qualification date by using these equivalencies versus simply transferring his STSM qualification from his previous position and retaining his original qualification date, the application of equivalencies was, in fact, intended to support his initial qualification as an SSO STSM. Interviews with the FTCP Agent and TQP Coordinator revealed that they did not consider the NNSA TQP Plan to be a requirements document until its recent publication as an NNSA Supplemental Directive (May 19, 2008). Therefore, their program requirements were built to the requirements documented in DOE M 426.1-1A which, as described earlier, does not levy the additional restrictions on the use of equivalencies for STSMs.

Several other TQP participants had equivalencies documented in their functional area qualification cards without documented evidence or the SSO Competency Equivalency Evaluation Form. Interviews with the FTCP Agent and TQP Coordinator revealed that they believe they have identified all participants with undocumented equivalencies per their CAP and that the next step in their CAP, which is to document these equivalencies with objective evidence or conduct a reevaluation of the participant to ensure the use of equivalencies for the SSO TQP participants and FRs, is compliant with both the SSO TQP procedure and DOE M 426.1-1A. This action in their CAP is estimated to be complete by July 18, 2008.

This criterion has not been met.

Equivalencies are formally validated, approved, and documented.

The application of one participant's equivalencies was formally validated, approved and documented. However, the documentation of the equivalency for this participant and the formal approval by the FTCP Agent as required by SSO's TQP Procedure was dated approximately 6 months after the equivalency was documented on the qualification card. The TQP Coordinator stated that he noticed the use of the equivalency on the qualification card after it had been documented and required the participant to fill out the Competency Equivalency Evaluation Form. He indicated that the use of the form and the process to obtain FTCP Agent approval is relatively new and will take time to become consistently implemented at SSO. Several other instances of the application of equivalency exist without formal validation, approval, or documentation.

SSO identified the application of undocumented equivalencies for several TQP participants in their FY 2008 TQP Self-assessment. The corrective action plan (CAP-FO-6/9/2008-52558) to address this discrepancy requires (in part) all identified equivalencies for participants not in qualification or requalification to be formally documented or a reevaluation of the participant's competence with an estimated completion date of July 18, 2008. Other than identifying the extent of condition of the use of undocumented equivalencies, no other action has been or will be taken prior to this next action. A determination of the qualification status and/or the need to impose duty limitations based on the possible application of unsubstantiated equivalencies has not been done, but will be done as part of the action to assess each participant's use of equivalencies.

An interview with AMES&H revealed that the use of equivalencies is valuable when applied appropriately; however, AMES&H did not exhibit a clear understanding of the requirements for the application of equivalencies as specified in NA-1 M 426.1-1A. Again, this can be directly attributed to the fact that the SSO TQP Procedure is compliant with DOE M 426.1-1A and does not incorporate the more restrictive requirements levied in the NNSA TQP Plan regarding the use of equivalencies. Examples of NA-1 M 426.1-1A requirements not clearly understood by AMES&H include the fact that AMES&H did state that equivalencies could be used for position-specific qualifications, as well as towards competencies addressing DOE-specific requirements.

This criterion has not been met.

The objective has not been met.

Area for Improvement

The SSO TQP Procedure is not consistent with the recently issued NNSA Supplemental Directive with regards to equivalencies. Specific inconsistencies include the following.

- Neither CP 0603.03 nor 1304.04 discuss the NA-1 M 426.1-1A requirement that professional certification cannot be used to demonstrate equivalency of competence for DOE-specific processes and requirements.
- NA-1 M 426.1-1A states that "equivalencies should be used sparingly and with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP." However, CP 0603.03, section 7.5, states that "participants are encouraged to use equivalencies as frequently as possible…with the utmost rigor and scrutiny to maintain the spirit and intent of the TQP." This statement is in conflict with the intended application of equivalencies to be infrequently applied.
- The use of GTB and position-specific equivalencies conflicts with the NNSA TQP Plan (NA-1 M 426.1-1A), section 4.d, which states that "Completion of GTBQS and any assigned office-, site-, facility-, or position-specific competencies must still be demonstrated."
- The NNSA TQP Plan states that equivalencies for STSMs must be demonstrated through some form of documented evaluation, such as an interview by the Agent or by a challenge exam. All four of the STSMs at SSO utilized equivalencies in their functional area qualification cards without a documented evaluation of the demonstration of these equivalencies.

Several TQP participants have equivalencies documented in their functional area qualification cards without documented evidence or the SSO Competency Equivalency Evaluation Form.

Noteworthy Information

The SSO FY 2008 Self-Assessment CAP does not adequately resolve the application of equivalencies for GTB and/or position-specific qualification standards.

A determination of the qualification status and/or the need to impose duty limitations based on the possible application of unsubstantiated equivalencies has not been made, but it will be done as part of the action to assess each participant's use of equivalencies. The estimated completion date of this action will allow participants with potentially unsubstantiated equivalencies to oversee Defense Nuclear Facilities for several months.

OBJECTIVE 6

Team Member(s): Jim Szenasi

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.

Document Review

- NNSA TQP Manual (NA-1 M426.1-1A)
- NNSA SC Supplementary Directive (SC O 426.1-1A)
- Vacancy Announcements
- Position Announcements
- IDPs
- Performance Agreements
- Self Assessments
- CAP

Interviews

- FTCP Agent
- HR Representative
- TQP Coordinator
- Transferee (3 HPs)
- NNSA Administrator
- Qualifying Official (HP)

Activity Observations

- None

Discussion

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

A review of the qualifications cards and interviews with the FTCP Agent and NNSA TQP Administrator indicates that each NNSA TQP participant uses standard FAQS officially recognized by FTCP. All employees qualify to GTB and at least one FAQS. NNSA Policy, interviews with the FTCP agent, and a review of qualification cards indicate that no exemptions are allowed or used by SSO. FAQS are used exactly as approved by FTCP and are fully transportable.

This criterion is met.

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

DOE O 426.1-A requires transportability of qualifications from one office to another. NNSA TQP Manual 426.1-1A describes the procedure for accepting TQP qualifications from another office. The acceptance of transferred qualifications is at the discretion of the QO. Review of documents and interviews with QOs indicated that SSO is following this process. Interviews with the TQP Coordinator, review of the TQP records, and interviews with individuals and a review of their records indicated that there is sufficient information (qualification card and required backup material) to document their qualification. (Some concern on errors in qualification records was identified in the SSO Self-Assessment and is being addressed in the SSO CAP.) The TQP Coordinator keeps copies of essential TQP records (qualification card, equivalency justification, certificate, etc.). The individual participant is required to maintain his/her own records, including the original, signed qualification card. The FTCP Agent states that the complete qualification card is sufficient to allow for easy transferability between sites. (Two fully qualified employees who recently transferred from SSO and the NNSA Service Center (SC) have had their qualifications accepted. Three fully qualified TQP participants have transferred to SSO and had their qualifications accepted where appropriate.)

This criterion is met.

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

NNSA TQP Manual 426.1-1A requires that there is a procedure for assuring that TQP requirements are included in personnel documents. HR has recently implemented a new procedure for assuring that TQP requirements are included in appropriate documents. The

former Albuquerque Operations Office used some position-specific qualifications only. Those have been mostly eliminated. However, where a PD has not been updated, an addendum identifying TQP requirements is being attached. Some addendums incorrectly identify people as STSMs, but it is not cost effective to modify all PDs at this time because many are scheduled for updating for pay banding. SSO has redone its PDs; however, the NNSA SC HR has been too busy with pay banding to accept them.

Interviews with the HR representative and a review of vacancy announcements, position descriptions, performance plans, and IDPs demonstrated that each position contained a statement concerning TQP. The HR representative also demonstrated that the vacancy announcement process included a checklist for the supervisor to determine if the position is in TQP, and this is then verified by the FTCP Agent. A review of recent vacancy announcements includes indication of inclusion in TQP. TQP requirements are also included in individual Performance Agreements and IDPs.

This criterion is met.

Area for Improvement

The discrepancies that exist in the formal TQP records for SSO personnel could impede the transportability of qualifications.

Strength
None

Noteworthy Information

The official SSO PDs are not up to date and have addendums that incorrectly identify personnel as STSMs.

OBJECTIVE 7

Team Member(s): Fred Bell (lead), Denise Webb, and Richard Gonzales

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 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 TQP provides for continuing training.

Document Review

- SSO CP 0603.03, *SSO Technical Qualification Program*, Rev. 1, June 19, 2007
- SSO 1304.04, *SSO Facility Representative Training and Qualification*, Rev. 0, June 29, 2007
- SSO CP 0803.04, *Self-Assessments for Federal Operations*, Rev. 1, December 16, 2005
- SSO CP No. 0803.08, *Corrective Action Management (CAM)*, Rev. 2, May 12, 2006
- SSO Emergency Management Program Manager Qualification Standard, January 2004
- SSO Office-/Facility-/Position-Specific Qualification Standard for Health Physicist, May 2008
- SSO Office-Specific Qualification Standard for Senior Technical Safety Manager, May 2008
- SSO Office-Specific Qualification Standard for Instrumentation and Controls Systems Engineer, August 2005
- SSO Office-Specific Qualification Standard for Mechanical Systems Engineer, November 2004
- TQP Records for:
  - Health Physicist
  - STSM (STSA)
  - Fire Protection Engineer
  - Instrumentation & Control Safety System Oversight Engineer
  - STSM (AMES&H)
  - Criticality Safety Engineer
  - Emergency Management Specialist
  - STSM (AMFO)
  - STSM (Deputy Site Manager)

- Industrial Hygienist
- Mechanical Systems Safety System Oversight Engineer
- Environmental Management Program Engineer
- Facility Representative (ACRR & SPRF)
- Facility Representative (NG & WM)
- Waste Management
- Safety Basis Engineer

- *FY 2008 Self-Assessment of the SSO Technical Qualification Program*, April 2008
- *SSO Corrective Action Plan Technical Qualification Program FY08 Self-Assessment*
- NA-1 M 426.1-1A, *Technical Qualification Program Plan for Federal Personnel with Safety Responsibilities at Defense Nuclear Facilities*, May 19, 2008
- DOE M 426.1-1A, *Federal Technical Capability Manual*, May 18, 2004
- Sandia Site Office, Facility Representative Site-Wide Qualification Standard Rev. 5, January 2006, Change 0
- Sandia Site Office Facility Representative Qualification Standard, Technical Area 5, Change 11, April 2006
- Sandia Site Office Qualification Standard Neutron Generator Facility (NGF) and Waste Management Facilities (WMF), September 2004
- DOE-STD-1137-2007, *Fire Protection Engineering Functional Area Qualification Standard*, December 2007
- Sampling of the final oral evaluation questions
- SSO AMFO Continuing Training "Homework" packages
- SSO Qualifying Official Training, June 25, 2008
- Sandia National Laboratory Vital Safety Systems List, December 13, 2007
- NNSA SSO Technical Qualification Program Assistance Visit Summary Results, October 25, 2007

Interviews

- TQP Coordinator
- AFMO
- EM Specialist
- Fire Protection Engineer
- Industrial Hygienist
- Occupational Safety Engineer
- Three FRs
- FTCP Agent
- Nuclear Safety Operations Engineer

Activity Observations

- Facility Walkthrough of Sandia Pulsed Reactor Facility (SPRF) and Annular Core Research Reactor (ACRR) with SPRF/ACRR Facility Representative, AMES&H, Health Physicist, and Fire Protection Engineer
- Facility Walkthrough of SPRF and ACRR with SPRF/ACRR Facility Representative
- Facility Walkthrough of Neutron Generator (NG) Facility with NG Facility Representative
- Facility Walkthrough of Gamma Irradiation Facility (GIF) with GIF Facility Representative
- Facility Walkthrough of SPRF and ACRR with Nuclear Safety Operations Engineer
- Observed the weekly SSO Operations Call – participants included FRs, SSOs, programmatic SMEs, Maintenance Manager, AMFO, and Deputy Site Manager

Discussion

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

TQP participants have the required competency to perform their assigned functions. This was verified through reviews of training completed, qualification expectations identified in standards, records of individual accomplishments, final evaluation interview documentation, TQP program requirements, and most importantly walkdowns and interviews with TQP participants discussing their individual areas of responsibility.

TQP records were sampled and two SMEs and one Assistant Manager were interviewed during this assessment to determine their technical competency in the areas of Emergency Management, Fire Protection, and Senior Technical Safety Manager. All three individuals interviewed were able to adequately and appropriately answer the questions within their area of qualification, and no issues were identified with the level of knowledge of the persons interviewed. The Emergency Management Program Manager has recently been required to fulfill the GTB, the Emergency Management (EM) FAQS, and position-specific qualification standards. The incumbent in this position has never had to fulfill the GTB or the EM FAQ, but the TQP Coordinator expected there would be sufficient training provided to the incumbent to allow her to satisfactorily meet the GTB. Her level of knowledge and experience as evidenced during the interview was sufficient to demonstrate a high level of competence with respect to her functional area.

Walkdowns were completed in the ACRR/SPRF, NG, and GIF with FRs and a Nuclear Facility Operations Engineer. The FRs are fully qualified; although the ACRR/SPRF and NG FRs are currently undergoing requalification on one of their assigned facilities. Qualification for all FRs required written exams and oral boards. The qualification standards for the ACRR/SPR, NG, and GIF FRs were reviewed and mastery of the competency requirements identified in these qualification standards was demonstrated during the walkthroughs. No issues were identified with the level of knowledge demonstrated by the FRs evaluated as part of this assessment.

A facility walkthrough that was intended to satisfy one of the practical factors for the position-specific qualification standards for a Senior Technical Safety Manager, the Fire Protection Engineer, and the Radiation Protection SME was observed. The walkthrough involved the ACRR/SPRF FR discussing the controls, hazards, and Material at Risk (MAR) limits for these facilities. The FR believed he was conducting the walkthrough as a training/educational tool to allow TQP participants to orally demonstrate their knowledge on these facilities at a later opportunity. However, the practical factor competency for these position-specific qualification standards clearly states that during the walkthrough with the FR, the candidate will demonstrate without assistance, knowledge on the listed topics. At the end of the walkthrough, the FR signed off the practical factor competency as the qualifying official for these candidates for ACRR and SPRF. (See AFI in Objective 1.)

A discussion with the SSO FTCP Agent, TQP Coordinator, Senior Technical Safety Advisor, and the participants involved in the walkthrough revealed confusion as to what was intended to be accomplished with this walkthrough. It is clear that both the FTCP Agent and the Senior Technical Safety Advisor intended that the practical factor associated with the facility walkthrough should not be signed by a QO until the candidate had successfully demonstrated the knowledge required by this competency without assistance. The FTCP Agent did not believe the flawed process demonstrated through this walkthrough affected any other SSO TQP participants since the position-specific qualification standards requiring demonstration of this practical factor are relatively new. In addition, the FTCP Agent stated that he has conducted a final qualifying interview for those participants who have already been required to demonstrate knowledge related to these practical factors and that his personal interaction has ensured participants have an adequate level of facility-specific knowledge. SSO has initiated an extent of condition review to see if other qualifications are impacted and to ensure the position-specific practical factor qualification process is clarified for future participants.

In response to issues identified by the Self-Assessment, a review of some TQP participants' competency was evaluated for the need to impose duty limitations. These reviews appropriately identified no restrictions for some staff members and restrictions for others. Continued use of this process will help ensure and document adequate technical competence or appropriate duty restrictions when qualifications are not yet completed or process deficiencies call into question the basis for allowing unrestricted oversight at defense nuclear facilities.

Review of a sampling of the final oral evaluation questions prepared for use by the Deputy Manager in completing the Final Evaluation Activity demonstrated that appropriate depth and breadth of expertise are reviewed. Additionally, the Deputy Manager adds broader context questions to satisfy her expectation that the technical expertise is implemented in the oversight role to meet management expectations. The final evaluation activity is rigorous, documented, and in compliance with the technical expectations of the procedure.

This criterion is met.

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.

Through the combination of methods described below, it is evident that SSO actively seeks and embraces TQP feedback to implement TQP continuous improvement in support of SSO mission accomplishment and the needs of the Department. Feedback is routinely received and acted upon.

Feedback mechanisms are proceduralized in the TQP and FR procedures; feedback is received as part of the standards development process, and periodic evaluation is accomplished by self-assessment and external reviews. The majority of feedback is provided through informal communications. Interviews identified that TQP participants and management routinely provide verbal feedback and markups of documents to the TQP Coordinator for incorporation into the program and are generally satisfied with the resulting disposition.

SSO Corporate Procedure (CP) No. 0603.03, Rev. 1, *Technical Qualification Program*, dated July 6, 2007, provides a Feedback and Improvement Report Form for use in providing program feedback. This same form is required to be completed by the TQP participant following completion of the final evaluation activity and submitted to the TQP Coordinator. The feedback forms are required to be maintained in the TQP records. Review of a sampling of records for personnel who have completed the final evaluation activity after the procedure was issued and the requirement instituted identified no Feedback and Improvement Reports in the files. Interviews conducted of TQP participants revealed that the formal mechanism for providing feedback via this form had not been used, but informal feedback is regularly provided to the TQP Coordinator.

Some of the most valuable feedback received comes from SME participation in the standards development and review process. Experienced SMEs with good depth of knowledge at SSO assist with the preparation of the Position-Specific Qualification Standards. Many of the SMEs interviewed stated that the opportunity to help develop their own position-specific qualification standards was an excellent opportunity to ensure the program requirements were tailored to the position's level of knowledge, skill, and ability and supports succession planning for future TQP candidates. The quality of the recently issued Position-Specific Standards reviewed demonstrated the value of this activity.

Periodic evaluation of the TQP is accomplished through self-assessment, directed external assessment, and requested assist visits. SSO CP No. 0603.03 requires biennial self-assessment with an STSM Team Leader utilizing the criteria of DOE M 426.1-1A, *Federal Technical Capability Manual*, and meeting the requirements of SSO CP 0803.04, *Self-Assessments for Federal Operations*. Additionally, SSO CP No. 0803.08, *Corrective Action Management (CAM)* is referenced from the self-assessment procedure for the development and tracking of corrective actions.

The FY 2008 Self-Assessment of the SSO TQP, dated April 2008, was completed in preparation for this TQP Accreditation Review. Corrective actions were developed for the findings identified by the Self-Assessment. The corrective action plans were not strictly in compliance with the format provided by the SSO governing procedure, in that they were improved to include a causal analysis, but narrowed in that the section identifying required compensatory measures was not included. The CAP did not include corrective actions for the observations identified by the Self-Assessment. Although it is not an expressed requirement of the CAM procedure, the failure to develop a CAP for the observations noted in the Self-Assessment may result in missed opportunities to improve TQP. Discussion with the TQP Coordinator indicated that there were plans to develop a CAP for these observations, but that it had not yet been completed.

Tracking of corrective actions and documentation of objective evidence is accomplished utilizing the Pegasus action management system. The SSO Corporate Procedure for CAM requires updating to reflect current management expectations for preparing CAPs and managing action completion.

Feedback gained from external evaluation is also used to improve TQP. The Chief Defense Nuclear Safety (CDNS) Biennial Review evaluated the Federal Training and Qualification and identified opportunities for improvement. Additionally, in preparation for SSO Accreditation, two assist visits were requested and conducted to gain additional external review and feedback on ways to improve the SSO TQP. Improvements were made as a result of each of these activities.

This criterion is met.

<u>The TQP provides for continuing training.</u>

The continuing training program fosters the continued professional development of TQP participants, and the rigorous requalification expectations ensure that the staff remains current on changes to directives in FAQS or changes with the standards themselves. Refinements to the program to better track expectations of specific functional area and position-specific qualification standards to continuous training activities assigned and completed, and specific tracking of individual accomplishments would strengthen the program.

SSO Corporate Procedure (CP) No. 0603.03, Rev. 1, *Technical Qualification Program*, dated July 6, 2007, requires continuing training for TQP participants, specifies the minimum requirements with approved methods for meeting the requirements, and requires documentation utilizing Procedure Appendices C and D. Review of training completed identified that value added training was conducted and, in some cases, clearly exceeded the expectations of the procedure. Training was provided that allowed individuals to meet the requirements of the procedure if opportunities presented were taken advantage of. The verification of each individual meeting the continuous training requirements was not completed, and records documenting individual training completion are not consistently maintained in the individual's training record.

The AMFO organization has recently initiated additional activities that serve to maintain and develop TQP participants beyond the expectations of the procedure. The assignment of technical "homework topics" as continuing training serves to refresh basic technical knowledge of TQP participants, and the initiation of field trips to local vendors allows for direct observation and hands on demonstration of equipment manufacturing and operation. Homework assignments include review of engineering fundamentals and completion of performance calculations, such as pump and fluids theory and performance. Touring of a local pump vendor's facility allowed direct observation of different types of pumps and their components, as well as discussion of application.

FRs conduct monthly program reviews that offer lessons learned and opportunities for continuing training, and weekly continuing training activities are discussed during weekly reviews by the FR team leader. These activities are available to other TQP participants if they chose to attend; however, continuing training for other TQP participants is not as extensive or structured as that provided for the AMFO staff (FRs and Nuclear Operations staff). As an example, the Fire Protection SME is required to complete a minimum of 30 "proficiency points" in his 3-year requalification period. This requirement can be satisfied through a number of different activities, such as participation in fire protection assessments and maintenance of Professional Engineer registration as a fire protection engineer. The SSO Fire Protection Engineer acknowledged that he was aware of the proficiency requirements related to his functional area qualification standard but was not actively tracking activities and/or the status of his proficiency points. Similarly, System Engineer Position-Specific Standards have continuing training requirements and require that the supervisor specifically identify what is required for the position and document those requirements in the participant's IDP. Continuing training area-specific requirements for TQP participants (other than FRs) are not clearly identified or tracked in accordance with the continuing training requirements identified in each participant's functional area and position-specific qualification standards. This deficiency is partially identified by the SSO TQP Self-Assessment, but is not addressed as part of the CAP developed.

This criterion is not met.

Area for Improvement

The feedback and improvement process as required by the TQP procedure is not implemented.

Individual Record of Continuing Training Forms are not maintained in the Individual Training Records as required by the governing procedure. Continuing training requirements for TQP participants (other than FRs) is not clearly identified or tracked in accordance with the continuing training requirements identified in each participant's functional area and position-specific qualification standards.

Strength

The content and quality of the continuing training program for personnel in the AMFO organization is excellent. It includes self-study, homework assignments, topical instruction by incumbents, and offsite trips to related equipment vendors.

Noteworthy Information

Though not an expressed requirement of the CAM procedure, the failure to develop a CAP for the observations noted in the self-assessment may result in missed opportunities to improve the TQP.

The SSO Corporate Procedure for CAM should be updated to reflect current management expectations for preparing corrective action plans and managing action completion.